The Scottish Parliament

(For official use only) PUBLIC PETITION NO.	**PE1188**

Should you wish to submit a public petition for consideration by the Public Petitions Committee please refer to the guidance leaflet How to submit a public petition and the Guidance Notes at the back of this form.

1. NAME OF PRINCIPAL PETITIONER
Nick Dekker
2. TEXT OF PETITION
Nick Dekker calling on the Scottish Parliament to urge the Scottish Government to investigate the circumstances whereby it agreed that 60 hydro-power stations could be accredited for subsidy under the Renewables Obligation scheme and that generation capacity could be cut to below the 20megawatt qualification threshold at others to enable accreditation and whether, in the interests of electricity consumers, it will rescind these accreditations.
3. ACTION TAKEN TO RESOLVE ISSUES OF CONCERN BEFORE SUBMITTING THE PETITION
I have contacted and have been in correspondence with AuditScotland, OFGEM, Scottish & Southern Energy PLC and ScottishPower PLC. Alex Neil MSP also corresponded with Scottish & Southern Energy.
4. ADDITIONAL INFORMATION
See— **"**The war on climate change – A licence to print money?" "Subsidies and Subterfuge – Hydro-power and the Renewables Obligation" (also on www.swap.org.uk) "ROCs earned by Alcan, SSE and ScottishPower from 'old build' hydro, April 2002 to December 2007" (a report by the petitioners); "Renewable Energy Data for Scotland (Hydro), May 2008" Correspondence generally pertinent to the petition but esp to Question 3 OFGEM's "Annual Reports on the Renewables Obligation" 2004 to 2008; Press releases and other material referred to in "The war on climate change – a licence to print money?" and elsewhere
5. DO YOU WISH YOUR PETITION TO BE HOSTED ON THE PARLIAMENT'S WEBSITE AS AN E-PETITION?

YES ☒ **NO** ☐

If “Yes” please enter a closing date for gathering signatures on your petition (we usually recommend a period of around six weeks). Please also provide at least one comment to set the scene for an on-line discussion on the petition, not exceeding ten lines of text.

CLOSING DATE

30 August 2008

COMMENTS TO STIMULATE ON-LINE DISCUSSION

If public money is given to a private company to encourage it to invest in projects deemed to be to the public benefit, there should be clear evidence that (a) the investment is for something the company would not have done on its own accord and (b) there is a clear and transparent equivalence between what is given to the company and what it invests.

Neither test was met when the Scottish Executive agreed that already existing hydro-electric power stations could be accredited under the Renewables Obligation scheme. In practice, it meant (a) a reduction in hydro generating capacity and (b) the generators being paid 20 times over for their investment at a time of widespread fuel poverty.

We are calling on the Scottish Parliament to investigate the decision and its financial consequences and to consider whether the subsidies should be withdrawn.

The war on climate change –

A licence to print money?

A petition calling on the Scottish Parliament to investigate the circumstances whereby the Scottish Executive agreed that extant hydro-power stations could be accredited for subsidy under the Renewables Obligation scheme, that generation capacity could be cut at others to enable accreditation and if it is in the interests of electricity consumers that the Scottish Government take steps to rescind the accreditations.

EVERYONE IS aware that the mechanism for driving the development of renewable electricity generation in Scotland is the Renewables Obligation (Scotland) (ROS) and that it is one of several parallel schemes across the UK. Fewer grasp how these complex 'carrot-and-stick' regimes work.[1]

In essence, they offer an incentive to invest in approved types of generating plant by, on the one hand, making it compulsory to supply a proportion of electricity from renewable sources while, on the other, offering high levels of subsidy for doing so.

Consultation on the schemes, which ran from March 1999 to March 2001, addressed the issue of a portfolio of small hydro installations, mostly in private hands and sometimes dating back to Edwardian times, which had fallen into disrepair or disuse and of how its owners might be enticed to bring it back into production. The key notion was that they could be accredited to the RO/ROS and treated as new plant if they were refurbished to an agreed standard or had been refurbished within the previous 12 years.

In the run-up to the launch of the schemes in April 2002, the electricity supply sector was, for a variety of reasons, cash-starved. In spite of this, government and stakeholders agreed that existing 'large' hydro-power stations should, as a mature and profitable technology, be excluded from the subsidies regime:

> Large-scale schemes will be taken here as having an installed generating capacity of greater than 5 MW. The assumption is that large-scale schemes would be developed and operated by major electricity utilities. (May 1999) [2]

> While relatively well-established technologies such as large scale hydro and energy from waste will count towards achievement of the 10% target, they will be excluded from the Obligation. (October 2000) [3]

> The majority view on hydro power was that the Government is right to exclude large-scale hydro power from the Renewables Obligation. (March 2001) [4]

Whitehall initially saw no reason why this situation should change and the (then) Scottish Executive presumably concurred.

This was proper. Building a new hydro station does incur high up-front costs but most of these are in the dams, tunnels and infrastructure – the turbines are comparatively cheap. The capital cost of Scotland's hydro stations was written off decades ago and, though they may have been expensive to build, they are cheap to maintain and particularly long-lasting.

In operational terms, hydro is superior to other renewable sources such as wind because, being storable, it is available pretty well on demand and, because it can come on- and go off-line at short notice, it attracts above average prices.

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1 Strictly speaking, the Renewables Obligation schemes are levies on electricity consumers, not fiscally-funded subsidies, but subsidy is the term generally used. The ROS is administered by OFGEM, not the Scottish Government.

2 DTI, *New and Renewable Energy – Prospects for the 21st Century; Supporting Analysis*, May 1999, pps 87 & 91.

3 DTI, *ibid – Preliminary Consultation*, October 2000, p 3, emphasis added.

4 DTI, *ibid – Analysis of the Responses to the Consultation Paper*, March 2001, p 6.

Contrary to popular perception, neither the construction nor the upkeep of any station in the Scottish hydro portfolio was ever state-funded or subsidised when in public ownership. Historically, Scotland's hydro power had hitherto been self-sufficient.

However, by 2001, generators were pressing the government to subsidise the technology for the first time ever and continued their lobbying after public consultation closed. Blaming ageing plant and poor trading conditions, Scottish and Southern Energy even threatened to 'de-commission' stations unless a subsidy mechanism could be found for all but the very largest of its stations. [5]

In the event, one was – two significant changes were included in the Renewables Obligation regulations that came into force on 1 April 2002. Neither had been the subject of public consultation.

The first change – lowering the bar

The public was at least told about this change, albeit *post hoc*. It raised the limit below which the existing hydro power schemes qualified for subsidy, at first from 5 MW to 10 then, later, from 10 MW to 20. In March 2001, the DTI had reported that:

> Eligible supplies . . . may exclude hydro-electric schemes . . . exceeding 10 MW since large scale hydro has long been established in the market and is in a position to compete in the open market with fossil-sourced energy. [6]

By June, the limit had again been increased:

> We, therefore, propose to exclude existing stations with a declared net capacity (DNC) of over 20 MW from the Obligation, but to include any stations first commissioned after the date of the Order is made, regardless of capacity. [7]

Although no rationale for these changes has been offered, refurbishing a station to secure accreditation was certainly an enticing investment. The owners had only to replace, or have recently replaced, the moving parts in a turbine, something which is (self-evidently) done from time to time in any event. The move costs little but adds at least thirty years to the life of the plant – roughly the same as the life of a thermal power station and probably twice that of a wind turbine. It was justified on the grounds that refurbishment would restore electricity output to original levels and, in some cases at least, increase it due to design improvements. Power companies, politicians and others claimed efficiency gains of up to ten per cent.[8]

Even if this figure is accepted (it can readily be shown to be exaggerated), it means that the subsidy per MWh of additional generation capacity created by refurbishing hydro is, by definition, ten times higher than that paid to those who develop new capacity from scratch.

Audit Scotland reported that the issue was outwith its remit and it fell to the petitioners and to politicians to approach the major hydro generators for details of what they spent on refurbishment to secure accreditation and on how this compared to the financial benefit they received.

Although they declined to provide this 'equivalence information', a reasonable estimate of both can be derived from data in the public domain, from general industry knowledge and from press reports on the refurbishment programme. The petitioners calculate that:

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5 See, e.g., House of Commons Science and Technology Committee, *Proceedings*, 21 March 2001. A Scottish Executive press release of July 2001 noted that, 'Initial proposals included support for large hydro schemes up to a limit of 10 MW. Subsequent consultation with the industry has demonstrated that extra support would be required to safeguard the future of Scotland's established large hydro stations . . . As a result, changes to the Scottish and English schemes have been agreed and will form part of the forthcoming consultations'. Consultation had, however, already closed.

6 DTI, *ibid – Conclusions in Response to the Public Consultation*, March 2001, p 9. Even if the definition of 'large' changed when the limit was raised (without explanation) from 5 MW to 10, it did seem that the sentiment had not.

7 DTI, *ibid – Statutory Consultation*, June 2001, p 4. Note that the petitioners are *not* opposing fiscal support for the building of genuinely new large hydro capacity when it is 'first commissioned after the date of the Order'.

8 An SSE press release of 26 Sept 2002, for example, noted that 'St Fillans Power Station on Loch Earn . . . has completed a £1 million refurbishment which will extend its life for 30 years and improve its efficiency by around 8%. Following the refurbishment of the 17 megawatt power station [it had been 21 MW – see below], it qualifies for Renewable Obligation Certificates'.

- The one-off cost of refurbishing the ROS-eligible hydro stations in Scotland to secure their accreditation was between £60 and £80 million. It was certainly not £130 million; [9]

- The annual income from the ROCs won by hydro-power stations belonging to Scotland's major generators is currently £100 million (not including the selling price of the electricity);[10]

- Accepting industry claims of a ten per cent increase in efficiency, it costs £500 in subsidy for every additional MWh of electricity generated by an extant accredited hydro-power station;

- Hard-pressed electricity consumers, who have already paid three times over for the refurbishment of Scotland's hydro plant, are now expected to pay for it once a year for the next twenty years. The total cost of the subsidies will exceed £1 billion.

The second change – cutting capacity

Few observers knew about the second change until OFGEM's first annual report on the RO schemes was published in February 2004, by which time the scheme had been going for two years. It revealed how the regulations as finally drawn up had allowed power station owners to cut the capacity of turbines at some stations to bring them below the 20 MW qualification threshold provided the cuts were made before the regulations came into force.[11]

Given the almost iconic status of Scotland's post-war hydro-power projects and the controversy that the move would have provoked had it been made public, reticence concerning the capacity cuts is understandable. In the event, two Scottish generators took advantage of the loophole and cut capacity at eight stations.[12]

The first effect on the hydro sector of the Renewables Obligation was thus that Scotland's capacity fell for the first time in the technology's 100-year-long history. The cuts in Scotland came to around 55 MW. In generation terms, they were roughly equivalent to closing Pitlochry power station and, in capacity terms, to closing it four times over.[13]

Politicians and others claimed that efficiency improvements as a result of refurbishment would offset the capacity cuts. This is disputed. For well understood engineering reasons, the reduced capacity impinges

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9 SSE wrote to Alex Neil MSP on 14 April 2008 that '[40 listed accredited sites] have received investment of around £130m in their refurbishment' but that that included work not required for accreditation. It reported Ceannacroc as costing £9.3m and Invergarry £9.7m. The list did not include 24 small sites all under one MW, 7 MW total. (It is not clear why it included the 300 MW Foyers site as this is Pumped Storage and thus not 'renewable'.)

By 1999, SSE had refurbished Sloy (152 MW, 4 turbines) for £15m and, by 2000, Rannoch (48 MW, 3 turbines) also for £15m. It was reported in 2002 that refurbishing St Fillans cost £1m and that Finlarig, Grudie Bridge, Mossford, Quoich and Shin (7 turbines in all) cost £4m. ScottishPower's Bonnington (11 MW, 2 turbines) and Stonebyres (6 MW, 2 turbines) together cost under £1.5m and Carsfad (12 MW) and Earlstoun (14 MW) about €5m.

Overhauling larger turbines in the subsidised portfolio (average 10 MW) cost under £1,500,000 each. SSE has now refurbished and accredited about 70 turbines but most are small. Apart from the 24 very small machines, 18 are between 1 and 5 MW, 6 between 5 and 10 MW and, in addition to the above, only eight others are over 10 MW. (Livishie, 17 MW, was refurbished in the 1990s.) A £60m-80m estimate is not unreasonable.

10 In 2006-07, OFGEM issued 2,155,045 SROCs for 'Hydro <20 MW DNC'. Rounding this to two million to allow for genuinely new capacity and assuming a typical ROC value of £50 suggests a subsidy income for the inherited portfolio of about £100 million for the year. A detailed analysis confirming this estimate is provided.

If productivity has indeed increased by ten per cent, it follows that every MWh of new generation was subsidised by £500; if the increase is five per cent, the subsidiy is ~£1,000/MWh. And so on.

11 OFGEM, *The Renewables Obligation – Ofgem's first annual report*, February 2004, p 35.

12 OFGEM reported that SSE cut Culligran from 24 MW to 17 MW (SSE says it is 19 MW), Finlarig from 30 to 16, Grudie Bridge from 24 to 19, Mossford from 24 to 19, Quoich from 22 to 18, Shin from 24 to 19 and St Fillans from 21 to 17. Every SSE hydro station below 30 MW except Inverawe (25 MW) and Mucomir (2 MW) is now subsidised. Alcan cut Kinlochleven from 30 MW to 19.5. ScottishPower made no capacity cuts.

13 The analogy makes due allowance for the increased load factors of 'de-rated' plant. However, the capacity cuts inevitably also increase the plant's 'spillage' (water released downstream without generating electricity). This happens mainly when high rainfall causes flows to exceed a scheme's storage capacity, leaving the generator no discretion over their release. By wasting this additional water, the cuts are accompanied, as a matter of mathematical law, by a drop in output that tends to counteract any increase due to its refurbishment.

slightly on operational flexibility (and thus the ability to cut CO_2 emissions elsewhere) and, more significantly, increases the amount of wasted water ('spillage') when the plant is run for longer periods, as it has to be.

Because it does not address this key issue, the argument that 'The lower installed capacity at these sites simply means they are run for a bit longer' is disingenuous at best.[14]

Why does the accreditation run counter to the interests of consumers?

The owners got functionally new and profitable plant for £100 to £150 per kW of capacity compared to anything up to £1,500/kW for new wind-driven or conventional power stations and to larger sums for emerging technologies. They did not have to navigate the planning process or pay for connection to the Grid.

They are getting the consumer to pay for this roughly once a year every year until the scheme expires in March 2027. It is (consumers') money for old rope.

The arrangement was a scandal when electricity was cheap. It is not cheap now.

The petitioners call upon the Scottish Parliament:

1 to investigate the circumstances whereby, prior to the launch of the Renewables Obligation Order on 1 April 2002, the Scottish Executive agreed that OFGEM could accredit over 70 extant hydro-power stations under the ROS scheme; [15]

2 to investigate the circumstances whereby the Scottish Executive agreed that generators could cut the capacity of some hydro-power stations to below 20 MW so that they too could be accredited under the scheme;

3 to consider whether financial support was ever justified for such long-established, low-cost electricity generating facilities;

4 to investigate the extent of the investment in refurbishment that was made to secure the accreditation of the stations and contrast it with the financial benefit it is giving to the generators concerned;

5 to recommend, should its investigation show that the costs incurred by electricity consumers far outweigh the benefits to the wider Scottish economy, that OFGEM rescind the accreditations;

6 to ensure, should it deem that compensation is justified, that it is commensurate with the expenditure incurred by the generators in seeking to comply with the stated aims of the Renewables Obligations orders rather than with expenditure incurred in such routine maintenance and modernisation as would normally and commercially fall to them.

N Dekker, BSC, ARCST, LLB, MICE

pp the petitioners

14 Letter of 14 April 2008 from SSE Generation Director Paul Smith to Alex Neil MSP.

15 'Large' is deemed to be over five MW in capacity, as originally defined by the DTI's 1999 consultation document.

Subsidies and Subterfuge

Hydro-power and the Renewables Obligation

The Scottish Wind Assessment Project

Produced by *The Scottish Wind Assessment Project*

June 2005

The Scottish Wind Assessment Project is an ongoing programme of research which seeks to collate existing studies and commission new research to promote a thorough investigation of the claims made for and against the use of wind-generated energy and associated issues. It is supported by private donations.

Contact *The Scottish Wind Assessment Project* via research@swap.org.uk. Its reports are posted on www.swap.org.uk.

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The opinions expressed in this report are entirely the responsibility of the *Scottish Wind Assessment Project*. Any errors will be corrected if notified.

Front cover: The underground turbine hall at Livishie (15 MW). Part of the Great Glen scheme and one of the last to be built by the North of Scotland Hydro Electricity Board, it was refurbished in the late 1990s.

Summary of argument

DURING CONSULTATION on New Labour's renewable energy policy and the Renewables Obligation, which ran from March 1999 to March 2001, government and stakeholders alike agreed that existing large hydro-power stations should, as a mature and profitable technology, be excluded from the subsidies regime.

However, after consultation closed, hydro generators pressed the government to reverse its decision, citing ageing plant and poor trading conditions.

Two major changes were subsequently made to the regulations, both of benefit exclusively to large generators. The first, which eased the qualification criteria for subsidies to include all hydro-power stations under 20 MW, was made public.

The second, which was all-but hidden from public view and did not generally come to light until 2004, brought an even larger portion of the UK's hydro portfolio into the scheme. It authorised owners to cut the capacity of turbines to bring them below the declared qualification limit.

As a result, since the Renewables Obligation schemes became operational, UK hydro-generation capacity has gone down, not up, for the first time in the technology's 100-year history. Claims that efficiency improvements offset the capacity cuts are disputed as losses due to increased water wastage are inevitable. These losses are equivalent to closing Pitlochry power station.

This report examines how these decisions came about and the reasoning behind them. It argues that the subsidy payments which large hydro-generation now attracts are not justified by the modest quantity of additional electricity being produced.

Compared to production before the schemes became operational, a megawatt-hour of additional electricity, typically worth around £30, is now attracting subsidies of around £500.

The policy is costing electricity consumers £60 million a year, possibly more, but has done very little to increase the quantity of new 'renewable' generation.

It is an appallingly inefficient way to cut CO_2 emissions.

This is happening at a time when emerging technologies, including marine technology and photo-voltaics, are being starved of resources – both have recently suffered significant setbacks.

This puts yet another question mark over the competence of the Renewables Obligation schemes to tackle the emissions crisis. However, discussion of this issue is explicitly excluded from the current consultations on the schemes.

Contents

Introduction

THE GOVERNMENT'S GREEN energy initiatives, the Renewables Obligation and the Renewables Obligation, Scotland (RO/ROS), promise to raise £1 billion a year for electricity suppliers by 2010 through levies on customers. OFGEM estimated the cost to consumers in 2003-2004 at £416 million.[1]

The schemes are justified by the perceived ability of electricity generators to reverse the threat of anthropogenic climate change. The need to examine whether they are efficient or even effective is self-evident.

There are certainly those with doubts. Within the last year, a substantive report from the House of Lords Science and Technology Committee, while taking a rosy view of the competence of wind-generated energy, argued that the Renewables Obligation served to 'ensure that the government's targets are not attained', a Holyrood committee drew attention to the scheme's inability to develop new technology and a House of Commons Scottish Affairs Committee report was sharply critical. A recent report from the Council for Science and Technology did not discuss the RO schemes but did describe an energy-sector R&D 'collapse'.[2]

A paper published recently by this project attracted media interest when it quantified what many in the milieu already knew: the RO/ROS schemes had created a rash of wind-power proposals which Scotland's generation system could never absorb and which the planning system was unable to control.[3]

Scotland's Enterprise Minister, Jim Wallace, who dismissed the press reports as scaremongering, had earlier said that 'more ROCs were awarded both to landfill gas and hydro output than to onshore wind'.[4] Given the pace of accreditation under the schemes, the remark had little meaning (there are few landfill gas schemes in Scotland and England is outwith his remit) although it was certainly correct to remind us that hydro-power remains a significant part of Scotland's electricity generation portfolio.

There is probably no technology more attractive than hydro to engineers in the electricity supply industry. Its fuel literally falls from the skies; unlike other 'renewables', its output is predictable and controllable; unlike coal- or gas-fired generators, turbines can go from stationary to flat-out in minutes (and stop just as quickly) without wasting fuel or stressing machinery. It is operated remotely, needs little maintenance, no back-up and lasts for decades. Unlike wind-power, it reduces the need for thermal plant. Once built, there are few emissions and no dangerous waste.

The main generator set at Scottish & Southern's Culligran Power Station by Inverness. Originally 24 MW, its capacity was cut to 17.1 MW prior to the introduction of the Renewables Obligations in April 2002. It is currently being refurbished.

While it is imperative that a renewable energy strategy pays heed to these qualities and ensures that plant is used as efficiently as possible, the effect of the Renewables Obligation on the hydro sector has hitherto attracted little public attention. Aspects of its role are examined in this report, not least to see if its failure in the wind-energy sector has parallels elsewhere.

Notes

1 OFGEM, *The Renewables Obligation, Ofgem's second annual report*, p 1.2. See also p 14, note 2.

2 See, House of Lords, *Renewable Energy: Practicalities,* 1.13; Scottish Parliament, *ECC 6th Report 2004*, para 15; House of Commons Scottish Affairs Committee, *Meeting Scotland's Future Energy Needs'* Council for Science and Technology, *An Electricity Supply Strategy for the UK,* page 6.

3 Scottish Wind Assessment Project, *A Gazetteer of wind power in Scotland*, Janaury 2005.

4 Letter in reply to objectors, 6 October 2004.

How large hydro edged its way into subsidy

THE GOVERNMENT BEGAN to consult on its plans for renewable energy in March 1999 with a series of papers called *New and Renewable Energy: Prospects in the UK for the 21st Century*. The consultation call made only general reference to hydro but a *Supporting Analysis* published that May defined its place:

> Large-scale schemes will be taken here as having an installed generating capacity of greater than 5 MW. The assumption is that large-scale schemes would be developed and operated by major electricity utilities . . .[1]

> Large-scale hydroelectric schemes have not been included in NFFO rounds to date because this is already a fully established, commercial technology. No new large hydro construction is likely, due to environmental objections.[2]

An *Analysis of the Responses to the Consultation Paper*, (October 1999) did not refer to large hydro but *Conclusions in Response to the Public Consultation* (January 2000) abruptly raised its qualification limit from five to ten MW:

> Eligible supplies . . . may exclude hydro-electric schemes . . . exceeding 10 MW since large scale hydro has long been established in the market and is in a position to compete in the open market with fossil-sourced energy.[3]

The shift made another dozen stations (94 MW) potentially eligible for RO subsidy. Given their age (two had been operating successfully since 1936 and a third was built in 1927 and fitted with new turbines in 1972), they could realistically be described as the 'fully established, commercial technology' which government had hitherto felt it inappropriate to support (table 1). Offering no explanation for the change, it added:

> The Government has announced that it now intends to allow electricity generated from renewable energy (with the exception of large scale hydro) to be exempt from the [climate change] levy.[4]

Over 150 hydro-stations could now apply for accreditation under Climate Change Levy (CCL) rules. As an academic recently noted:

> Remarkably, electricity from hydro schemes larger than 10 MW as well as nuclear stations does not qualify for exemption. Officially this is to 'stimulate growth in the development of renewable sources of energy' as all the major large-scale hydroelectric schemes in the UK have already been developed (HM Customs and Excise, 2004). An alternative view [is] that it was to avoid a potential windfall for Scottish and Southern . . . [5]

With the broad sweep of its renewable energy policy in place and supported by both industry and the environmental lobby, consultation on its implementation began in October 2000 with *The Renewables Obligation, Preliminary Consultation*.

Despite the subsidies concession, the government still seemed keen to ensure that funding supported emerging technologies:

> We consider that energy from waste and large scale hydro are both sufficiently commercially viable to allow us to concentrate support on those renewables which have yet to reach this stage . . .[6]

> Large scale hydro (i.e. exceeding 10MW installed capacity) [is] well established in the market and can compete with electricity from fossil fuels. For this reason, the Government considers that [it] should be excluded from the Obligation . . .[7]

> While relatively well-established technologies such as large scale hydro and energy from waste will count towards achievement of the 10% target, they will be excluded from the Obligation.[8]

RO = Renewables Obligation
ROS = Renewables Obligation (Scotland)

Station name	Capacity	Scheme	Commissioned
National Grid			
Kielder	6.00 MW	--	1984
RWE nPower			
Cwm Dyli	9.90 MW	RO	1906
Scottish & Southern			
Allt-na-Lairige	6.00 MW	ROS	1956
Cassley	10.00 MW	--	1959
Foyers Falls	5.04 MW	ROS	1968
Gaur	6.40 MW	ROS	1952
Loch Gair	6.00 MW	ROS	1961
Sron Mor	5.00 MW	ROS	1957
Striven	8.00 MW	ROS	1951
ScottishPower			
Carsfad - set # 1	6.00 MW	ROS	1936
Carsfad - set # 2	6.00 MW	--	1936
Earlstoun - set # 1	7.00 MW	ROS	1936
Earlstoun - set # 2	7.00 MW	--	1936
Stonebyres	6.00 MW	ROS	1927
Total Installed Capacity:	**94 MW**		

Table 1: Hydro stations made eligible for the RO schemes by raising the qualification level from 5 MW to 10 MW.

Again, the position seemed clear enough and stakeholders seemed to be supportive. A DTI paper of March 2001, analysing over 200 replies, commented that:

> A wide range of technologies should be included in the Obligation, including energy from waste, wave power, tidal power, photovoltaics, wind power and biomass. The exclusion of large-scale hydro power received majority support.[9]
>
> The majority view on hydro power was that the Government is right to exclude large-scale hydro power from the Renewables Obligation.[10]

In short, the consultation concluded with broad agreement on the government's RO schemes and support for its unequivocal stance on hydro subsidies.

Not everyone was happy. Dr James Martin, Generation Director for Scottish & Southern Energy (SSE), addressed a House of Commons committee on March 21. Without doubt, his was an industry voice – SSE owns some 75 per cent of UK hydro capacity.[11] He argued that times were so bad that the company could barely afford to run, never mind refurbish, its elderly sub-30 MW plants. If government saw renewables as a priority, it would have to raise the subsidy ceiling from ten to 30 MW to guarantee a future for hydro stock.[12]

Although SSE's 2000-2001 Annual Report (June 2001) reported profits for the year up eight per cent to £655 million, it noted a disappointing year for hydro due to low rainfall and added:

> We are continuing discussions with the Government about the future fiscal regime for hydro stations and the outcome of these will determine our future investment programme.[13]

This was all slightly melodramatic. Times had admittedly been tough after NETA and industry cash-flow problems that saw British Energy flounder but SSE had found £15 million virtually to rebuild its large station at Sloy (150 MW) and £10 million for Rannoch (48 MW).[14] Work was ongoing at Pitlochry (15 MW). Prospects even for its smaller stations could not have been that bad – people were not going to stop buying electricity and hydro's prices held up better than most in the 2001 price slump. The figures suggest that refurbishment was unlikely to catch SSE short (see page 13).

Brian Wilson, who became New Labour's third Energy Minister on 11 June 2001, moved quickly to overturn his colleagues' policy. On July 20, a statement from Scotland's Rhona Brankin, modestly noting that she had 'secured Scotland's future as a major producer of energy from renewable sources', said:

> The Deputy Minister for Environment announced plans to extend support for established hydro plants under the forthcoming Renewables Obligation (Scotland) to include larger power stations. This will result in the refurbishment of an additional 30 hydro-electric power stations, investment worth £250 million and secure 200 jobs in rural areas.

SSE responded with a press release on July 23:

> We are delighted that output from refurbished hydro stations of 20MW capacity and below will receive Renewable Obligation Certificates (ROCs). This means that it is now attractive to refurbish our small to medium sized hydro

The House of Commons Science and Technology Committee quizzes Scottish & Southern's Dr John Martin, 21 March 2001

The route that we have taken . . . hitherto has been to invest approximately £20 million per annum in renewable energy. The purpose of that investment has been to sustain the hydro facilities which were built in the fifties and sixties of the last century. Those machines are now obviously 40 to 50 years old and a power plant typically has a life of 40 to 50 years. All our hydro is now in that age range and to keep it going we have found it necessary to invest £20 million-odd over approximately a 15-year programme, so we had committed to a £300 million investment programme which completely dwarfs any other investment in renewables in this country.

Is that not largely maintenance of what you have?

I would submit that that investment is necessary to keep what the nation has. The position at the moment, with the decline in the price of electricity, means that that investment no longer meets our criteria so we have stopped that programme completely at the moment. I am studying at the moment de-commissioning hydro and I would like the Committee to note that point.

Because gas generation is cheaper than hydro with the high maintenance costs you have at the moment?

Fundamentally the price of electricity has come down in this country which makes that investment in keeping Scottish Hydro going less attractive than other opportunities. Indeed, it does not meet our investment hurdle rates. Therefore we have stopped that programme. The solution, to move on along that particular line, is for the plants in the 10 to 30 megawatt range to receive some form of support. At the moment they are not eligible for renewable energy certificates. As such they are not economic to refurbish. The larger schemes are, and we have done most of those.

stations, securing the long term future of this renewable resource for the UK . . . This will help secure over 200 jobs in remote rural communities across the north of Scotland.

Speaking in July at the opening of the now-refurbished Pitlochry, Brian Wilson may have mixed his metaphors but he made his views clear, saying the change 'would give hydro its biggest boost in 50 years' and that:

> Refurbished hydroelectric power plants are roughly 10 per cent more energy efficient . . . These new measures will wash away the cobwebs on old hydro-electric power plants. They will give companies the confidence to invest in this forward-looking industry.
>
> It is expected that the deal will result in the refurbishment of around 30 hydro-electric power stations and company investment of around £250 million into hydro-electric power projects.

Brian Wilson and Rhona Brankin were both mistaken: the measure brought 13 stations, not 30, into the schemes, eleven in Scotland (178 MW) and two in Wales (28.5 MW), see table 2. Of the UK's 27 stations over 20 MW, some had already been refurbished and others were large – to subsidise these in a nominally market-driven

RO = Renewables Obligation
ROS = Renewables Obligation (Scotland)

Station name	Capacity	Scheme	Commissioned
BNFL			
Maentwrog	15.00 MW	--	1928
RWE nPower			
Dinas	13.50 MW	RO	1962
Scottish & Southern			
Aigas	18.00 MW	ROS	1962
Cashlie	11.00 MW	ROS	1959
Ceannacroc	20.00 MW	ROS	1956
Invergarry	19.98 MW	ROS	1956
Kilmorack	20.00 MW	ROS	1962
Livishie	15.00 MW	ROS	1962
Nant	15.00 MW	ROS	1963
Orrin	18.00 MW	ROS	1959
Pitlochry	15.00 MW	ROS	1950
Torr Achilty	15.00 MW	ROS	1954
ScottishPower			
Bonnington	11.00 MW	ROS	1927
Total Installed Capacity:	**206 MW**		

Table 2 Hydro stations made eligible for the RO schemes by raising the qualification level from 10 MW to 20 MW – a change made after the public consultation closed.

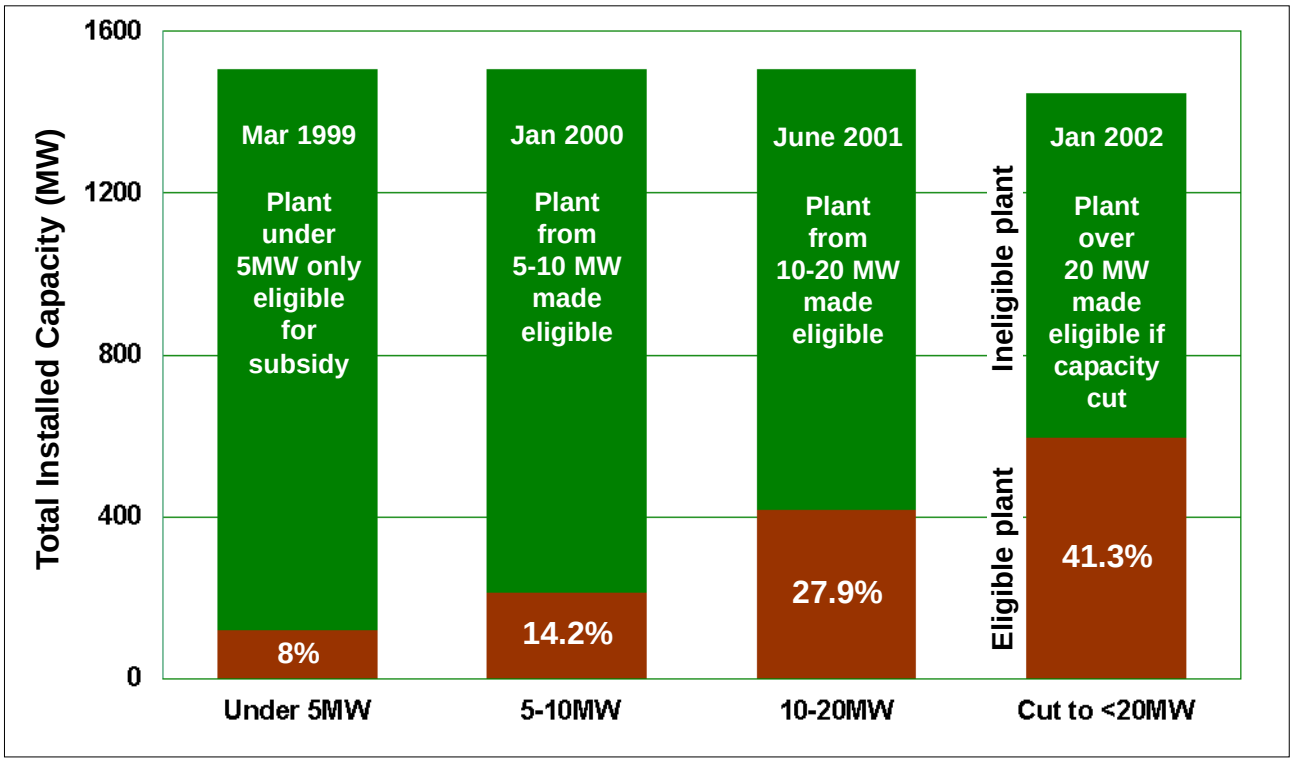


Figure 1: When and how existing UK hydro capacity was added to the Renewables Obligation schemes, originally intended to 'incentivise' new build and small-scale generation only. The lower (brown) segment of the bar represents the proportion of total capacity made eligible for ROCs at each stage.

The rules and the upper qualifying limit were incrementally altered in a way that ran counter to public consultation and was eventually to cut UK hydro's overall capacity. The last (and largest) change was not generally known to the public until OFGEM's *First Annual Report on the renewables obligations*, published two years after the schemes began.

industry would be controversial. Whitehall launched a new consultation round in August and noted the policy change:

> The majority of responses to the preliminary consultation supported the exclusion of large hydro stations, which were constructed under public ownership. However, concern was expressed by the industry over the age of current stations and the need to refurbish them, and there has also been concern that some potential new developments could not proceed without support. We, therefore, propose to exclude existing stations with a declared net capacity (DNC) of over 20MW from the Obligation, but to include any stations first commissioned after the date of the Order is made, regardless of capacity. We believe that these measures will encourage the refurbishment of existing stations of up to 20MW and will support any future schemes, if planning permission can be secured.[15]

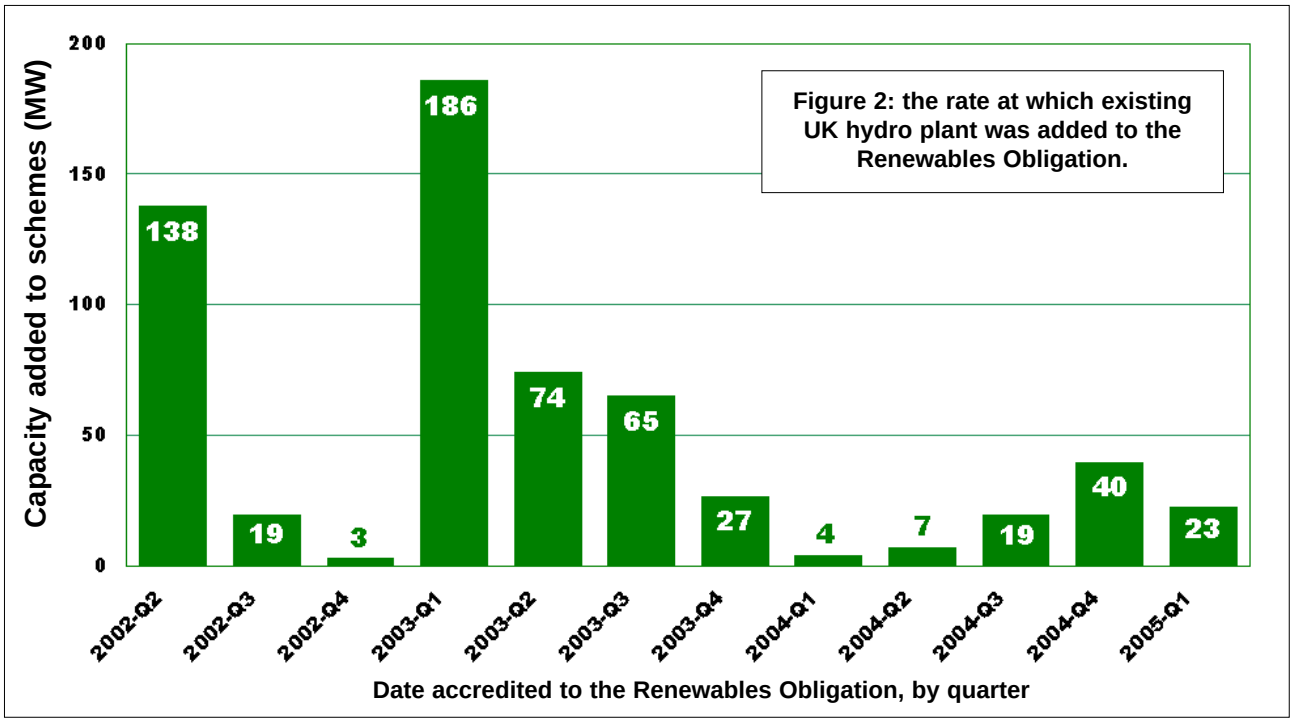
Even if the ministers were poorly informed, the rule change had at least been publicised. Publicity for another change was more discreet. The Renewables Obligation Order which came into force on April 1 2002 defined a large hydro station as one 'which has, *or has had at any time since 1 April 2002*, a declared net capacity of more than 20 MW' [emphasis added].

Few commentators grasped the significance of this at the time. If a station's capacity were cut from over 20 MW to under 20 MW before the April 1 deadline, it made it eligible for RO accreditation. It was necessary only to disable a few alternator windings: the new runner and sundries could be fitted at any time. On 26 September 2002, SSE reported that:

> Energy Minister Brian Wilson MP visited St Fillans Power Station on Loch Earn which has completed a £1 million refurbishment which will extend its life for 30 years and improve its efficiency by around 8%. Following the refurbishment of the 17 megawatt power station, it qualifies for Renewable Obligation Certificates (ROCs).
>
> The refurbishment is part of Scottish and Southern Energy's £450 million investment programme in renewable energy. £250 million will be spent refurbishing its hydro power stations in a 10 year rolling programme. St Fillans is the first of the Company's refurbished power stations to qualify for ROCs,

but made no comment on a 4.2 MW (20%) cut in St Fillans' capacity.[16] In November 2002, it said:

> Scottish and Southern Energy has announced today that five more hydro-electric power stations are to be refurbished at a cost of £4 million. The power stations involved are at Quoich, west of Invergarry, Mossford and Grudie Bridge, west of Garve, Shin, south of Lairg and Finlarig near Killin on Loch Tay. The refurbishments will extend the lives of the power stations for over 30 years and increase their working efficiency . . .
>
> The power stations are all rated at under 20 megawatts and when the refurbishments are complete the output will qualify for Renewable Obligation Certificates (ROCs). The refurbishments involve new runners and guide vanes . . .



The schemes became operational on April 1, 2002. The high figure for Quarter 2, 2002 is due to the prior accreditation of plant refurbished or built since 1989 and thereby eligible for subsidy without further intervention. The 'flurry' in Quarters 1 to 3, 2003 reflects the many larger sites by then refurbished – they dwarf small-scale and new build. Most of the work was complete by late 2003: the 'ten-year rolling programme' took barely 18 months.

Station name	Capacity		Scheme	Commissioned
Alcan				
Kinlochleven	19.50 MW	(was 30 MW, i.e. cut by 35 %)	ROS	1909
RWE nPower				
Dolgarrog High Head	18.40 MW	(was 37 MW, i.e. cut by 10 %)	RO	1907
Dolgarrog Low Head	14.98 MW		RO	1907
Scottish & Southern				
Culligran	17.10 MW	(was 24 MW, i.e. cut by 29 %)		1962
Finlarig	16.05 MW	(was 30 MW, i.e. cut by 47 %)	ROS	1955
Grudie Bridge	18.66 MW	(was 24 MW, i.e. cut by 22 %)	ROS	1950
Mossford	18.60 MW	(was 24 MW, i.e. cut by 23 %)	ROS	1957
Quoich	18.05 MW	(was 22 MW, i.e. cut by 18 %)	ROS	1955
Shin	18.62 MW	(was 24 MW, i.e. cut by 22 %)	ROS	1958
St Fillans	16.83 MW	(was 21 MW, i.e. cut by 20 %)	ROS	1957

Total Installed Capacity: 236 MW before downgrading

Total Installed Capacity: 177 MW after downgrading

Lost Capacity: 59 MW

Table 3: Hydro stations that became eligible for the RO schemes because their capacity was cut prior to April 1 2002.

The change that allowed hydro stations between 10 and 20 MW DNC to qualify for RO subsidies was made after consultation closed but it was at least public knowledge.

A later change allowing generators to cut the capacity of stations over 20 MW to qualify for RO subsidy was not generally known until an OFGEM report of February 2004, two years after the RO/ROS came into force.

These schemes impose heavy costs on consumers purportedly to stimulate the generation of 'renewable' energy.

The amendment does little for the schemes' credibility.

Again, few readers would have known that every one of these five stations had previously been over 20 MW but had had their capacity cut. Thereafter, the programme continued with little publicity: most eligible stations are now accredited for ROCs with the few remaining being added at a rate of one or more a month.

Apart from a January draft of the Order, SWAP can find no reference to the rule change in the public domain prior to OFGEM's *First Annual Report on the Renewables Obligation* of February 2004, nearly two years later. Section 5, *Down-rating of hydro generating stations*, comments:

> This provision allowed what would otherwise have been large hydro generating stations to down-rate their declared net capacity (DNC) to 20 MW or below before 1 April 2002 in order to be eligible for accreditation under the Orders.[17]

It reported that SSE cut capacity at seven stations and Alcan at one – Kinlochleven. This last, built with heavy sacrifice of labour and life, is now at its lowest capacity since commissioning in 1909 (see page 10). A ninth, nPower's 37 MW Dolgarrog site in Wales, was re-classified as two separate stations before capacity was cut at Dolgarrog High Head. In all, 236 MW was reduced to 177 MW (table 3). The report continued:

> The capacity that was down-rated equated to 59.21 MW in total. This ranged from 3.62 MW for the down-rating in respect of the Dolgarrog stations together to 13.95 MW for Finlarig. This capacity would have contributed to the Government's targets for renewable generation.

It was a reasonable point to make but the change was, by then, already law. A scheme originally intended to develop small-scale and new hydro generation was, by the time it became operational, heavily subsidising much of the plant belonging to the country's largest and most profitable hydro-power generators.[18]

At least one company had lobbied for the scheme to include plant up to 30 MW or 37 per cent of its hydro portfolio. It got its way: apart from Inverawe (25 MW), every SSE station formerly between 20 and 30 MW was eligible for subsidy by April 2002. The only snag was that capacity at seven of them had been cut for political reasons. There are certainly no reported technical or environmental reasons for the move.

It was now down to SSE's contractors to complete the 'ten-year rolling programme' of refurbishment and secure RO accreditation. They did well: it was all but complete in eighteen months.

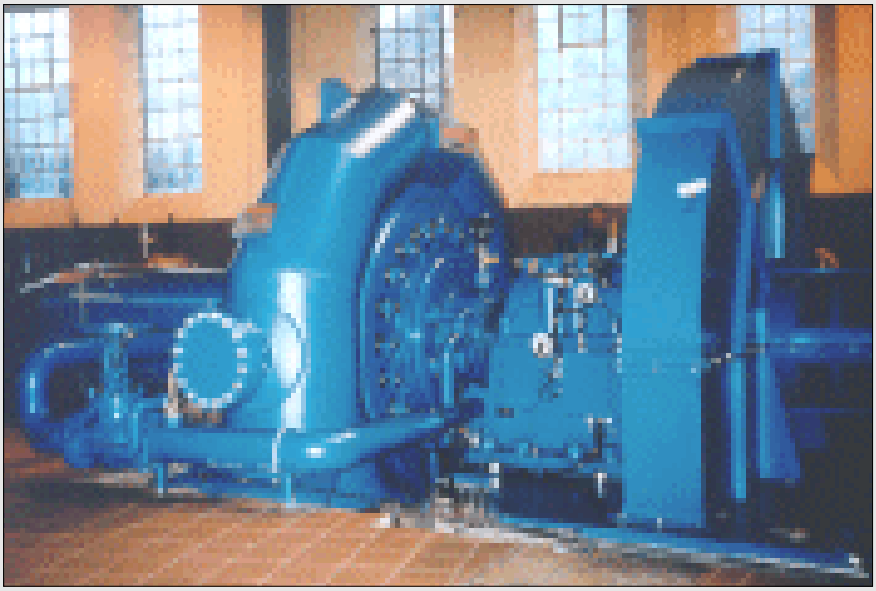
Notes

1 DTI, *New and Renewable Energy – Prospects for the 21st Century, Supporting Analysis*, May 1999, p 87, introduced by the Energy and Industry Minister, John Battle.
2 *Ibid*, p 91.
3 DTI, *New and Renewable Energy – Prospects for the 21st Century, Conclusions in Response to the Public Consultation*, p 9, introduced by the Minister for Energy and Competitiveness in Europe, Helen Liddell.
4 *Ibid*, p 13.

5 Harrison, *Prospects for Hydro in the UK: Between a ROC and a Hard Place?*, University of Edinburgh, prob 2005.
6 DTI, *New and Renewable Energy – Prospects for the 21st Century, The Renewables Obligation Preliminary Consultation*, October 2000, p 3.
7 *Ibid*, p 16.
8 *Ibid*, p 31.
9 DTI, *New and Renewable Energy – Prospects for the 21st Century, Analysis of the Responses to the Consultation Paper*, March 2001, p 1.
10 *Ibid*, p 6.
11 The rest of UK hydro is owned (by capacity) by Alcan (6%), nPower (7%), ScottishPower (8%) and small players (4%).
12 House of Commons Select Committee on Science and Technology, *Minutes of Evidence, 21 March 2001*, Q 102.
13 SSE, *Annual Report and Accounts 2001*, Chief Executive's Operating and Financial Review, page 4.
14 Although a Scottish Executive statement of 6 December 1999 quoted a figure of £115 million, SSE's *Annual Report and Accounts 2000* (p 17) gave the cost as £15 million and the efficiency gain as five per cent.
15 *New and Renewable Energy – Prospects for the 21st Century, The Renewables Obligation, Statutory Consultation*, June 2001, p 4 (introduced by a new Secretary of State for Trade and Industry, former Liberty director Patricia Hewitt).
16 SSE claimed typical improvements of six per cent, not eight, in *Annual Report and Accounts 2002*, p10.
17 OFGEM, *The Renewables Obligation – Ofgem's first annual report*, February 2004, p 40. The report should not be read, as some have done, as implying that the capacity cut led to a *pro rata* production loss – see page 12.
18 Twenty-one of 23 eligible UK hydro stations over 10 MW (383 MW, was 442 MW) are now in the RO schemes with SSE's Culligran currently being refurbished. BNFL's 15 MW set at Maentrog in Wales has not been accredited. ScottishPower did not downgrade sites although two in its New Galloway scheme are just over 20 MW.

Kinlochleven:

A site now at its lowest capacity for 93 years



The Department of Trade and Industry's *New Review* (a magazine for the renewables industry) of August 1998 carried the above picture and reported that:

'A 10 MW hydro turbine has been installed by Alcan Smelting and Power at the company's aluminium-producing plant in Kinlochleven, Argyll.

'The smelter there, which has been powered by hydro energy since its construction in the early part of the century, is scheduled for closure in the future and Alcan is utilising existing infrastructure investment as a basis for dedicated electricity generation.

'Designed, manufactured and installed by Gilbert Gilkes & Gordon Ltd, the new turbine is a low-specific-speed Francis type and harnesses a 'head' of 278 metres. A generator manufactured by GEC Alsthom was also installed as part of the package.'

The new machines (total 30 MW) replaced the original 1909 Pelton turbines (total 25.7 MW). These had provided an average annual output of 160 MkWh at a load factor of around 70 per cent.

Less than four years later, site capacity was cut by 35 per cent from 30 MW to 19.5 MW, three-quarters of what it had been in 1909. As a result, Alcan's UK hydro capacity was cut by ten per cent overall.

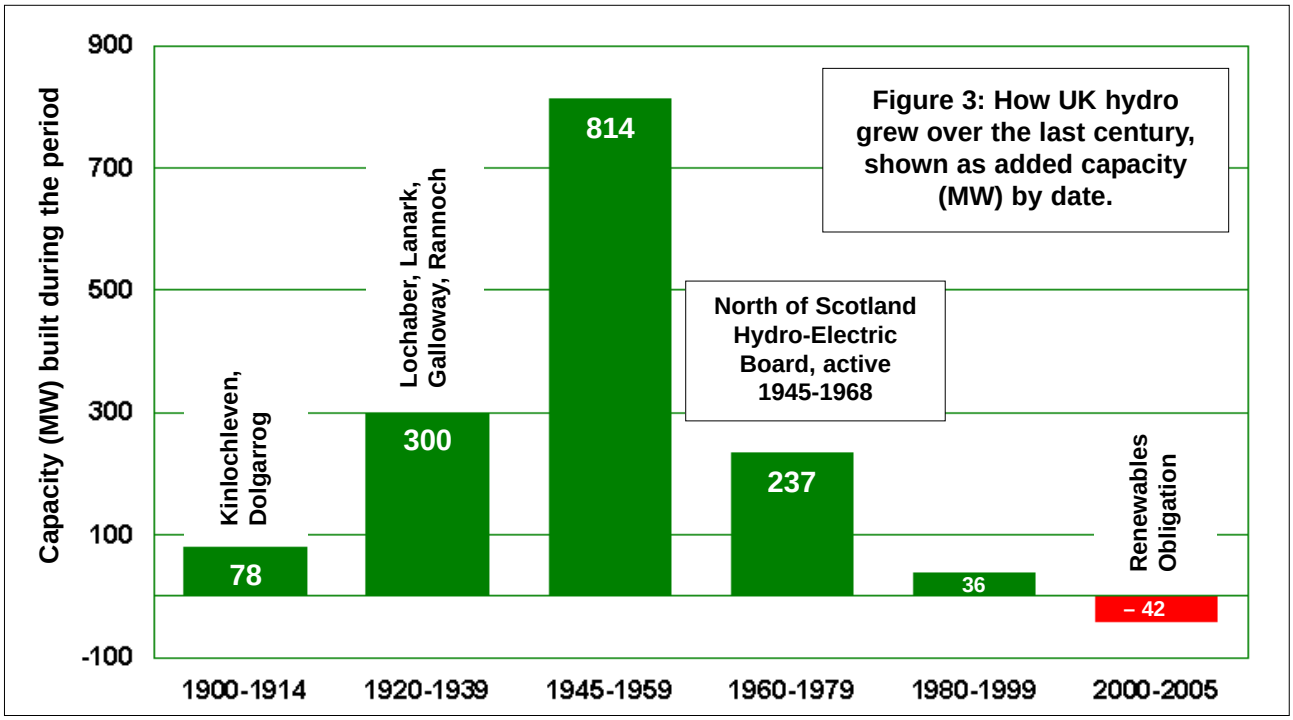
The site was accredited under the Renewables Obligation scheme on April 1, 2002.

The recent installation date meant that the company did not have to refurbish the turbines to qualify for subsidies. It also meant there were no grounds for claiming efficiency increases.

Losses due to spillage increases after the down-grading are estimated to be in the region of 20 MkWh (units) per year or about 10 per cent of production.

The Renewables Obligation has effectively doubled the price of Kinlochleven's product even though it may well be generating less electricity than at any time during the previous 93 years.

An historical trend is reversed



THE GRAPHIC SHOWS the growth of UK hydro capacity since 1900. Note the construction campaigns of the Edwardian, inter-war and NSHEB years, described on page 16. Kielder (6 MW), commissioned in 1984, is the largest build since 1964. The pumped storage stations at Foyers (1974) and Dinorwig (1983) were certainly major projects but they are not generally recognised as 'renewable' and are not included here.

While private hydro facilities, mostly on rural estates, did fall derelict as the National Grid expanded particularly after 1945, the capacity was insignificant. (Some have been restored under the RO.) There is no record of any significant 20th century hydro plant going out of service once commissioned prior to the period preceding the introduction of the Renewables Obligation in April 2002.

There is little prospect that new build will correct this situation for several years at least.

- SSE, which downrated seven stations by a total of 45.2 MW prior to the RO launch in 2002, commissioned Cuileig (run-of-river, 3.3 MW) in 2002 and Kingairloch (3.5MW) in December 2004. The 7.5 MW Fasnakyle 'extension' uses the extra capacity to resolve a long-standing efficiency anomaly. The 100 MW scheme for Glendoe is, according to recent press coverage, 'unlikely' to be built if 'too many conditions' are attached. This might be yet more sabre-rattling but funding issues have also been reported.
- Alcan, which downrated Kinlochleven by 10.5 MW, has applied to build seven MW of new capacity.
- nPower, which downgraded Dolgarrog by a relatively modest 3.6 MW, commissioned Stanley Mills (0.8 MW) in May 2004. Construction is ongoing at its Braevallich (2.2 MW) and Garrogie (2.3MW) sites and the company has lodged applications for 37 MW of new capacity and reports projects in Wales.
- Glenglass (1 MW, private developer) came on-stream in 2002 and Inverbain (ditto) in 2005.

SWAP has records of two Scottish pre-applications (6 MW) but none of projects in England and Wales. This should not be taken to mean that there are none.

Note

DNC and build dates are based on owners' publications in preference to DTI or OFGEM data (there are inconsistencies). The latter were taken as authoritative for RO/ROS-accreditation and down-graded capacities. Data for 2000-2005 are slightly weighted as build dates are not known for about 20 very small sites (approx total five MW), most long-standing installations at water treatment plants and the like but otherwise assumed to have been commissioned between 2000 and 2005 even if the civil engineering is older.

Do the cuts in hydro capacity matter?

THE NOTION THAT refurbishment of the UK's hydro stations has increased their efficiency (and their output) and that this justifies the resulting subsidies is, unless qualified, potentially misleading.

SSE publicity claimed in 2002 that refurbishing a hydro turbine leads to efficiency gains of eight per cent while the then energy minister, Brian Wilson, suggested a ten per cent productivity hike. On its web site, Argyll and the Islands Enterprise started off more realistically but got carried away:

> SSE will also be investing over £250 million refurbishing some of their 50 year old hydro power stations in a 10 year rolling programme. This investment in modern technology will see an average 5% rise in the efficiency of these plants without extra water being utilised and could represent, overall, an extra 50MW of increased capacity.[1]

To win RO/ROS accreditation, a station owner must have replaced a turbine's 'runner' (i.e. the propeller or blades, according to type) and associated sundries some time after1989. Any turbine's output will indubitably fall over time as parts become corroded, worn and pitted. However, it is not generally possible to make *inherent* gains in efficiency simply by refurbishing it, although it can be restored to, or close to, its original specification. By the same token, gains made by replacing these parts will themselves be slowly eroded as the new parts wear.

An exception is where a turbine is particularly old – the new runner will be of improved design, mainly in the geometry of its blades. Manufacturers report that, in such cases, genuine efficiency gains of perhaps two to five per cent can reasonably be expected.

Claims made for production increases at the ten down-graded stations are especially hard to sustain. Where a turbine's capacity has been cut, operators will maintain or, more accurately, attempt to maintain, its output by running it for longer, i.e. by increasing load factors. While these higher load factors do almost maintain production, they are inevitably accompanied by increased spillage. The relation between load factor and spillage is well understood – see page 15.

An estimate of the production lost due to capacity cuts

The claim that refurbishing turbines increases their efficiency to the extent that it negates the capacity cuts does not stand up to scrutiny.

To maintain production at or close to previous levels, it is clearly necessary to run now-smaller turbines for longer, i.e. to increase their load factor.

It is a basic tenet of hydro-power engineering that higher load factors mean increased spillage, i.e. a loss in efficiency (see page 15).

Historical production data for the Scottish stations where capacity was cut suggest that the additional spill losses will cost over 50 million units a year in lost production. Figures for the seven SSE stations concerned are shown in table 4. Because Kinlochleven was recently upgraded and then downgraded, and its load factor was already high, the estimate of 20 million lost units (page 10) may well be conservative. Not counting Dolgarrog, for which there were no data to hand, the losses are roughly equivalent to closing down Pitlochry power station or, in current parlance, losing enough energy to power 13,000 homes.

Table 4

	Production before cuts (MKWh/yr)	Capacity		Load Factor		Estimated increased Spill Losses (MkWh/year)
		Before	After	Before	After	
Culligran	53	24	17.1	25	35	1.6
Finlarig	64	30	16.0	24.5	45.5	4.5
Grudie Bridge	78	24	18.7	37	48	3.9
Mossford	112	24	18.6	53	69	7.8
Quoich	77	22	18.0	40	49	3.5
Shin	115	24	18.6	55	70	8
St Fillans	68	21	16.8	37	46	2
Totals:	567	169	123.8			

It is difficult not to conclude that the decision to sanction capacity cuts was made to accommodate large generators keen to enjoy a subsidies regime from which they had to a degree been excluded whilst avoiding any publicity arising as a result of moving the goal posts for the third time.

Of course, design efficiencies at refurbished stations where capacity was not cut will be more or less restored with real, if modest, production gains. The cost of subsidising these is examined below.

Production losses were calculated for SSE's seven down-graded stations. (There were no data to hand for Dolgarrog and those for Kinlochleven were unreliable.) It is estimated that the down-grading will have reduced output by six per cent (table 4), roughly equivalent to closing Pitlochry power station.[2]

The figure of £250 million suggested by SSE for its refurbishment budget also needs to be qualified. It is hard to see, from internal evidence at least, how it could cost more than £60 million to refurbish its RO-eligible sites. Overhauling St Fillans reportedly cost £1 million; seven turbines at the five stations named in November 2002 were refurbished for £4 million; Contractor GE Hydro reported a $3 million tag for Shin, Quoich and Finlarig. ScottishPower's Bonnington (11 MW) and Stonebyres (6 MW) together cost just under £1.5 million to refurbish. In short, overhauling some of the largest turbines in the programme (average 14.3 MW) cost about £750,000 each, including, presumably, incidentals such as site decoration.

It is not clear what is different about the others except that they are generally smaller. Twenty-one are less than a MW, 20 are between one and five MW and only 17 are over five MW. Stations such as Livishie (17 MW) were refurbished in the 1990s.

Is subsidising large hydro good value?

REFURBISHING HYDRO UNDER the Renewables Obligation is certainly an enticing investment. It gives a site an added life expectancy of at least thirty years, longer than new thermal plant or wind turbines. Hydro tends in any case to attract above-average prices because it is available more or less on demand (nearly everyone has at last grasped that wind power tends to come on when it is not wanted and go off when it is). Its load factors are significantly higher than wind-power's capacity factors. In short, hydro-generated electricity is a superior product to wind power and, megawatt for megawatt, there is more of it.

New-build hydro's high up-front costs do make for complex trade-offs that make investors cautious but these do not concern refurbishments. Most of the costs were written off decades ago – owners get all-but new plant for £100 to £150/kW (of capacity). This compares favourably with £750 to £1,000/kW for wind power or conventional power stations without the need to navigate a costly and hazardous planning process.[3]

Best of all, the RO scheme is set fair to have the consumer pay back the capital cost through subsidies (on top of normal electricity prices) roughly once every eighteen months for years to come.

OFGEM issued hydro-generators with 1,270,337 ROCs in 2003-2004, worth £60 million at a typical ROC price of £47.50.[4] The 2004-2005 figure will rise as additional stations become accredited.

There are grounds for treating the claim of efficiency increases of eight per cent following refurbishment (see p 7) with caution and it is certainly not true for Alcan's new-but-downrated Kinlochleven.[5] But, if they are accepted, it means that the increased production is costing about £500/MWh, year in and year out for the foreseeable future – ten to fifteen times the current wholesale price of electricity. If the efficiency gain is actually less than this and the calculation uses the average ROC price (which is what consumers pay for) rather than the buy-back figure, the cost of the additional generation is very much higher.

It is an appallingly inefficient way of using consumers' money to cut CO_2 emissions. Its adoption is perplexing in the light of the already high profitability of the major suppliers who get these subsidies and of criticism directed at them by Scottish ministers and others following price rises that hit commerce, general consumers and the poor alike. It would have been cheaper by far for the taxpayer just to have paid for the refurbishments and be done with it.

Speaking to the Highlands Renewable Energy Group in April 2005, Brian Wilson reportedly said that his policy of bringing hydro below 20 MW into the RO schemes had been a 'great success' and should be expanded although he made no mention of capacity cuts. The House of Lords' Science & Technology Committee and others who question the merit of the schemes might care to ask 'Where to and how far?'.

Hopefully, following the less-than-open way in which the cuts in turbine capacity were authorised, it will not be a matter of discreetly authorising re-connection of disabled windings while retaining RO accreditation.

The insistence on heavily subsidising technologies that were self-sufficient in public ownership is open to further criticism in the light of difficulties in the marine-energy sector. Funding uncertainties recently saw

Wavegen sold off to German rival Voith Siemens Hydro. One hopes that if the new owners 'brush away the cobwebs' and take a 'forward looking' approach to marine generation it will not yet again mean British innovation underpinning manufacture elsewhere. If it does, the blame will lie in no small measure with the target culture of the Renewables Obligations and its inability to provide meaningful incentive for innovation.

The concerns voiced by Holyrood's Enterprise and Culture Committee (see page 4) and others were reinforced following the recent decision by Ocean Power Delivery (OPD) to install its new wave-power device in Portugal rather than locally after the company was offered a 12-year fixed tariff of £150/MWh. Despite development funded in part by Westminster and being tested at the Scottish Executive-financed European Marine Energy Centre in Orkney, a joint £30 million ScottishPower/OPD project for a wave 'farm' near Orkney has been shelved amidst more funding uncertainties.[6]

Recent press coverage also reports the pulling of funding for photo-voltaic generation technologies:

> Renewable energy campaigners said grant allocations for solar photovoltaic schemes – which harness sunlight to generate electricity – were being phased out from this summer by the Department of Trade and Industry even though the Government had promised support from 2002 to 2012.[7]

The backs-to-the-wall scenario suggested by Dr Martin at the Westminster committee was shortly followed by greener-than-thou posturing in Holyrood in the form of leap-frogging 'renewables' targets under Lib-Dem stewardship of the Environment and Enterprise ministries. This reassured the ROC market that there was space long-term for more players than enough even if hydro had, against expectation, become a significant contender: there seemed little chance long-term that there would be too many ROCs. It also exacerbated a wind-power over-capacity crisis that the Executive still cannot confront.[8]

It is possible to paint a picture that contrasts with Dr Martin's and shows instead hydro-power generators playing fast and loose with a profligate subsidies regime by citing conditions that were, in reality, a deal less arduous than they were made to look.

As a result, inappropriate concessions were granted by a bewildering succession of ill-informed energy ministers at national and regional level which led to high subsidies for a generation sector which had never needed them before and didn't need them now.

They can be justified neither by economic conditions or the need to support emerging technologies; they are also technically inappropriate. The emissions-effective use of hydro calls for low load factor (peak load) plant but subsidy has driven it in the opposite direction.

In short, the politicians were had.

Ironically, just as the RO is failing the marine energy sector so has it all but stifled new hydro build. Received wisdom has it that cost and environmental issues, particularly EU regulation, limit hydro's scope for expansion. However, engineers claim that acceptable schemes are more inhibited by fear of long-term investment. The literature reports outline proposals for new schemes that match current capacity, much of it acceptable under modern environmental regulation. Some of these are upgrades to existing schemes.

If the public is to retain confidence in the Renewables Obligation in the light of these and other distortions of the market, these issues need to be addressed.

An opportunity might have arisen during the current consultation round on the ROs. However, discussion of the topic was explicitly excluded in its terms of reference.[9]

Notes

1 www.hie.co.uk/aie/hydro_energy.html.

2 Production data were published at intervals by the NSHEB and later by Scottish Hydro-Electric. Correlation with OFGEM data was inconclusive – the samples are too short and 2004-2005 run-offs well above average.

3 Even these seem high compared to fire-sale prices of around £20/kW SSE paid in June 2004 for Fiddlers Ferry and Ferrybridge, two old coal-fired stations in England. Both have opted out of the EU's Large Combustion Plant Directive and must close on environmental grounds by 2015. They are currently earning ROCs through co-firing.

4 See *The Renewables Obligation, OFGEM's Second Annual Report*, table B1, p 73: 'The buy-out price is intended to act as a cap on the costs to be charged to consumers'. It is not the same as a ROC's value, typically around £45.

5 Alcan appears to have made no efficiency claims and SSE spoke only for its own plant. Blanket claims of efficiency increases seem to have been made only by politicians.

6 Independent, *20,000 volts under the sea*, 26 May 2005.

7 Independent, *Government pulls the plug on solar schemes*, 3 March 2005.

8 Scottish Executive, *Scotland's Renewable future – Beyond 2010*: the forty-per-cent-by-2020 'aspirational' target.

9 Scottish Executive, *2005-06 Review of the Renewables Obligation (Scotland) Order Preliminary Consultation*, etc.

What is spillage?

'Spillage' in a hydro scheme is water that goes directly down river without generating power.

To generate in line with demand requires a constant supply of water but, even in Scotland, periods of heavy rainfall are interspersed with lengthy dry periods and flow levels in rivers regularly vary by two or even three hundred times.

To smooth out these peaks and troughs, all but the smallest projects use a storage system comprising a dam, an artificial reservoir and a power station or stations at varying distances below the dam. Water flows under gravity from the reservoir through pipes or tunnels to power turbines which, in turn, drive electricity generators.

The amount of energy a site can produce is determined by its hydrology – how much water can be induced to flow into its turbines and from what height. The capacity of its dams, tunnels and turbines is determined by this and by its intended purpose.

A hydro station can provide a lot of power in short bursts or less power for longer periods – the percentage of time it produces the equivalent of its maximum output is called its load factor.

A low load factor (i.e. more power but in short bursts) does need bigger turbines and tunnels or pipes to feed them. (Compared to the cost of dams and tunnels, turbines are cheap.) It does not, as is often suggested, reflect poor productivity. On the contrary, the increased generation capacity provides operational flexibility and ensures efficient use of water.

Unlike coal- or gas-driven ('thermal') power stations, where starting from cold can take hours and where flexibility is limited even when hot, hydro can go on- and off-line in minutes. Operators can turn a station on when demand peaks and off again as it falls. This 'peak lopping' ensures genuine fuel savings at thermal plants – being predictable or 'firm', hydro needs no thermal backup. A good example of this is Sloy, which has a capacity of 152 MW, a load factor of about 10 per cent and an output of over 120 MkWh/year.

High load factors are a feature of plants originally built for aluminium smelting where continuity of supply was essential. They were achieved by design at the cost of comparatively low generation capacity and above-average spillage. An example is Kinlochleven where a capacity of 26 MW averaged 160 MkWh/year production at a load factor of about 70 per cent.

It is imperative to use as much of the available water as possible but to use it all is an unrealisable goal. Costs for dams and tunnels rise exponentially with size and it makes neither engineering nor environmental sense to build a system capable of storing quantities of water best described as spate. In practice, if levels rise too quickly after rain, the excess is 'spilled'.

The relationship between spillage and load factor is well-understood and quantified. The lower the load factor, the lower the probability of spillage and, conversely, the higher the load factor, the higher the probability of spillage. UK hydro stations generally enjoy low load factors with an average of just over 30 per cent – few stations run for more than fifty per cent of the time.

The increased load factors following capacity cuts intended to secure accreditation under the Renewables Obligation are inevitably accompanied by increased spillage and lost production.

UK hydro in the international context

THOSE WHO BUILT Scotland's hydro power can take justifiable pride in their achievement but it is salutary to set the UK's hydro-generation in a wider context.

Water power provides a fifth of the world's generating capacity but only one per cent of the UK's (figure 4). The largest ever hydro scheme is the joint Paraguay/Brazil Itaipu scheme, commissioned in the early 1980s. Its final capacity will be 15 GW, it will produce over 75,000 GWh of electricity a year and meet nearly all Paraguay's and a quarter of Brazil's demand.[1]

In Europe, hydro-power provides 99 per cent of Norway's electricity production (93 per cent of its demand); about half of Swedish and Austrian demand and a quarter of France's.

Dams remain environmentally controversial. Over 45,000 large dams world-wide (more than one new dam for every day of the 20th century) have fragmented 60 per cent of the world's major rivers. An authoritative November 2000 report published by the World Commission on Dams claimed that, for many dams, especially in hotter regions, '… in some circumstances the gross emissions can be considerable and possibly greater than the thermal alternatives'.[2]

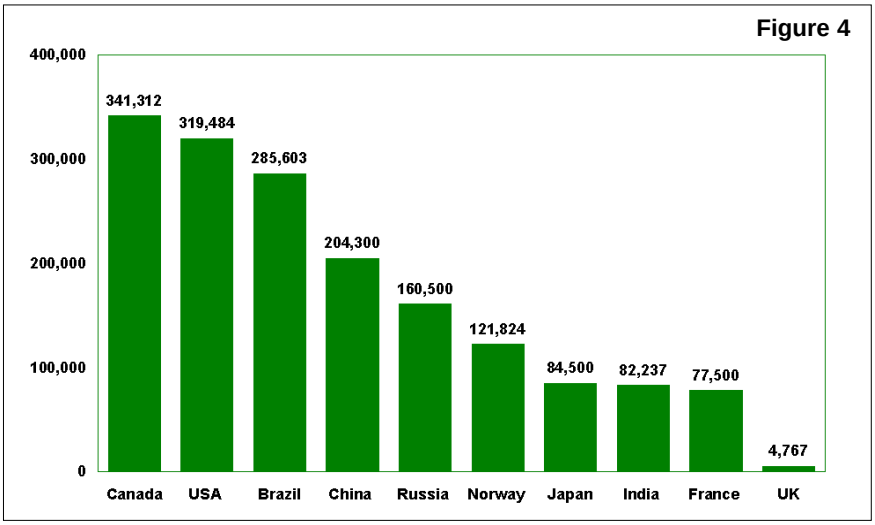
In contrast, total UK hydro capacity (excluding pumped storage) is about 1,400 MW and produces one per cent of UK demand. Nearly all of it is in Scotland (figure 5).

Britain's first hydro-electric plant opened in Surrey in 1881 and Scotland's in Greenock four years later.[3] Early schemes of significance were driven by an emerging aluminium industry's voracious appetite for power. The North British Aluminium Company's Foyers hydro-plant started production in 1896 and an ambitious construction programme saw the creation of an eight-mile reservoir behind Europe's then-largest dam driving turbines at Kinlochleven. Generation began in 1909. High war-time demand saw the site's expansion using PoW and conscript labour.

The inter-war years saw new schemes in Lanarkshire, Galloway and the Highlands as well as aluminium-extraction projects at Lochaber by Fort William and Dolgarrog in Wales.

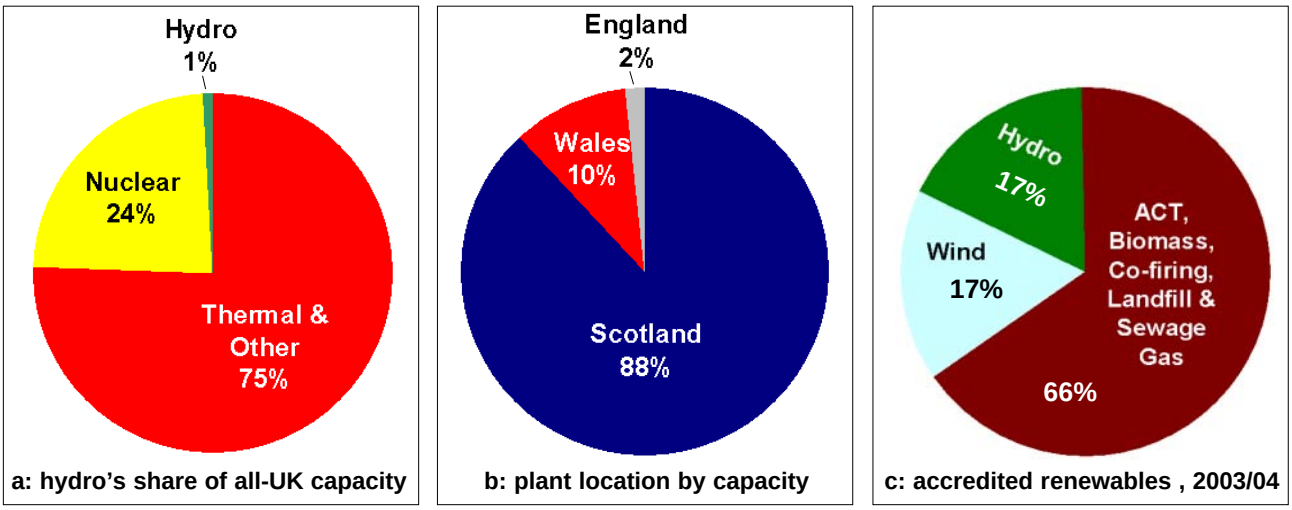
Hydro's zenith years were from the mid-1940s to the mid-1960s. Led by Tom Johnston (see page 18), the North of Scotland Hydro-Electric Board was as much an engineer of social change as an administrator of engineering. Under a 'social clause' that reflected Johnston's political aspirations, it sought to reverse Highland de-population by attracting investment and, through electrification, to improve the quality of life for those who stayed.[4] Success with the first of these ambitious aims was limited but it undeniably achieved the second. It retained both a public service ethos and widespread respect until disbanded after privatisation.

Between 1945 and 1963, the Board built 28 schemes with 66 dams, 51 power stations, 170 miles of tunnel, 100 miles of aqueduct, nearly 20,000 miles of power line and a total capacity of over 960 MW. It brought affordable electricity to almost every home in the north of Scotland, a very considerable achievement. It is worth noting that it never used public funds or received any subsidy.



UK hydro-power production (GWh) compared to the world's large producers.

A 1961 review of Scotland's generation by the Mackenzie Committee and the 1965 rejection of the Fada-Fionn proposal by the incoming Labour government effectively ended what had been heady days.



a: hydro's share of all-UK capacity | **b: plant location by capacity** | **c: accredited renewables , 2003/04**

Figure 5: Hydro-power's contribution to the UK's total energy portfolio is one per cent of capacity (a); the plant is mostly located in Scotland (b) and, compared especially to thermal 'renewables', hydro's share is small (c). Note that the first two graphics are by capacity (MW), the third by production (MWh).

Pumped Storage schemes at Cruachan and Foyers were still to come but as adjuncts to ever-more dominant thermal plant. Although the Board retained its political independence, it was, by the mid-1960s operationally part of a national authority.

Board historians cite a Conservative agenda and even far-right plots for the construction halt but the truth is perhaps more prosaic.[5] However cheap it was to run, hydro's up-front costs were seen as too high realistically to expect it to meet a demand that was, by the early 1960s, increasing at an unprecedented rate. Thermal competitors seemed to offer a more viable alternative.

In modern generation terms, UK hydro is a long-established but niche technology confined largely to Scotland but with a limited presence in Wales.

Notes

1 China's Three Gorges Dam will have higher capacity but a lower load factor.

2 World Commission on Dams, *Dams and Development, a New Framework for Decision-Making*, Nov 2000, p 75.

3 Precise details differ but all sources agree that the technology has its roots in the early to mid 1880s.

4 Not all of them. The NSHEB's first project, Sloy, dogged by labour shortages due to grim working conditions and plentiful alternative work, was allocated German PoWs in 1946. At times providing ninety per cent of the workforce, they could be as reluctant as paid colleagues to tolerate their lot though less able to evade it. Their first task, an access road by Loch Sloy, became known as The Burma Road. They were repatriated late in 1948 along with PoWs from other NSHEB projects.

Sloy's workforce also included 'Displaced Persons' working on half pay to win the right to stay in Britain. Attitudes to the Geneva Convention and asylum seekers were, it seems, ever robust. Ironically, Tom Johnston's newspaper, *Forward*, had, much earlier, interviewed Patrick McGill, chronicler of equally rough conditions at Kinlochleven (1904-1909). Johnston later took vigorous steps to improve housing conditions on NSHEB projects. See Miller, *The Dam Builders* and Wood, *The Hydro Boys*, both 2002 but especially Payne, *The Hydro,* 1988. (The latter, an authorised history of the NSHEB, is indispensable.)

5 *Ibid*.

Sell and Buy Back

An arrangement whereby a company generating 'renewable' electricity for its own use instead sells it to a licensed supplier and buys back whatever power it needs, thus qualifying its output for ROCs.

Originally intended to assist the funding of e.g. small-scale photo-voltaic arrays, where a company which would otherwise buy power in the normal way instead installs its own plant, Sell and Buy Back agreements have been widely made by the water treatment and sewage industries where operators have had on-site hydro-generation facilities for many years.

The effect is to provide a long-term subsidy in return for the modest refurbishment of small-scale plant that has, in most cases, worked perfectly satisfactorily for decades. The capacities involved are modest.

Tom Johnston

TOM JOHNSTON'S place in Scotland's political and economic history is assured not least because contemporary politicians are given to hinting that they follow in his footsteps. His story is relevant here because of his role in the North of Scotland Hydro-Electric Board which supervised the construction of many of the schemes examined in this report.

Born into a middle-class family in 1881 and educated at Lenzie Academy and Glasgow University, he set up the left-wing newspaper *Forward* in 1906 which he edited and published for over 30 years.

Elected to Kirkintilloch Town Council in 1913, he pioneered municipal banking in Scotland and other welfare services then seen as innovative. He left the Council on election as MP for West Stirlingshire in November 1922 and travelled to Westminster as a colleague of the 'Red Clydesiders'.

When Ramsay MacDonald became prime minister in 1929, he appointed Johnston Under-Secretary of State for Scotland. Although promoted to Lord Privy Seal in March 1931, cabinet rank was short-lived – he refused to join the National Government established that August in the wake of a financial crisis that had paralysed the Labour government.

He lost his seat in the election that followed but returned to the Commons in November 1935. Appointing him Scottish Secretary in 1941, Churchill allowed him to pursue distinctive but successful war-time policies in collaboration with a Scottish Advisory Council comprising his predecessors in the post.

He set up the NSHEB in 1943 and, after leaving the Commons in 1945, was its (unpaid) chairman for 14 years. He compared its role to the Tennessee Valley Authority – public works as a vehicle for economic and social development.

He also chaired the Scottish National Forestry Commission (1945-48) and the Scottish Tourist Board (1945-54). Although chiefly remembered for his work on hydro, his contribution to Scotland's fledgling tourist industry was arguably just as substantial though much of what is almost hagiographic biography downplays it. Some have suggested that his tenure of the latter post helped to reconcile amenity and hydro but Johnson undeniably treated tourism as an economic sector with a prescient seriousness that his successors might do well to emulate.

As he developed into an outstanding administrator, the young man's socialist rhetoric inevitably mellowed into an organiser's impatience but he seems never to have abandoned either a deeply-held commitment to public service or high standards of personal conduct.

A (more balanced) biographer says that 'the privatisation of hydro power under a Tory government would have been the final blow to his ambitions for the Highlands', a fair claim but, of course, speculation. Likewise, we can but guess at his reaction to a Labour regime which has encouraged the Forestry Commission to clear-fell land for subsidised wind power with scant regard for tourism or his reaction to downgrading hard-won hydro in a fiscal three-card trick.

Johnson is remembered for a best-selling book, *Our Scots Noble Families* (1909), 'a furious denunciation of Scotland's gentry and its stewardship of the land'. Recently reprinted even though he disowned it, it is perhaps of more interest to polemicists than historians. He remained proud of the more substantive *The history of the working classes in Scotland* (reprinted 1974).

He died on 5th September 1965.

A glossary of technical terms

Alternator – a machine for converting mechanical energy into electrical energy. See *turbine*.

Buy-out – suppliers meet their Renewables Obligation by producing ROCs to OFGEM or making buy-out payments or both. Buy-out payments are recycled to suppliers *pro rata* to the ROCs they submitted whether targets are met or not. It is currently £31.39 per MWh. Payments to suppliers were £165 million in 2003/04.

Capacity – here, a measure of a generating set's ability to produce electrical power. See *Megawatt.*

Climate Change Levy – a levy on commercial energy users of 0.43p/unit administered by Customs & Excise. Businesses that buy power from accredited 'renewable' sources avoid the levy. It is 'fiscally neutral' in that funds are recycled to employers as reductions in National Insurance. It raises the price of electricity from accredited sources, making them more attractive to generators. The CCL on electricity is higher than other sources to allow for transmission losses.

Compensation – the provision of 'compensation' water downstream of dams to those parts of a water course that would otherwise be depleted by a hydro-power facility. There is a statutory requirement for a continuous minimum flow to protect aquatic life.

Compensation Set – a turbine installed in the path of a compensation flow. As this is usually located at a system's dam, a compensation set may be some way upstream of a station's main turbines. The largest compensation set in the UK is one MW but most are much smaller. Recognised by OFGEM as separate from other turbines in a scheme, they are described as e.g. Clunie Dam or Cwm Rheidol CS.

Declared Net Capacity (DNC) – the net capacity of a hydro power station, i.e. all its turbines less what is required for its own operation.

Down-rating – a little-understood provision of the Renewables Obligation Order whereby generators were permitted to cut the capacity of generating plant prior to April 1 2002 so that it might qualify, after refurbishment, for ROCs.

Generator – a generator is licensed to operate an electricity generating station and sell its product to a licensed supplier. The distinction between generator and supplier is crucial to the structure of the privatised, market-driven electricity supply industry. A vertical structure prevails in Scotland and efforts to bring it into line with the English model have had mixed success. See S*upplier*.

Head – the difference in height between the water stored in a hydro station's reservoir and the level at which it exits the turbines. The power that can be generated is proportional to the head.

Hydro-power – the generation of electricity by passing water under pressure and gravity through a turbine. 'Run-of-river' exploits the natural flow of a suitable watercourse but any sizeable scheme requires an extensive system of dams and tunnels.

Large Hydro – hydro-power stations defined by the Renewables Obligations Order as too large to qualify for ROCs unless new build. There are now only 17 'large' sites in the UK (approx 848 MW).

Load Factor – the proportion of time a generating set runs at the equivalent of its full output. It is a function of a scheme's design. Load Factors are usually measured over a year: a turbine that ran all day, every day would have a load factor of 100 per cent, for 12 hours a day, 50 per cent, etc. UK hydro load factors average 30 per cent (see page 15).

Load Following – since electricity can be neither stored nor discarded, system operators must vary power levels in line with a continuously varying demand. The process is called 'load following'.

Hydro power's ability rapidly to vary power levels is a prime asset in this regard and contributes to emissions reduction.

Megawatt (MW) – a million watts; the unit of capacity usually applied to electricity generating plant, a measure of a machine's *ability* to do work. It is frequently confused with Megawatt Hour.

Megawatt Hour (MWh) – a measure of work done. If a one-MW generator runs for an hour, it produces a MWh of electricity. It is therefore an index of electricity production and distinct from the *ability* to do work. Engineers tend to measure production in millions of kilowatt hours (MkWh) whereas political circles use MWh.

Micro Hydro – privately-owned (as defined by the

1989 Electricity Act) plant of 1.25 MW or less. It qualifies for ROCs without refurbishment. Many very small sites are not accredited.

New Electricity Trading Arrangement (NETA) – an electricity trading scheme that replaced the 'pool' and designed to curb alleged price fixing. When Scotland came into the scheme, it became the British Electricity Trading and Transmission Arrangement (BETTA).

New Build – in this context, new hydro-power installations. New build qualifies for ROCs regardless of capacity.

North of Scotland Hydro-Electric Board – the 'Hydro Board' was set up by Parliament in 1943, its task primarily to oversee the electrification of the Scottish Highlands by constructing generation and power distribution facilities. A 'social clause' charged it with attracting employment to the region. It was disbanded in 1990 in the aftermath of privatisation. See page 18.

OFGEM – the state-run regulator of the UK's gas and electricity markets. It administers and reports on the Renewables Obligation schemes.

Peak Lopping – the meeting of relatively short but intense peaks in electrical demand. To meet these with thermal plant requires that it be kept hot (and thus polluting) for significantly longer than it is producing. Hydro is the only current renewable technology able to displace conventional plant.

Pumped Storage – a power station that uses thermally-generated electricity at times of low demand to pump water from a lower to a higher reservoir. The pumps are later used as turbines to generate power. Despite significant losses, it increases the efficiency of the generating system as a whole. However, unlike landfill gas, it is not regarded as a 'renewable' technology.

Refurbishment – the Renewables Obligation Orders allows owners of older renewable-technology generating plant to qualify for ROCs if they refurbish, or have recently refurbished, the plant in compliance with DTI stipulations.

In the case of hydro plant, refurbishment involves replacing a turbine's rotating element (the 'runner') and associated sundries.

Renewables Obligation – the Renewables Obligation Order (2002) requires licensed electricity suppliers either to produce ROCs or pay a 'buy-out' fine corresponding to a proportion of the electricity it has sold during the year. It obtains the ROCs either from its generators or on the open market. See *buy-out*.

Renewables Obligation Certificates (ROCs) – under the Obligations, a 'renewables' generator demonstrates sale of its product to OFGEM which issues it with a ROC for each MWh it sells. Generators usually sell ROCs with the product to suppliers who use them to meet their obligation or for trade. It can also sell ROCs to other suppliers or retain them in the hope of selling later at a higher price. They currently trade at around £45.

Renewables Obligation Target – in England and Wales, an annually increasing increment of a supplier's total sales that must be met from an accredited 'renewables' source. It increases by an average of one per cent per year. In Scotland, the target has been subject to politically-coloured increases and it is not clear quite what it represents.

ROC Pot, the – energy traders' jargon for the Buy-out fund.

Small Hydro – hydro-generating plant of less than 20 MW capacity, excluding 'micro-hydro'. If it was built or refurbished after December 31 1989, its output qualifies for ROCs.

Spillage – when water rises too quickly for a dam and reservoir to retain, the excess flows directly downstream, not through the turbines. See page 15.

Supplier – Licensed electricity suppliers buy from licensed generators and sell to end users. It is a supplier's name at the top of electricity bills. They must prove renewables purchase from accredited sources but they receive 'Buy-out' money.

Turbine – in this context, a machine that converts the potential energy of water flowing under gravity and pressure into mechanical energy by turning a bladed rotor. It is coupled to an alternator to produce electrical power.

Shot of the refurbishment at Ceannacroc (20 MW), by Fort Augustus. It was accredited for ROCs in April 2003.

ROCs earned by Alcan, SSE and ScottishPower from 'old build' hydro, April 2002 to December 2007

Year	Hydro ROCs issued	Assumed ROC price	Estimated value to the generators
2002	231,806	£45.94	£10,649,168
2003	720,521	£54.43	£36,497,437
2004	1,635,472	£45.05	£73,678,014
2005	1,841,325	£42.54	£78,329,966
2006	1,728,114	£49.28	£85,161458
2007	1,982,863	£50.00	£99,982,863
Total:	8,140,101	–	£385,459,192

The number of SROCs issued to Alcan, Scottish & Southern and ScottishPower in respect of 'old build' hydro from the launch of the Renewables Obligation scheme on April 1, 2002 to December 31, 2007.

Scottish hydro-power generators understandably regard information about money made from Renewable Obligations Certificates (ROCs) as commercially confidential but the topic is of interest to decision makers as well as to the consumers on whom the levies fall.

ROCs are a tradeable commodity and it is not possible to 'second guess' what the profits and losses of their trading might be. However, as OFGEM publishes figures for typical ROC values, it is possible to make a meaningful estimate of the sums involved in general terms. The results of a calculation of the benefit from ROCs accrued from Scottish 'old build' hydro are presented here.

The figures were taken from *Renewable Energy Data for Scotland (Hydro)*, compiled by Oswald Consultancy Ltd from OFGEM data and published by the Scottish Sustainable Energy Foundation in May 2008. The 'prices' for ROCs were taken year by year from OFGEM's *Annual Reports* on the RO schemes. For the period April to December 2007 (for which OFGEM's report is not yet due), it was assumed to be £50.

ROC information is summarised in OFGEM reports and elsewhere but the figures are not readily comparable to Oswald's because, first, OFGEM summarises ROCs issued between 1 April and 31 March while Oswald lists in detail those issued between January and December and, second, though both datasets started on 1 April 2002, OFGEM's ends at 31 March 2007 and Oswald's at 31 December.

Pertinent answers to Holyrood PQs also look to OFGEM data but may not be comprehensive. For example, Rob Gibson MSP recently asked (S3W-1760) how many ROCs were 'issued during each of the last three years for each of the 61 hydro stations constructed before 1990 [the cut-off date for automatic RO accreditation]'.

There are in fact around 80 such stations but the reply listed 61 only, omitting, for whatever reason, half a dozen large stations [Cashlie (1959, 11 MW, Culligran (1962, 19 MW), Finlarig (1955, 16.9 MW), Livishie (1962, 15 MW), Nant (1963, 15 MW) and Shin (1958, 18.6 MW)] and several small ones although other small stations were included.

Name	Capacity	No of Turbines	Opened	SROCs issued (by hydro-power station) to Alcan, SSE and ScottishPower from January to December of: 2002	2003	2004	2005	2006	2007	Total	Estimated value
Alcan											
Kinlochleven	19.5 MW	1	1909	119,953	163,867	161,404	163,761	162,233	185,761	956,979	**£45,786,590**
Scottish & Southern											
Chliostair	1.3 MW	1	1955			2,015	3,915	3,777	4,210	13,917	**£653,950**
Cladach Dam	0.2 MW	1	1955						269	269	**£13,450**
Cluanie Dam	0.3 MW	1	1955			1,700	1,877	2,107	2,195	7,879	**£370,016**
Duchally	0.5 MW	1	1959					251	692	943	**£46,969**
Dundreggan Dam	0.2 MW	1	1953		118	589	532	619	577	2,435	**£114,825**
Gisla	0.7 MW	1	1960	57	1,720	2,996	2,701	2,342	2,485	12,301	**£584,052**
Gorton	0.1 MW	1	1960						110	110	**£5,500**
Kerry Falls	1.3 MW	1	1951			342	3,842	4,528	6,155	14,867	**£709,736**
Loch Dubh	1.2 MW	1	1954		864	3,407	3,830	1,640	4,551	14,292	**£670,946**
Lochay CS	2.0 MW	1	1958			2,002	9,818	9,317	8,257	29,394	**£1,379,840**
Loyne	0.6 MW	1	1956					2,842	3,900	6,742	**£335,054**
Meig Dam	0.1 MW	1	1954		208	321	216	290	276	1,311	**£62,854**
Morar	0.8 MW	1	1948				972	2,663	3,198	6,833	**£332,482**
Nostie Bridge	1.3 MW	1	1948		871	6,884	5,708	5,577	3,350	22,390	**£1,041,815**
Storr Lochs	2.4 MW	1	1952			6,532	8,475	8,360	10,040	33,407	**£1,568,774**
Tobermory	0.3 MW	1	1953			199	249	494	327	1,269	**£60,252**
Tralaig	0.1 MW	1	1956						250	250	**£12,500**
Vaich	0.3 MW	1	1956				732	930	795	2,457	**£116,720**
Affric/Beauly											
Aigas	20.0 MW	2	1962		26,625	73,595	70,718	62,994	75,179	309,111	**£14,609,667**
Culligran	19.1 MW	2	1962				22,725	42,941	58,335	124,001	**£5,999,604**
Culligran CS	2.0 MW	1	1962			6,304	6,803	14,463	14,908	42,478	**£2,031,531**
Kilmorack	20.0 MW	2	1962		28,984	72,920	71,130	63,160	74,871	311,065	**£14,715,606**
Mullardoch Tunnel	2.4 MW	1	1955				376	7,570	2,603	10,549	**£519,195**
Breadalbane											
Cashlie	11.0 MW	1	1959			11,121	30,555	26,022	30,540	98,238	**£4,610,175**

Name	Capacity	No of Turbines	Opened	SROCs issued (by hydro-power station) to Alcan, SSE and ScottishPower from January to December of: 2002	2003	2004	2005	2006	2007	Total	Estimated value
Dalchonzie	4.0 MW	1	1958			3,042	16,646	15,932	14,133	49,753	**£2,336,942**
Finlarig	16.9 MW	1	1955		4,483	77,198	79,901	70,665	73,617	305,864	**£14,279,506**
Lednock	3.0 MW	1	1961			2,730	4,914	4,863	4,451	16,958	**£794,227**
Lubreoch	4.0 MW	1	1958			6,418	19,052	14,999	18,288	58,757	**£2,753,154**
St Fillans	16.8 MW	1	1957	36,453	48,371	77,454	86,045	71,595	72,100	392,018	**£18,541,972**
Stronuich	0.2 MW	1	1957				214	844	773	1,831	**£89,346**
Conon											
Achanault	3.0 MW	1	1956			328	7,271	2,590	5,692	15,881	**£736,320**
Grudie Bridge	18.7 MW	2	1950		13,844	116,380	106,251	74,251	111,886	422,612	**£19,755,911**
Luichart Dam	0.1 MW	1	1929		144	319	408	357	388	1,616	**£76,414**
Mossford	18.6 MW	2	1957		84,944	122,626	131,074	114,963	124,555	578,162	**£27,531,874**
Orrin	18.0 MW	1	1959		38,855	103,072	71,281	97,486	100,263	410,957	**£19,568,970**
Orrin Dam	0.3 MW	1	1959		837	1,140	1,171	1,211	1,474	5,833	**£279,270**
Torr Achilty	15.0 MW	2	1954		14,355	54,001	49,245	45,525	53,572	216,698	**£10,216,687**
Deanie											
Misgeach	0.4 MW	1	1963					120	487	607	**£30,264**
Great Glen											
Ceannacroc	20.0 MW	2	1956		42,847	87,450	107,250	81,446	116,202	435,195	**£20,615,112**
Foyers Falls	5.0 MW	1	1975			3,177	14,935	22,417	29,958	70,487	**£3,381,069**
Invergarry	20.0 MW	1	1956		19,809	103,727	99,716	83,547	54,054	360,853	**£16,793,111**
Invergarry Dam	0.2 MW	1	1956		84	1,173	1,086	1,124	1,071	4,538	**£212,471**
Livishie	15.0 MW	1	1962				25,221	32,223	31,724	89,168	**£4,247,051**
Quoich	18.1 MW	1	1955		37,125	108,284	120,295	73,113	133,802	472,619	**£22,272,241**
Quoich Dam	0.3 MW	1	1955		2,072	2,416	2,442	2,319	2,481	11,730	**£561,761**
Loch Awe											
Awe Barrage - A	0.9 MW	1	1956			1,033	2,504	999	2,652	7,188	**£334,888**
Kilmelfort	2.5 MW	1	1956			5,202	9,747	11,265	12,227	38,441	**£1,815,477**
Kilmelfort CS	0.1 MW	1	1956			265	463	532	583	1,843	**£87,001**
Loch Gair	6.0 MW	1	1961			6,872	16,099	17,852	18,501	59,324	**£2,799,232**
Lussa	2.4 MW	1	1952	3,978	5,541	6,735	7,887	9,203	9,784	43,128	**£2,060,454**
Nant	15.0 MW	1	1963	25,026	26,134	42,521	37,621	37,254	38,174	206,730	**£9,806,580**

Name	Capacity	No of Turbines	Opened	SROCs issued (by hydro-power station) to Alcan, SSE and ScottishPower from January to December of: 2002	2003	2004	2005	2006	2007	Total	Estimated value
Striven	8.0 MW	1	1959		7,033	14,155	17,494	24,245	20,128	83,055	**£3,958,844**
Shin											
Cassley	10.0 MW	2	1959				13,842	26,709	31,828	72,379	**£3,496,458**
Lairg	3.5 MW	1	1959				10,692	10,402	12,856	33,950	**£1,610,248**
Shin	18.6 MW	2	1958		53,240	121,945	123,372	124,167	146,206	568,930	**£27,015,730**
Shin Diversion Dam	0.1 MW	1	1958		488	441	505	520	480	2,434	**£117,049**
Sloy											
Allt-na-Lairige	6.0 MW	1	1956			6,537	22,148	21,463	21,042	71,190	**£3,346,464**
Sron Mor	5.0 MW	1	1957			1,705	6,338	5,756	6,313	20,112	**£945,734**
Tummel											
Clunie Dam	0.2 MW	1	1950		918	1,296	1,327	1,291	1,259	6,091	**£290,455**
Cuaich	2.5 MW	1	1959				6,166	6,212	6,592	18,970	**£898,029**
Gaur	6.4 MW	2	1952		13,785	26,470	24,282	24,249	23,014	111,800	**£5,307,653**
Loch Ericht	2.2 MW	1	1962	1,252	9,446	13,136	12,408	7,589	8,882	52,713	**£2,499,916**
Pitlochry	15.0 MW	2	1950	42,439	43,775	69,873	64,056	50,285	53,906	324,334	**£15,334,612**
Pitlochry CS	0.1 MW	1	1950		16	345	382	405	389	1,537	**£72,056**
Trinafour	0.6 MW	1	1959	2,648	3,476	3,476	3,654	3,753	3,249	20,256	**£966,805**
ScottishPower											
Lanark											
Bonnington	11.0 MW	2	1905		24,614	45,763	40,461	31,550	51,767	194,155	**£9,241,094**
Stonebyres	6.0 MW	2	1927		1,028	27,586	19,181	22,759	23,515	94,069	**£4,410,949**
New Galloway											
Carsfad	12.0 MW	1	1935			4,702	20,092	20,764	15,990	61,548	**£2,889,289**
Drumjohn	2.2 MW	1	1985			2,926	3,103	3,602	3,575	13,206	**£620,074**
Earlstoun	14.0 MW	1	1935			9,222	24,148	28,578	25,146	87,094	**£4,108,331**
	455.2 MW	**84**		**231,806**	**720,521**	**1,635,472**	**1,841,325**	**1,728,114**	**1,982,863**	**8,140,101**	
	Estimated income from ROCs			**£10,649,168**	**£38,497,437**	**£73,678,014**	**£78,329,966**	**£85,161,458**	**£99,143,150**	**Total:**	**£385,459,192**

SSEF SCOTTISH SUSTAINABLE ENERGY FOUNDATION

RENEWABLE ENERGY DATA FOR SCOTLAND

HYDRO

May 2008

Scottish Sustainable Energy Foundation
Independent Energy Information for Scotland's Future

2nd Floor, Prospect House, 5 Thistle Street, EDINBURGH EH2 1DF
Tel 0131 220 6650; Email: admin@ssef.org.uk

Renewable Energy Data for Scotland

Background and Disclaimer

A secure and reliable energy supply can no longer be taken for granted, and a solution that is also environmentally sustainable is urgently needed. Though the issue is pressing it is critical that we avoid haste. A measured and considered response is essential, since decisions taken in the next five years will lock-in long-term consequences for Scottish prosperity.

The debate must include all Scotland's energy forms, with due consideration being given to both demand and supply . In the latter it is imperative that we do not rashly constrain Scotland's options. Achieving such a balanced, long-term, systems-level approach requires that the general public, elected representatives and decision makers acquire an enhanced knowledge of accurate and relevant research. Meeting this need is not straightforward, and it is the view of many that Scotland requires a dedicated source of independent, a-political energy information.

The Scottish Sustainable Energy Foundation (SSEF) is pleased to present the Renewable Energy Data for Scotland (REDS), published as a contribution to this requirement.

SSEF have commissioned the Oswald Consultancy Ltd to prepare REDS on the basis of their experience in preparing similar data summaries on a Britain-wide basis for the Renewable Energy Foundation of London, and we extend our thanks to both parties for their advice and assistance. SSEF and their consultants have taken all reasonable care and attention with regard to the accuracy and correctness of the data used and the analysis provided, but errors and omissions are excepted.

Ofgem publishes information on the Renewables Obligation certificates issued to renewable electricity generators (http://www.rocregister.ofgem.gov.uk/main.asp). This data is re-presented here on a site-by-site basis with other relevant publicly available information. The result is a series of easily understood information sheets for each renewable generator in Scotland and accredited under the RO system. These are useful both to people making general enquiries and as a summary source of technical data.

The publication of this data in the REDS format, with specific reference to Scotland, will – with subsequent issues of REDS – allow a clear picture of performance to be built up to inform Scottish investors, policy makers and other interested parties. This data will also enable 'value for money' assessments to be made across technologies and geographical areas if combined with monetary data.

SSEF is a not-for-profit organisation, a company limited by guarantee, and our application for charity status is with OSCR. Our remit is to provide independent energy information for Scotland's future. We have no affiliations with political or commercial interests. We are funded by private individuals keen to ensure that balanced and impartial information is available for all involved in and interested by the energy issues facing Scotland, and we extend our thanks to these donors without whom this publication would not be possible.

Euan Robson, Chief Executive , SSEF

About the charts

REDS will be available only in electronic form, as five files:

1. Biomass and Biomass Co-firing
2. Hydropower
3. Landfill gas
4. Sewage gas
5. Wind power (on- and offshore)

The charts in Renewables Energy Data for Scotland (REDS) volumes present:

- Generation statistics based on the publicly available monthly Renewables Obligation Certificate data provided by Ofgem.
- Details of the generator station name, operating company, turbine specifications (where applicable) and unique reference.

One Renewables Obligation Certificate is issued to a renewable generator for every MWh (1,000 kWh) of electrical energy generated. These certificates are freely tradable and are the government's way of encouraging investment in renewable generation under the Renewable Obligation legislation (the RO).

The certificates provide a valuable insight into the generation performance of Scotland's renewable electricity generators, and since Ofgem also publishes the installed capacities of the generators, it is possible to calculate Load F actors.

Load factor is the proportion of the theoretical maximum energy generation that is actually attained under normal working conditions. F or example the theoretical yearly maximum of a 1 MW plant would be reached by operating at full output for 8,760 hours, and would deliver 8,760 MWh. In this case its Load Factor would be 100%.

In practice, however, generators are limited by market demand (i.e. the need to respond to fluctuating demand for electricity), downtime for scheduled and unscheduled maintenance and availability of renewable resource such as hydro water , wind or wave. Consequently they will produce less energy than their theoretical maximum. Thus, a 1 MW plant that generated 6,000 MWh in a year would have a Load F actor of 6000 MWh / 8760 MWh, or 68%.

In the case of Landfill Gas the Load Factor graph is calculated, as all the other charts are, according to the total installed capacity as taken from the Ofgem web site. However, it should be noted that landfill operators have reason from time to time to alter the installed plant in response to gas evolution rates. It has not been possible to track these changes in detail and the load factor calculations should be interpreted with a degree of caution. It should also be noted that the reciprocating engines used in Landfi ll sites use electricity themselves and these auxiliary loads reduce the available power to slightly less than the 'T otal Installed Capacity' value which means that even at full power , the Load Factor will be slightly less than 100%.

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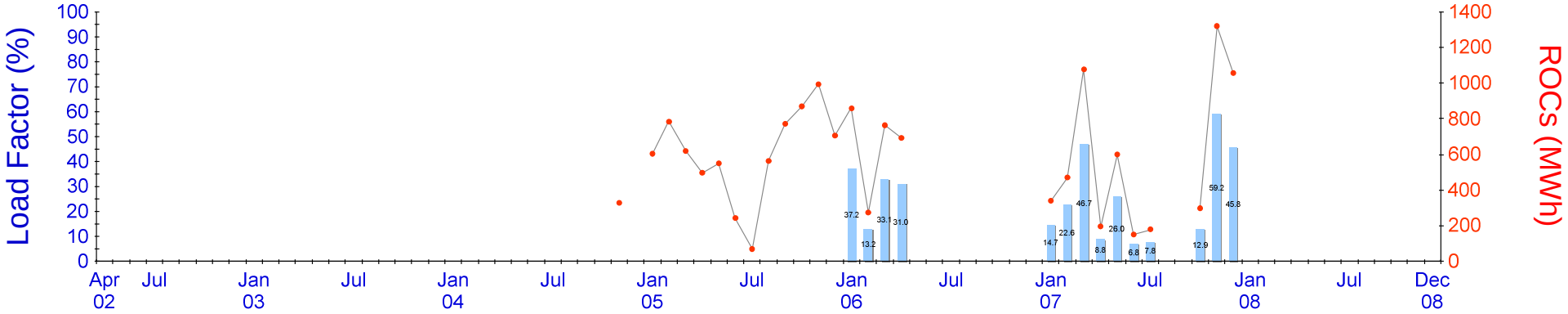
Generating Station Name: **Achanalt Power Station** **R.O. ID** **R00108SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :3,100



Station Summary

Date commissioned	01/01/1956
Operator Company	SSE Generation Limited
Contact address	Achanalt Power Station, By Loch a'Chuillin, Near Garve, Ross-shire , IV23 2QD
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	328	
2005	0	7,271	
2006	3,100	2,590	9.5
2007	3,100	5,692	21.0

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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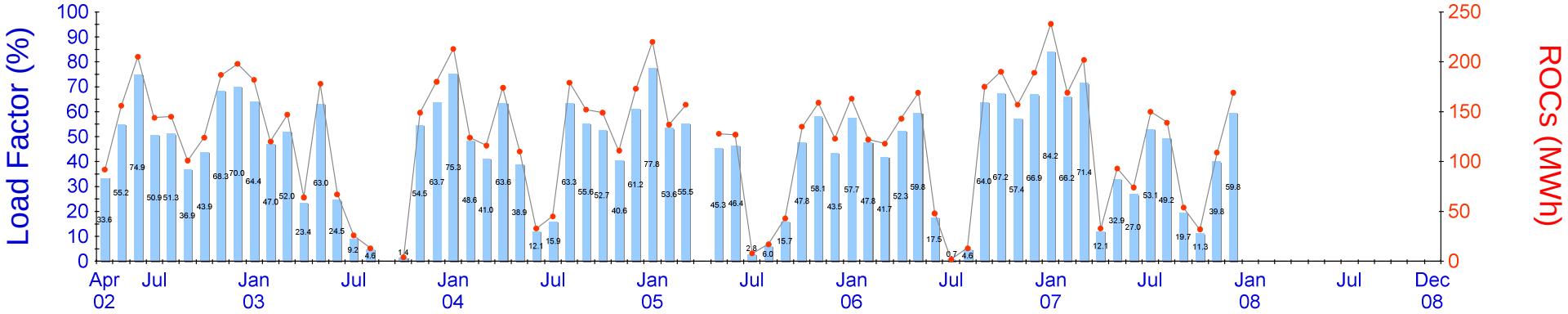
Generating Station Name: **Acharn Hydro** **R.O. ID** **R00002SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :380



Station Summary

Date commissioned	01/12/1992
Operator Company	Acharn Hydro Ltd
Contact address	Remony Estate, Acharn, Aberfeldy, Perthshire , PH15 2HR
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

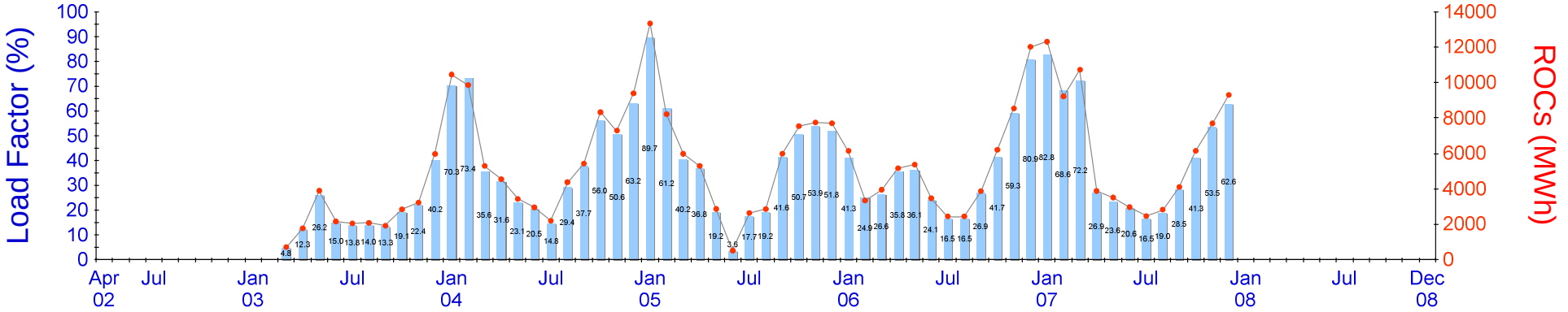
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	380	1,352	
2003	380	1,130	33.9
2004	380	1,579	47.4
2005	380	1,254	37.7
2006	380	1,489	44.7
2007	380	1,462	43.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Aigas Power Station** **R.O. ID** **R00028SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :20,000



Station Summary

Date commissioned	01/01/1962
Operator Company	SSE Generation Ltd
Contact address	By Beauly, Inverness-shire , IV4 7AE
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

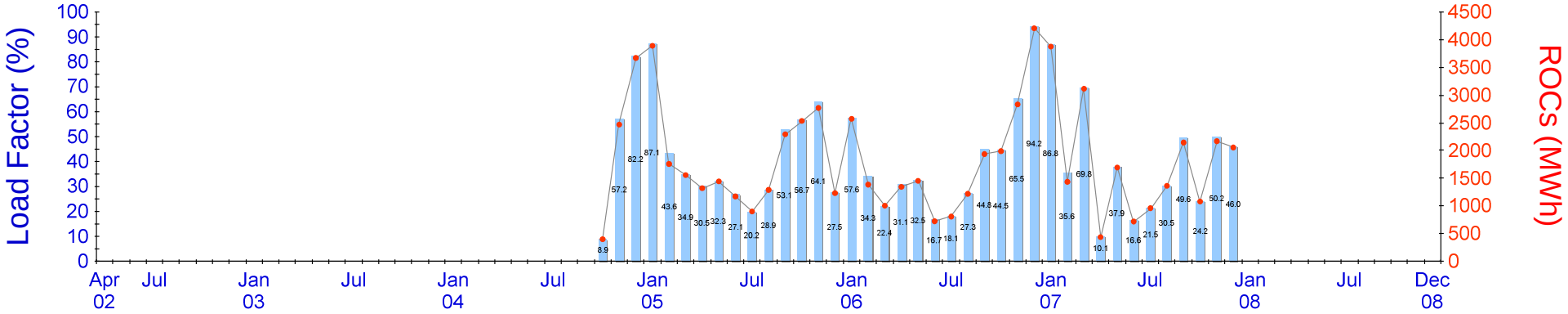
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	20,000	0	
2003	20,000	26,625	
2004	20,000	73,595	42.0
2005	20,000	70,718	40.4
2006	20,000	62,994	36.0
2007	20,000	75,179	42.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Allt Na Lairige Power Station** **R.O. ID** **R00085SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :6,000



Station Summary

Date commissioned	01/01/1956
Operator Company	SSE Generation Limited
Contact address	Cairndow, Argyll , PA26 8BJ
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	6,000	0	
2003	6,000	0	
2004	6,000	6,537	
2005	6,000	22,148	42.1
2006	6,000	21,463	40.8
2007	6,000	21,042	40.0

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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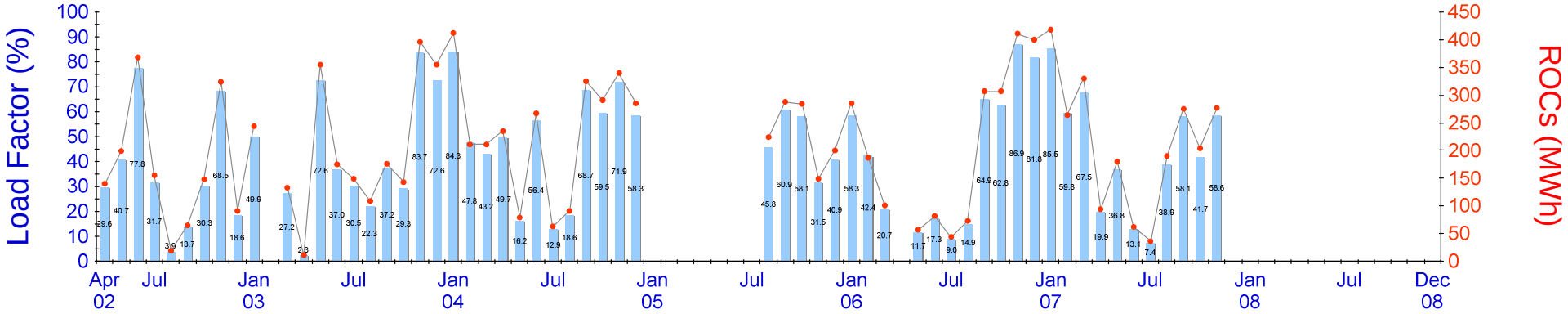
Generating Station Name: **Ardtornish Estate-River Rannoch** **R.O. ID** **R00013SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :657



Station Summary

Date commissioned	01/04/1996
Operator Company	Ardtornish Estate Company Ltd
Contact address	Ardtornish Estate - River Rannoch Hydro Scheme, Morvern, Oban, Argyll , PA34 5UZ
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

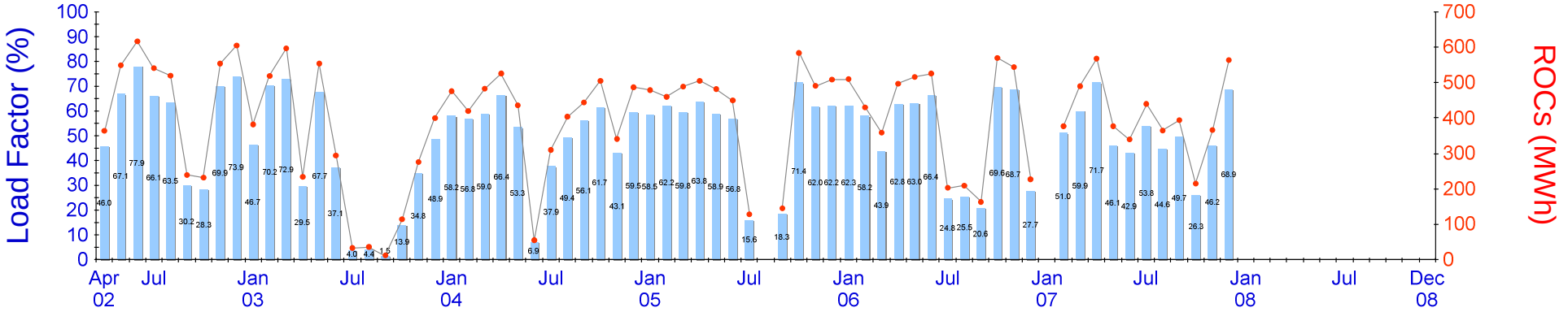
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	657	1,509	
2003	657	2,246	39.0
2004	657	2,810	48.8
2005	657	1,145	19.9
2006	657	2,254	39.2
2007	657	2,330	40.5

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Ardverikie** **R.O. ID** **R00007SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :1,100



Station Summary

Date commissioned	01/03/1988
Operator Company	Ardverikie Estates Ltd.
Contact address	Ardverikie Power House, Kinlochlaggan, Newtonmore, Invernesshire , PH20 1BX
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

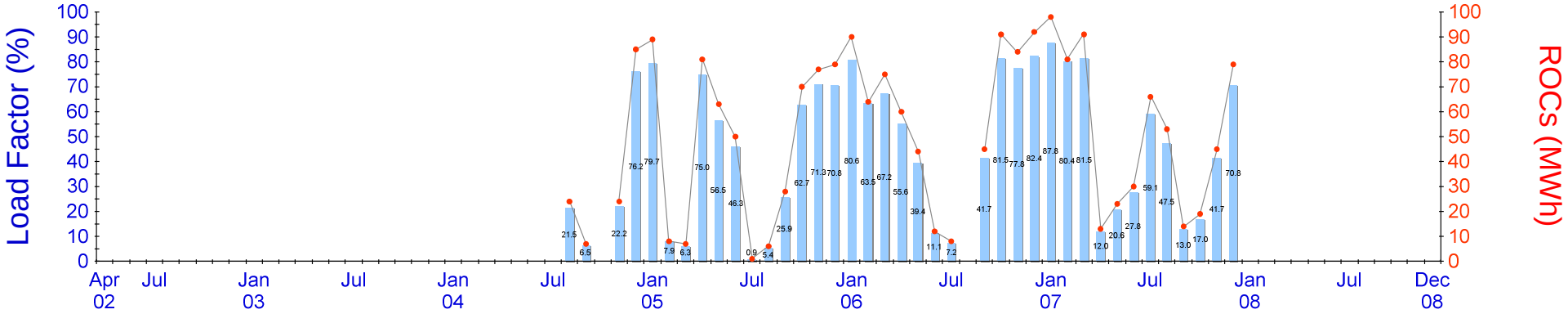
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	1,100	4,221	
2003	1,100	3,451	35.8
2004	1,100	4,887	50.7
2005	1,100	4,722	49.0
2006	1,100	4,754	49.3
2007	1,100	4,496	46.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Ashfield Mill** **R.O. ID** **R00051SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :150



Station Summary

Date commissioned	01/07/1989
Operator Company	John R Robb
Contact address	Ashfield Mill, Ashfield, By Dunblane, Scotland , FK15 0JX
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

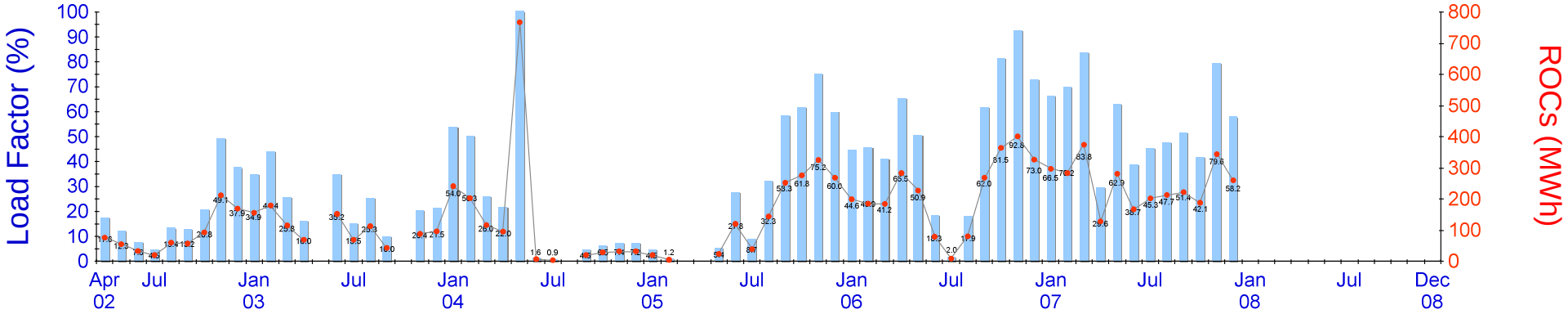
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	150	0	
2003	150	0	
2004	150	140	
2005	150	559	42.5
2006	150	665	50.6
2007	150	612	46.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Auchtertyre Hydro Station** **R.O. ID** **R00010SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :600



Station Summary

Date commissioned	01/11/2000
Operator Company	RWE Npower plc
Contact address	Auchtertyre Hydro Station, Alt Gleann Chalchin, Auchtertyre, Tyndrum, Scotland , NN355292
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

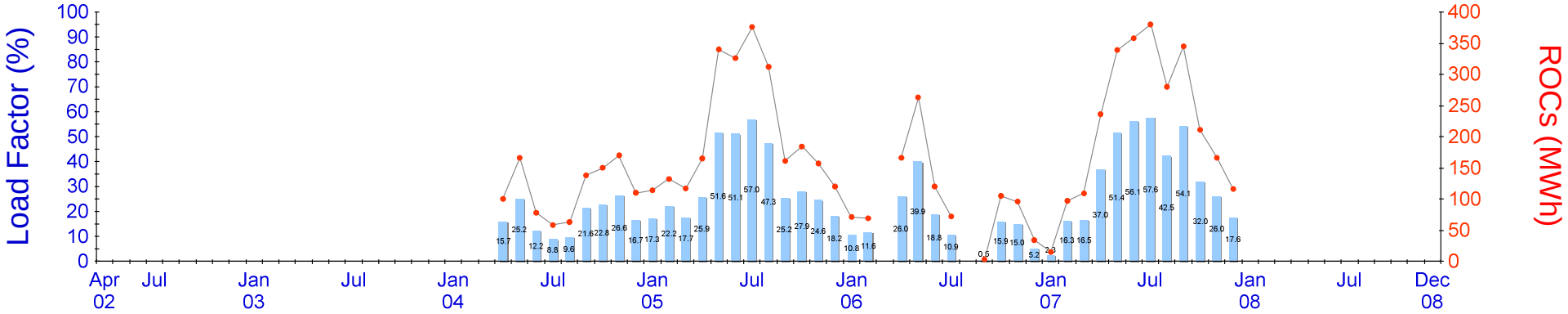
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	600	775	
2003	600	1,080	20.5
2004	600	1,546	29.4
2005	600	1,473	28.0
2006	600	2,605	49.6
2007	600	2,959	56.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Awe Barrage** **R.O. ID** **R00098SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :886



Station Summary

Date commissioned	01/03/1956
Operator Company	SSE Generation Ltd
Contact address	Pass of Brander, By Bridge of Awe, Argyll, Scotland , PA35 1HR
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

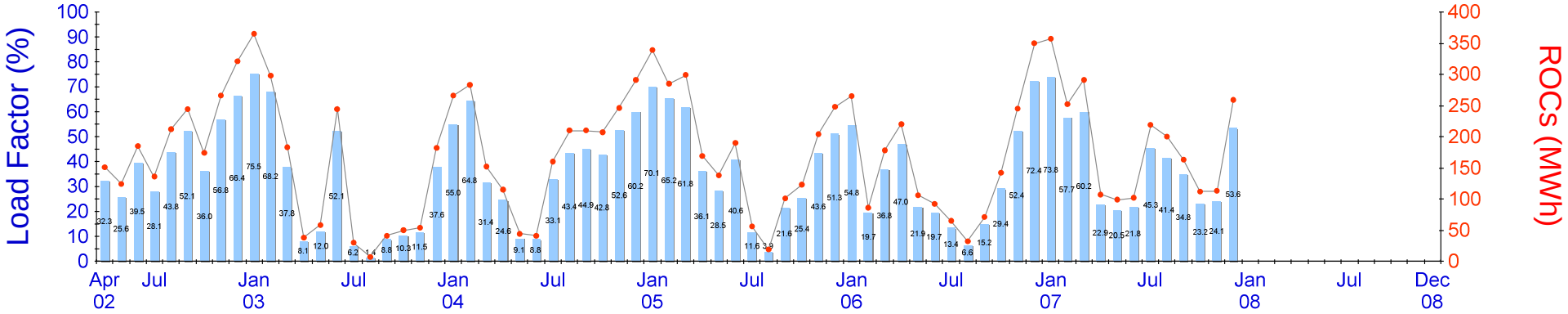
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	886	0	
2003	886	0	
2004	886	1,033	
2005	886	2,504	32.3
2006	886	999	12.9
2007	886	2,652	34.2

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Balgonie Hydro Power Station** **R.O. ID** **R00011SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :650



Station Summary

Date commissioned	01/01/1922
Operator Company	TLS Hydro Power Ltd (TLS Hydro Power Ltd)
Contact address	Balgonie Hydro Power Station, Balgonie Castle, Markinch, Glenrothes, Fife , KY7 6HQ (First Floor, Batchwork Lock House, 99 Church Street, Rickmansworth, Hertfordshire)
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

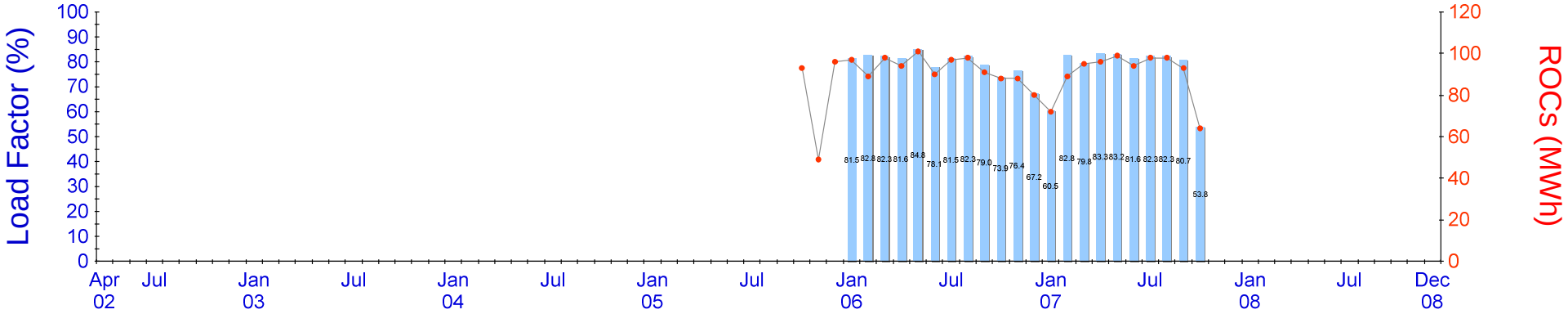
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	650	1,813	
2003	650	1,550	27.2
2004	650	2,225	39.1
2005	650	2,171	38.1
2006	650	1,852	32.5
2007	650	2,274	39.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Bennachran Dam** **R.O. ID** **R00109SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :160



Station Summary

Date commissioned	01/09/2005
Operator Company	SSE Generation Ltd
Contact address	Beannachran Dam Struy Inverness-shire , IV4
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

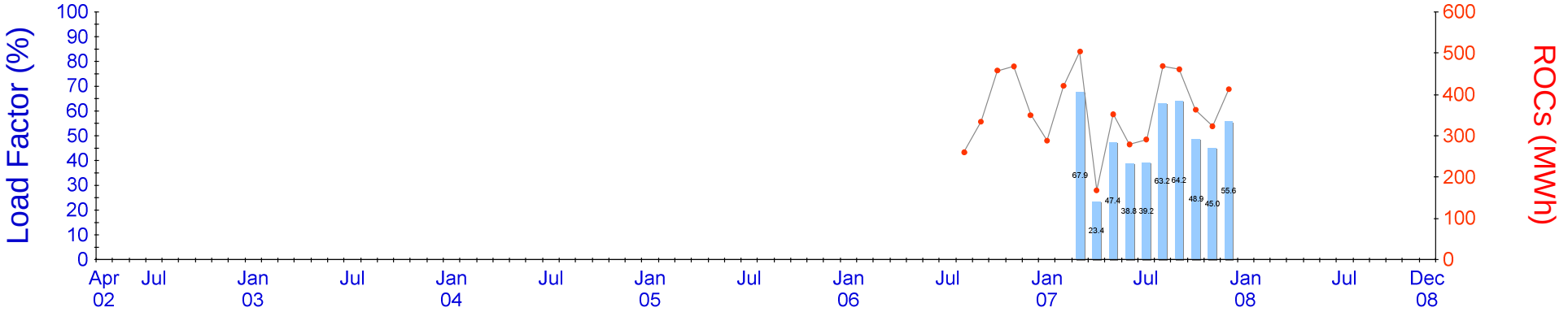
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	238	
2006	160	1,111	79.3
2007	160	898	64.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Beochlich Hydro Electric Scheme(SRO)** **R.O. ID** **R00121SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :998



Station Summary

Date commissioned	01/01/1999
Operator Company	The Wind Fund (Beochlich) Ltd
Contact address	Beochlich Hydro Electric Scheme, Ballimeanoch Farm, By Dalmally, Argyll , PA33 1BW
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

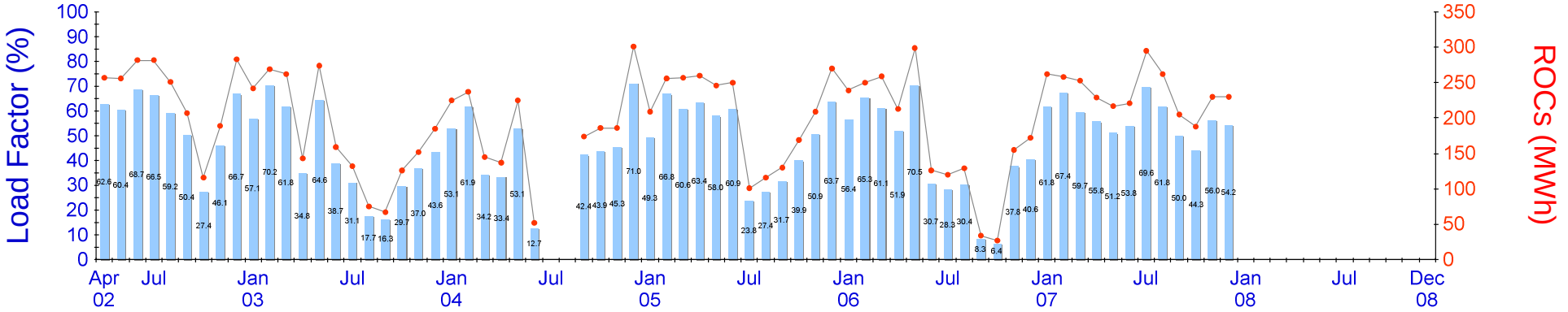
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	1,870	
2007	0	4,332	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Blantyre Mill** **R.O. ID** **R00017RESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :570



Station Summary

Date commissioned	01/01/1995
Operator Company	RWE Npower plc
Contact address	Station Road, Blantyre, Glasgow , G72 9BX
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

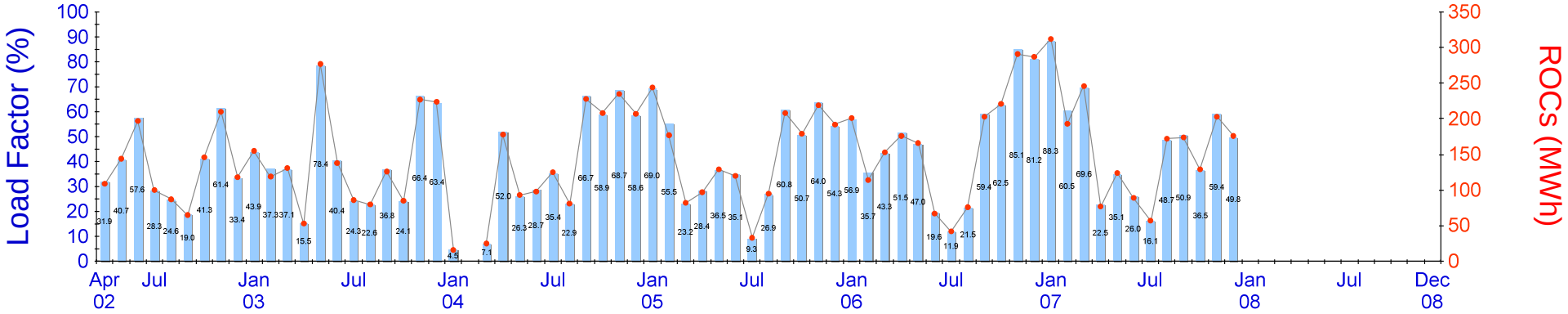
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	570	2,123	
2003	570	2,086	41.8
2004	570	1,868	37.4
2005	570	2,473	49.5
2006	570	2,023	40.5
2007	570	2,850	57.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Blarghour Hydro Station** **R.O. ID** **R00006SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :475



Station Summary

Date commissioned	01/04/1994
Operator Company	Blaghour Power Company Ltd
Contact address	Blarghour Farm, By Dalmally, Argyll , PA33 1BW
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

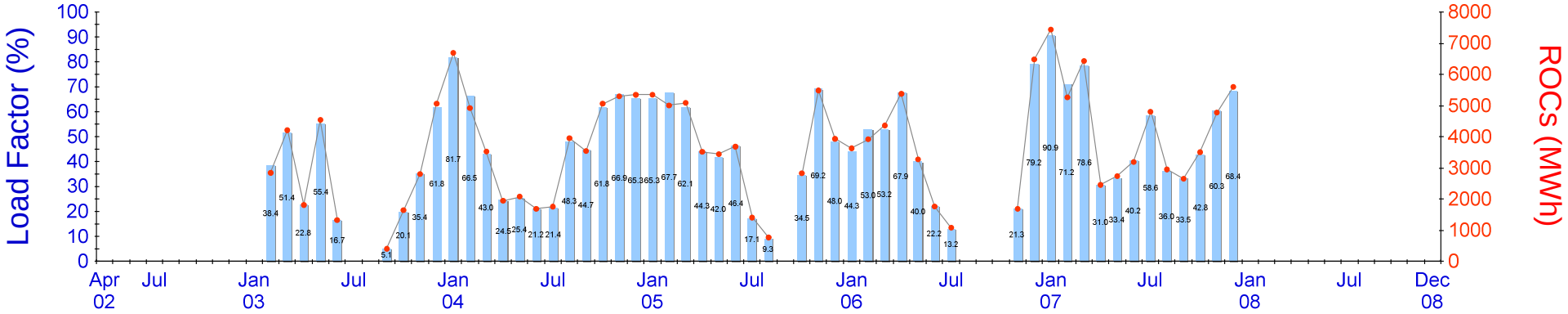
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	475	1,176	
2003	475	1,701	40.9
2004	475	1,494	35.9
2005	475	1,775	42.7
2006	475	1,997	48.0
2007	475	1,952	46.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Bonnington** **R.O. ID** **R00054SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :11,000



Station Summary

Date commissioned	01/10/1927
Operator Company	Scottish Power Generation UK
Contact address	Bonnington Power Station, Nr Lanark, Scotland , ML11 9TB
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	11,000	0	
2003	11,000	24,614	
2004	11,000	45,763	47.5
2005	11,000	40,461	42.0
2006	11,000	31,550	32.7
2007	11,000	51,767	53.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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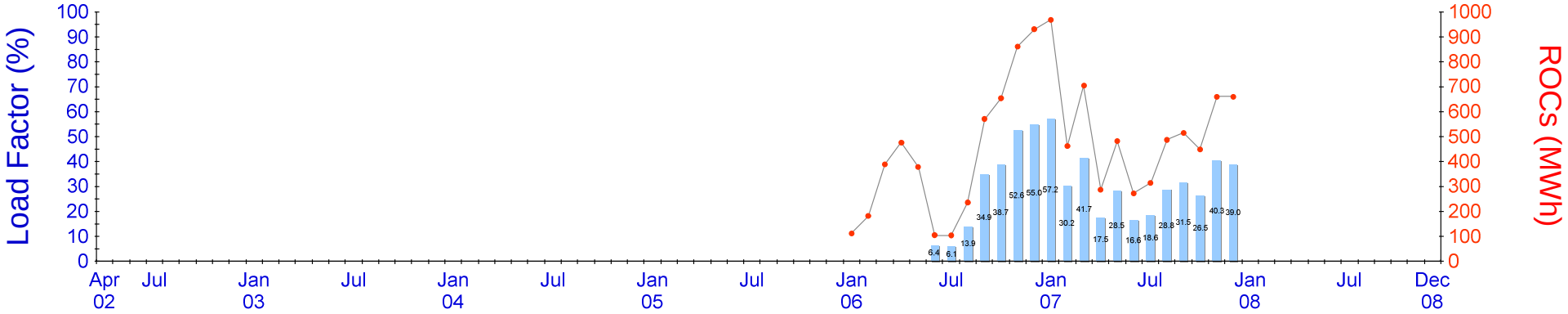
Generating Station Name: **Braevallich Hydroelectric Scheme** **R.O. ID** **R00107RESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,274



Station Summary

Date commissioned	01/11/2005
Operator Company	RWE Npower plc (hydro)
Contact address	Braevallcih, By Dalmally , PA 33 1BU
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	4,999	
2007	2,274	6,261	31.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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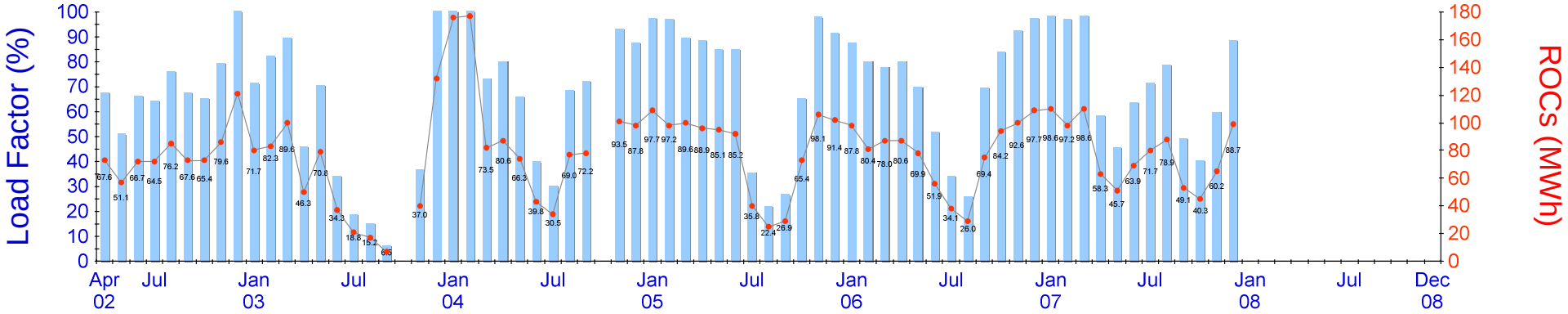
Generating Station Name: **Bridge of Tilt** **R.O. ID** **R00017SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :150



Station Summary

Date commissioned	01/01/1968
Operator Company	Bridge of Tilt Co. Ltd
Contact address	c/o Lude Estate Office, Blair Atholl , PH18 5TS
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

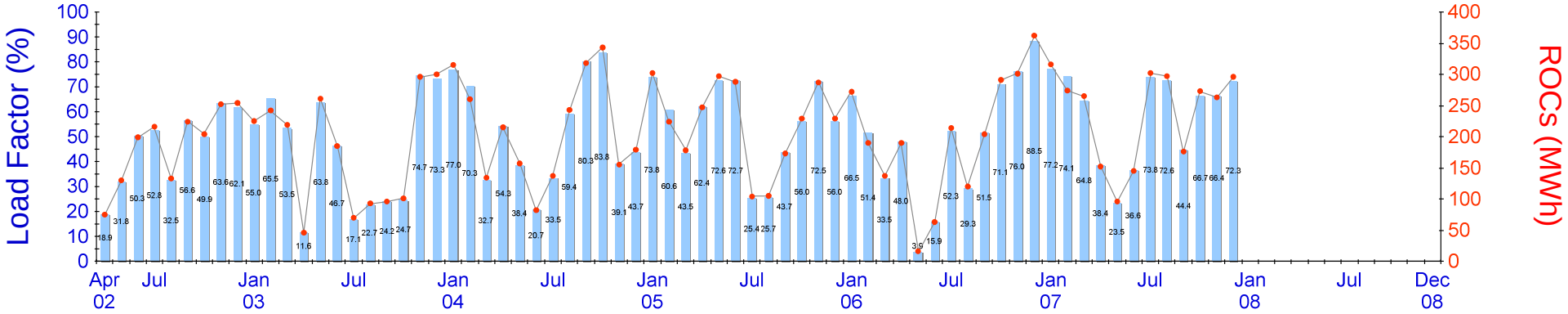
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	150	712	
2003	150	646	49.2
2004	150	1,027	78.2
2005	150	965	73.4
2006	150	932	70.9
2007	150	931	70.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Burnhead Power Station** **R.O. ID** **R00018SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :550



Station Summary

Date commissioned	01/01/1983
Operator Company	Fred Olsen Ltd
Contact address	Burnhead Power Station, Burnhead, Forrest Estate, Dalry, Castle Douglas , DG7 3XS
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

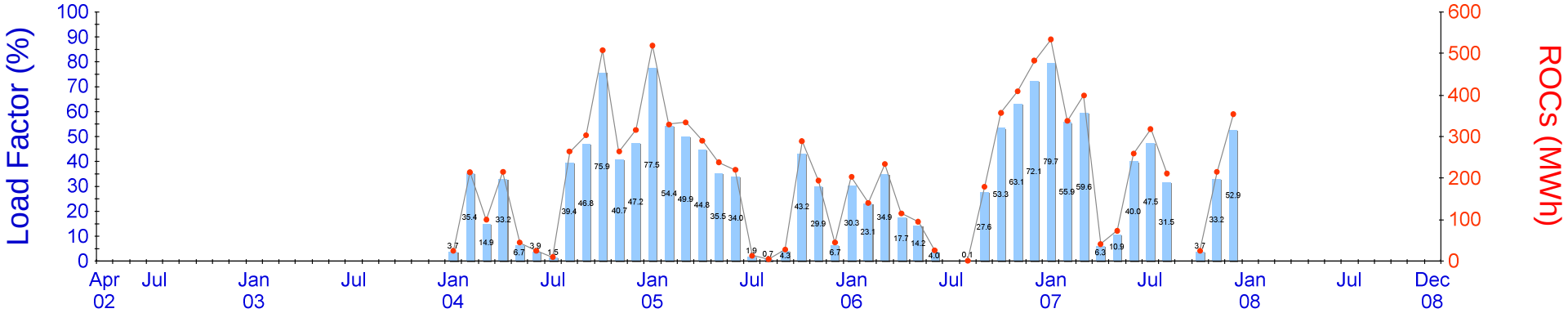
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	550	1,687	
2003	550	2,134	44.3
2004	550	2,538	52.7
2005	550	2,663	55.3
2006	550	2,360	49.0
2007	550	2,855	59.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Camserney Hydro Scheme** **R.O. ID** **R00072SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :900



Station Summary

Date commissioned	01/01/2004
Operator Company	Camserney Hydro Scheme Ltd
Contact address	Camserney Farm, Aberfeldy, Perthshire, Scotland , PH15 2JG
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	900	0	
2003	900	0	
2004	900	2,289	29.0
2005	900	2,504	31.8
2006	900	2,242	28.4
2007	900	2,767	35.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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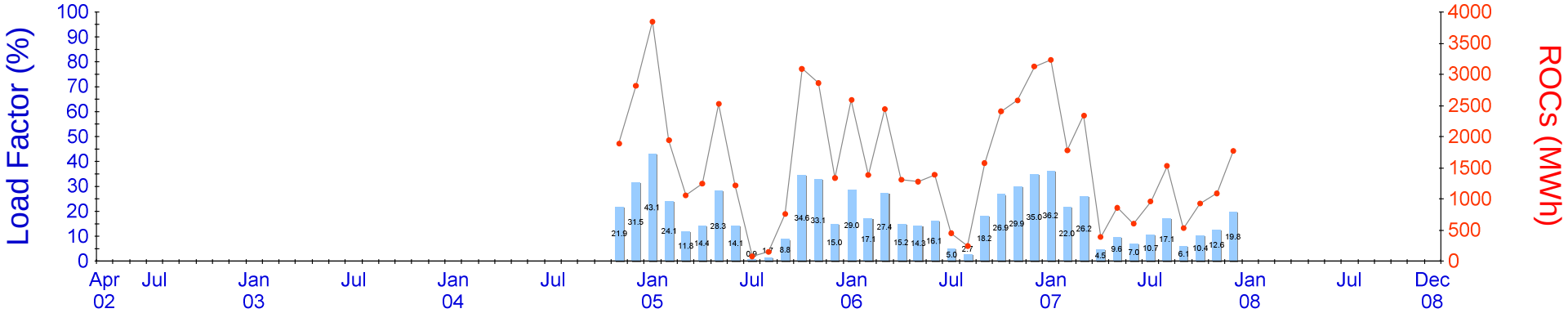
Generating Station Name: **Carsfad** **R.O. ID** **R00091SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :12,000



Station Summary

Date commissioned	01/01/1935
Operator Company	Scottish Power Generation UK
Contact address	St Johns Town of Dalry, Castle Douglas, Kirkcudbrightshire, Scotland , DG7 3ST
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	12,000	0	
2003	12,000	0	
2004	12,000	4,702	
2005	12,000	20,092	19.1
2006	12,000	20,764	19.8
2007	12,000	15,990	15.2

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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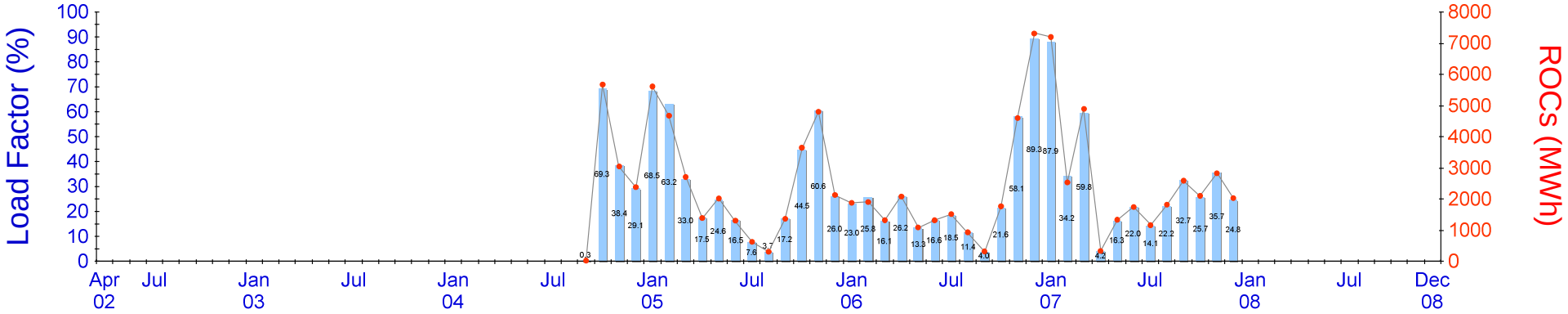
Generating Station Name: **Cashlie Power Station** **R.O. ID** **R00086SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :11,000



Station Summary

Date commissioned	01/09/2004
Operator Company	SSE Generation Ltd
Contact address	Cashlie Power Station, Bridge of Balgie, Glen Lyon, Perthshire, Scotland, , PH15
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	11,000	0	
2003	11,000	0	
2004	11,000	11,121	
2005	11,000	30,555	31.7
2006	11,000	26,022	27.0
2007	11,000	30,540	31.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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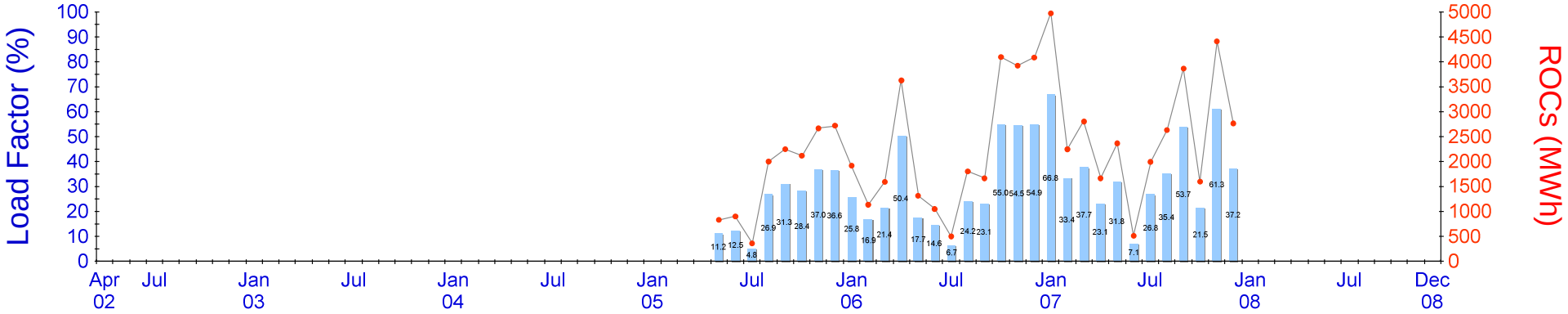
Generating Station Name: **Cassley Power Station** **R.O. ID** **R00099SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :10,000



Station Summary

Date commissioned	01/01/1959
Operator Company	SSE Generation Limited
Contact address	By Overscaig, Lairg, Sutherland , IV27 4NY
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

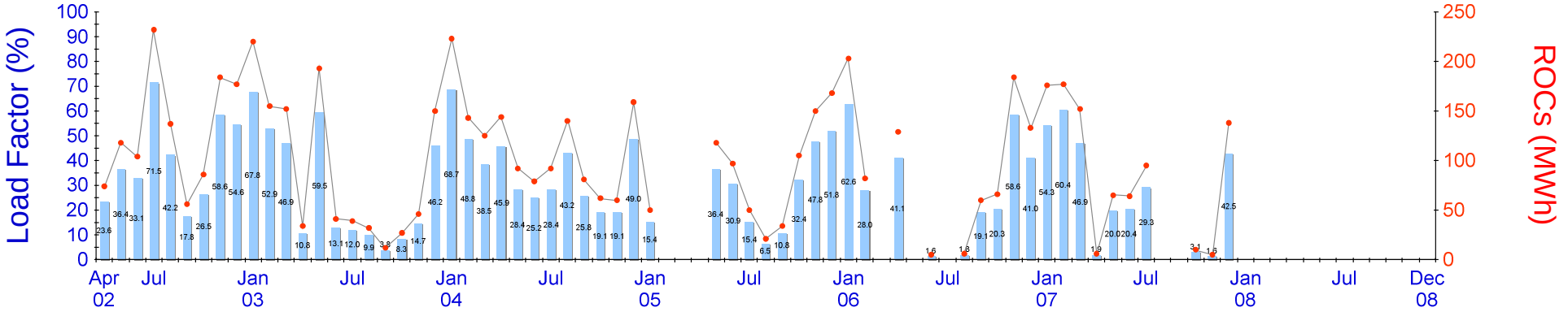
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	10,000	0	
2003	10,000	0	
2004	10,000	0	
2005	10,000	13,842	
2006	10,000	26,709	30.5
2007	10,000	31,828	36.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Cauldron Linn** **R.O. ID** **R00012SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :436



Station Summary

Date commissioned	01/06/1993
Operator Company	Blairhill Water Power Co. Ltd
Contact address	Blairhill, Rumbling Bridge, Kinross , KY13 0PX
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

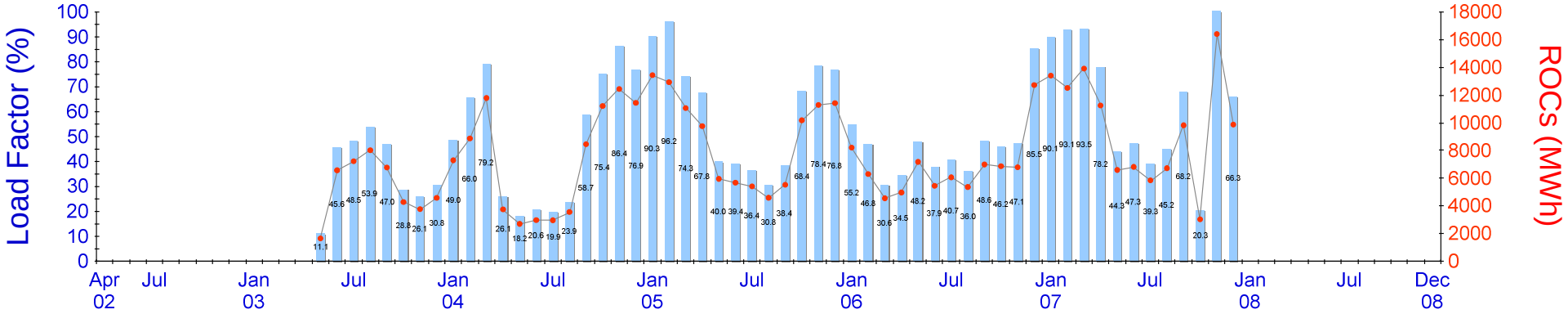
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	436	1,168	
2003	436	1,101	28.8
2004	436	1,400	36.7
2005	436	793	20.8
2006	436	868	22.7
2007	436	888	23.2

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Ceannacroc Power Station** **R.O. ID** **R00057SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :20,000



Station Summary

Date commissioned	01/01/1956
Operator Company	SSE Generation Ltd
Contact address	Ceannacroc Power Station, Invermoriston, By Fort Augustus, Inverness-shire , IV3 6YN
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

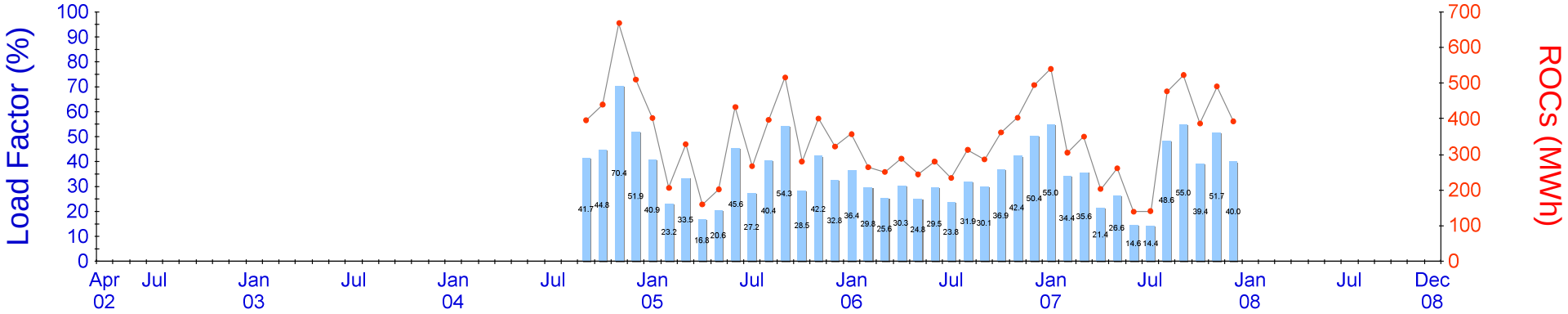
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	20,000	0	
2003	20,000	42,847	
2004	20,000	87,450	49.9
2005	20,000	107,250	61.2
2006	20,000	81,446	46.5
2007	20,000	116,202	66.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Chliostair Power Station** **R.O. ID** **R00081SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :1,320



Station Summary

Date commissioned	01/01/1960
Operator Company	SSE Generation Limited
Contact address	Chliostair, By Tarbert, Isle of Harris, Western Isles , HS3 3AZ
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	1,320	0	
2003	1,320	0	
2004	1,320	2,015	
2005	1,320	3,915	33.9
2006	1,320	3,777	32.7
2007	1,320	4,210	36.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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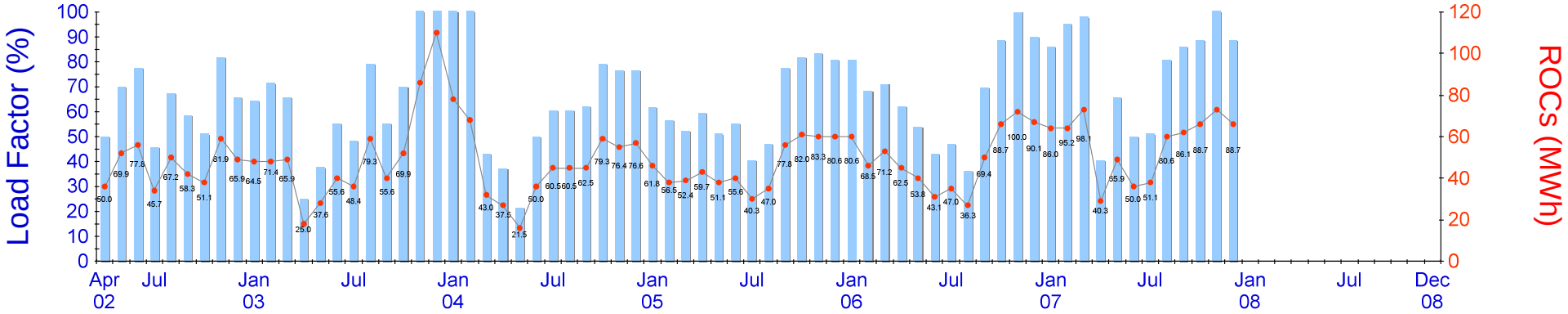
Generating Station Name: **Clachbreck** **R.O. ID** **R00003SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :100



Station Summary

Date commissioned	01/01/1996
Operator Company	Inver Farmers
Contact address	Ormsary, Lochgilphead, Argyll , PA31 8PE
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	100	416	
2003	100	614	70.1
2004	100	563	64.3
2005	100	546	62.3
2006	100	592	67.6
2007	100	680	77.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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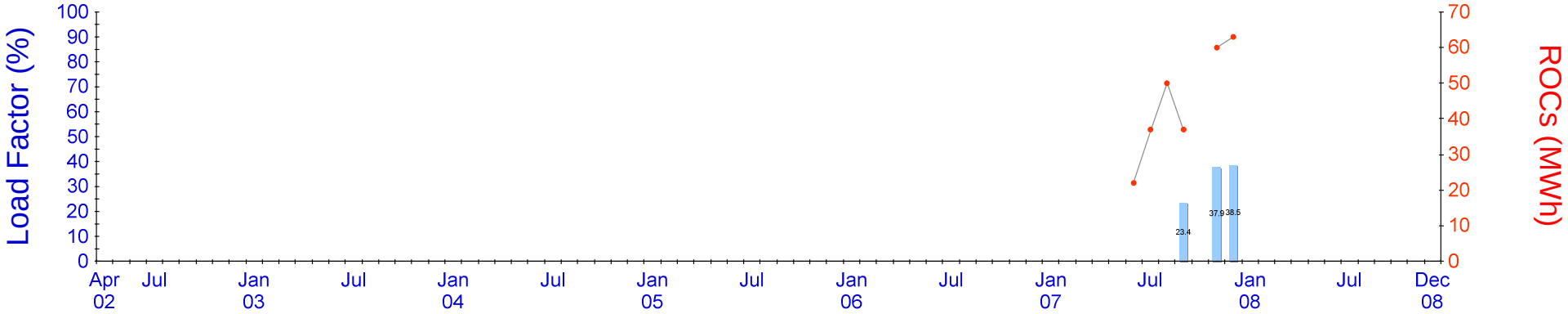
Generating Station Name: **Cladach Dam** **R.O. ID** **R00127SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :220



Station Summary

Date commissioned	01/01/1949
Operator Company	SSE Generation Limited
Contact address	Cladach Power Station, By Brodick Castle, Brodick, Isle of Arran, Ayrshire , KA26
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

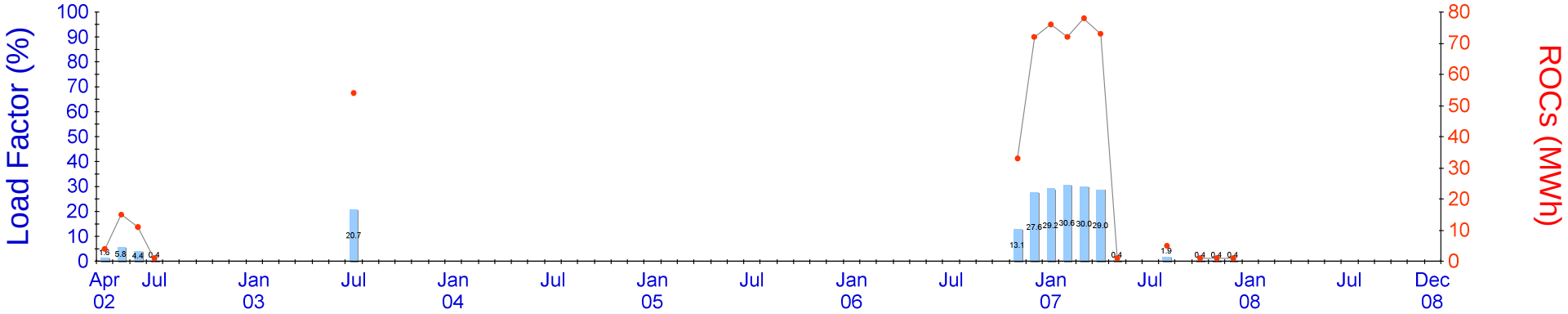
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	0	
2007	0	269	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Clatto Treatment Works** **R.O. ID** **R00017SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :350



Station Summary

Date commissioned	01/08/1994
Operator Company	Scottish Water
Contact address	Clatto Treatment Works, Dalmahoy Drive, Dundee , NO371343
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

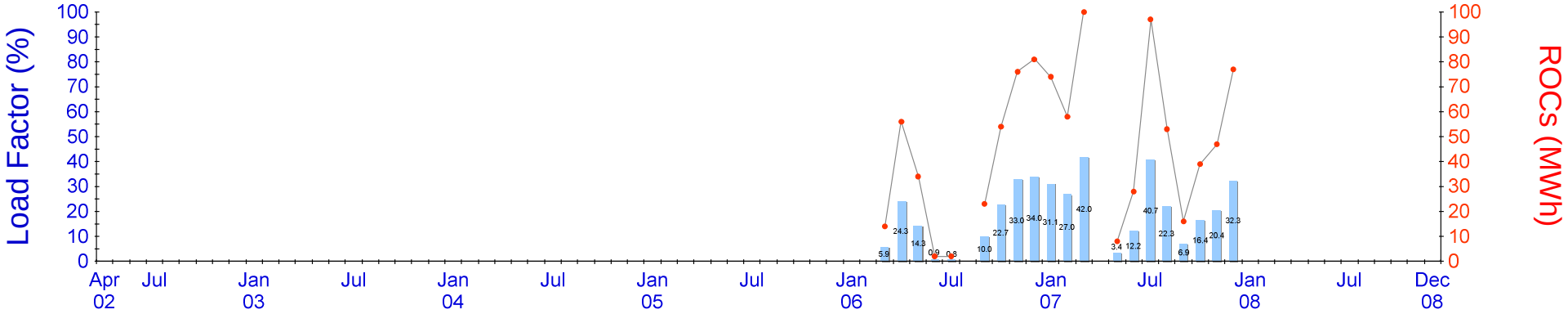
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	350	31	
2003	350	54	1.8
2004	350	0	0.0
2005	350	0	0.0
2006	350	105	3.4
2007	350	308	10.0

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Cleghorn Bridge Hydro** **R.O. ID** **R00104SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :320



Station Summary

Date commissioned	01/08/2005
Operator Company	TLS Hydro Power Ltd
Contact address	Cleghorn Bridge Nr lanak, Scotland , ML11 7RW (First Floor, Batchwork Lock House, 99 Church Street, Rickmansworth, Hertfordshire)
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

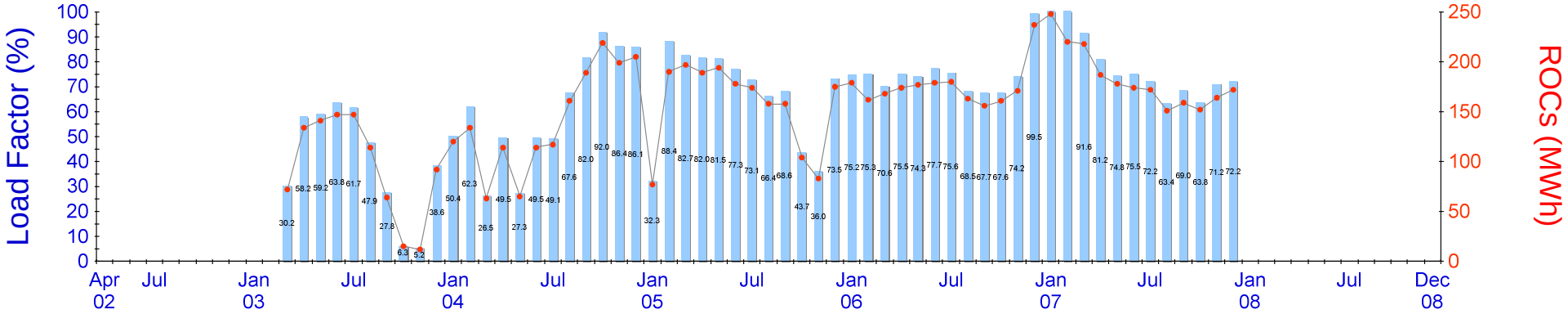
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	320	0	
2003	320	0	
2004	320	0	
2005	320	0	
2006	320	342	
2007	320	597	21.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Cluanie Dam** **R.O. ID** **R00025SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :320



Station Summary

Date commissioned	01/01/1955
Operator Company	SSE Generation Ltd
Contact address	Loch Cluanie, Dalchreichart, Invermoriston, Inverness-shire , NH185099
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

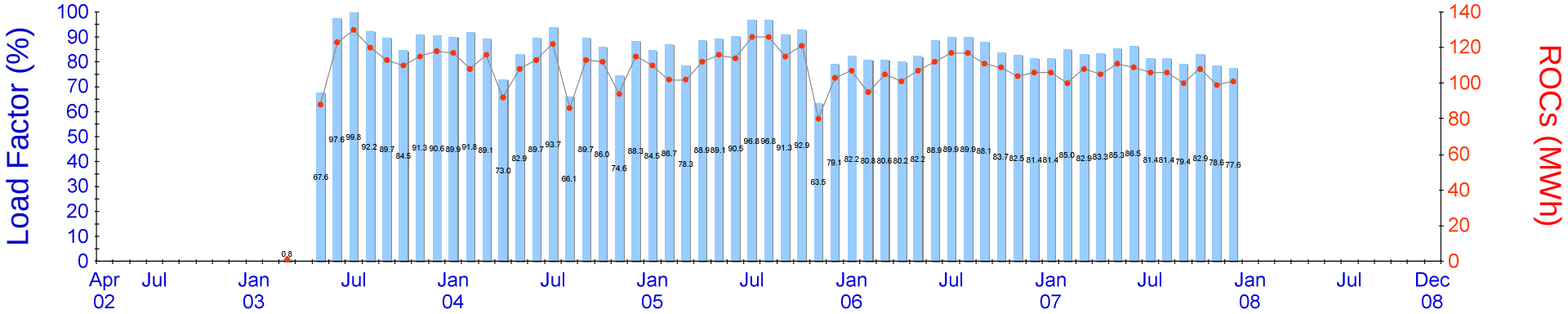
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	320	0	
2003	320	938	
2004	320	1,700	60.6
2005	320	1,877	67.0
2006	320	2,107	75.2
2007	320	2,195	78.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Clunie Dam** **R.O. ID** **R00030SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :175



Station Summary

Date commissioned	01/01/1950
Operator Company	SSE Generation Ltd
Contact address	Pitlochry, Perthshire , PH16
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	175	0	
2003	175	918	
2004	175	1,296	84.5
2005	175	1,327	86.6
2006	175	1,291	84.2
2007	175	1,259	82.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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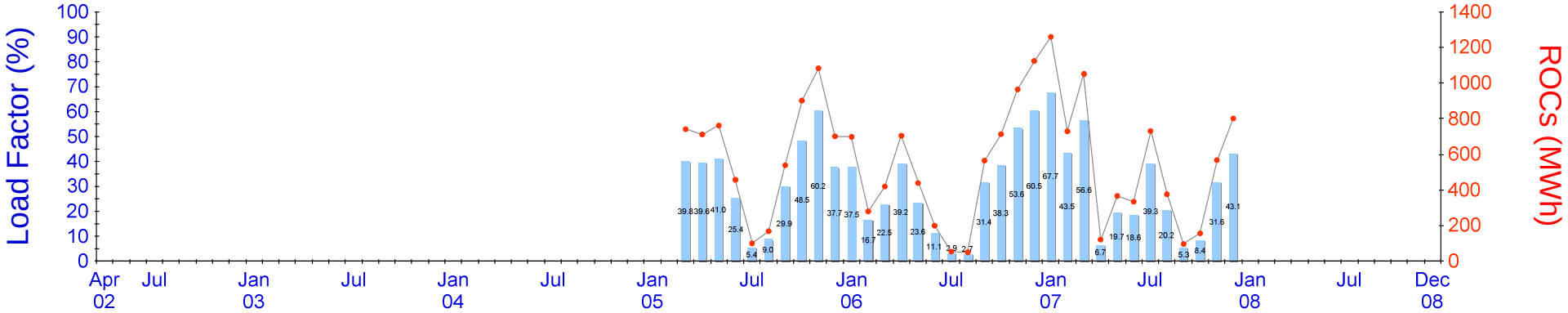
Generating Station Name: **Cuaich Power Station** **R.O. ID** **R00106SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,500



Station Summary

Date commissioned	01/01/1959
Operator Company	SSE Generation Limited
Contact address	Loch Cuaich, By Dalwhinnie, Inverness-shire , PH19 1AF
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,500	0	
2003	2,500	0	
2004	2,500	0	
2005	2,500	6,166	
2006	2,500	6,212	28.4
2007	2,500	6,592	30.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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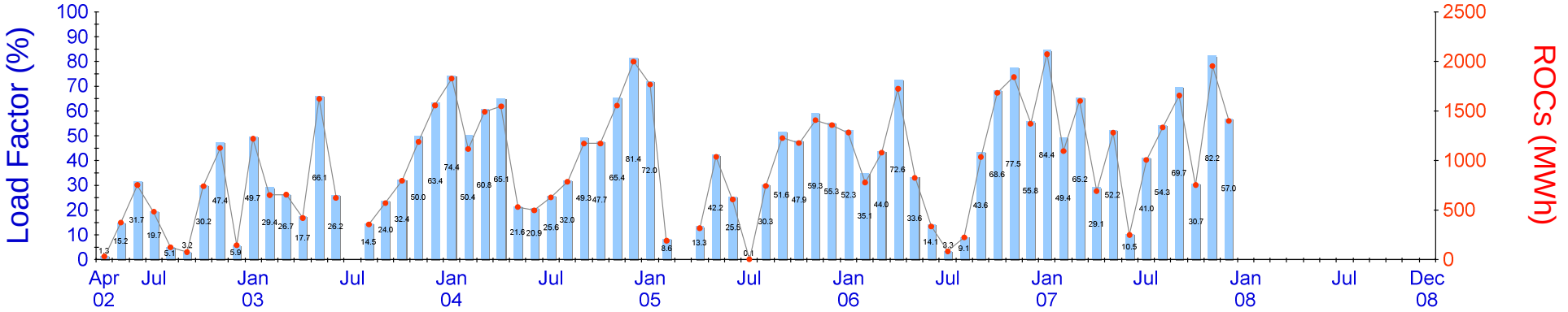
Generating Station Name: **Cuileig Power Station** **R.O. ID** **R00011SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :3,300



Station Summary

Date commissioned	01/01/2002
Operator Company	SSE Generation Limited
Contact address	Cuileig Power Station, Loch Broom, Ullapool, Wester Ross, Scotland , NH193789
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

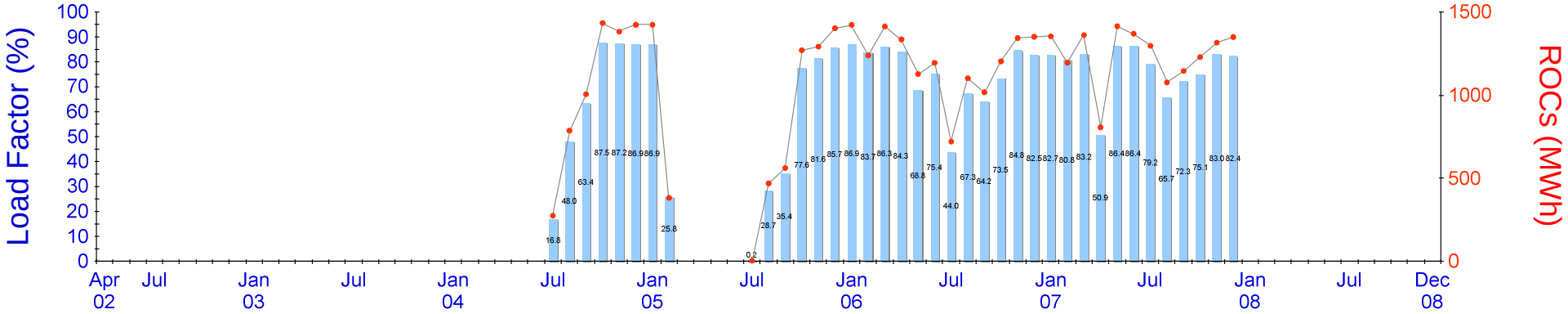
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	3,300	3,856	
2003	3,300	9,660	33.4
2004	3,300	14,321	49.5
2005	3,300	9,835	34.0
2006	3,300	12,265	42.4
2007	3,300	15,096	52.2

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Culligran Comp Set** **R.O. ID** **R00101SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,000



Station Summary

Date commissioned	01/07/2004
Operator Company	SSE Generation Ltd
Contact address	Culligran Power Station Struy By Beauly Invernesshire , IV4 7JX
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

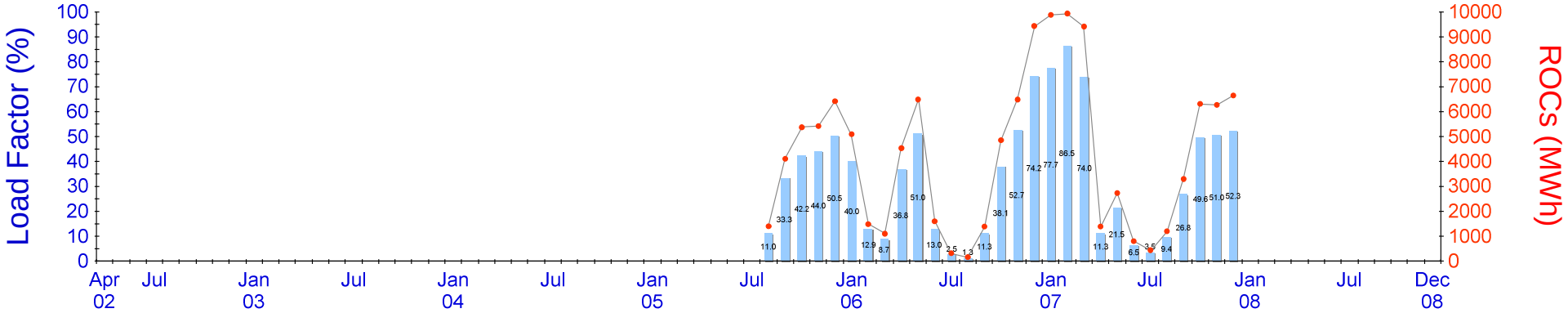
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,200	0	
2003	2,200	0	
2004	2,200	6,304	
2005	2,200	6,803	35.3
2006	2,200	14,463	75.0
2007	2,200	14,908	77.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Culligran Power Station Unit 2** **R.O. ID** **R00107SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :17,100



Station Summary

Date commissioned	01/07/2005
Operator Company	SSE Generation Ltd
Contact address	Struy, By Beauly, Invernesshire , IV4 7JX
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

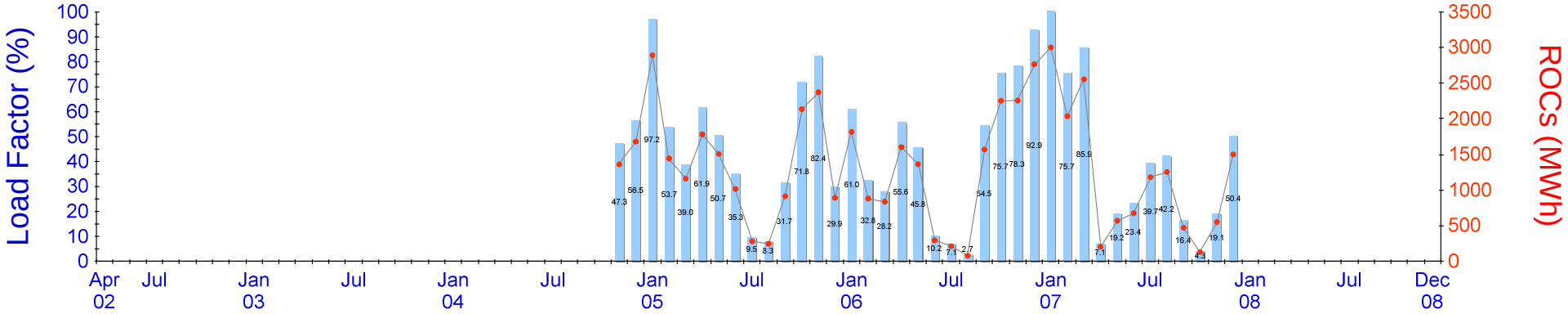
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	17,100	0	
2003	17,100	0	
2004	17,100	0	
2005	17,100	22,725	
2006	17,100	42,941	28.7
2007	17,100	58,335	38.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Dalchonzie** **R.O. ID** **R00089SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :4,000



Station Summary

Date commissioned	01/01/1958
Operator Company	SSE Generation Limited
Contact address	Comrie, By Crieff, Perthshire , PH6 2LB
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	4,000	0	
2003	4,000	0	
2004	4,000	3,042	
2005	4,000	16,646	47.5
2006	4,000	15,932	45.5
2007	4,000	14,133	40.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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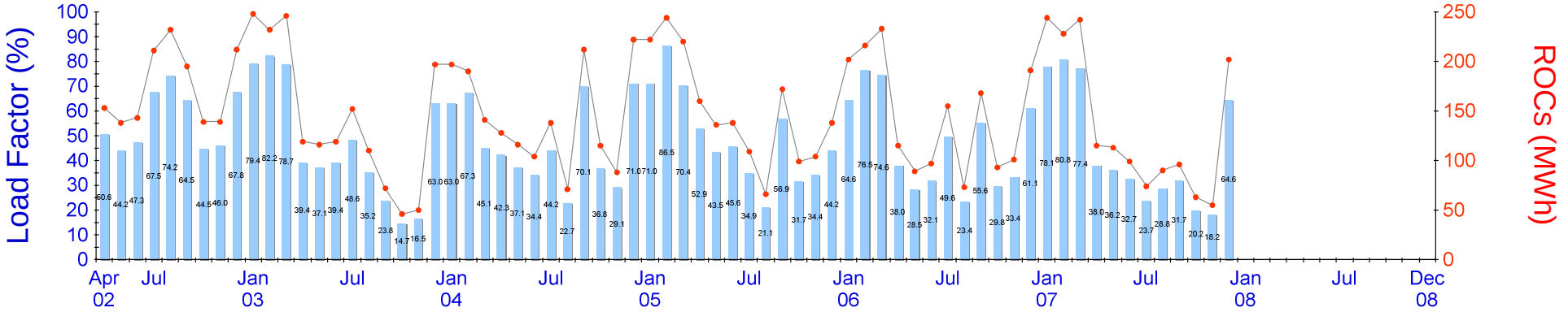
Generating Station Name: **Deanston HES** **R.O. ID** **R00013SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :420



Station Summary

Date commissioned	01/11/1988
Operator Company	Hydro Energy Developments Ltd.
Contact address	The Turbine House, Deanston Distillery, Doune, Perthshire , NN715015
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

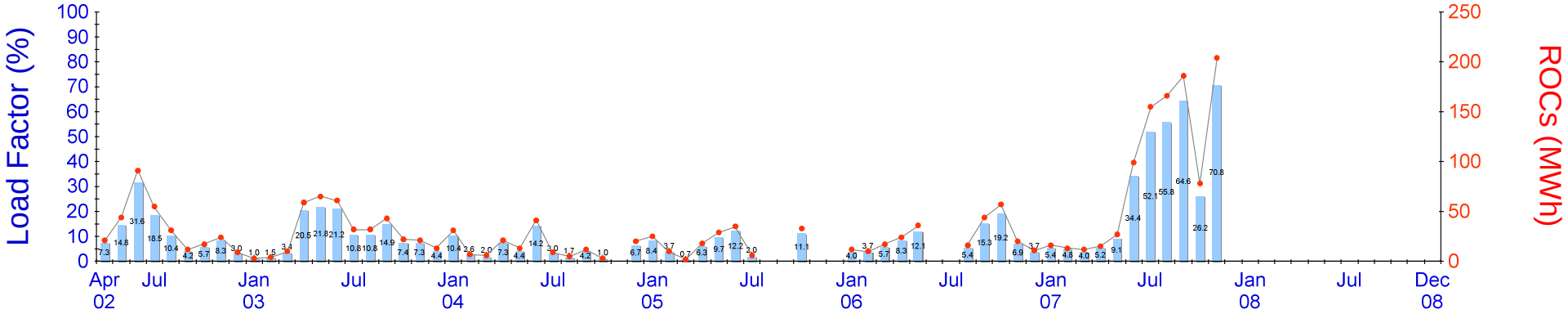
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	420	1,562	
2003	420	1,707	46.4
2004	420	1,722	46.8
2005	420	1,808	49.1
2006	420	1,733	47.1
2007	420	1,621	44.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Drimsynie Estate Power Station** **R.O. ID** **R00006SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :400



Station Summary

Date commissioned	01/01/1986
Operator Company	Drimsynie Construction
Contact address	Lettermay, Drimsynie Estates, Lochgoilhead, Argyle , PA23 8AD
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

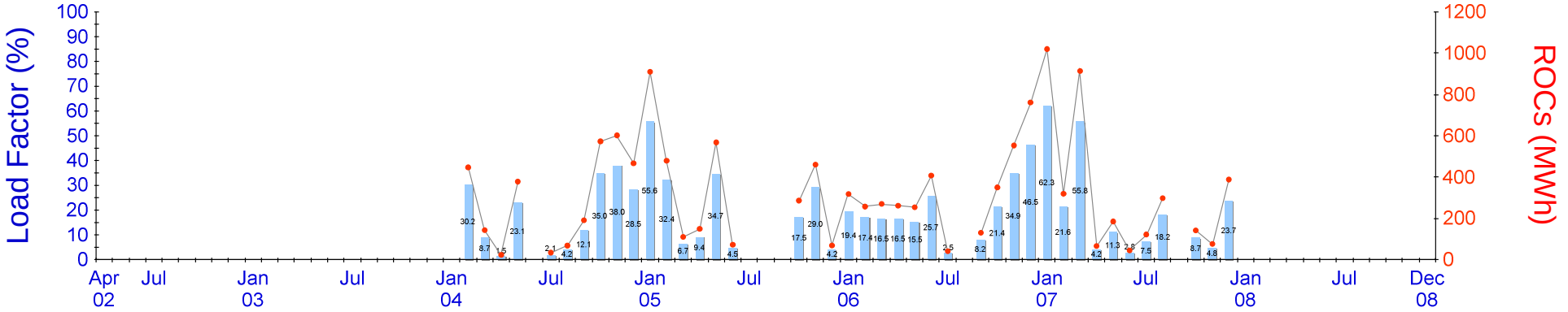
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	400	304	
2003	400	365	10.4
2004	400	168	4.8
2005	400	158	4.5
2006	400	247	7.0
2007	400	971	27.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Drumjohn Power Station** **R.O. ID** **R00076SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,200



Station Summary

Date commissioned	01/02/1986
Operator Company	Scottish Power Generation Limited
Contact address	Carsphairn, St Johns Town of Dalry, Castle Douglas , DG7 3TJ
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,200	0	
2003	2,200	0	
2004	2,200	2,926	
2005	2,200	3,103	16.1
2006	2,200	3,602	18.7
2007	2,200	3,575	18.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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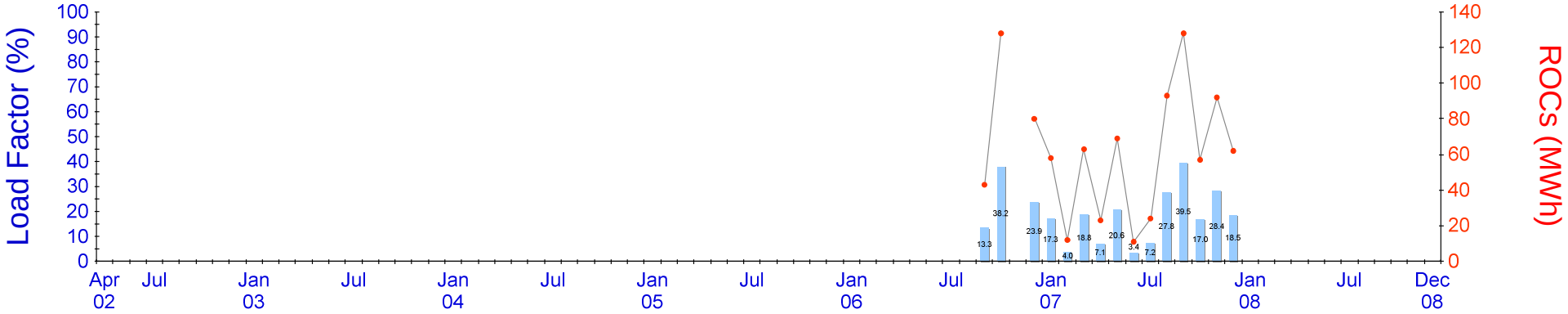
Generating Station Name: **Duchally Power Station** **R.O. ID** **R00100SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :450



Station Summary

Date commissioned	01/01/1959
Operator Company	SSE Generation Limited
Contact address	By Overscaig, Lairg, Sutherland , IV27 4NY
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	450	0	
2003	450	0	
2004	450	0	
2005	450	0	
2006	450	251	
2007	450	692	17.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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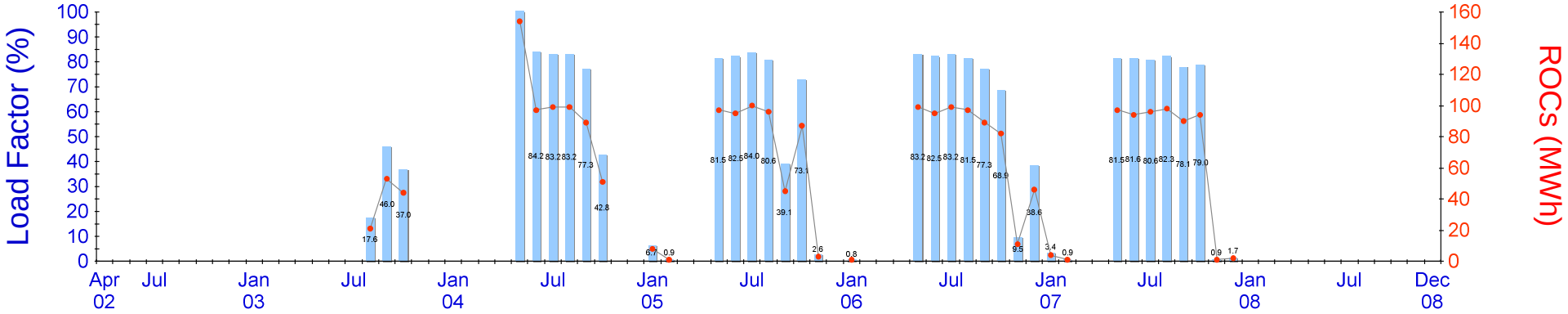
Generating Station Name: **Dundreggan Dam** **R.O. ID** **R00067SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :160



Station Summary

Date commissioned	01/01/1953
Operator Company	SSE Generation Ltd
Contact address	Invermoisten, by Fot Augustus, , IV6 6YH
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

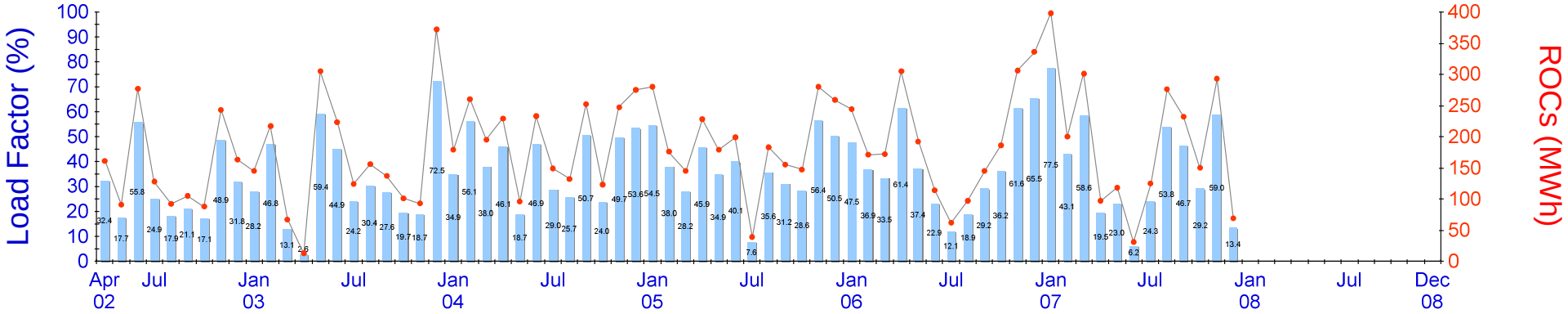
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	160	0	
2003	160	118	
2004	160	589	42.0
2005	160	532	38.0
2006	160	619	44.2
2007	160	577	41.2

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Duror** **R.O. ID** **R00009SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :690



Station Summary

Date commissioned	01/06/1998
Operator Company	Novera Energy
Contact address	Glen Duror, Auchendarrodk, By Ballachulish, Lochaber District, Inverness-shire , NN003550
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

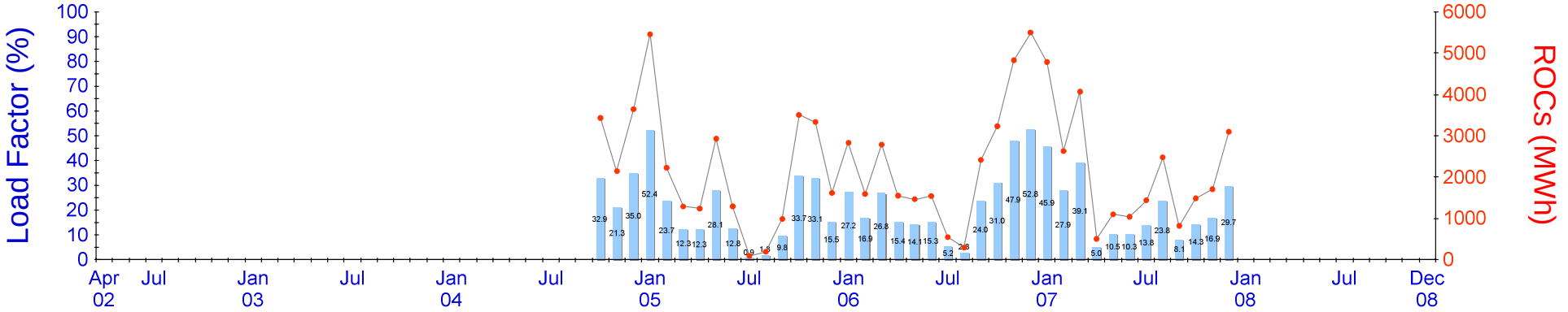
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	690	1,348	
2003	690	1,953	32.3
2004	690	2,370	39.2
2005	690	2,270	37.6
2006	690	2,330	38.5
2007	690	2,290	37.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Earlstoun** **R.O. ID** **R00092SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :14,000



Station Summary

Date commissioned	01/01/1935
Operator Company	Scottish Power Generation UK
Contact address	St Johns Town of Dalry, Castle Douglas, Kirkcudbrightshire, Scotland , DG7 35R
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

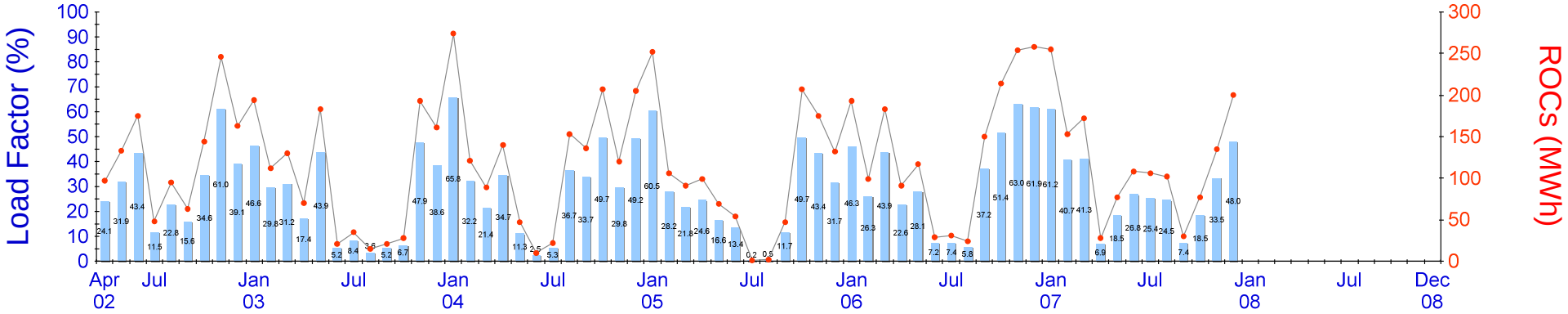
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	14,000	0	
2003	14,000	0	
2004	14,000	9,222	
2005	14,000	24,148	19.7
2006	14,000	28,578	23.3
2007	14,000	25,146	20.5

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Eliock Hydro Electric Station** **R.O. ID** **R00004SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :560



Station Summary

Date commissioned	01/02/1995
Operator Company	Eliock Hydro Electric Company Ltd
Contact address	Nr Eliock Sawmill, Sanquhar, Dumfriesshire , DG4 8LE
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

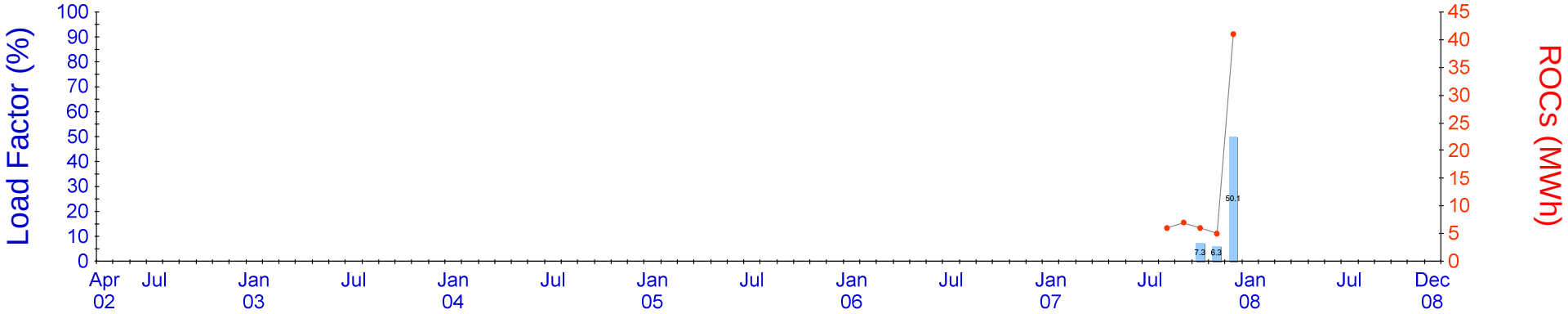
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	560	1,164	
2003	560	1,163	23.7
2004	560	1,524	31.1
2005	560	1,235	25.2
2006	560	1,643	33.5
2007	560	1,443	29.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Fairburn House** **R.O. ID** **R00057SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :110



Station Summary

Date commissioned	01/01/1995
Operator Company	Fairburn House Ltd
Contact address	Orrin Falls, Fairburn House, Marybank, Urray, Muir of Ord. Ross-shire , IV6 7UT
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	0	
2007	0	65	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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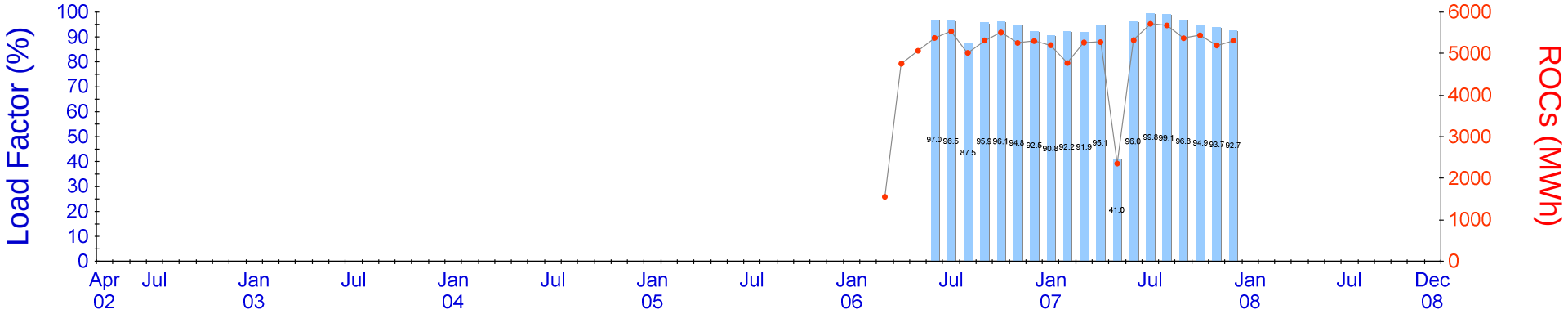
Generating Station Name: **Fasnakyle Compensation Generator** **R.O. ID** **R00115SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :7,701



Station Summary

Date commissioned	01/02/2006
Operator Company	SSE Generation Ltd
Contact address	Cannich, Inverness-shire, Scotland , IV4 7NB
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	48,672	
2007	7,701	60,890	90.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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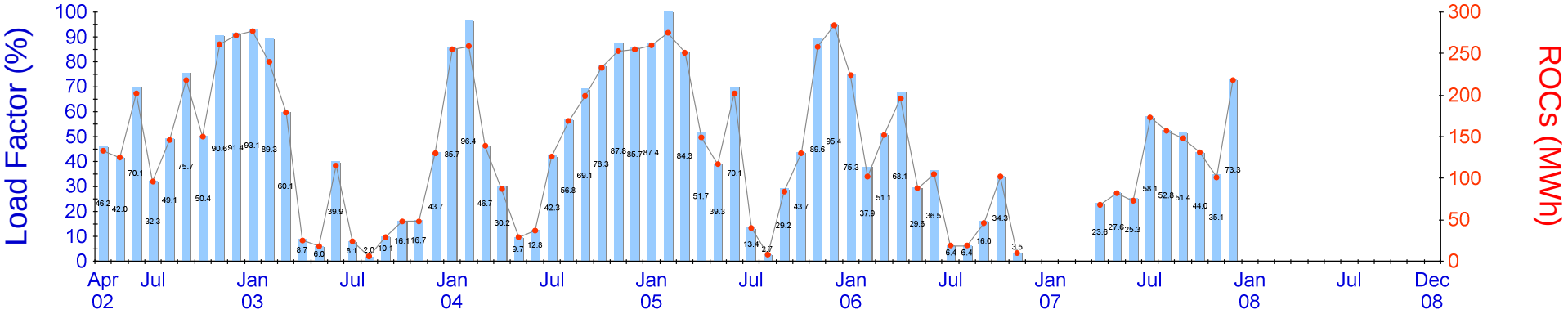
Generating Station Name: **Fettykil Mills** **R.O. ID** **R00015SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :400



Station Summary

Date commissioned	01/01/1952
Operator Company	KPMG LLP
Contact address	Fettykil Mills, Smith, Anderson and Co Ltd, Fettykil Mills, Leslie, Glenrothes, Fife , KY6 3AQ
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	400	1,603	
2003	400	1,139	32.5
2004	400	2,041	58.2
2005	400	2,058	58.7
2006	400	1,063	30.3
2007	400	1,151	32.8

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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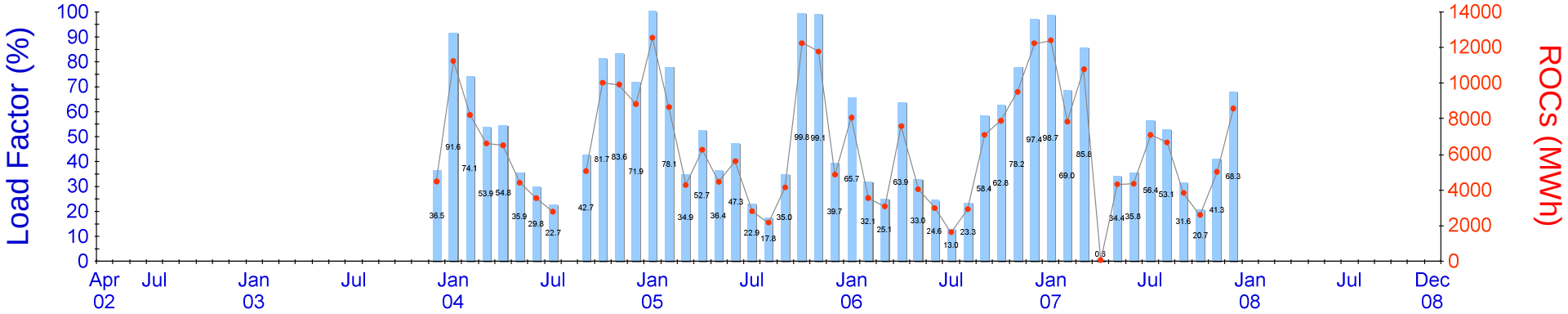
Generating Station Name: **Finlarig Power Station** **R.O. ID** **R00073SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :16,900



Station Summary

Date commissioned	01/12/2003
Operator Company	SSE - Generation Ltd
Contact address	By Killin, Perthshire , FK21 8TX
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	16,500	0	
2003	16,500	4,483	
2004	16,500	77,198	53.4
2005	16,500	79,901	55.3
2006	0	70,665	
2007	16,900	73,617	49.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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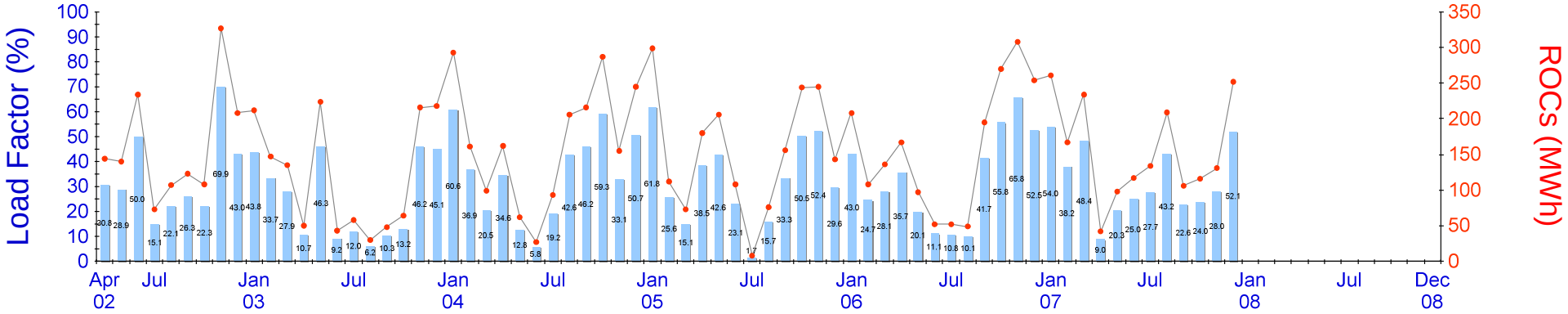
Generating Station Name: **Forebush Power Station** **R.O. ID** **R00020SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :650



Station Summary

Date commissioned	01/01/1987
Operator Company	Fred Olsen Ltd
Contact address	Forebush Power Station, Forebush, Forrest Estate, Dalry, Castle Douglas , DG7 3XS
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

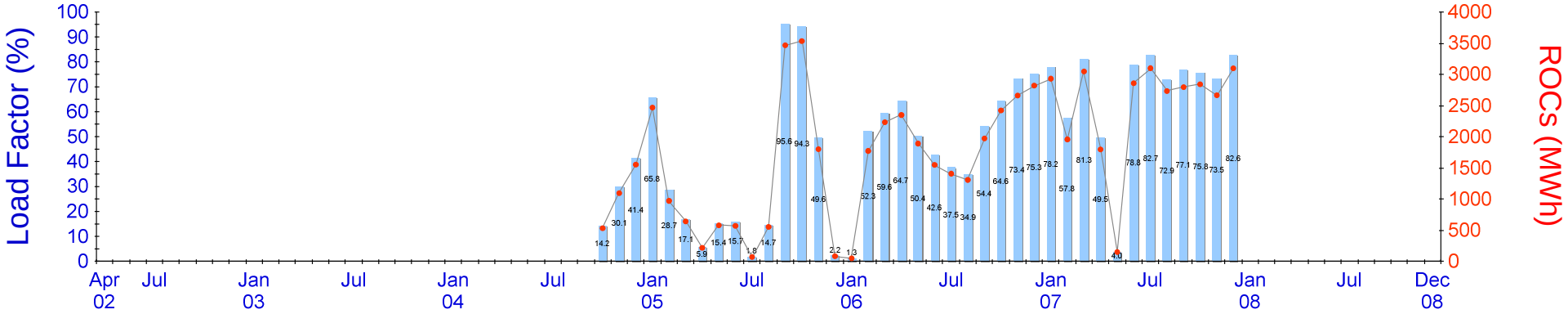
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	650	1,464	
2003	650	1,445	25.4
2004	650	2,006	35.2
2005	650	1,850	32.5
2006	650	1,896	33.3
2007	650	1,867	32.8

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Foyers Fall Power Station** **R.O. ID** **R00084SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :5,036



Station Summary

Date commissioned	01/01/1968
Operator Company	SSE Generation Limited
Contact address	Loch Ness, Foyers, Inverness-shire , IV1 2YB
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	5,036	0	
2003	5,036	0	
2004	5,036	3,177	
2005	5,036	14,935	33.9
2006	5,036	22,417	50.8
2007	5,036	29,958	67.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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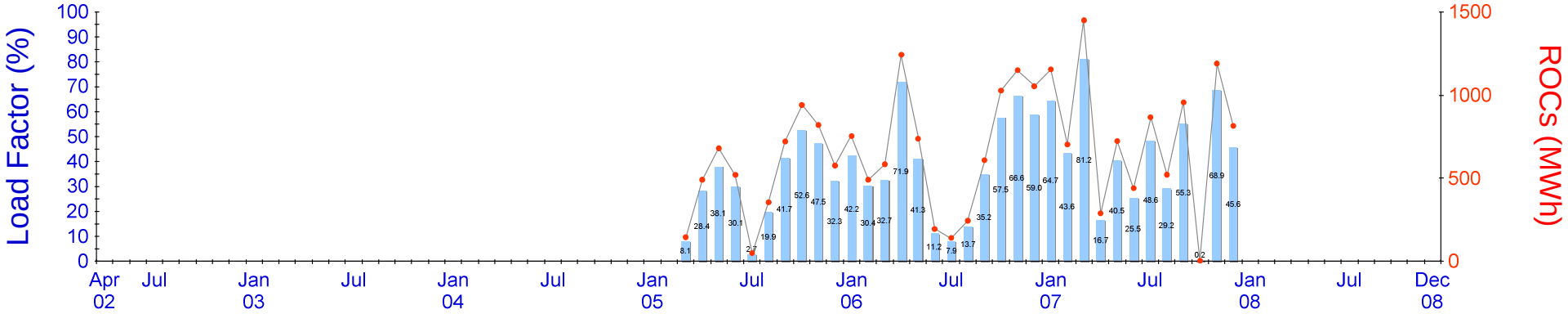
Generating Station Name: **Garrogie Hydro Scheme (SRO)** **R.O. ID** **R00103SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,400



Station Summary

Date commissioned	01/02/2005
Operator Company	RWE Npower plc (Hydro)
Contact address	Garrogie Hydroelectric Scheme, Garrogie, Whitebridge, Inverness-shire, Scotland , IV2 6UR
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

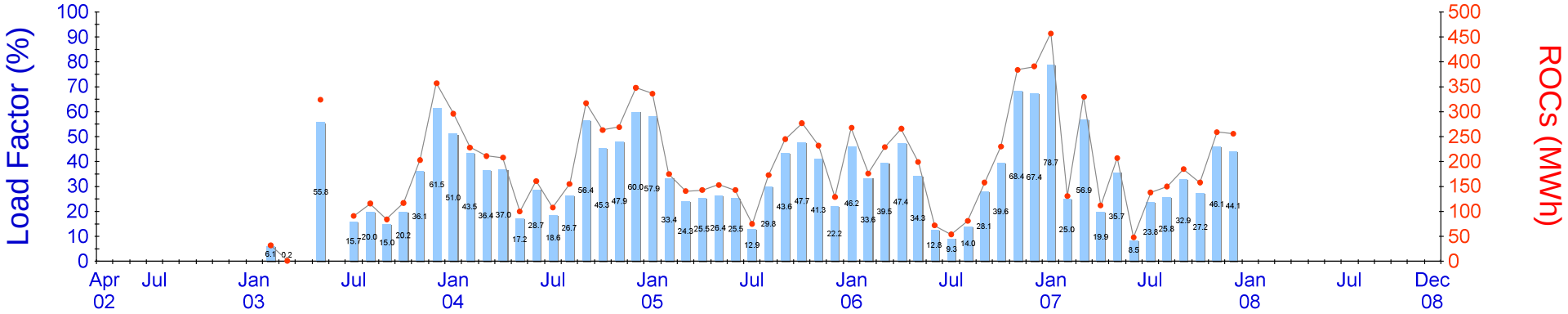
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,400	0	
2003	2,400	0	
2004	2,400	0	
2005	2,400	5,297	
2006	2,400	8,226	39.1
2007	2,400	9,113	43.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Garry Gualach Hydro Station** **R.O. ID** **R00032SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :780



Station Summary

Date commissioned	01/08/2002
Operator Company	RWE Npower plc
Contact address	Garry Gualach Hydro Station, Invergarry, Fort Augustus, Invernesshire , PH35 4HR
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

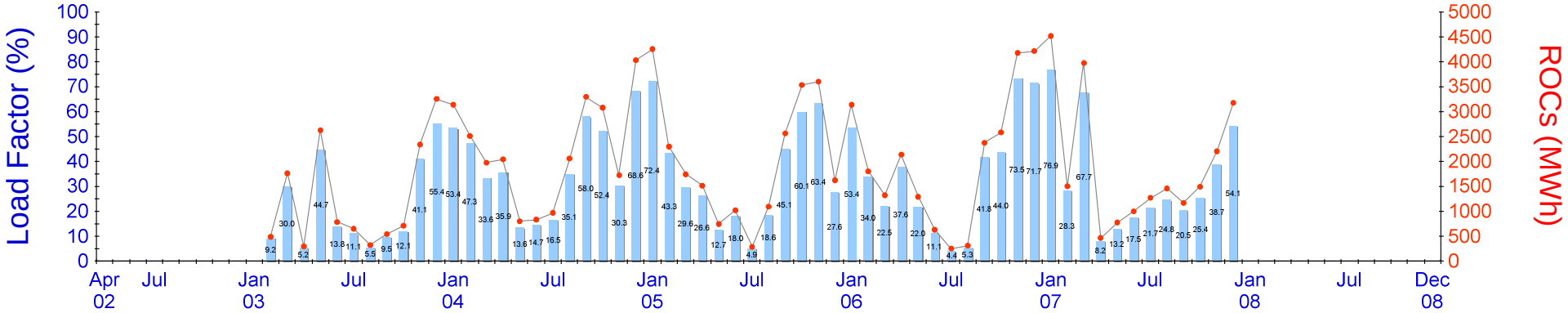
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	780	0	
2003	780	1,325	
2004	780	2,664	39.0
2005	780	2,222	32.5
2006	780	2,508	36.7
2007	780	2,431	35.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Gaur Power Station** **R.O. ID** **R00023SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :7,900



Station Summary

Date commissioned	01/01/1953
Operator Company	SSE Generation Limited
Contact address	Killiechonan, Bridge of Gaur, Perthshire , PH17 2QB
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

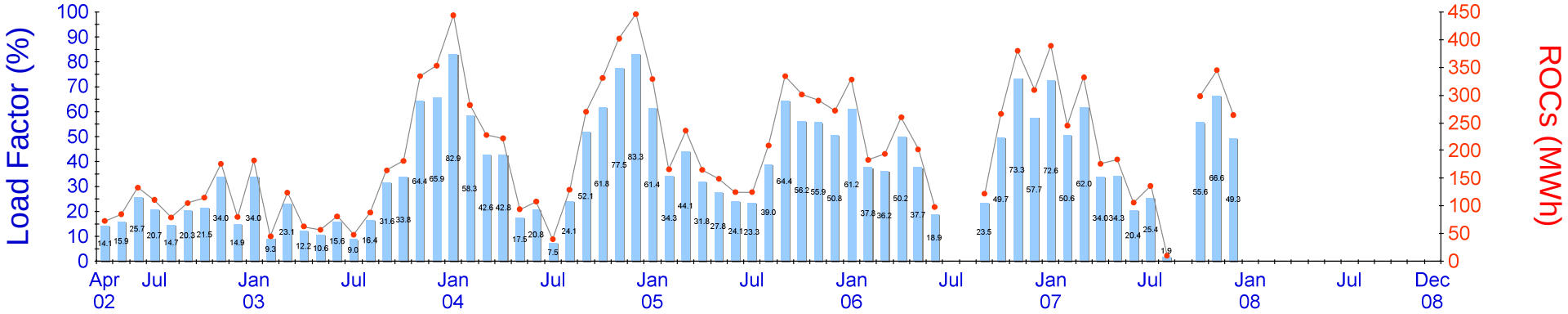
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	7,900	0	
2003	7,900	13,785	
2004	7,900	26,470	38.2
2005	7,900	24,282	35.1
2006	7,900	24,249	35.0
2007	7,900	23,014	33.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Gisla Power Station** **R.O. ID** **R00004SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :720



Station Summary

Date commissioned	01/01/1960
Operator Company	SSE Generation Limited
Contact address	Roag, Near Stornoway, Isle of Lewis , IV5 19X
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	720	957	
2003	720	1,720	27.3
2004	720	2,996	47.5
2005	720	2,701	42.8
2006	720	2,342	37.1
2007	720	2,485	39.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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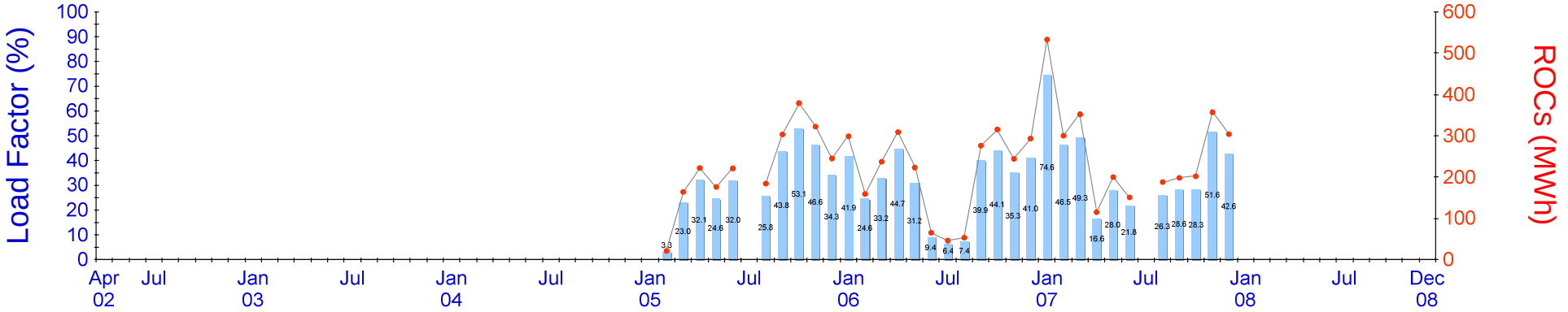
Generating Station Name: **Glen Kinglas Hydro Ltd** **R.O. ID** **R00052SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :960



Station Summary

Date commissioned	01/11/2004
Operator Company	Glen Kinglas Hydro Ltd
Contact address	River Kinglass, Strone Estate, Cairndow, Argyll , PA26 8BQ
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

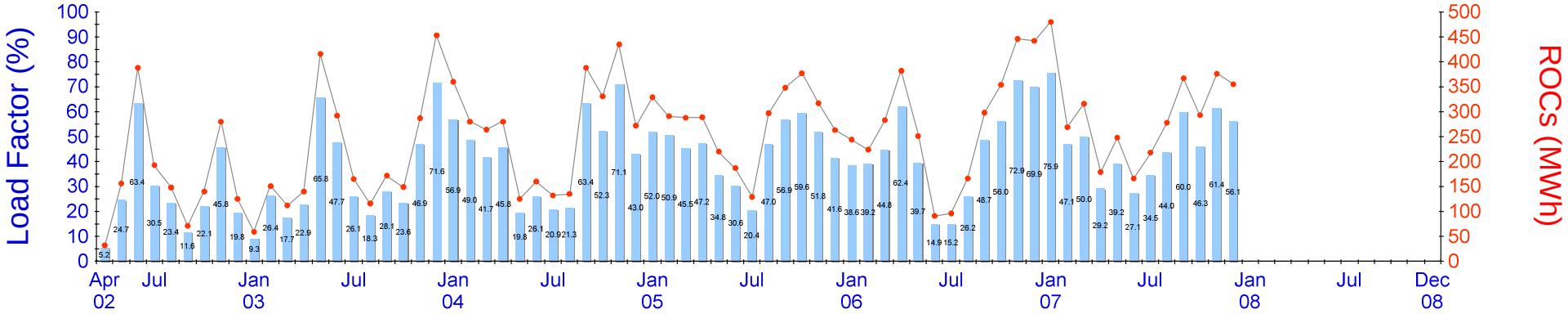
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	960	0	
2003	960	0	
2004	960	0	
2005	960	2,237	
2006	960	2,519	30.0
2007	960	2,900	34.5

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Glen Tarbert** **R.O. ID** **R00008SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :850



Station Summary

Date commissioned	01/11/2000
Operator Company	RWE Npower plc
Contact address	Glean Feith A'Mean Glen Tarbert Hydro Station Strontain Lochaber , NM865605
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

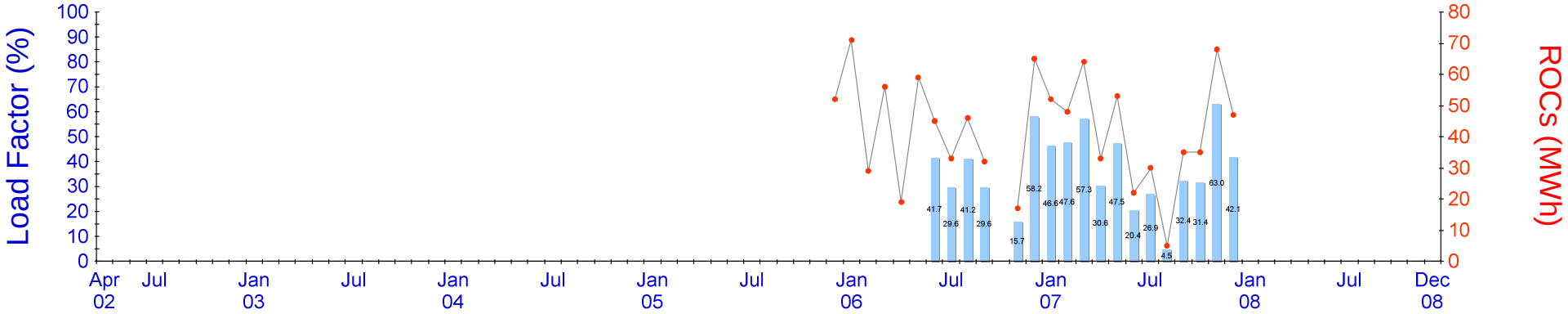
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	850	1,533	
2003	850	2,512	33.7
2004	850	3,162	42.5
2005	850	3,335	44.8
2006	850	3,277	44.0
2007	850	3,545	47.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Glenborrodale Hydro** **R.O. ID** **R00054SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :150



Station Summary

Date commissioned	01/10/2005
Operator Company	Gorteneorn Ltd
Contact address	Glenborrodale Castle Glenborrodale Acharacle Argyll , PH36 4JP
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	52	
2006	0	472	
2007	150	492	37.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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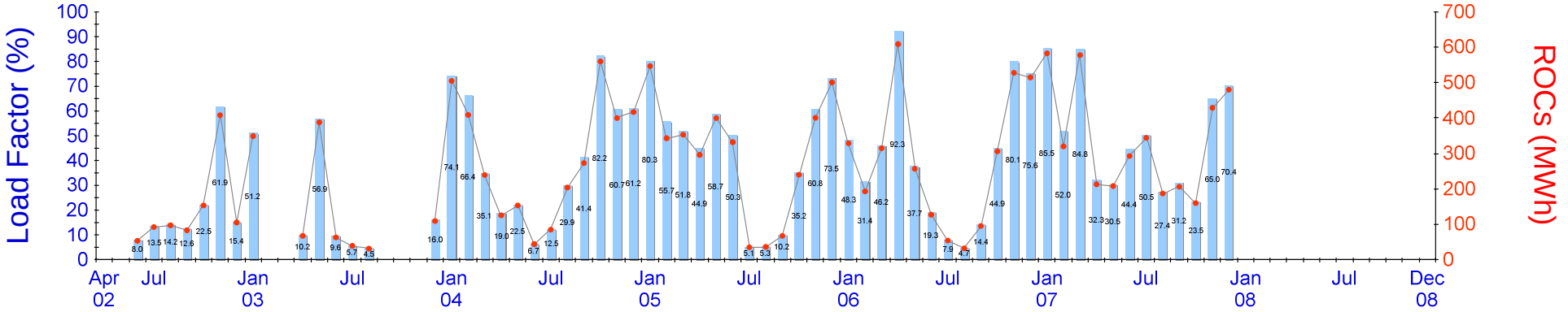
Generating Station Name: Glenglass Hydro (Novar) Ltd (SRO) **R.O. ID** R00014SESC

Technology Type : Hydro <20 MW DNC Current TIGC (kW) :916



Station Summary

Date commissioned	01/03/1997
Operator Company	Glenglass Hydro Ltd
Contact address	Glenglass Hydro Ltd, River Glass (Allt Graad), Novar Estate, Evanton, Ross-shire, Scotland , IV16 9XL
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

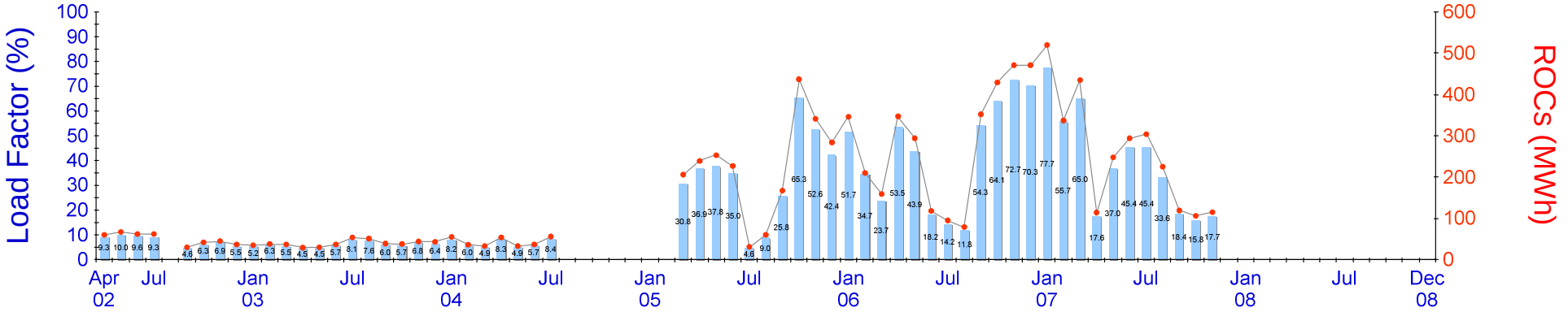
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	916	991	
2003	916	1,046	13.0
2004	916	3,414	42.5
2005	916	3,551	44.3
2006	916	3,360	41.9
2007	916	4,001	49.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Glenlyon Estate** **R.O. ID** **R00016SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :900



Station Summary

Date commissioned	01/11/1995
Operator Company	Glenlyon Estate
Contact address	Glenlyon Estate, Fortineall, Aberfeldy, Perthshire , NN736473
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

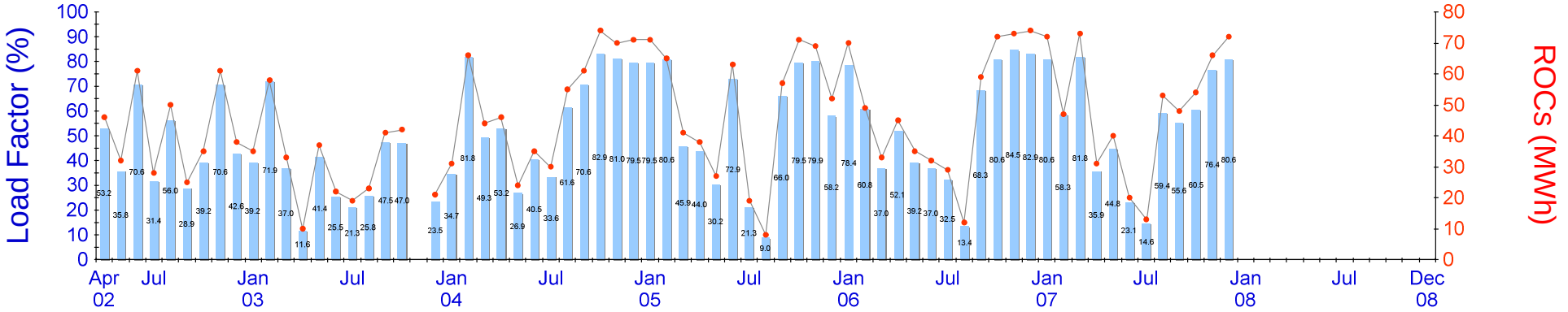
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	900	405	
2003	900	475	6.0
2004	900	304	3.9
2005	900	2,245	28.5
2006	900	3,371	42.8
2007	900	2,817	35.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Glenmore Power Station** **R.O. ID** **R00008SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :120



Station Summary

Date commissioned	01/07/1991
Operator Company	Kames Farm Ltd
Contact address	Tullich Farms, Kilmelford, Argyll , PA34 4XA
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

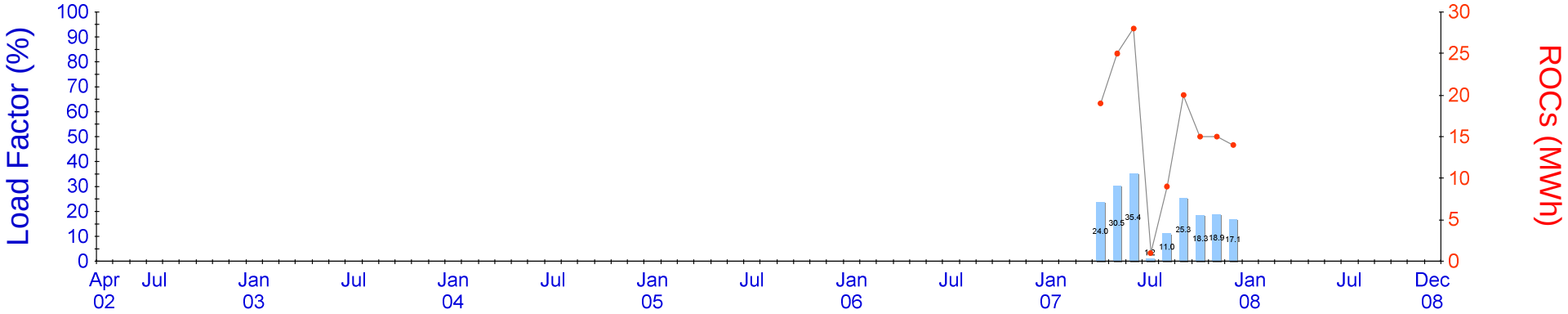
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	120	376	
2003	120	341	32.4
2004	120	607	57.7
2005	120	581	55.3
2006	120	583	55.5
2007	120	589	56.0

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Gorton Power Station** **R.O. ID** **R00111SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :110



Station Summary

Date commissioned	01/01/1960
Operator Company	SSE Generation Limited
Contact address	By Salen Ardnamurchan Lochaber , NM634678
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	0	
2007	110	146	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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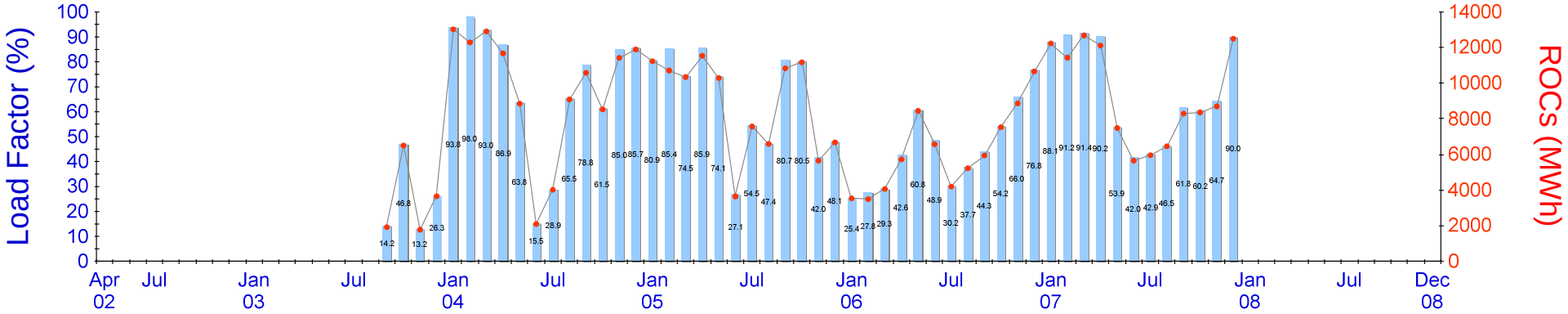
Generating Station Name: **Grudie Bridge Power Station** **R.O. ID** **R00074SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :18,660



Station Summary

Date commissioned	01/01/1950
Operator Company	Scottish and Southern Energy - Generation Ltd
Contact address	Loch Luichart, By Grave, Inverness-shire , IV23 2QB
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

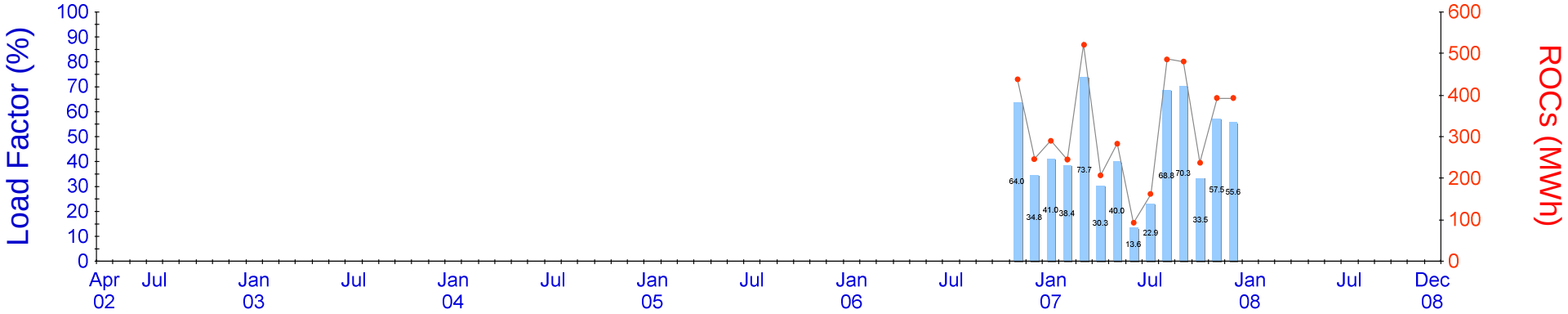
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	18,660	0	
2003	18,660	13,844	
2004	18,660	116,380	71.2
2005	18,660	106,251	65.0
2006	18,660	74,251	45.4
2007	18,660	111,886	68.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Inverbain Hydroelectric Scheme** **R.O. ID** **R00118SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :950



Station Summary

Date commissioned	01/08/2006
Operator Company	RWE Npower plc (hydro)
Contact address	Loch Sheildaig, Wester Ross, Scotland , IV548XH
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

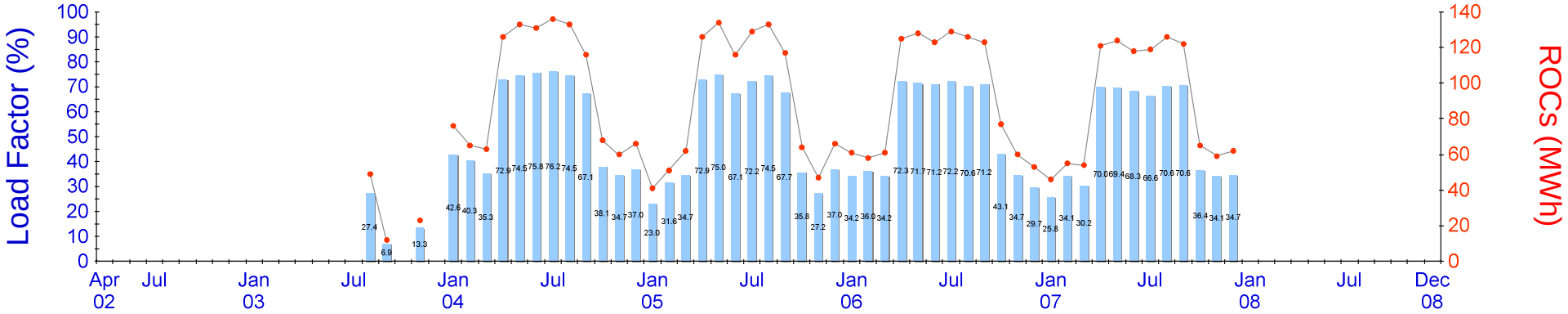
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	684	
2007	950	3,791	45.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Invergarry Dam** **R.O. ID** **R00064SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :240



Station Summary

Date commissioned	01/04/2003
Operator Company	Scottish and Southern Energy - Generation Ltd
Contact address	Invergarry, Inverness-shire , PH32 4LU
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	240	0	
2003	240	84	
2004	240	1,173	55.8
2005	240	1,086	51.7
2006	240	1,124	53.5
2007	240	1,071	50.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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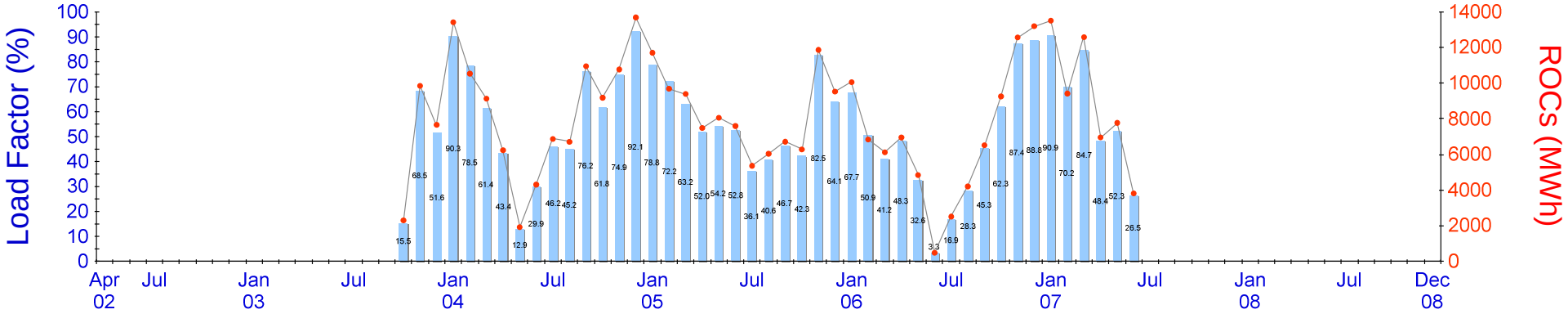
Generating Station Name: **Invergarry Power Station** **R.O. ID** **R00065SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :19,975



Station Summary

Date commissioned	01/01/1956
Operator Company	SSE - Generation Ltd
Contact address	Invergarry, Inverness-shire , PH32 4LU
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

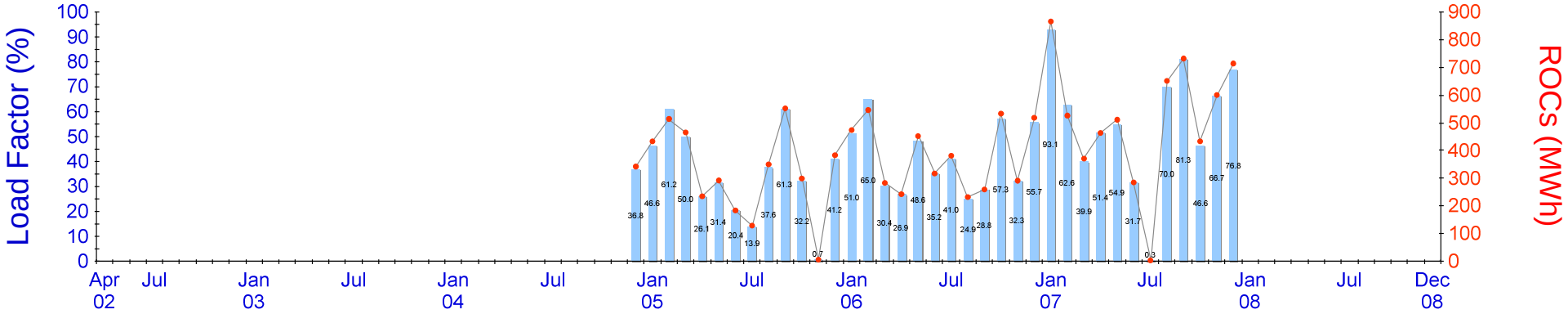
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	19,975	0	
2003	19,975	19,809	
2004	19,975	103,727	59.3
2005	19,975	99,716	57.0
2006	19,975	83,547	47.7
2007	19,975	54,054	30.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Kerry Falls Power Station** **R.O. ID** **R00093SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :1,250



Station Summary

Date commissioned	01/01/1951
Operator Company	SSE Generation Limited
Contact address	By Gairloch, Wester Ross , IV
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

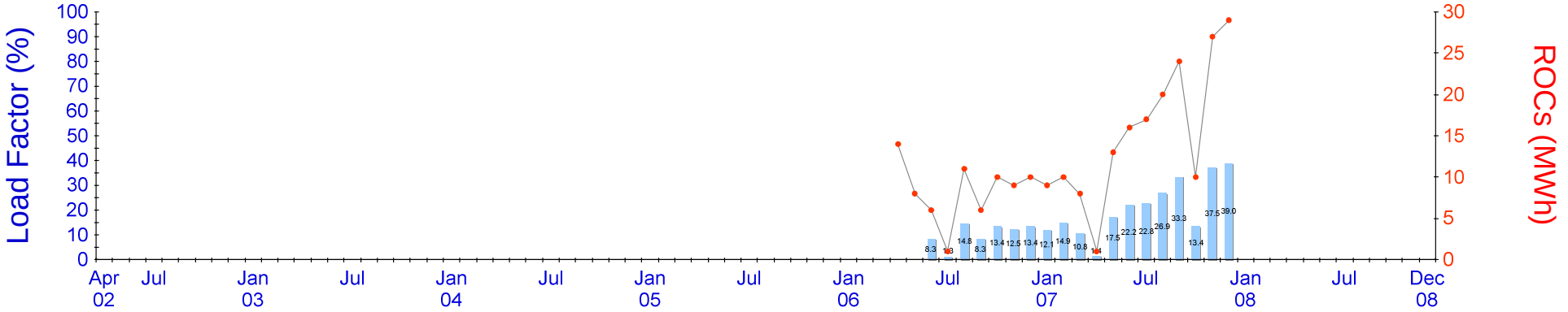
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	1,250	0	
2003	1,250	0	
2004	1,250	342	
2005	1,250	3,842	35.1
2006	1,250	4,528	41.4
2007	1,250	6,155	56.2

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: Kildermorie Estate **R.O. ID** R00055SDSC

Technology Type : Micro hydro Current TIGC (kW) :100



Station Summary

Date commissioned	01/03/1996
Operator Company	The Firm of Kildermorie Estate
Contact address	Kildermorie Estate Ardross Easter Ross , IV17 0YH
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

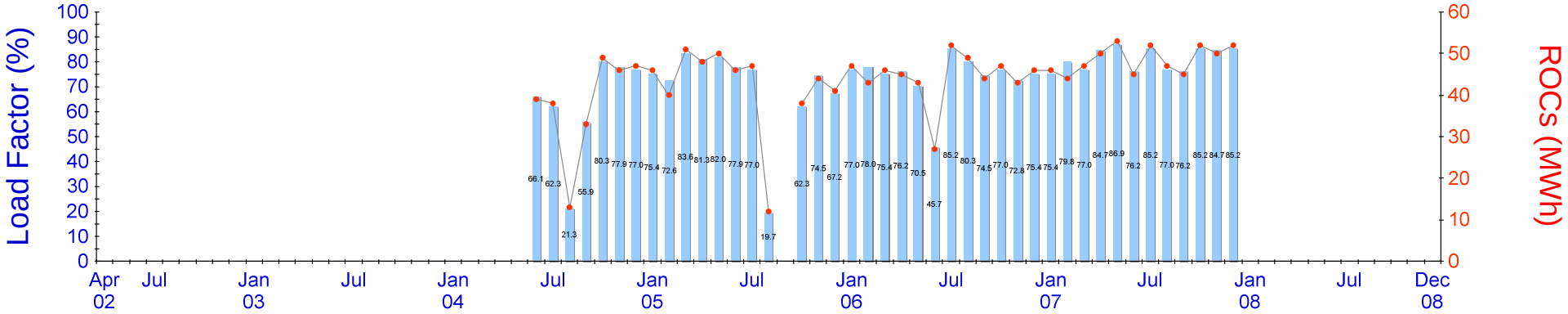
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	75	
2007	100	184	21.0

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Kilmelford Compset** **R.O. ID** **R00077SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :82



Station Summary

Date commissioned	01/03/2004
Operator Company	SSE Generation Ltd
Contact address	Grampian House, 200 Dunkeld Road, Perth , PA34 4XD
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

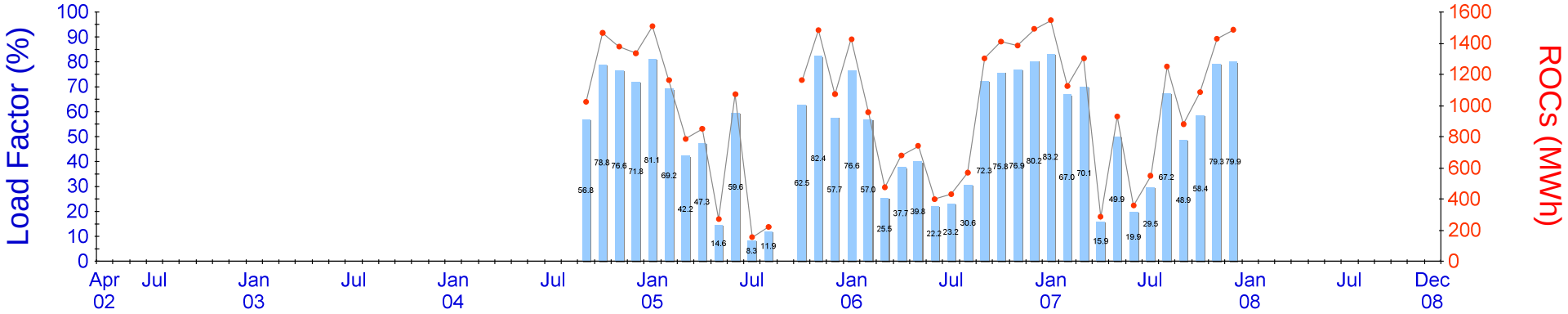
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	82	0	
2003	82	0	
2004	82	265	
2005	82	463	64.5
2006	82	532	74.1
2007	82	583	81.2

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Kilmelford Power Station** **R.O. ID** **R00083SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,500



Station Summary

Date commissioned	01/01/1956
Operator Company	SSE Generation Ltd
Contact address	Kilmelford, By Oban, Argyll , NM541144
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

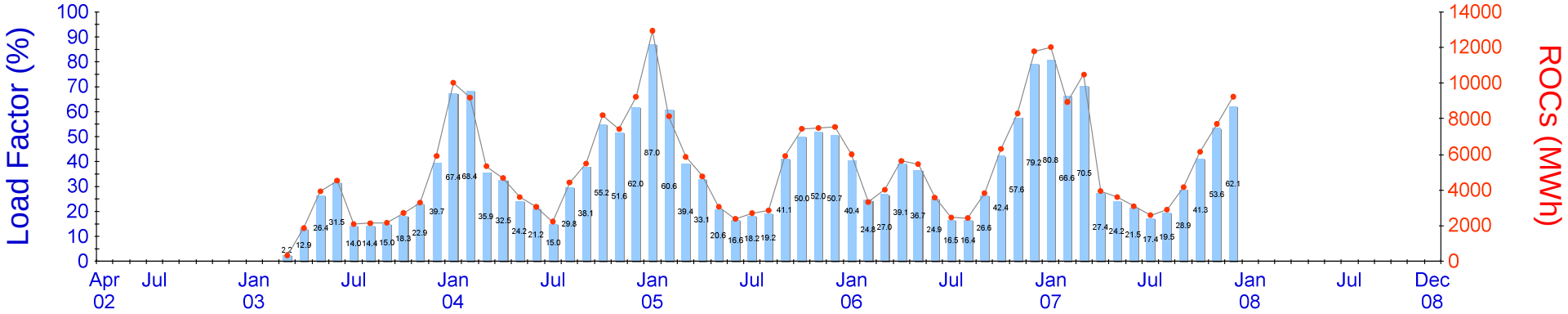
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,500	0	
2003	2,500	0	
2004	2,500	5,202	
2005	2,500	9,747	44.5
2006	2,500	11,265	51.4
2007	2,500	12,227	55.8

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Kilmorack Power Station** **R.O. ID** **R00029SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :20,000



Station Summary

Date commissioned	01/01/1962
Operator Company	SSE Generation Ltd
Contact address	By Beauly, Inverness-shire , IV4 7AL
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

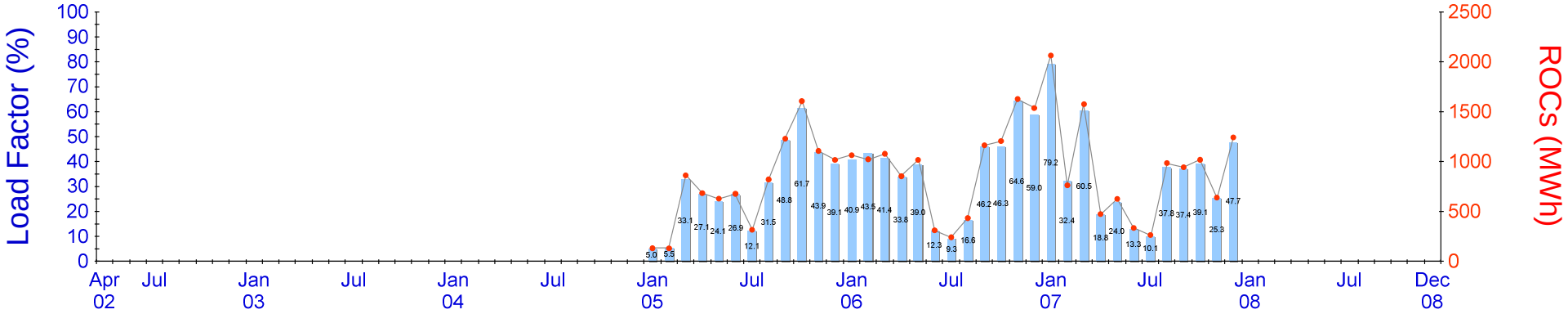
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	20,000	0	
2003	20,000	28,984	
2004	20,000	72,920	41.6
2005	20,000	71,130	40.6
2006	20,000	63,160	36.1
2007	20,000	74,871	42.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Kingairloch Power Station** **R.O. ID** **R00096SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :3,500



Station Summary

Date commissioned	01/12/2004
Operator Company	SSE Generation Ltd
Contact address	Ardgour, Fort William, Scotland , PH33 7AE
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	3,500	0	
2003	3,500	0	
2004	3,500	0	
2005	3,500	9,207	30.0
2006	3,500	11,551	37.7
2007	3,500	10,924	35.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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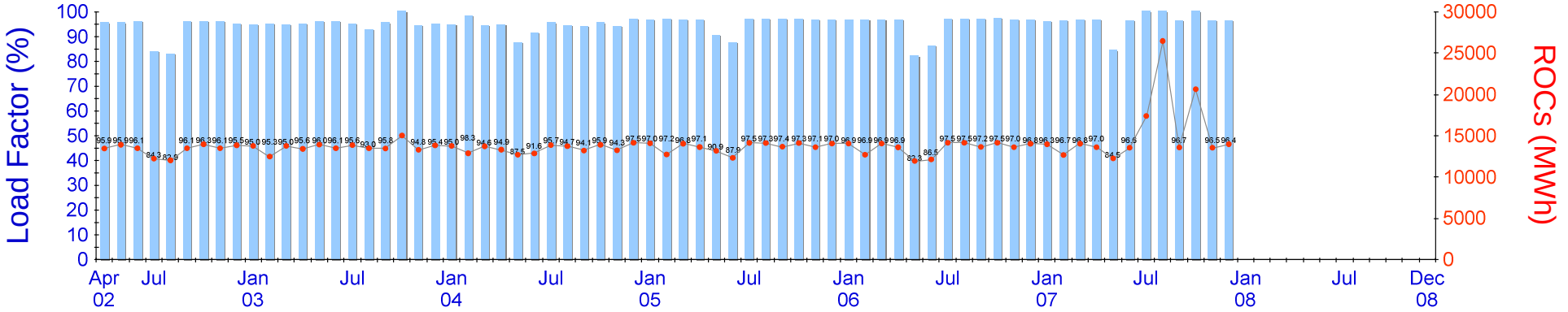
Generating Station Name: **Kinlochleven Hydro Power Station** **R.O. ID** **R00016SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :19,500



Station Summary

Date commissioned	01/01/1909
Operator Company	Alcan Primary Metal - Europe
Contact address	Kinlochleven Hydro Power Station, Alcan Smelting & Power UK, Kinlochleven Hydro Power Station, Kinlochleven, Argyll, Scotland , PH50
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	19,500	119,953	
2003	19,500	163,867	95.9
2004	19,500	161,404	94.5
2005	19,500	163,761	95.9
2006	19,500	162,233	95.0
2007	19,500	185,761	108.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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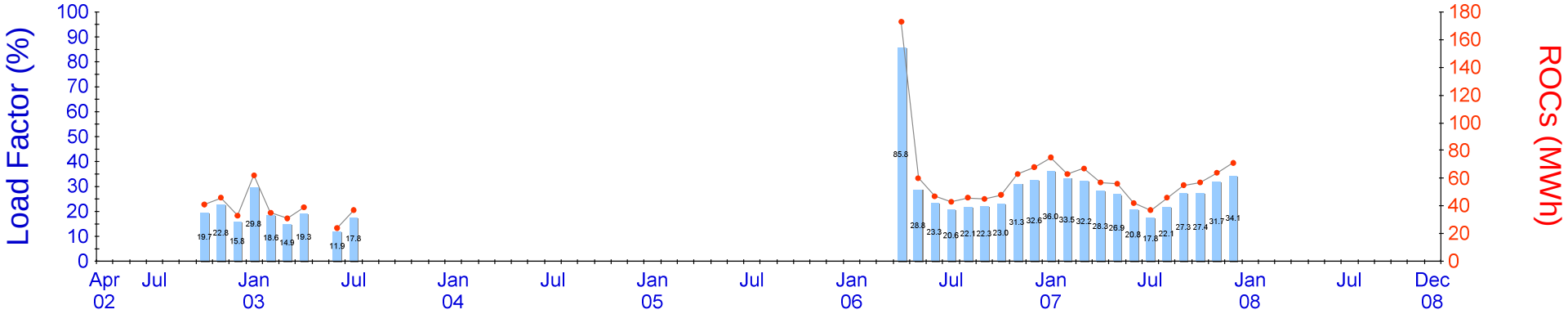
Generating Station Name: **Knoydart Hydro** **R.O. ID** **R00023SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :280



Station Summary

Date commissioned	01/01/1970
Operator Company	Knoydart Hydro Ltd
Contact address	Knoydart Hydro, Inverie, By Mallaig, Inverness-shire , PH41 4PL
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

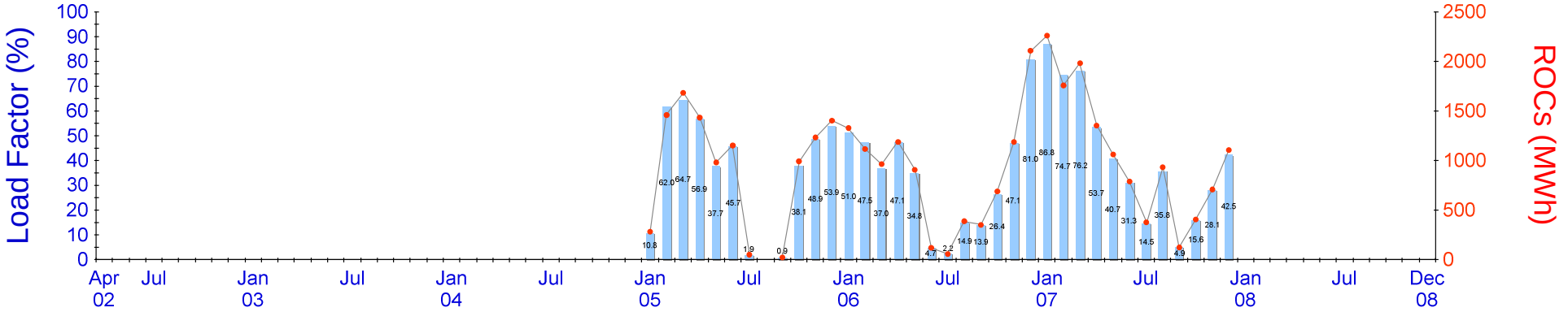
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	280	120	
2003	280	228	9.3
2004	280	0	0.0
2005	280	0	0.0
2006	280	593	24.2
2007	280	690	28.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Lairg Power Station** **R.O. ID** **R00095SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :3,500



Station Summary

Date commissioned	01/01/1959
Operator Company	SSE Generation Limited
Contact address	Loch Shin, Lairg, Sutherland , IV27 4BY
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	3,500	0	
2003	3,500	0	
2004	3,500	0	
2005	3,500	10,692	34.9
2006	3,500	10,402	33.9
2007	3,500	12,856	41.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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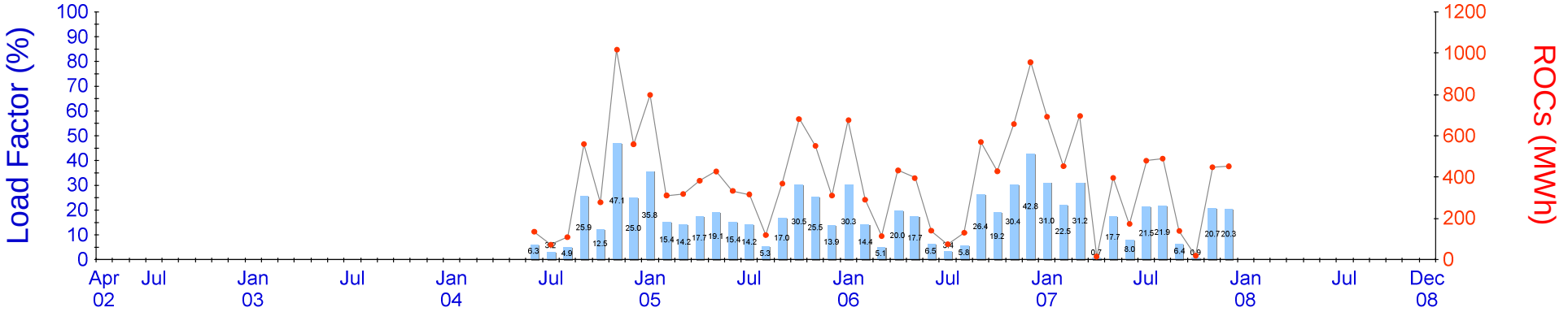
Generating Station Name: **Lednock Power Station** **R.O. ID** **R00079SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :3,000



Station Summary

Date commissioned	01/01/1961
Operator Company	SSE Generation Limited
Contact address	Glen Lednock, Comrie, Perthshire , PH6 2LY
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	3,000	0	
2003	3,000	0	
2004	3,000	2,730	
2005	3,000	4,914	18.7
2006	3,000	4,863	18.5
2007	3,000	4,451	16.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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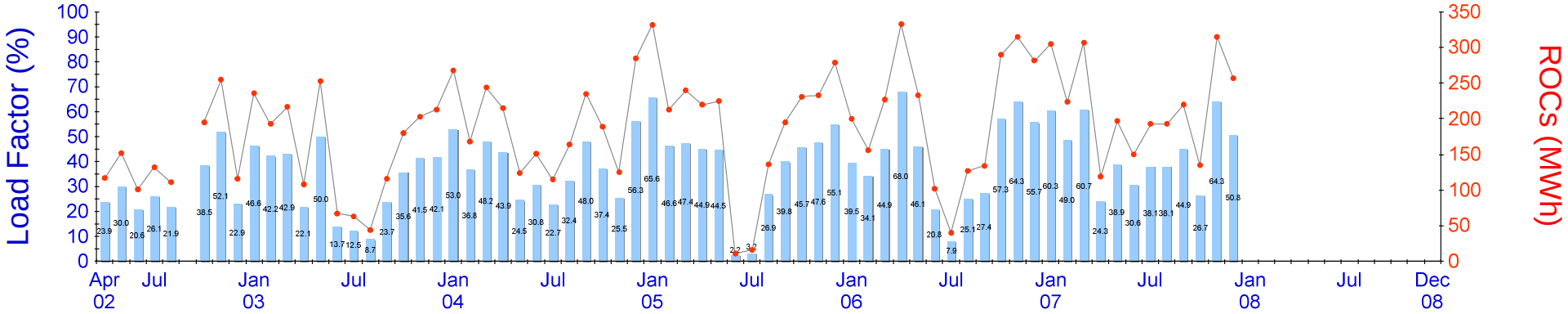
Generating Station Name: Little Wyvis **R.O. ID** R00012SESC

Technology Type : Hydro <20 MW DNC Current TIGC (kW) :680



Station Summary

Date commissioned	01/03/2001
Operator Company	Wyvis Plant & Power Ltd
Contact address	Little Wyvis, Glensgiach, Strathpeffer, Ross-shire, Scotland , IV23 2PG
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

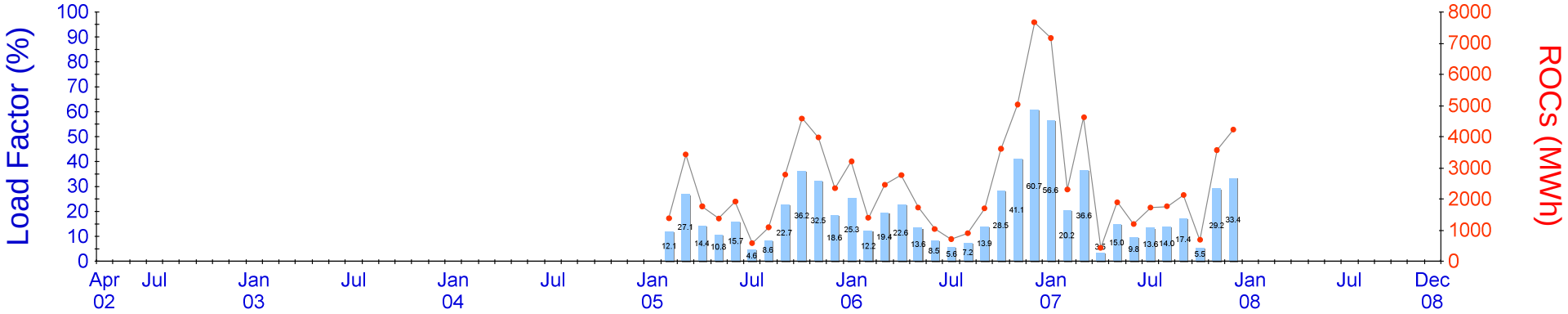
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	680	1,179	
2003	680	1,893	31.8
2004	680	2,283	38.3
2005	680	2,331	39.1
2006	680	2,439	40.9
2007	680	2,615	43.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Livishie Power Station** **R.O. ID** **R00097SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :17,000



Station Summary

Date commissioned	01/02/2005
Operator Company	SSE Generation Ltd
Contact address	Invermoriston, Invernesshire, Scotland , IV3 6YH
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	17,000	0	
2003	17,000	0	
2004	17,000	0	
2005	17,000	25,221	
2006	17,000	32,223	21.6
2007	17,000	31,724	21.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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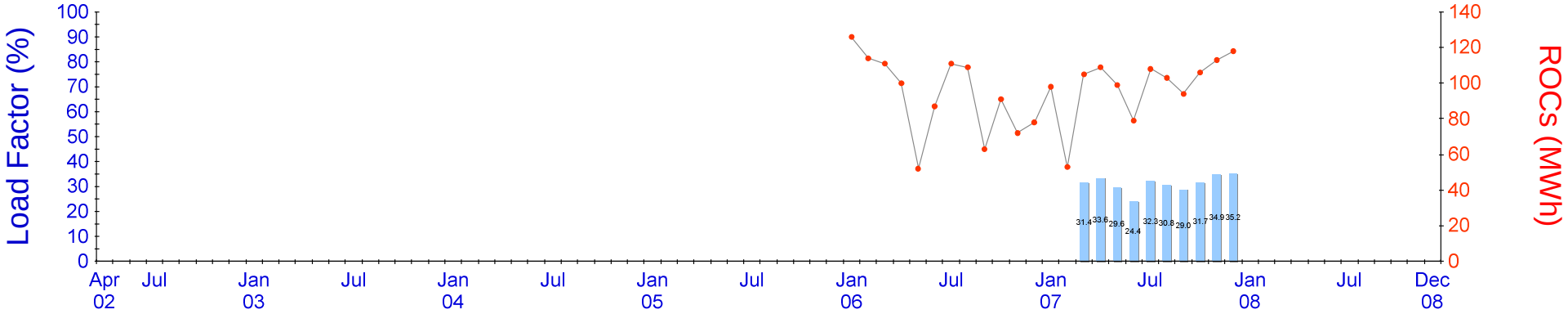
Generating Station Name: **Loch Braden WTW** **R.O. ID** **R00117SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :450



Station Summary

Date commissioned	01/10/2004
Operator Company	Scottish Water
Contact address	WTW Loch Braden, Carrick Forrest, South Ayreshire, Scotland , KA19 7HR
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	1,114	
2007	0	1,185	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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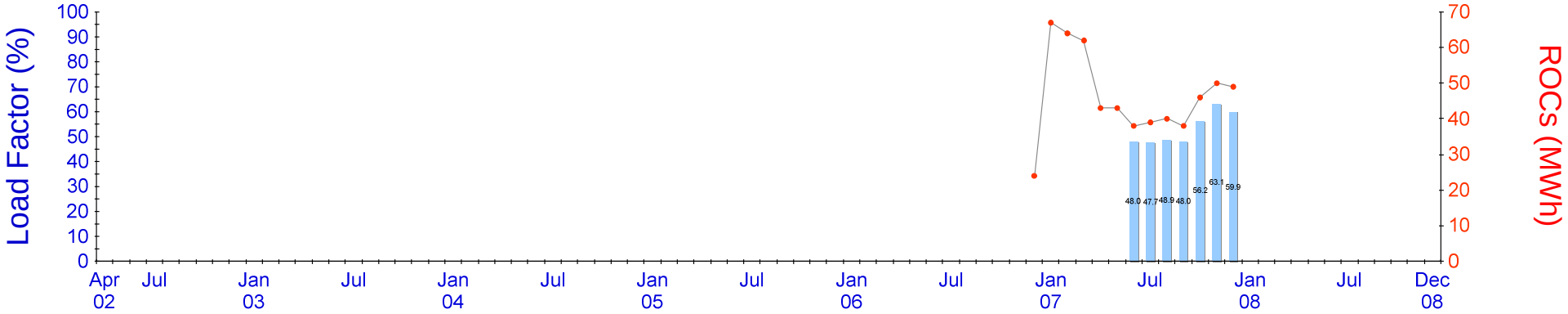
Generating Station Name: **Loch Calder (WTW)** **R.O. ID** **R00056SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :110



Station Summary

Date commissioned	01/04/2004
Operator Company	Scottish Water
Contact address	6 Castle Drive, Carnegie Campus, Dunfermline, Fife , ND136604
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

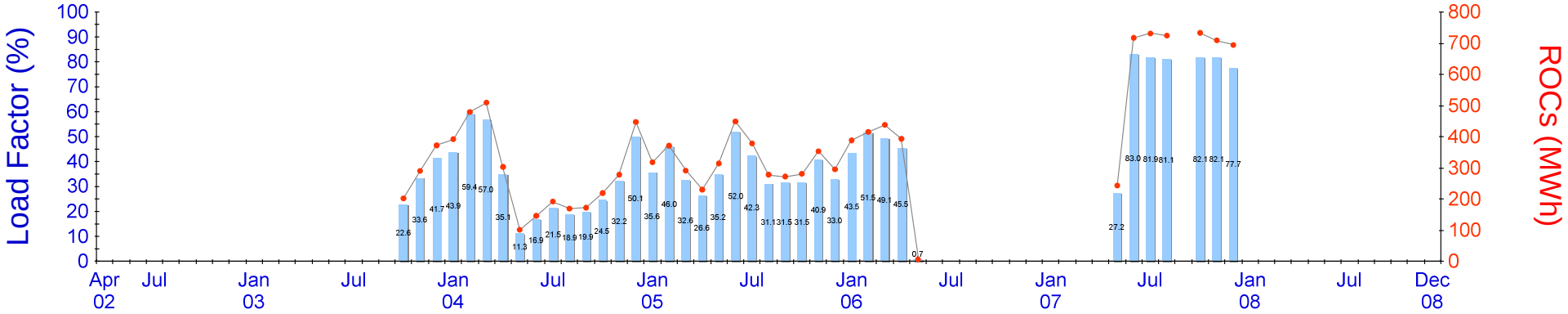
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	24	
2007	0	579	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Loch Dubh** **R.O. ID** **R00066SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :1,200



Station Summary

Date commissioned	01/01/1954
Operator Company	SSE Generation Limited
Contact address	Strath Kanaird, By Ullapool, Wester Ross , IV26 2TW
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

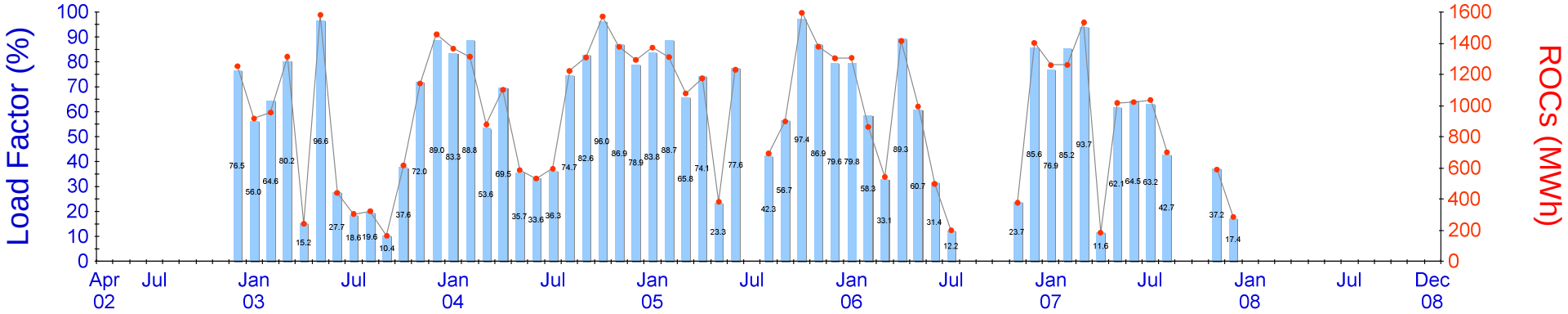
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	1,200	0	
2003	1,200	864	
2004	1,200	3,407	32.4
2005	1,200	3,830	36.4
2006	1,200	1,640	15.6
2007	1,200	4,551	43.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Loch Ericht Power Station** **R.O. ID** **R00020SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,200



Station Summary

Date commissioned	01/01/1962
Operator Company	SSE Generation Limited
Contact address	Loch Ericht, By Kinloch Rannoch, Pitlochry, Perthshire , NN553728
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,200	1,252	
2003	2,200	9,446	49.0
2004	2,200	13,136	68.2
2005	2,200	12,408	64.4
2006	2,200	7,589	39.4
2007	2,200	8,882	46.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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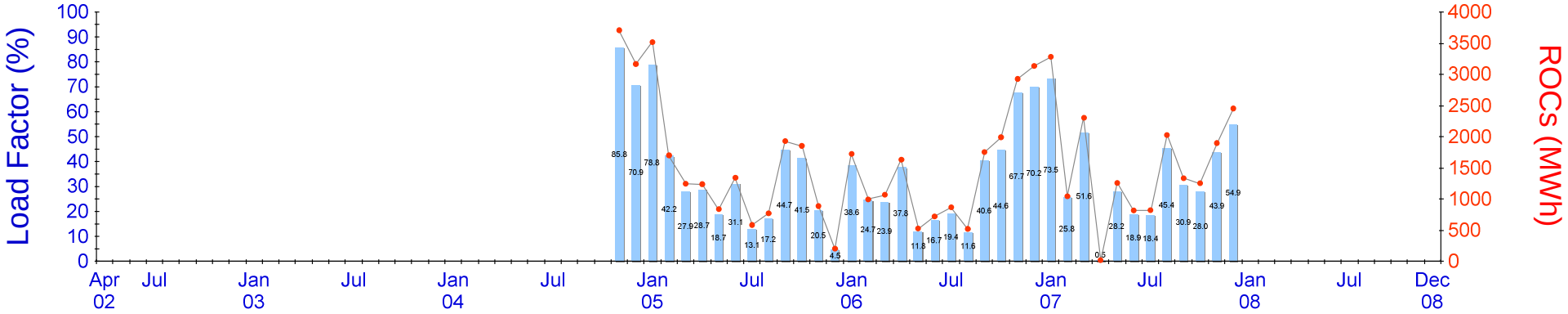
Generating Station Name: **Loch Gair** **R.O. ID** **R00088SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :6,000



Station Summary

Date commissioned	01/01/1961
Operator Company	SSE Generation Limited
Contact address	Loch Gair, By Lochgilphead, Argyll , PA31 8SD
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	6,000	0	
2003	6,000	0	
2004	6,000	6,872	
2005	6,000	16,099	30.6
2006	6,000	17,852	34.0
2007	6,000	18,501	35.2

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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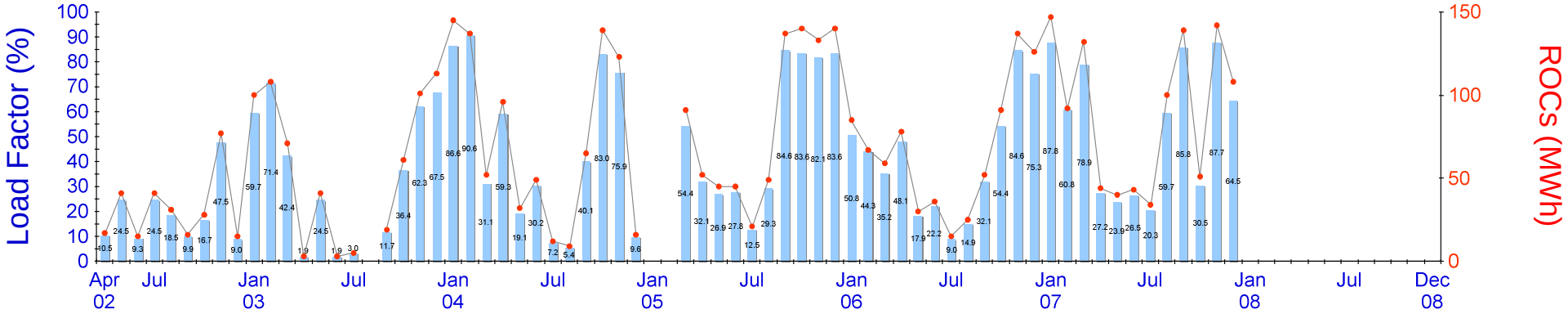
Generating Station Name: **Loch Poll** **R.O. ID** **R00015SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :225



Station Summary

Date commissioned	01/02/2000
Operator Company	Highland Light & Power Ltd
Contact address	Loch Poll Hydro Station, Loch Poll Hydro Project, Assynt, Scotland , NC103329
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

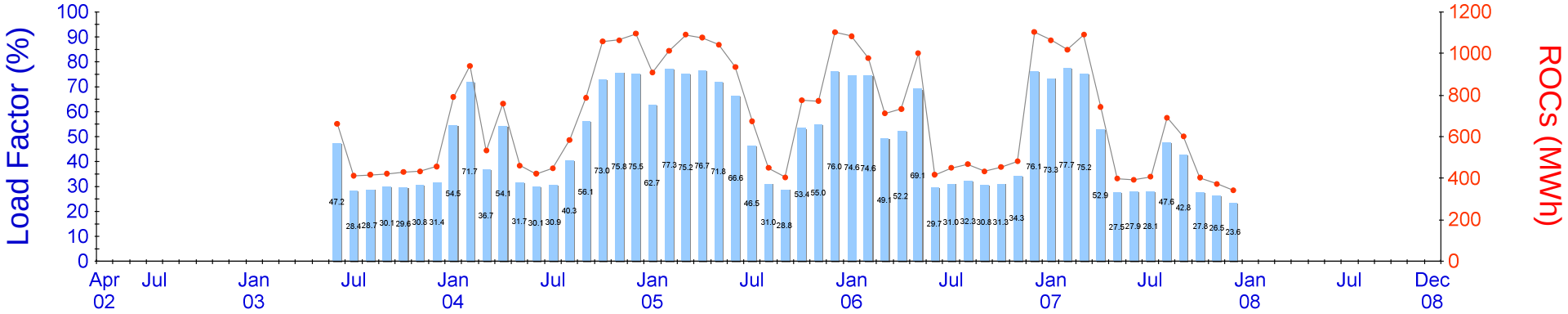
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	225	281	
2003	225	625	31.7
2004	225	875	44.4
2005	225	853	43.3
2006	225	801	40.6
2007	225	1,072	54.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Loch Turret** **R.O. ID** **R00059SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :1,950



Station Summary

Date commissioned	01/01/1968
Operator Company	Scottish Water
Contact address	Glen Turret, Crieff, Perthshire , PH7 4LD
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

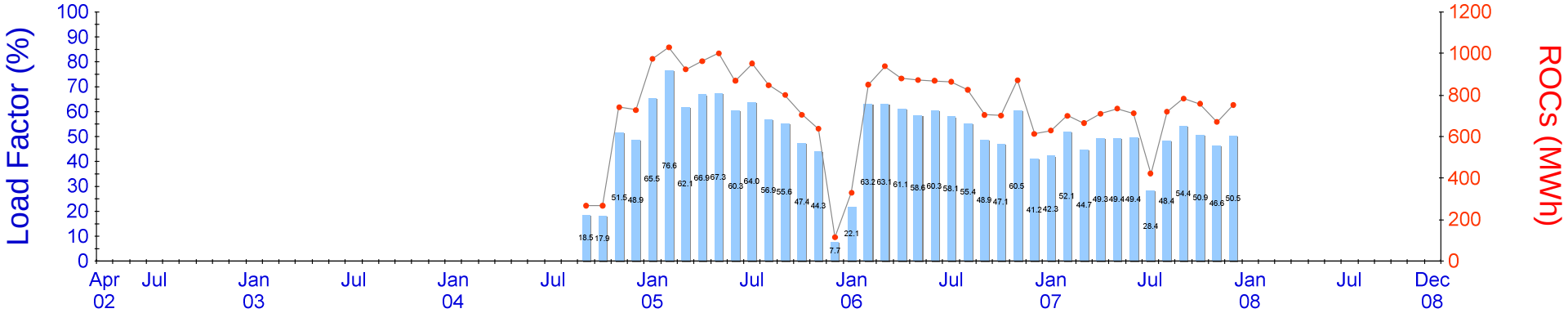
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	1,950	0	
2003	1,950	3,232	
2004	1,950	8,943	52.4
2005	1,950	10,245	60.0
2006	1,950	8,316	48.7
2007	1,950	7,523	44.0

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Lochay Compensation Generator** **R.O. ID** **R00102SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,000



Station Summary

Date commissioned	01/01/1958
Operator Company	SSE Generation Ltd
Contact address	Glen Lochay By Killin Perthshire Scotland , FK21 8AU
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,000	0	
2003	2,000	0	
2004	2,000	2,002	
2005	2,000	9,818	56.0
2006	2,000	9,317	53.2
2007	2,000	8,257	47.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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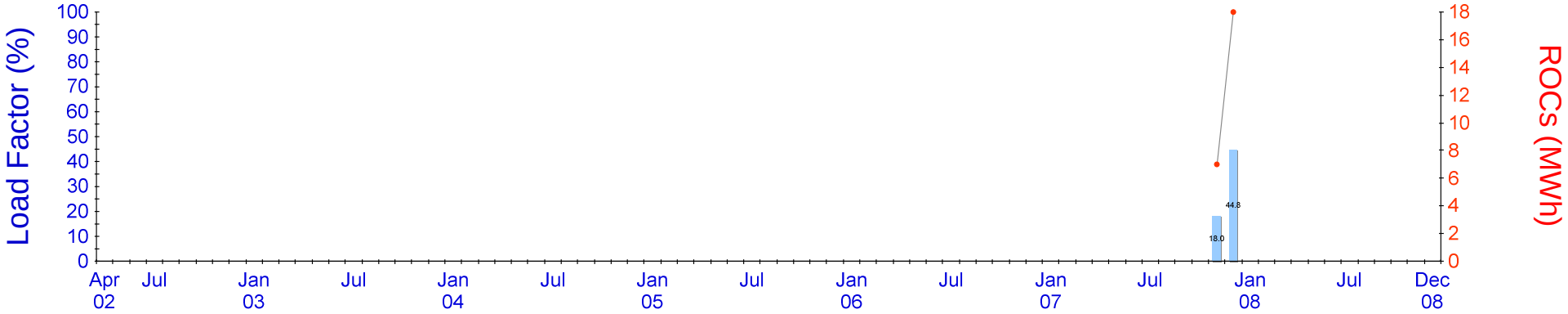
Generating Station Name: **Lochay Fish Pass Generator** **R.O. ID** **R00128SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :54



Station Summary

Date commissioned	01/12/2004
Operator Company	SSE Generation Ltd
Contact address	Hydro Generation Headquarters, Clunie, Power Station, Pitlochry , FK21 8UA
Operator comments	
Research notes	This station had its ID changed from R00108RESC in April 2008. It started claiming ROCS under this new ID in Oct 2007 so the TIGC has

Corrections from operators shown in red brackets ( )

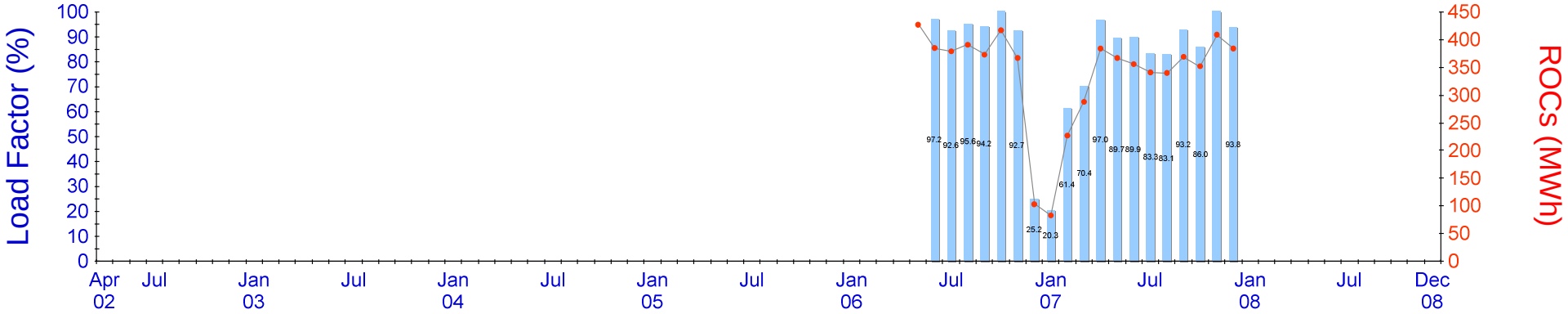
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	0	
2007	0	25	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: Loyne Power Station **R.O. ID** R00113SESC

Technology Type : Hydro <20 MW DNC Current TIGC (kW) :550



Station Summary

Date commissioned	01/01/1956
Operator Company	SSE Generation Limited
Contact address	Dalchreichart Invermoriston By Augustus Inverness-shire , NH200800
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

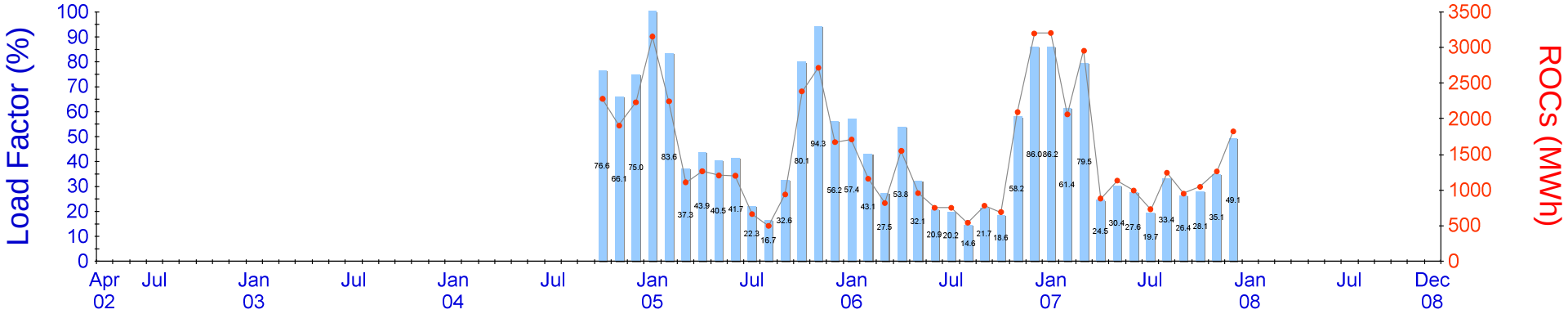
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	2,842	
2007	550	3,900	80.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Lubreoch Power Station** **R.O. ID** **R00090SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :5,000



Station Summary

Date commissioned	01/01/1958
Operator Company	SSE Generation Limited
Contact address	Bridge of Balgie, Glen Lyon, Perthshire , PH15
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

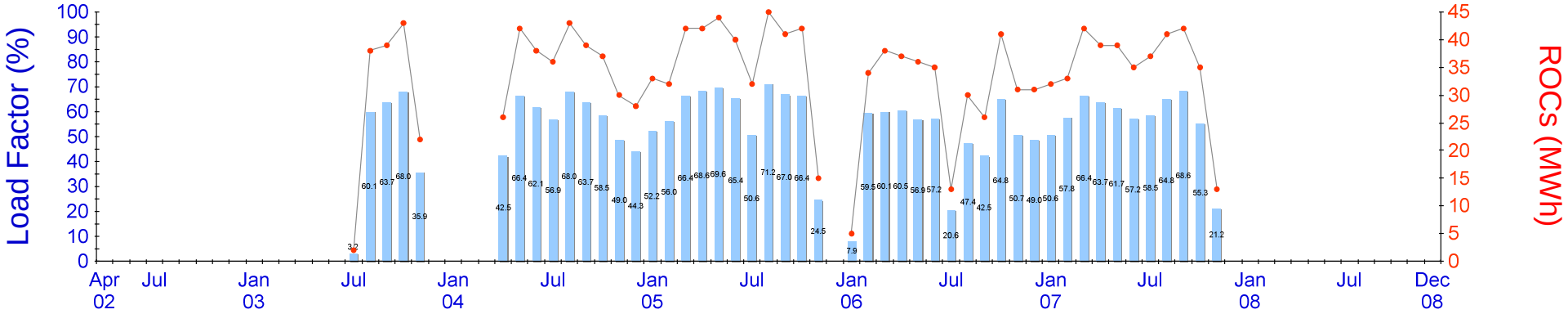
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	4,000	0	
2003	4,000	0	
2004	4,000	6,418	
2005	4,000	19,052	54.4
2006	0	14,999	
2007	5,000	18,288	41.8

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Luichart Dam** **R.O. ID** **R00026SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :85



Station Summary

Date commissioned	01/01/1954
Operator Company	SSE Generation Ltd
Contact address	By Loch Luichart, Contin, Ross-shire , IV14
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

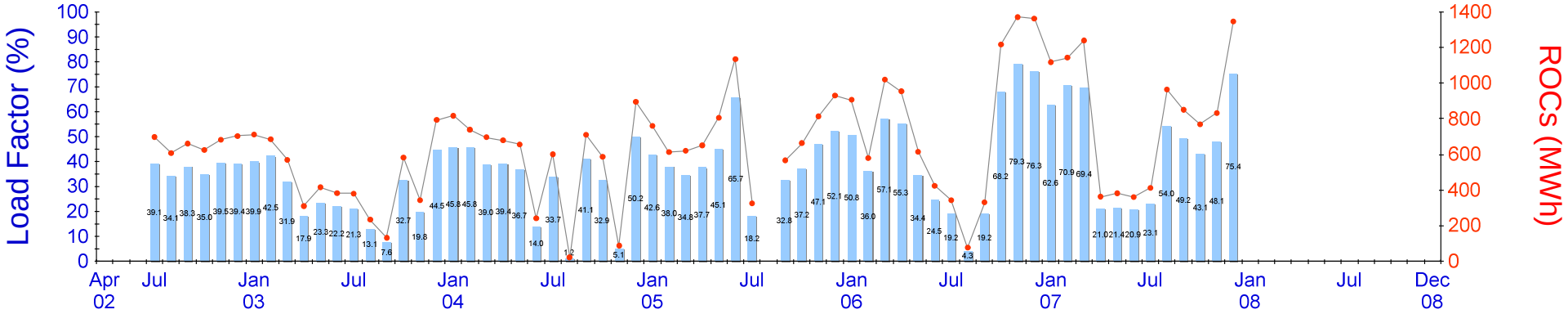
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	85	0	
2003	85	144	
2004	85	319	42.8
2005	85	408	54.8
2006	85	357	47.9
2007	85	388	52.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Lussa Power Station** **R.O. ID** **R00018SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,400



Station Summary

Date commissioned	01/01/1952
Operator Company	SSE Generation Limited
Contact address	Lussa Power Station, Peninver, Campbeltown, Argyll , NR735261
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

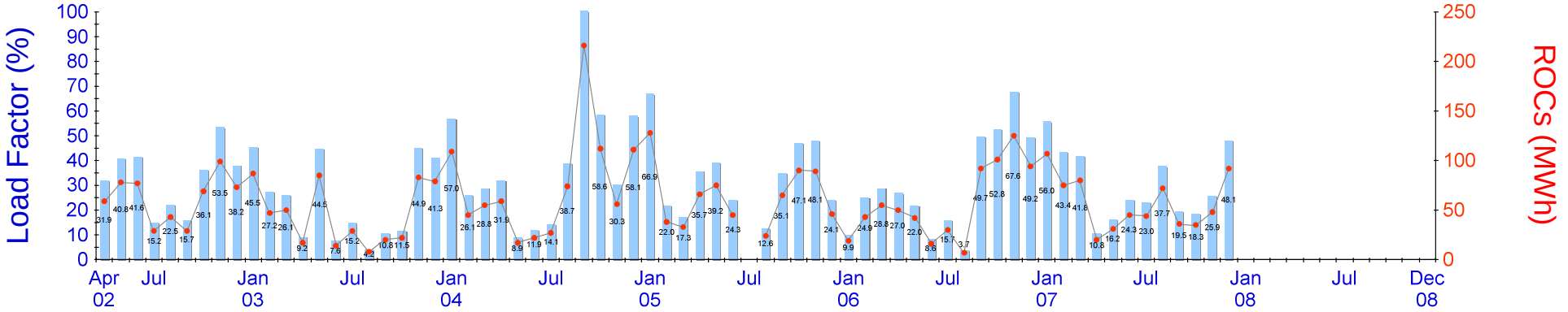
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,400	3,978	
2003	2,400	5,541	26.4
2004	2,400	6,735	32.0
2005	2,400	7,887	37.5
2006	2,400	9,203	43.8
2007	2,400	9,784	46.5

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Mannoch Power Station** **R.O. ID** **R00019SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :257



Station Summary

Date commissioned	01/01/1988
Operator Company	Fred Olsen Ltd
Contact address	Mannoch Power Station, Mannoch, Forrest Estate, Dalry, Castle Douglas , DG7 3XS
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

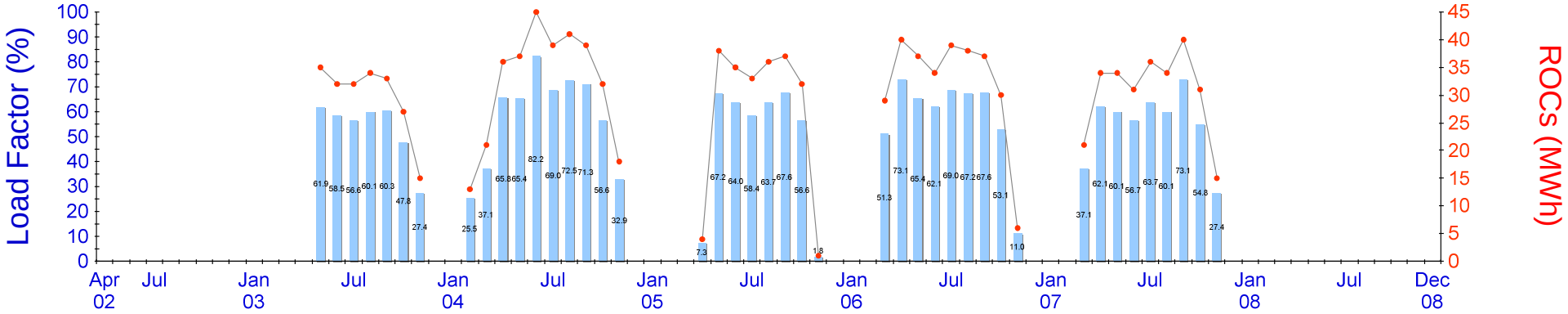
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	257	556	
2003	257	541	24.0
2004	257	903	40.1
2005	257	699	31.0
2006	257	674	29.9
2007	257	685	30.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Meig Dam** **R.O. ID** **R00027SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :76



Station Summary

Date commissioned	01/01/1954
Operator Company	SSE Generation Ltd
Contact address	Scatwell, Muir of Ord, Ross-shire , NH375560
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	76	0	
2003	76	208	
2004	76	321	48.2
2005	76	216	32.4
2006	76	290	43.6
2007	76	276	41.5

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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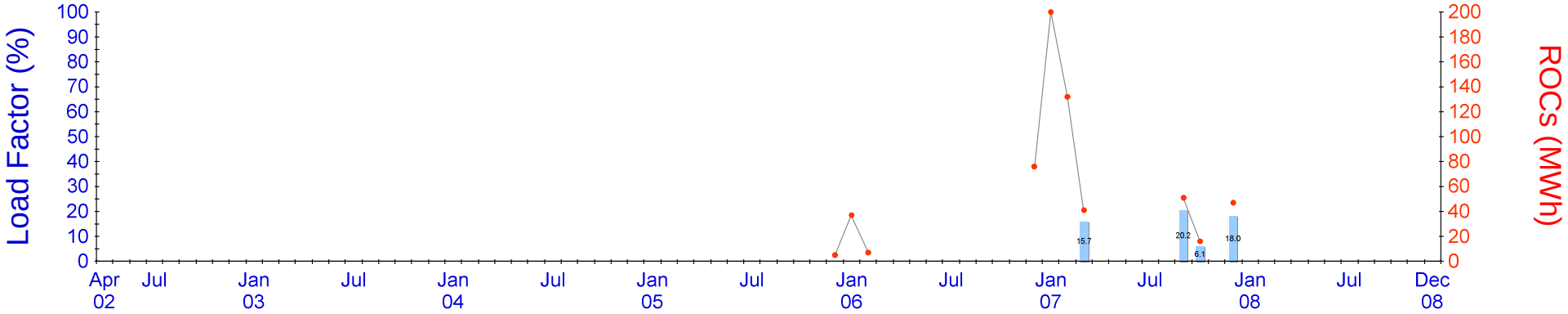
Generating Station Name: **Misgeach Power Station** **R.O. ID** **R00119SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :350



Station Summary

Date commissioned	01/01/1963
Operator Company	SSE Generation Limited
Contact address	Glen Stratharrar, Struy, Inverness-shire , NH183381
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

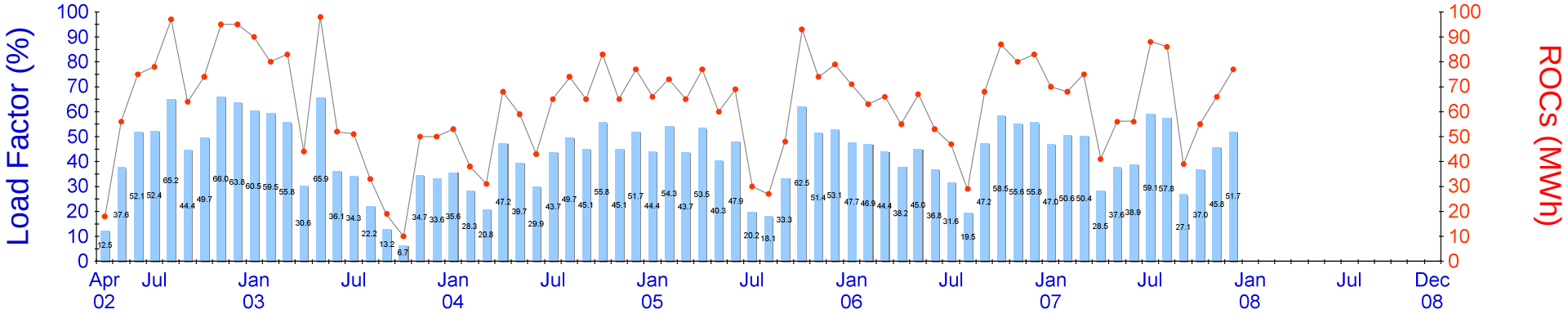
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	5	
2006	0	120	
2007	0	487	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Monzie Hydro Electric** **R.O. ID** **R00010SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :200



Station Summary

Date commissioned	01/01/1952
Operator Company	Monzie Hydro Electric Partnership
Contact address	Monzie, Crieff, Perthshire , PH7 4HE
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	200	652	
2003	200	660	37.7
2004	200	721	41.2
2005	200	761	43.4
2006	200	769	43.9
2007	200	777	44.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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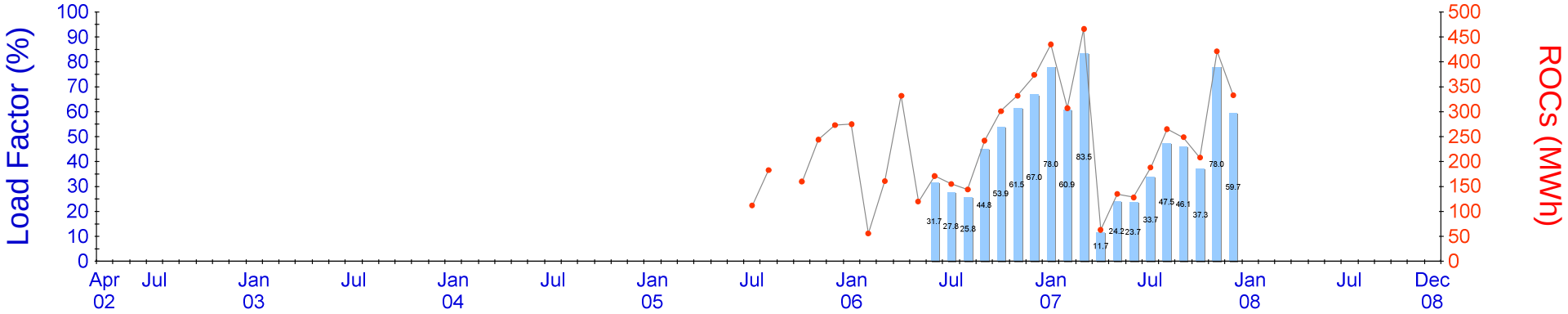
Generating Station Name: **Morar Power Station** **R.O. ID** **R00114SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :750



Station Summary

Date commissioned	01/01/1950
Operator Company	SSE Generation Limited
Contact address	Morar Power Station Morar Lochaber , PH40 4PV
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	972	
2006	0	2,663	
2007	750	3,198	48.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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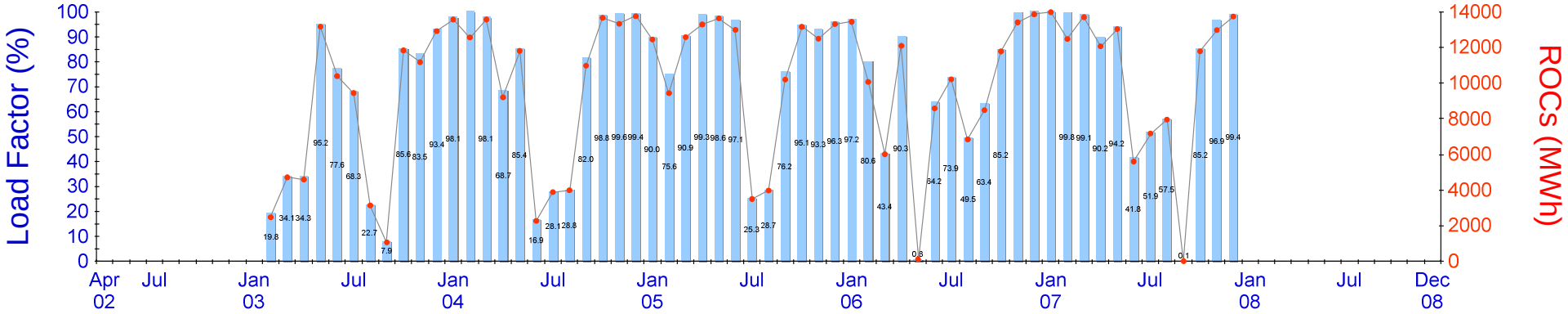
Generating Station Name: **Mossford Power Station** **R.O. ID** **R00022SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :18,600



Station Summary

Date commissioned	01/01/1957
Operator Company	SSE Generation Ltd
Contact address	Loch Luichart, By Garve, Inverness-shire , IV23 2PZ
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

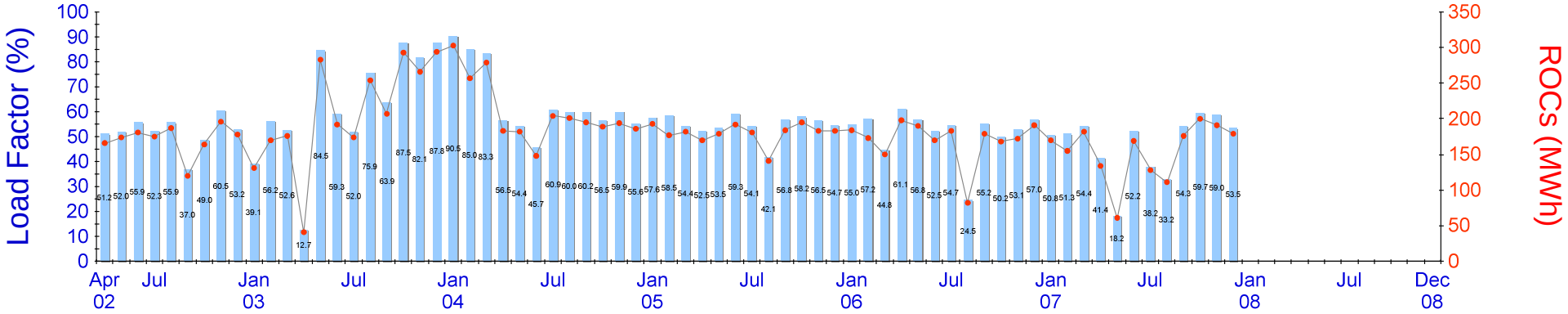
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	18,600	0	
2003	18,600	84,944	
2004	18,600	122,626	75.3
2005	18,600	131,074	80.4
2006	18,600	114,963	70.6
2007	18,600	124,555	76.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: MRC Energy **R.O. ID** R00009SDSC

Technology Type : Micro hydro Current TIGC (kW) :450



Station Summary

Date commissioned	01/09/2000
Operator Company	MRC Energy Ltd
Contact address	The Marine Resource Centre, Barcaldine, Oban, Argyll , PA37 1SH
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	450	1,541	
2003	450	2,481	62.9
2004	450	2,521	64.0
2005	450	2,160	54.8
2006	450	2,040	51.8
2007	450	1,856	47.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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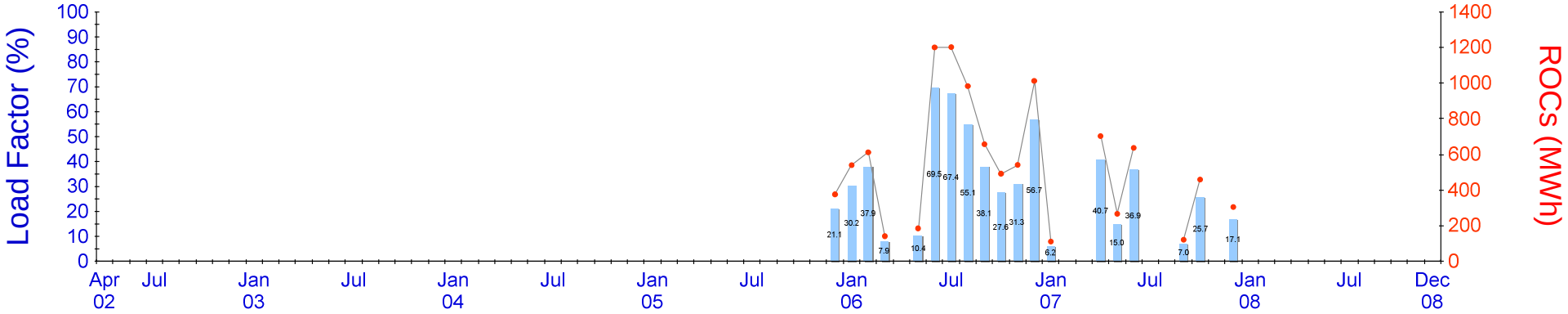
Generating Station Name: **Mullardoch Power Station** **R.O. ID** **R00105SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,400



Station Summary

Date commissioned	01/01/1955
Operator Company	SSE Generation Limited
Contact address	Glen Cannich, By Beauty, Inverness-shire , NH223310
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

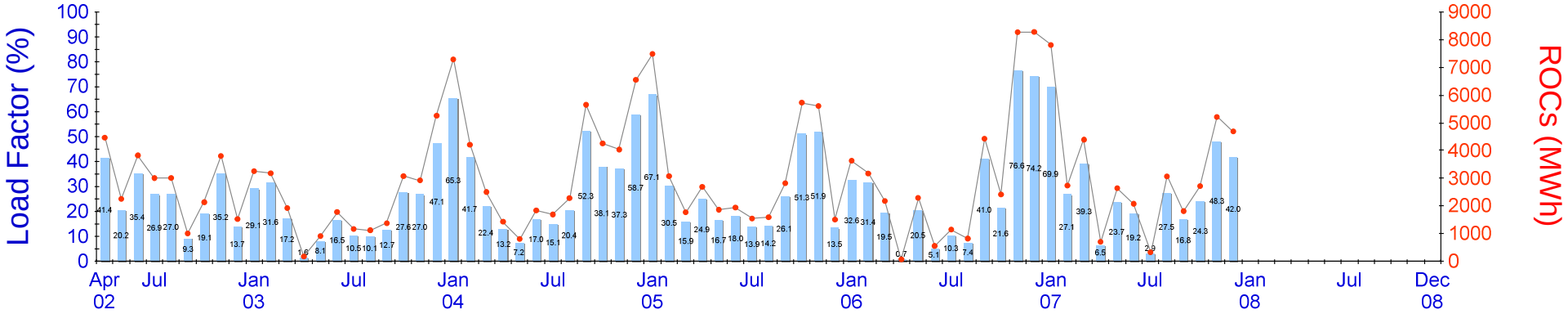
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,400	0	
2003	2,400	0	
2004	2,400	0	
2005	2,400	376	
2006	2,400	7,570	36.0
2007	2,400	2,603	12.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Nant Power Station** **R.O. ID** **R00003SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :15,000



Station Summary

Date commissioned	01/08/1994
Operator Company	SSE Generation Limited
Contact address	Kilchrenan, By Taynuilt, Argyll, Scotland , PA35 1HD
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

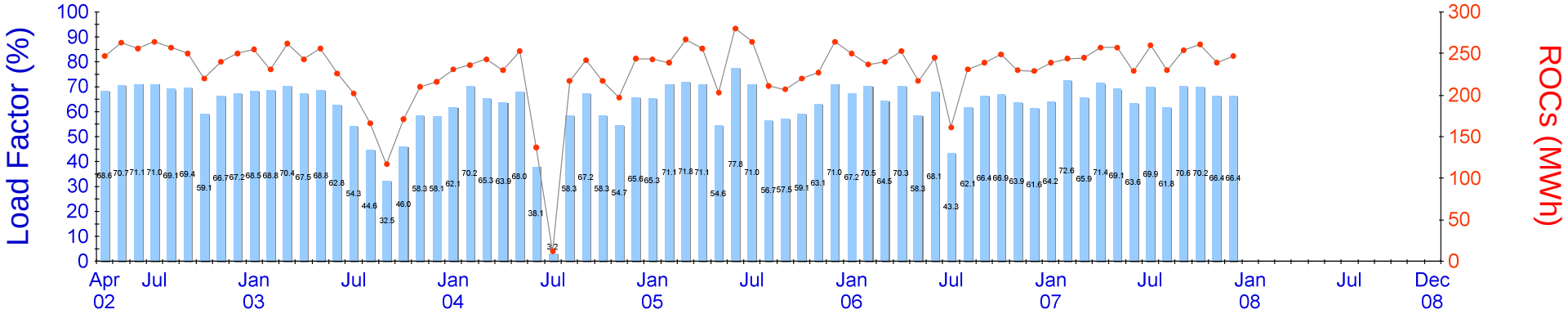
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	15,000	25,026	
2003	15,000	26,134	19.9
2004	15,000	42,521	32.4
2005	15,000	37,621	28.6
2006	15,000	37,254	28.4
2007	15,000	38,174	29.1

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **New Lanark Mills** **R.O. ID** **R00002SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :500



Station Summary

Date commissioned	01/05/1994
Operator Company	New Lanark Conservation Trust
Contact address	New Lanark Mills, New Lanark , ML11 9DB
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

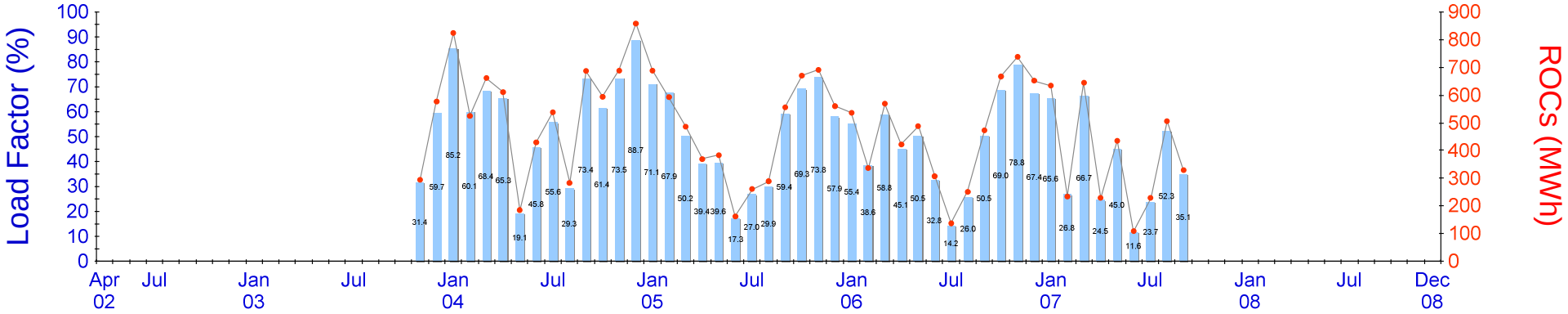
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	500	2,247	
2003	500	2,555	58.3
2004	500	2,459	56.1
2005	500	2,881	65.8
2006	500	2,781	63.5
2007	500	2,962	67.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Nostie Bridge** **R.O. ID** **R00078SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :1,300



Station Summary

Date commissioned	01/01/1950
Operator Company	SSE Generation Limited
Contact address	Auchtertyre, Kyle of Lochaklsch, Ross-shire , IV40 8EQ
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	1,300	0	
2003	1,300	871	
2004	1,300	6,884	60.4
2005	1,300	5,708	50.1
2006	1,300	5,577	49.0
2007	1,300	3,350	29.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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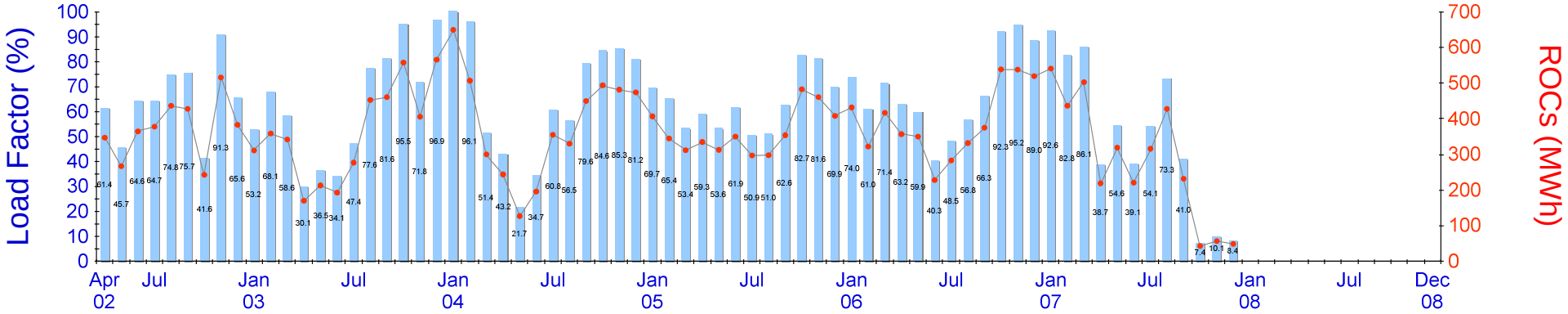
Generating Station Name: **Ormsary** **R.O. ID** **R00005SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :785



Station Summary

Date commissioned	01/01/1981
Operator Company	Ormsary Farmers
Contact address	Ormsary Estate, Ormsary, Lochgilphead, Argyll , PA31 8PE
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	785	3,364	
2003	785	4,309	62.7
2004	785	4,609	67.0
2005	785	4,363	63.4
2006	785	4,693	68.2
2007	785	3,365	48.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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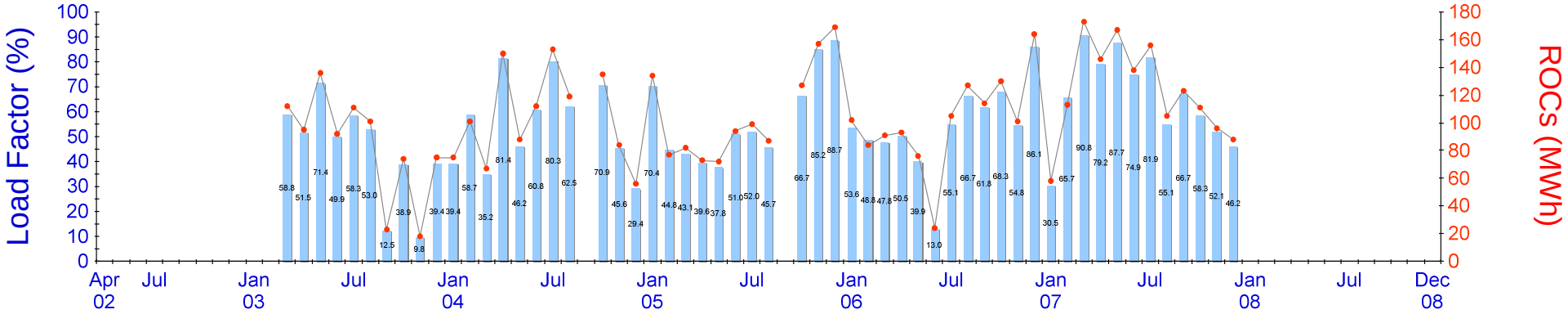
Generating Station Name: **Orrin Dam** **R.O. ID** **R00031SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :256



Station Summary

Date commissioned	01/01/1959
Operator Company	SSE Generation Ltd
Contact address	By Contin, Inverness-shire , IV6
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

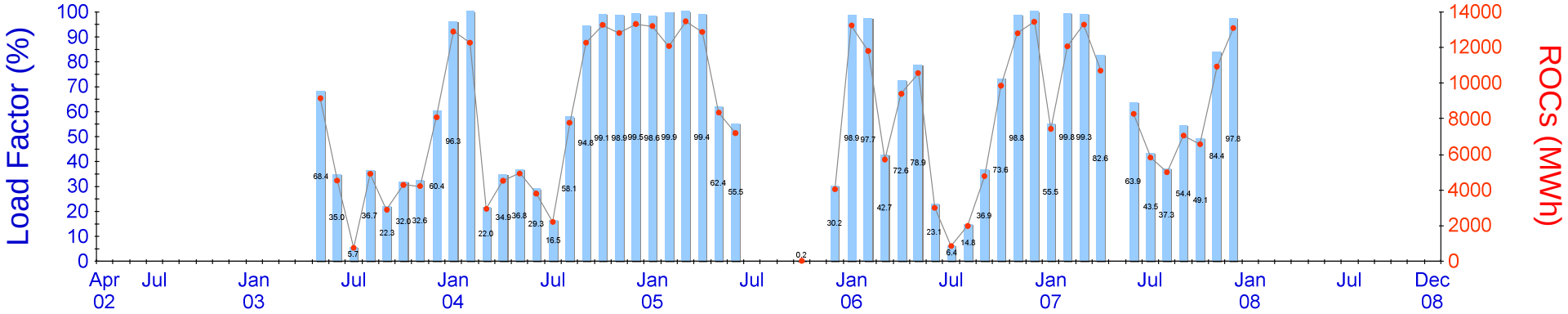
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	256	0	
2003	256	837	
2004	256	1,140	50.8
2005	256	1,171	52.2
2006	256	1,211	54.0
2007	256	1,474	65.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Orrin Power Station** **R.O. ID** **R00056SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :18,000



Station Summary

Date commissioned	01/01/1959
Operator Company	SSE Generation Ltd
Contact address	Orrin Power Station, By Loch Achonnachie, Urray, Near Muir of Ord, Ross-shire , IV6
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

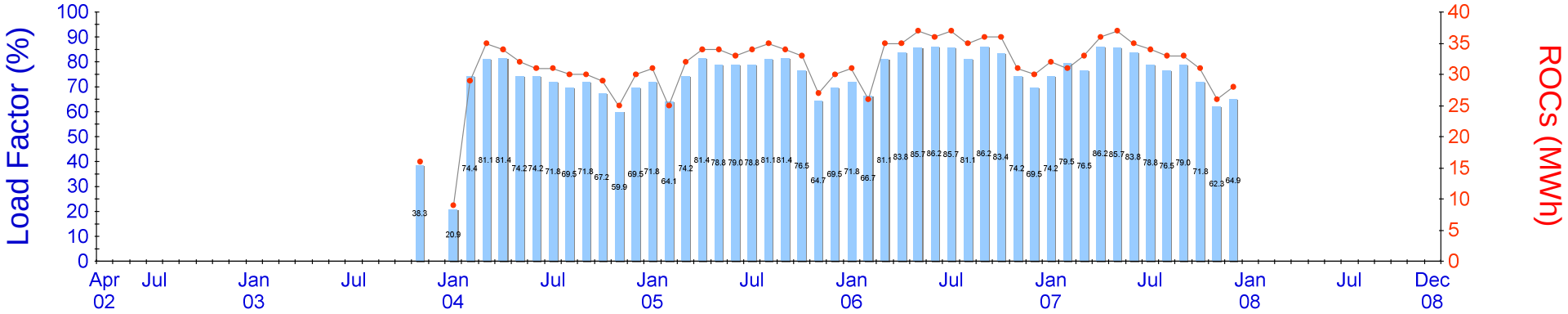
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	18,000	0	
2003	18,000	38,855	
2004	18,000	103,072	65.4
2005	18,000	71,281	45.2
2006	18,000	97,486	61.8
2007	18,000	100,263	63.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Pitlochry Compensation Generation** **R.O. ID** **R00070SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :58



Station Summary

Date commissioned	01/01/1950
Operator Company	SSE - Generation Ltd
Contact address	Pitlochry Power Station, Pitlochry, Perthshire , PH16 5ND
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	58	0	
2003	58	16	
2004	58	345	67.9
2005	58	382	75.2
2006	58	405	79.7
2007	58	389	76.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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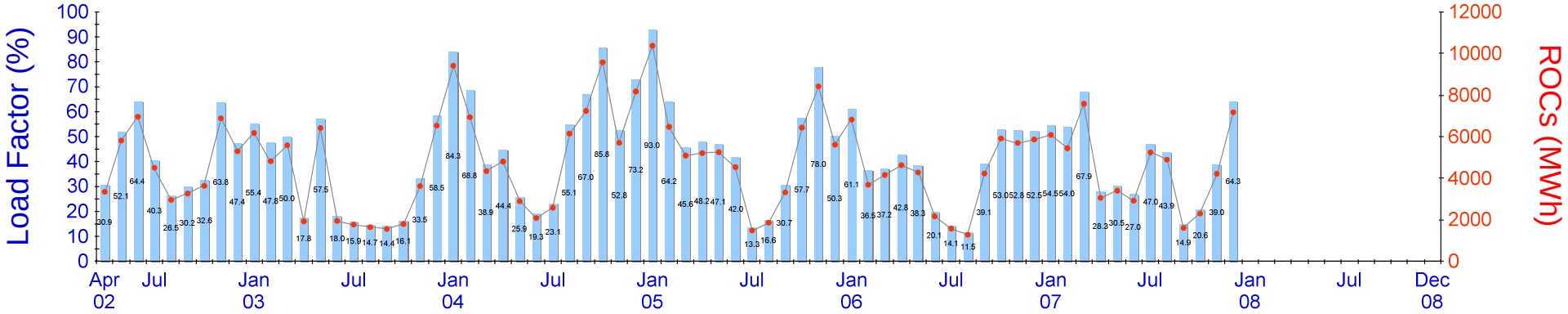
Generating Station Name: **Pitlochry Power Station** **R.O. ID** **R00007SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :15,000



Station Summary

Date commissioned	01/01/1950
Operator Company	SSE - Generation Ltd
Contact address	Pitlochry Power Station, Pitlochry, Perthshire, Scotland , PH16 5ND
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

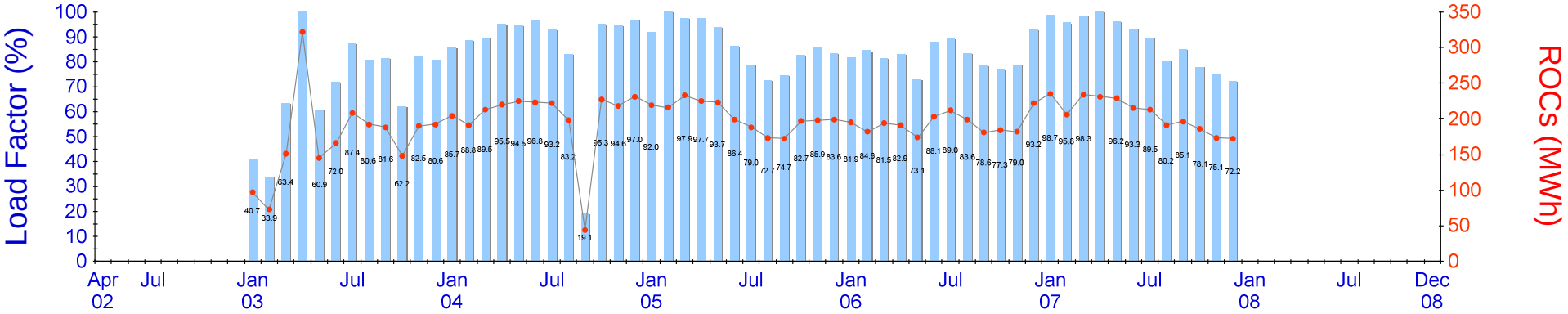
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	15,000	42,639	
2003	15,000	43,775	33.3
2004	15,000	69,873	53.2
2005	15,000	64,056	48.7
2006	15,000	50,285	38.3
2007	15,000	53,906	41.0

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: Quoich Dam **R.O. ID** R00024SESC

Technology Type : Hydro <20 MW DNC Current TIGC (kW) :320



Station Summary

Date commissioned	01/01/1955
Operator Company	SSE Generation Ltd
Contact address	Tomdoun, By Loch Garry, Fort Augustus, Inverness-shire , NH071023
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

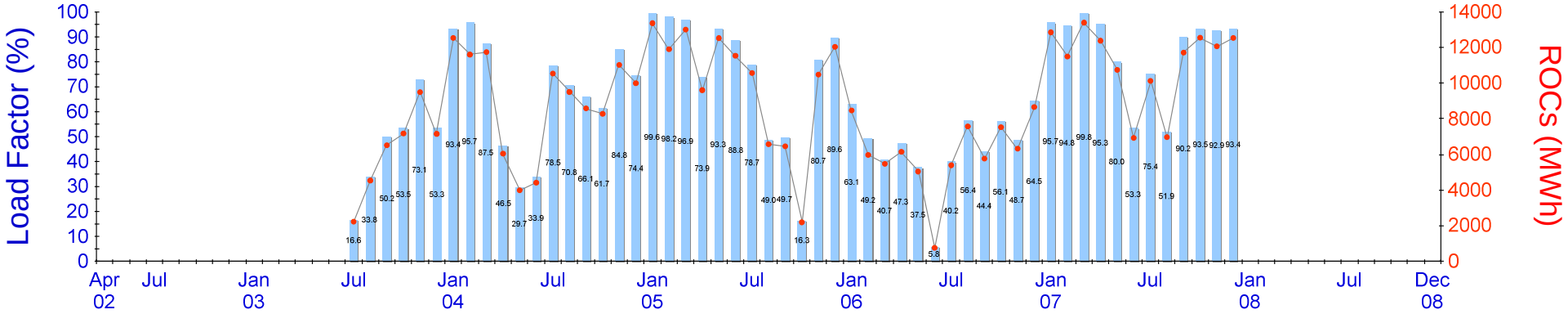
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	320	0	
2003	320	2,072	73.9
2004	320	2,416	86.2
2005	320	2,442	87.1
2006	320	2,319	82.7
2007	320	2,481	88.5

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: Quoich Power Station **R.O. ID** R00061SESC

Technology Type : Hydro <20 MW DNC Current TIGC (kW) :18,050



Station Summary

Date commissioned	01/01/1955
Operator Company	SSE Generation Ltd
Contact address	Tomdum, By Loch Garry, Nr Fort Augustus, Inverness-shire, Scotland. , IV3
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	18,050	0	
2003	18,050	37,125	
2004	18,050	108,284	68.5
2005	18,050	120,295	76.1
2006	18,050	73,113	46.2
2007	18,050	133,802	84.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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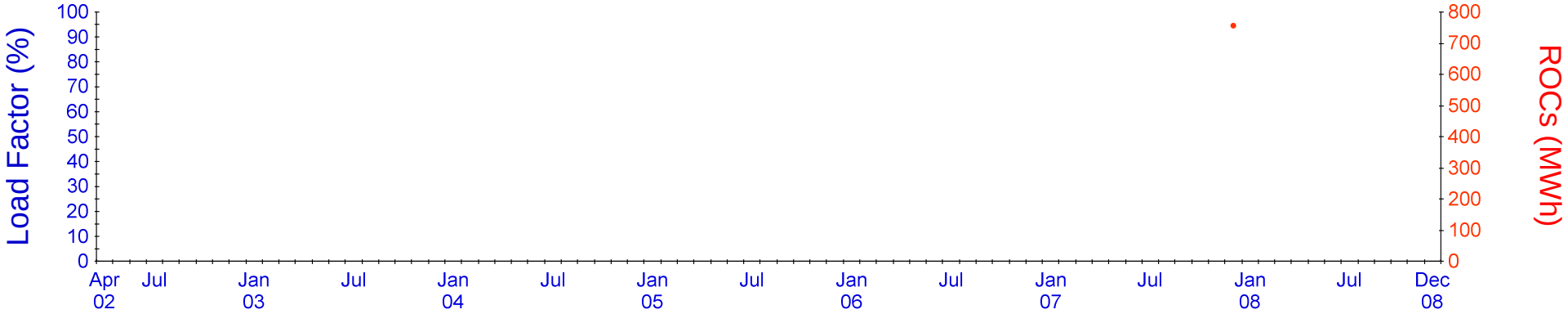
Generating Station Name: River E Hydro Electric Generating **R.O. ID** R00129SESC

Technology Type : Hydro <20 MW DNC Current TIGC (kW) :3,000



Station Summary

Date commissioned	01/11/2007
Operator Company	RWE Npower PLC
Contact address	Garthbeg Farm, Gorthleck, Inverness-shire , IV2 6UL
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	0	
2007	0	756	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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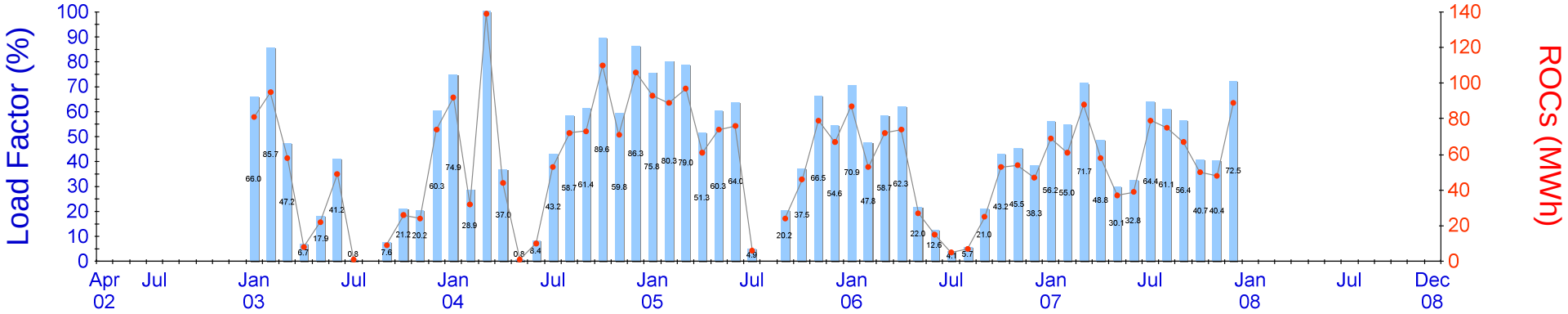
Generating Station Name: **Rothes Hydro Turbine** **R.O. ID** **R00025SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :165



Station Summary

Date commissioned	01/01/1950
Operator Company	Tullis Russell Papermakers Ltd
Contact address	Tullis Russell Papermakers Ltd, Markinch, Glenrothes, Fife , KY7 6PB
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

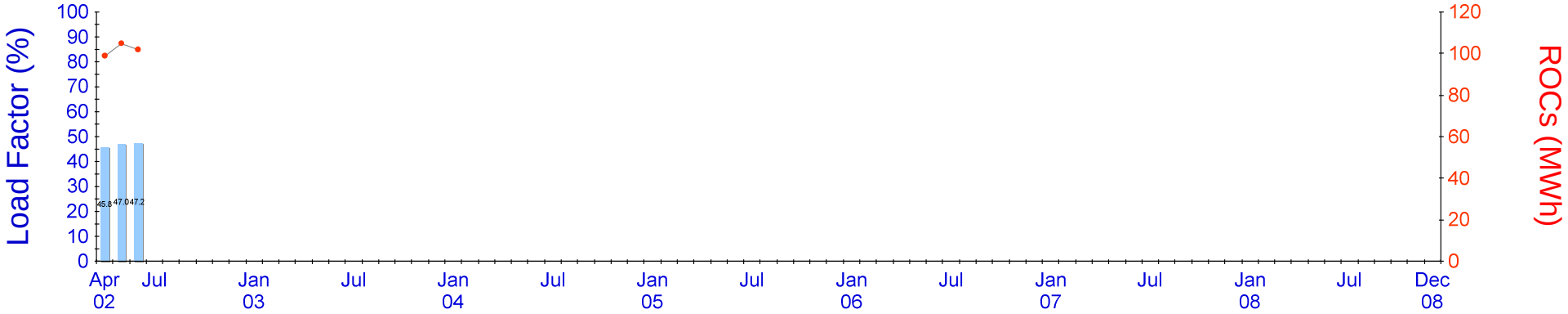
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	165	0	
2003	165	447	30.9
2004	165	803	55.6
2005	165	712	49.3
2006	165	519	35.9
2007	165	760	52.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Salmon Inn** **R.O. ID** **R00001SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :300



Station Summary

Date commissioned	01/01/1990
Operator Company	Scottish Water
Contact address	Salmon Inn Road, Falkirk , NS924787
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

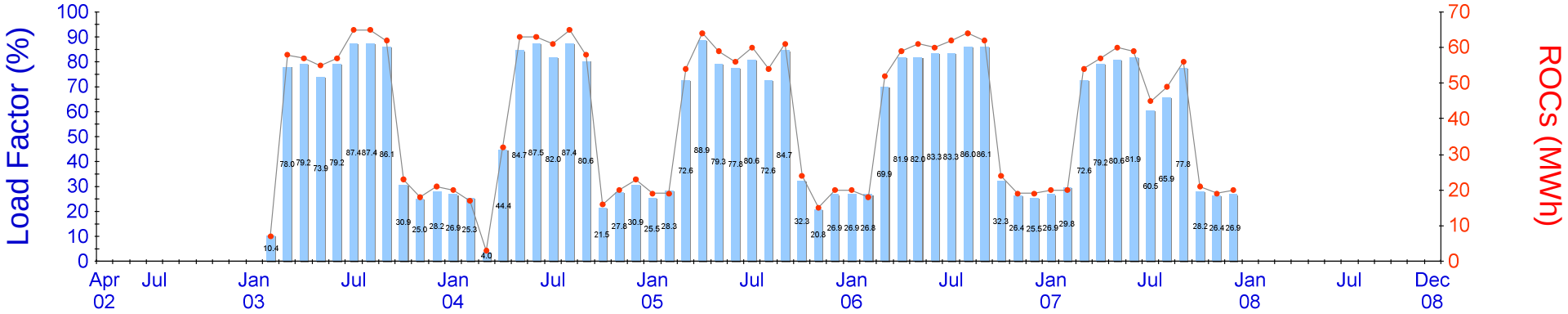
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	300	306	
2003	300	0	0.0
2004	300	0	0.0
2005	300	0	0.0
2006	300	0	0.0
2007	300	0	0.0

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Shin Diversion Dam** **R.O. ID** **R00021SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :100



Station Summary

Date commissioned	01/10/2002
Operator Company	SSE Generation Ltd
Contact address	Shin Diversion Dam, Inveran, By Larig, Sutherland , IV27
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

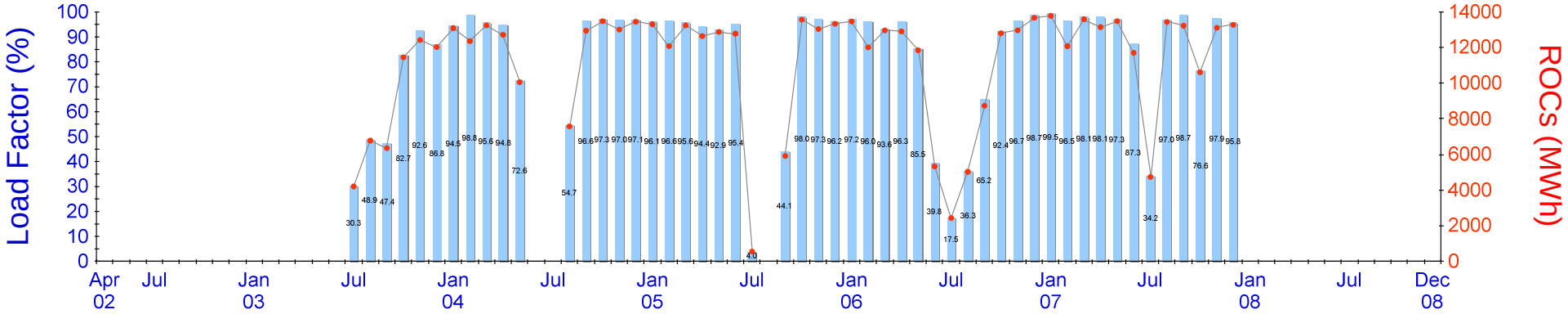
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	100	0	
2003	100	488	
2004	100	441	50.3
2005	100	505	57.6
2006	100	520	59.4
2007	100	480	54.8

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Shin Power Station** **R.O. ID** **R00058SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :18,620



Station Summary

Date commissioned	01/06/2003
Operator Company	Scottish and Southern Energy - Generation Ltd
Contact address	Invernan, By Lairg, Sutherland , IV27 4EY
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	18,620	0	
2003	18,620	53,240	
2004	18,620	121,945	74.8
2005	18,620	123,372	75.6
2006	18,620	124,167	76.1
2007	18,620	146,206	89.6

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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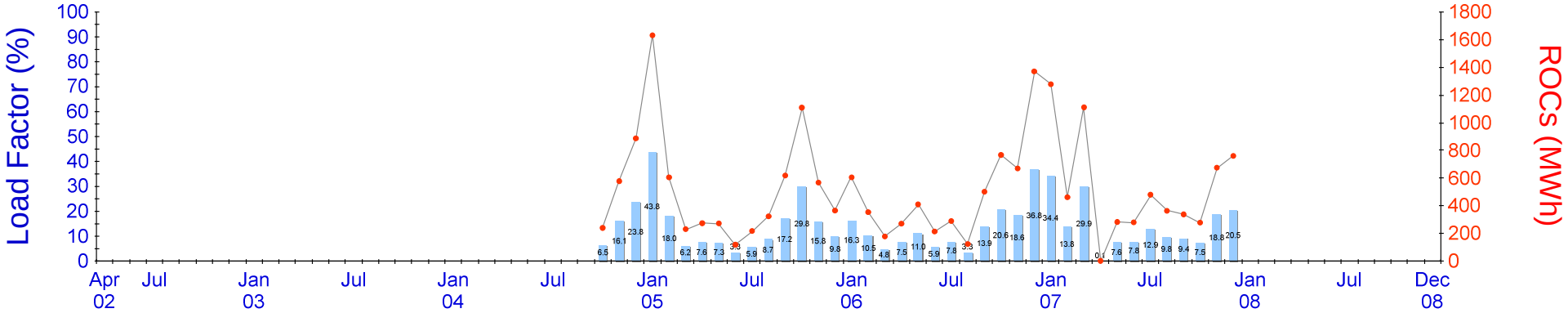
Generating Station Name: **Sron Mor Powerstation** **R.O. ID** **R00087SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :5,000



Station Summary

Date commissioned	01/01/1957
Operator Company	SSE Generation Limited
Contact address	Glen Shira, By Inverary, Argyll , PA26
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	5,000	0	
2003	5,000	0	
2004	5,000	1,705	
2005	5,000	6,338	14.5
2006	5,000	5,756	13.1
2007	5,000	6,313	14.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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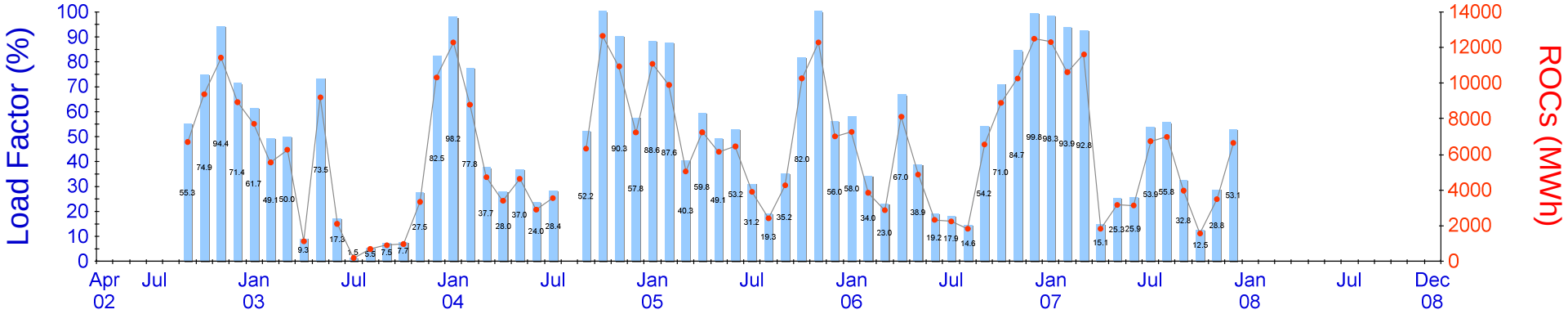
Generating Station Name: St Fillans Power Station **R.O. ID** R00019SESC

Technology Type : Hydro <20 MW DNC Current TIGC (kW) :16,830



Station Summary

Date commissioned	01/01/1957
Operator Company	SSE Generation Ltd
Contact address	St Fillans, Perthshire, Scotland , PH6 2NG
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

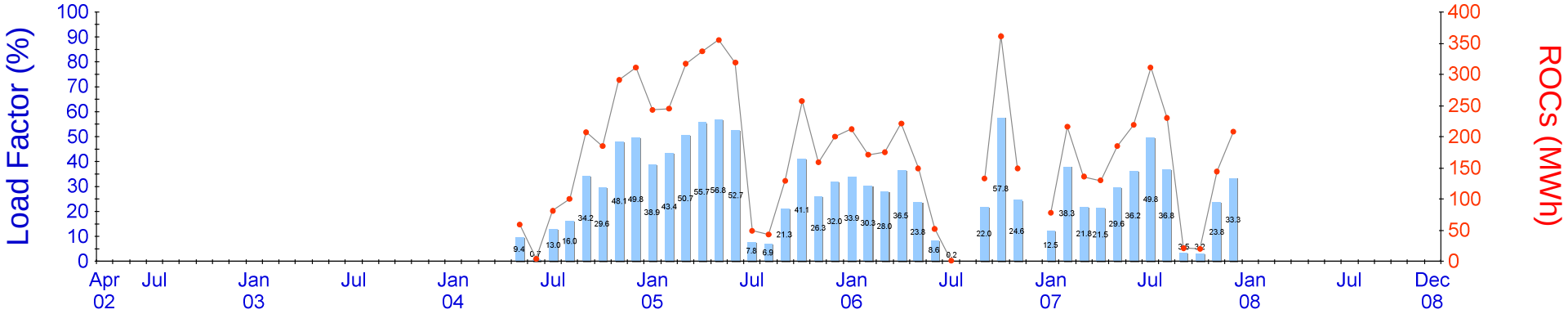
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	16,830	36,453	
2003	16,830	48,371	32.8
2004	16,830	77,454	52.5
2005	16,830	86,045	58.4
2006	16,830	71,595	48.6
2007	16,830	72,100	48.9

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Stanley Mills Hydro Station** **R.O. ID** **R00080SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :840



Station Summary

Date commissioned	01/11/2003
Operator Company	RWE Innogy Hydro
Contact address	Mill Road, Stanley Mills, Stanley, Perthshire , PH1 4QE
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	840	0	
2003	840	0	
2004	840	1,238	
2005	840	2,653	36.1
2006	840	1,624	22.1
2007	840	1,898	25.8

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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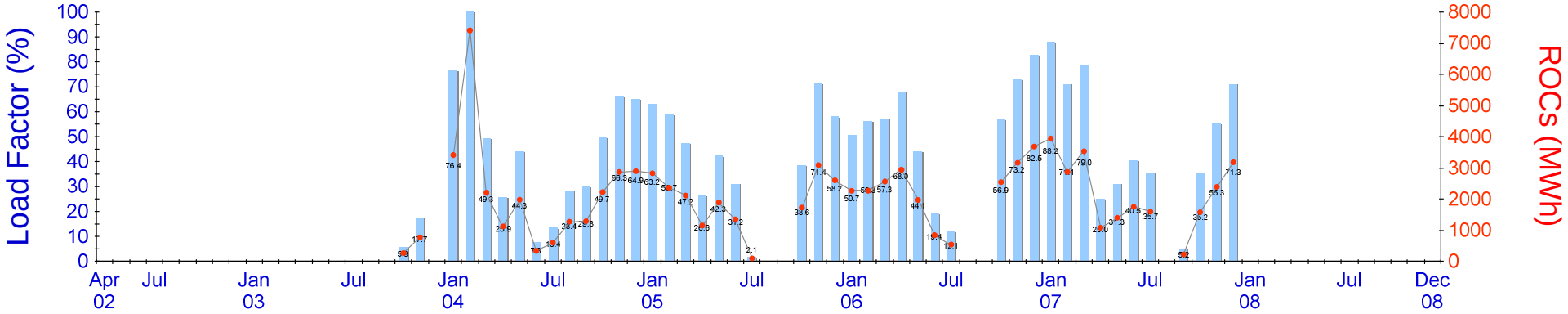
Generating Station Name: **Stonebyres Power Station** **R.O. ID** **R00071SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :6,000



Station Summary

Date commissioned	01/06/1928
Operator Company	Scottish Power Generation Limited
Contact address	Scottish Power Generation Business, Renewable Energy Group, Kirkfieldbank, Lanark , ML11 9UP
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

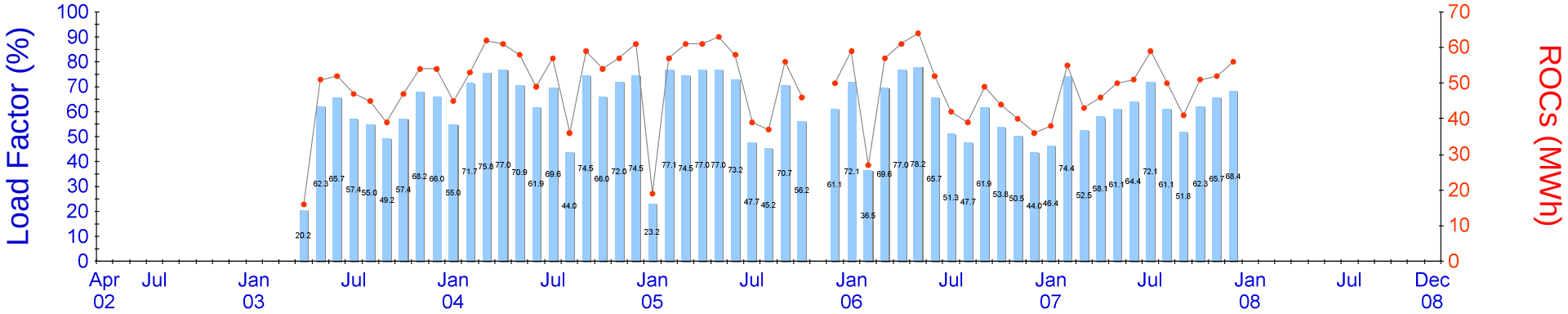
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	6,000	0	
2003	6,000	1,028	
2004	6,000	27,586	52.5
2005	6,000	19,181	36.5
2006	6,000	22,759	43.3
2007	6,000	23,515	44.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Stormontfield Hydro Station** **R.O. ID** **R00024SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :110



Station Summary

Date commissioned	01/01/1987
Operator Company	TLS Hydro Power Ltd
Contact address	Stormontfield Hydro Station, Stormontfield, Perth , PH2 6BJ (First Floor, Batchwork Lock House, 99 Church Street, Rickmansworth, Hertfordshire)
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

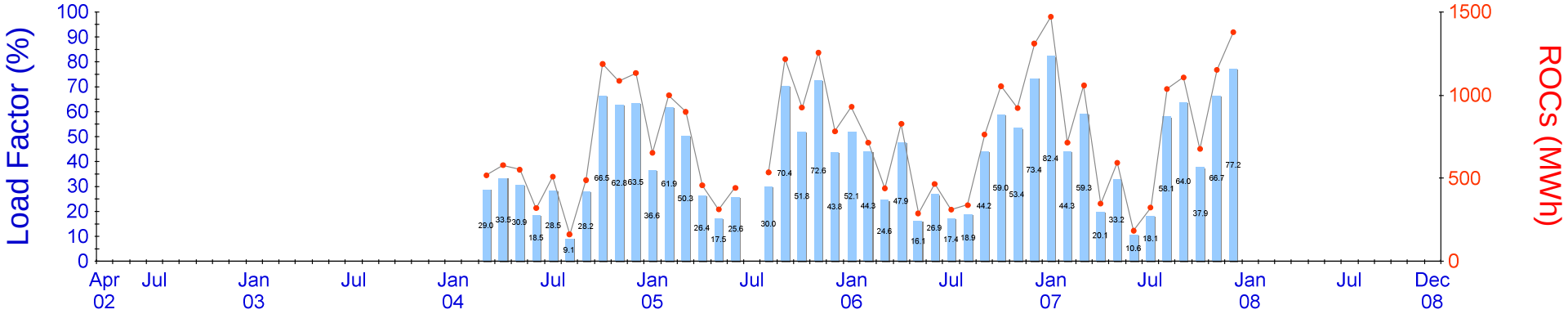
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	110	0	
2003	110	405	
2004	110	652	67.7
2005	110	547	56.8
2006	110	570	59.2
2007	110	592	61.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Storr Lochs Power Station** **R.O. ID** **R00075SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :2,400



Station Summary

Date commissioned	01/01/1952
Operator Company	SSE Generation Limited
Contact address	Bayfield Lane, Near Portree, Isle of Skye , IV51 9EN
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	2,400	0	
2003	2,400	0	
2004	2,400	6,532	
2005	2,400	8,475	40.3
2006	2,400	8,360	39.8
2007	2,400	10,040	47.8

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

SSEF SCOTTISH SUSTAINABLE ENERGY FOUNDATION
Scottish Sustainble Energy Foundation, Prospect House, 5 Thistle St, Edinburgh, EH2 1DF

Generating Station Name: **Strathdon Hydro** **R.O. ID** **R00058SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :75

Load Factor (%)

ROCs (MWh)

Station Summary

Date commissioned	01/11/2007
Operator Company	Strathdon Hydro, Semeil Farm
Contact address	Semeil Farm, Strathon, Aberdeenshire , AB36 8XJ
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

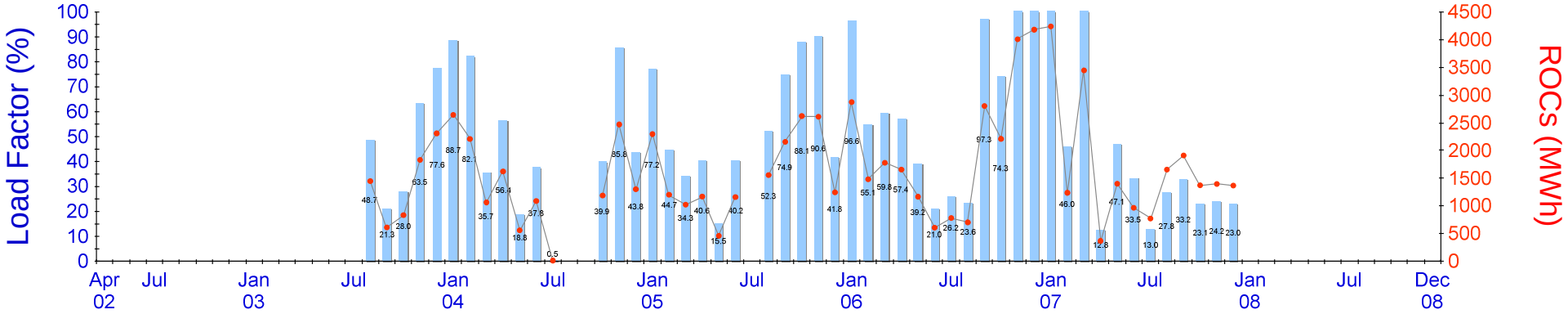
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	0	
2007	0	0	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Striven Power Station** **R.O. ID** **R00063SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :8,000



Station Summary

Date commissioned	01/01/1951
Operator Company	SSE Generation Limited
Contact address	Glen Striven, By Dunoon, Argyll , PA23 8RG
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	4,000	0	
2003	4,000	7,033	
2004	4,000	14,155	40.4
2005	4,000	17,494	49.9
2006	4,000	24,245	69.2
2007	0	20,128	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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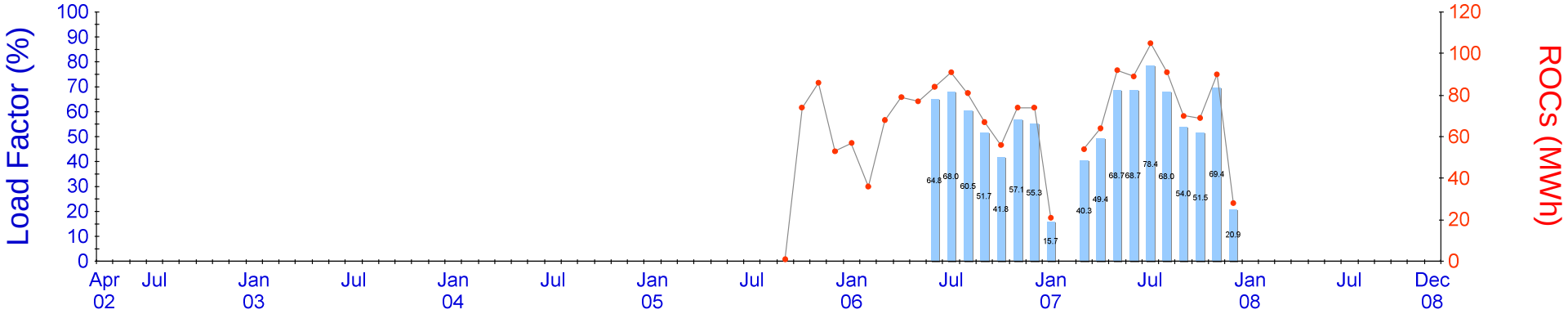
Generating Station Name: **Stronuich Power Station** **R.O. ID** **R00116SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :180



Station Summary

Date commissioned	01/01/1957
Operator Company	SSE Generation Limited
Contact address	Stronuich Power Station, Bridge of Balgie, Glen Layon, By Aberfeldy, Perthshire , PH15
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

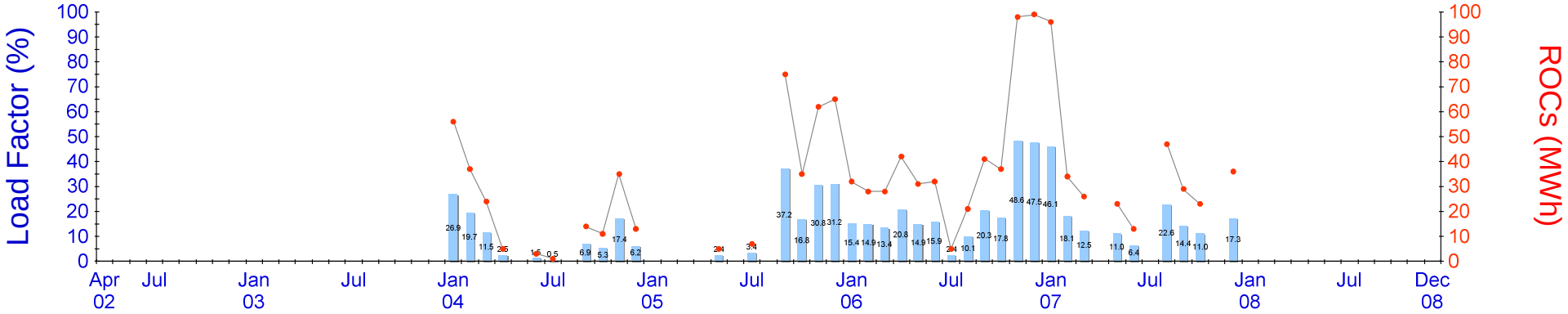
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	214	
2006	0	844	
2007	180	773	49.0

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Tobermory Power Station** **R.O. ID** **R00060SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :280



Station Summary

Date commissioned	01/01/1953
Operator Company	SSE Generation Limited
Contact address	Tobermory, Isle of Mull, Argyll , PA75
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	280	0	
2003	280	0	
2004	280	199	8.1
2005	280	249	10.2
2006	280	494	20.1
2007	280	327	13.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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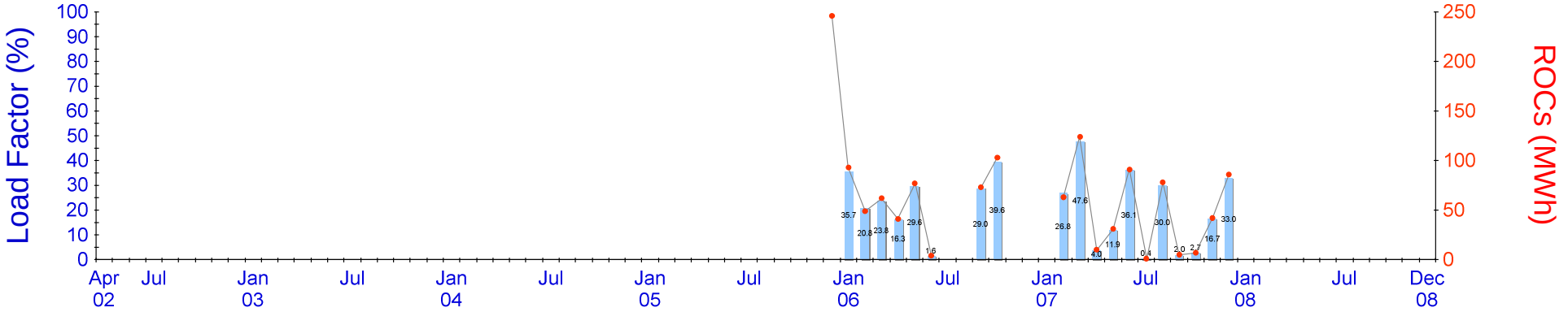
Generating Station Name: **Tombuie Hydro** **R.O. ID** **R00110SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :350



Station Summary

Date commissioned	01/04/2005
Operator Company	Bolfracks Estate
Contact address	Balnaskeag, Kenmore, Perthshire , PH15 2HA
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

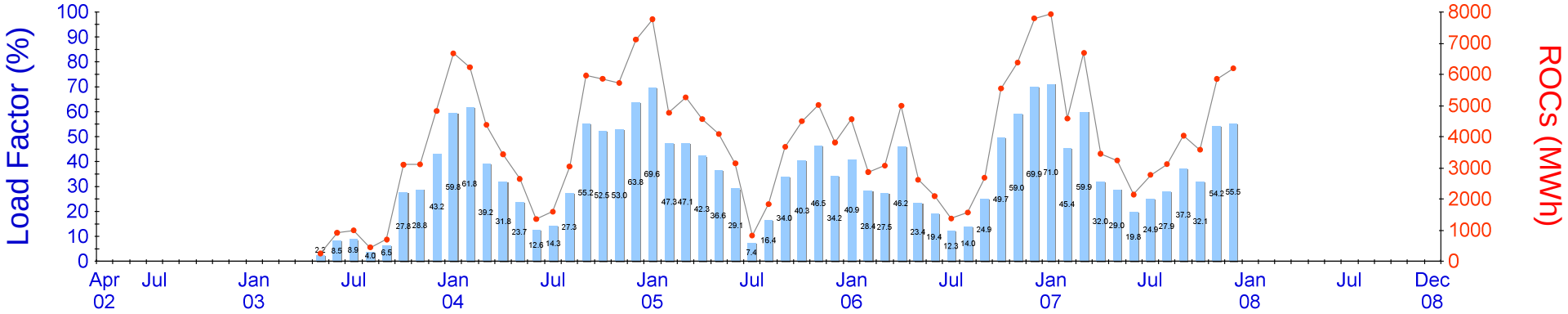
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	246	
2006	350	502	16.4
2007	350	538	17.5

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Torr Achilty Power Station** **R.O. ID** **R00055SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :15,000



Station Summary

Date commissioned	01/01/1954
Operator Company	SSE Generation Ltd
Contact address	Urray, Muir of Ord, Ross-Shire , IV6 7QF
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	15,000	0	
2003	15,000	14,335	
2004	15,000	54,001	41.1
2005	15,000	49,245	37.5
2006	15,000	45,525	34.6
2007	15,000	53,572	40.8

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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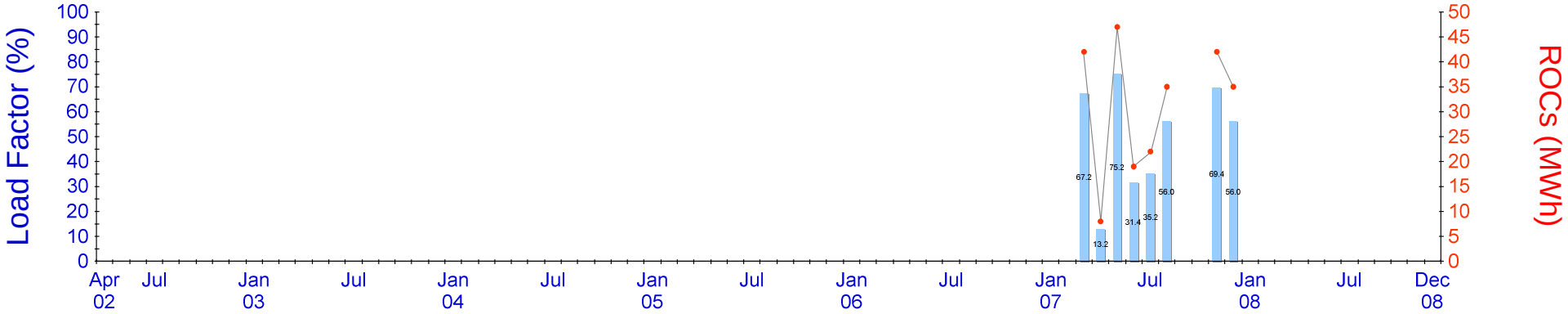
Generating Station Name: **Tralaig Power Station** **R.O. ID** **R00122SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :84



Station Summary

Date commissioned	01/01/1956
Operator Company	SSE Generation Limited
Contact address	Braes, Kilmelford, By Oban, Argyll , PA34
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

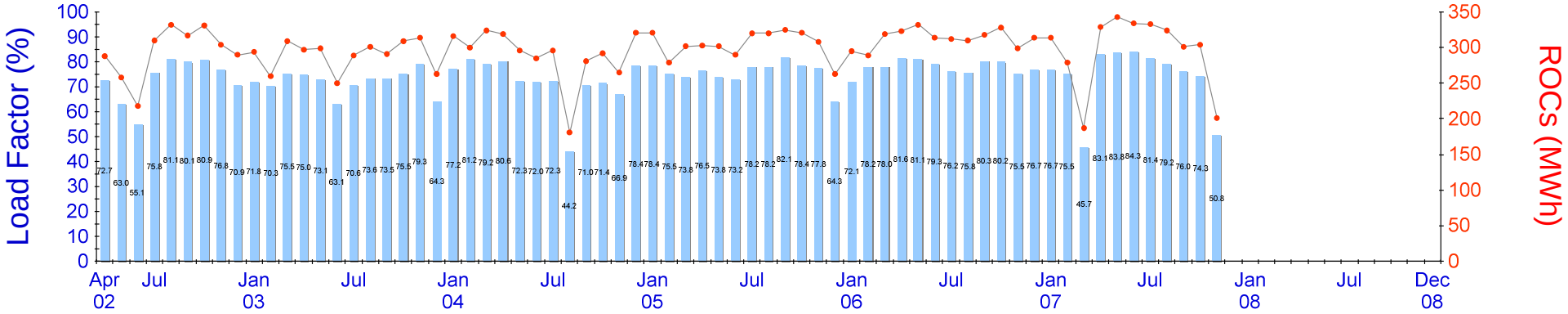
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	0	0	
2003	0	0	
2004	0	0	
2005	0	0	
2006	0	0	
2007	0	250	

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Trinafour Power Station** **R.O. ID** **R00005SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :550



Station Summary

Date commissioned	01/01/1959
Operator Company	SSE Generation Limited
Contact address	By Calvine, Pitlochry, Perthshire , NN725648
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	550	2,648	
2003	550	3,476	72.1
2004	550	3,476	72.1
2005	550	3,654	75.8
2006	550	3,753	77.9
2007	550	3,249	67.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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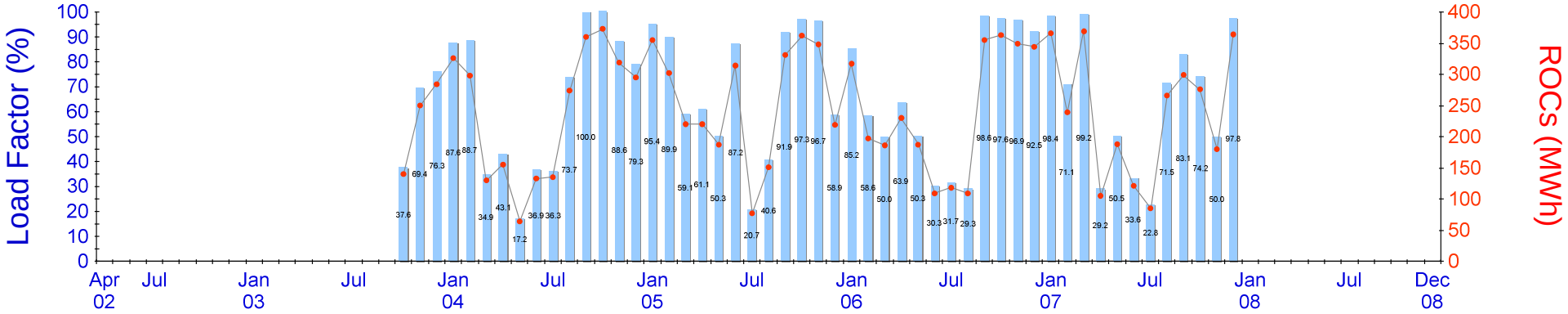
Generating Station Name: **Twin Loch Hydro** **R.O. ID** **R00050SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :500



Station Summary

Date commissioned	01/08/2003
Operator Company	C R Foster & Partners
Contact address	Ashfield Farm, Achnamara, By Lochgilphead, Argyll, Scotland , PA31 8PT
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

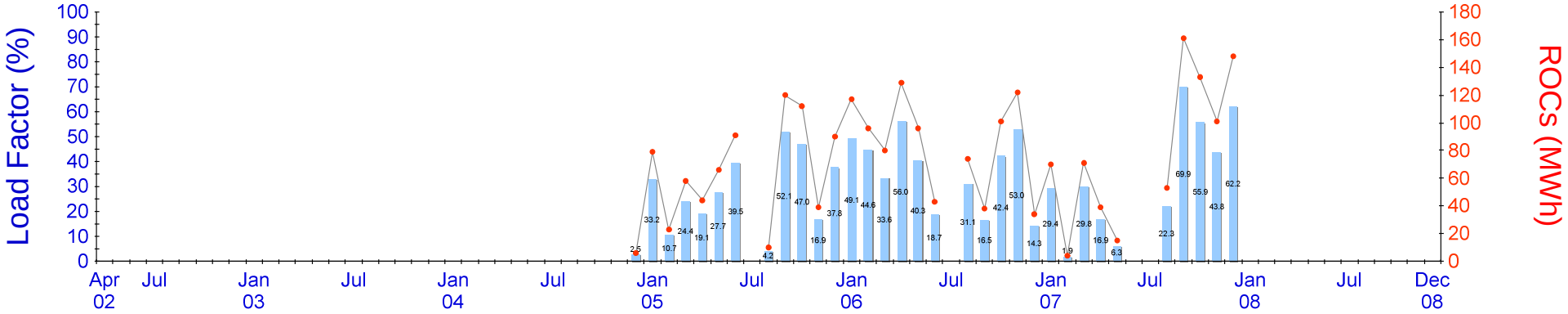
Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	500	0	
2003	500	674	
2004	500	2,862	65.3
2005	500	3,086	70.5
2006	500	2,864	65.4
2007	500	2,858	65.3

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Generating Station Name: **Vaich Power Station** **R.O. ID** **R00094SESC**

Technology Type : **Hydro <20 MW DNC** Current TIGC (kW) :320



Station Summary

Date commissioned	01/01/1956
Operator Company	SSE Generation Limited
Contact address	Silverhill Hydro Station, By Garve, Ross-shire , NH321726
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	320	0	
2003	320	0	
2004	320	6	
2005	320	732	26.1
2006	320	930	33.2
2007	320	795	28.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

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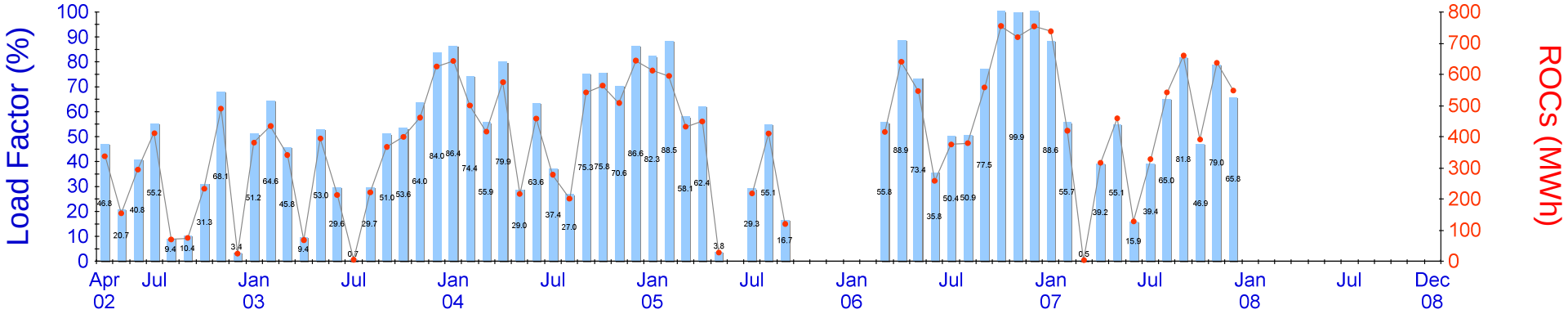
Generating Station Name: **Victoria Falls Station** **R.O. ID** **R00014SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :1,120



Station Summary

Date commissioned	01/04/1993
Operator Company	Garbhaig Hydro Power Ltd.
Contact address	Loch Garbhaig, Strattadale, Ross-shire , NG711894
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

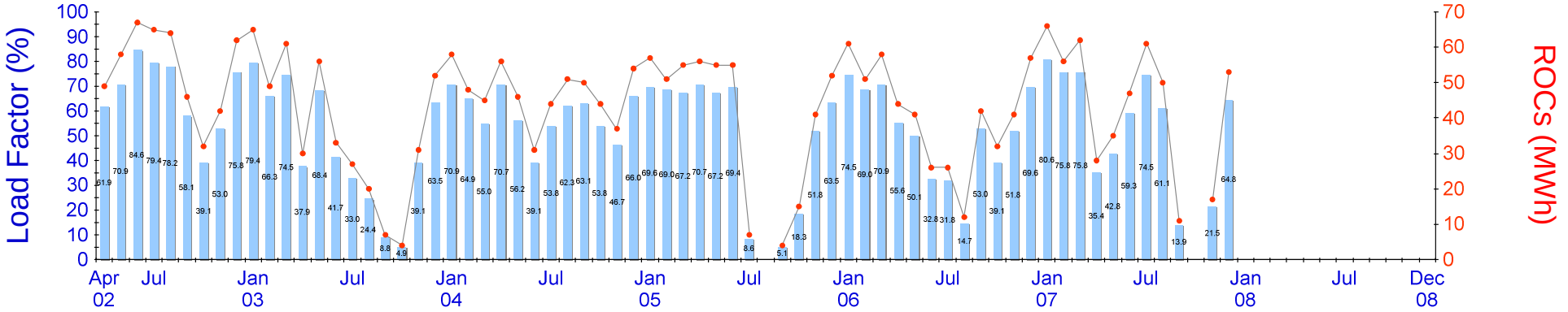
Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	1,000	2,089	
2003	1,000	3,909	44.6
2004	1,000	5,545	63.3
2005	1,000	2,864	32.7
2006	1,000	5,399	61.6
2007	1,120	5,170	52.7

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

SSEF SCOTTISH SUSTAINABLE ENERGY FOUNDATION
Scottish Sustainble Energy Foundation, Prospect House, 5 Thistle St, Edinburgh, EH2 1DF

Generating Station Name: **West Cromwell Park, Almond Bank** **R.O. ID** **R00021SDSC**

Technology Type : **Micro hydro** Current TIGC (kW) :110



Station Summary

Date commissioned	01/11/1987
Operator Company	Kestral Controls Ltd
Contact address	MOD Site no 6, West Cromwell Park, Almond Bank, Nr Perth , NN055270
Operator comments	
Research notes	

Corrections from operators shown in red brackets ( )

Annual Summary

Year	Annual TIGC (kW)	Annual ROCs (MWh)	Annual LF (%)
2002	110	485	
2003	110	435	45.1
2004	110	564	58.5
2005	110	448	46.5
2006	110	491	51.0
2007	110	486	50.4

Notes:
1. TIGC stands for Total Installed Generating Capacity (kW)
2. TIGC is shown blank if its value changes within the year
3. Annual Load Factor (LF) is shown blank if the station is commissioned and starts producing ROCs in that year. This is to avoid calculating annual LF for new stations which generate for only part of the year.

Scottish and Southern

Grampian House
200 Dunkeld Road
Perth
PH1 3GH

Telephone: 01738 458420
Facsimile: 01738 457790

Mr N Dekker
1 Nairn Way
Cumbernauld
G68 0HX

Date: 13th November 2007

Our Reference: let1344

Dear Mr Dekker

Thank you for your letter concerning the refurbishment of our hydro power stations.

The majority of our power stations and associated infrastructure are over fifty years old with some dating back to the 1920's. This age profile led to the majority of them requiring refurbishment around the same time. In order that all our stations could continue to operate, some have been fully refurbished and others have had a partial refurbishment of critical components. Our intention being to maintain them in a safe and reliable condition until a full refurbishment of the remaining components is carried out.

We are currently refurbishing an average of five machines per year combined with a substantial programme of civil infrastructure life extension works. The total sum invested in our hydro schemes since 2001 is £172,000,000.

We are currently refurbishing machines at Clunie, Nostie Bridge, Deannie and Achanault Power Stations. The next group of stations to be refurbished will be chosen on a risk based asessment.

I hope this answers your questions and you will see from this figure that we are well on our way to fulfilling the commitment we gave back in 2001.

Yours sincerely

Paul R. Smith

Paul R Smith
Director of Generation

MR PAUL R SMITH
DIR. OF GENERATION
SCOT. & SOUTH. ENERGY

1, NAIRN WAY
CUMBERNAULD
G68 0HX

DEAR MR SMITH

THANK YOU FOR YOUR LETTER 1344 OF 13TH NOV. AND THE INFORMATIVE INFORMATION CONTAINED.
I WOULD BE GRATEFUL IF YOU WOULD LET ME KNOW THE FOLLOWING

1. DOES THE £172 MILLION YOU REFERRED TO COVER COSTS ASSOCIATED ONLY WITH REFURBISHMENT OF EXISTING HYDRO STATIONS, AND NONE OF IT APPLIES TO THE GLENDOE PROJECT?

2. COULD YOU PROVIDE ME WITH A LIST OF ALL >1MW HYDRO PLANTS THAT YOU OPERATE, AND WHAT THEIR REFURBISHMENT STATUS IS AT PRESENT I.E. DATE REFURBISHED, IF REFURBISHED TO A LOWER CAPACITY, YET TO BE REFURBISHED BY EXPECTED DATE.?

3. HAVE ANY STATIONS THAT HAVE <u>YET TO BE</u> REFURBISHED, PRESENTLY ACCREDITED FOR QUALIFICATION UNDER THE ROC SCHEME?

4. IS IT POSSIBLE TO FIND OUT FROM YOUR ANNUAL ACCOUNTS, HOW MUCH

S.S.E HAVE BENEFITTED IN THEIR TRADING OF THE ROC's EARNED FROM THE ELECTRICITY THEY HAVE PRODUCED FROM THEIR ACCREDITED HYDRO STATIONS.

4. APPROX. HOW MUCH HAVE SSE RECEIVED EACH YEAR SINCE THE ROC ACCREDITATION SCHEME COMMENCED, FROM TRADING IN THE ROC's RECEIVED FROM THE ELECTRICITY PRODUCED AT THEIR ACCREDITED HYDRO STATIONS.

THANK YOU
YOURS SINCERELY
Nick Dekker
NICK DEKKER

cc. MR ALEX NEILL, MSP. HOLYROOD.

Scottish and Southern Energy

Grampian House
200 Dunkeld Road
Perth
PH1 3GH

Telephone: 01738 4578420
Facsimile: 01738 457790

Mr N Dekker
1, Nairn Way
Cumbernauld
G68 0HX

Date: 7th December 2007

Our Reference: let1348

Dear Mr Dekker

Thank you for your most recent letter.

I believe your concerns boil down to this: Has the Renewables Obligation (Scotland) led to investment in the refurbishment of Scotland's hydro electric stations which might have been delayed or not taken place at all? Does this refurbishment mean the productive life of those stations has been extended by several decades? Does the investment mean that more renewable energy is being produced from those stations than would otherwise have been the case? Is SSE's commitment to invest £250m in hydro station refurbishment in the 10 years to 2011 on course to be achieved? And do SSE's activities comply with the Renewables Obligation (Scotland)? The answer to all of those questions is yes.

I acknowledge that you have some other questio s, but they are essentially commercial in nature.

On the basis of the clear response I have given to you on the fundamental points which have been raised during your correspondence, I believe we can now bring it to a close.

Yours sincerely

Paul R. Smith

Paul R Smith
Director of Generation

Address:
18 George Street
Edinburgh
EH2 2QU

Telephone
0845 146 1010
Fax:
0845 146 1009

Website:
www.audit-scotland.gov.uk

AUDIT SCOTLAND

Mr N Dekker
1 Nairn Way
Cumbernauld
G68 0HX

22nd January 2008
Our ref: 08-g-066

Dear Mr Dekker

Renewable Obligation Certificates

Thank you for your letter about Renewable Obligation Certificates which I received on 4th January.

Audit Scotland provides services to the Auditor General for Scotland. The Auditor General has responsibility for securing the audit of most public bodies in Scotland, including the Scottish Government, its executive agencies, non-departmental public bodies and further education colleges. He may also initiate examinations into the economy, efficiency and effectiveness with which bodies and office-holders have used their resources in discharging their functions.

The Auditor General may not question the merits of policy decisions taken by or on behalf of Ministers. Decisions as to who is eligible for Renewable Obligation Certificates are a policy matter which rests with Ministers and the award itself does not lead to any financial payment from the Scottish Government. In these circumstances the issues you have raised are not covered by the audit of accounts and should be pursued with the Scottish Government.

Examinations of economy, efficiency and effectiveness may consider the effects of policy decisions. Examinations are delivered through a forward work programme which is produced after a risk assessment of the issues affecting public bodies and after a wide consultation process. The results of such examinations would normally be reported to the Scottish Parliament. The information you have provided may help inform our risk assessment for our future work programme.

I hope this information is of use to you.

Yours sincerely

Bob Leishman
Portfolio Manager
Public Reporting Group

The Scottish Parliament

Alex Neil MSP

SERVING CENTRAL SCOTLAND

AN/RI

Paul Smith
Director of Generation
Scottish & Southern Energy
Grampian House
200 Dunkeld Road
Perth
PH1 3GH
Thursday, 31st January 2008

Dear

I am writing on behalf of a constituent of mine, Mr Nick Dekker, who has been making enquiries into the nature of subsidies given to hydro stations to carry out refurbishments. Mr Dekker asked some very legitimate questions as to the nature of subsidies provided for refurbishing hydro stations. However, the responses he has received thus far have not been adequate and I am asking that you pursue this matter on his behalf.

In a letter to you in late November Mr Dekker asked for 5 specific pieces of information, to which he did not receive a formative reply. As a recipient of public subsidy I believe it is incumbent upon your organisation to demonstrate that the taxpayer has received value for money. I would therefore ask if you could provide me with a response to the specific questions asked by Mr Dekker, namely:

1) Has any of the £172million which you have invested in refurbishment of your hydro schemes since 2001 been invested in the Glendoe project, or has it only covered the cost of existing hydro power stations.

2) Can you provide a list of all hydro plants of output greater than 1MW which you operate, and provide details of their refurbishment status?

3) Are any stations that have yet to be refurbished presently accredited for qualification under the ROC scheme?

4) Do your annual accounts give details of how much SSE have benefited in their trading of the ROCs earned from the electricity produced from accredited hydro stations?

Alex Neil MSP Scottish Parliament, Holyrood, EDINBURGH EH99 1SP

Telephone: 0131 348 5703; Fax: 0131 348 5895; E-Mail alex.neil.msp@scottish.parliament.uk

The Scottish Parliament

Alex Neil MSP

SERVING CENTRAL SCOTLAND

5) How much have SSE received each year from the trading in the ROCs received from the electricity produced at their accredited hydro power stations, since the ROC accreditation scheme commenced?

In the interests of scrutinising use of public money, I would be grateful if you could assist in pursuing this matter.

Yours Sincerely

Alex Neil MSP

Alex Neil MSP Scottish Parliament, Holyrood, EDINBURGH EH99 1SP

Telephone: 0131 348 5703; Fax: 0131 348 5895; E-Mail alex.neil.msp@scottish.parliament.uk

Scottish and Southern Energy

Grampian House
200 Dunkeld Road
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PH1 3GH

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Facsimile: 01738 457790

Alex Neil MSP
Scottish Parliament
Holyrood
Edinburgh
EH99 1SP

Date: 12th February 2008

Our Reference: let1351

Dear Mr Neil

Thank you for your letter of 31 January. In answer to your questions:

- The £172m quite clearly refers to investment in refurbishment of hydro electric stations to extend their lives, optimise their engineering capability and increase their output of renewable energy. The money invested in Glendoe is over and above this.
- Please find attached the list of hydro electric stations as requested.
- No output from stations that have yet to be refurbished qualifies for Renewable Obligation Certificates (ROCs).
- SSE's Annual Report sets out how much output from its power stations qualifies for ROCs, but does not provide information beyond that.

It is perhaps worth emphasising that investment of the kind undertaken by SSE is not subsidised; it is only output from certain stations in which there has been investment up to the required standard that qualifies for ROCs.

Given the proposals for a Scottish Climate Change Bill, and given your party's commitment to renewable energy, you might find a visit to a refurbished hydro electric station to be of interest. If so, please do not hesitate to contact our Public Affairs Manager, George Baxter, on 01738 455120.

Yours sincerely

Paul R. Smith

Paul R Smith
Director of Generation

Scottish and Southern Energy Hydro Power Stations

Station	MW	Refurbishment status	
Achanalt	3	Completed for ROC compliance	2006
Aigas	20	Completed for ROC compliance	2003
Allt-na-Lairige	6	Completed for ROC compliance	2004
Cashlie	11	Completed for ROC compliance	2004
Cassley	10	Completed for ROC compliance	2005
Ceannacroc	20	Completed for ROC compliance	2003
Chliostair	1.1	Completed for ROC compliance	2004
Clachan	40	Completed for ROC compliance	2001
Clunie	61.2	Currently being refurbished	
Cuaich	2.5	Completed for ROC compliance	2004
Cuileig	3.2	Completed for ROC compliance	2002
Culligran	19.1	Completed for ROC compliance	2005
Dalchonzie	4	Completed for ROC compliance	2004
Deanie	38	Completed	2006
Errochty	75	Completed	2000
Fasnakyle	69	Completed	2006
Fasnakyle comp set	7.5	Completed for ROC compliance	2006
Finlarig	16.5	Completed for ROC compliance	2003
Foyers	300	on going works	
Foyers Falls	5.2	Completed for ROC compliance	2005
Gaur	7.5	Completed for ROC compliance	2003
Glenmoriston	37	Completed	1999
Grudie Bridge	18.66	Completed for ROC compliance	2003
Inverawe	25		
Invergarry	20	Completed for ROC compliance	2003
Kerry Falls	1.25	Completed for ROC compliance	2004
Kilmelfort	2.082	Completed for ROC compliance	2004
Kilmorack	20	Completed for ROC compliance	2003
Kingairloch	3.5	Completed for ROC compliance	2005
Lairg	3.5	Completed for ROC compliance	2004
Lednock	3	Completed for ROC compliance	2002
Livishie	15	Completed for ROC compliance	2005
Loch Dubh	1.2	Completed for ROC compliance	2006
Loch Ericht	2.2	Completed for ROC compliance	1991
Loch Gair	6	Completed for ROC compliance	2004
Lochay	45		
Lochay Comp Set	2	Completed for ROC compliance	2004
Lubreoch	4	Completed for ROC compliance	2004
Luichart	34		
Lussa	2.4	Completed for ROC compliance	2003
Mossford	18.66	Completed for ROC compliance	2003
Mucomir	1.75		
Mullardoch	2.4	Completed for ROC compliance	2005
Nant	15	Completed for ROC compliance	1995
Nostie Bridge	1.3	Completed for ROC compliance	2003
Orrin	18	Completed for ROC compliance	2003
Pitlochry	15	Completed for ROC compliance	2007
Quoich	18.05	Completed for ROC compliance	2003
Rannoch	44.1	Completed	1999
Shin	18.62	Completed for ROC compliance	2003
Sloy	152.5	Completed	1996
Sron Mor	5	Completed for ROC compliance	2004
St. Fillans	16.83	Completed for ROC compliance	2001
Storr Lochs	2.4	Completed for ROC compliance	2004
Striven	8	Completed for ROC compliance	2004
Torr Achilty	15	Completed for ROC compliance	2003
Tummel	34		

AN/RI

February 27th, 2008

Paul Smith
Director of Generation
Scottish & Southern Energy
Grampian House
200 Dunkeld Road
Perth PH1 3GH

Dear Paul

Thank you for your letter dated 12th February, and for your assistance in providing information relating to hydro subsidies. Your answers raise a few issues which I would be most grateful if you could clarify:

1) In your letter, you state that "the £172m quite clearly refers to investment in refurbishment of hydro stations." How much of the £172m was invested in the 44 hydro stations that have a status (in the table you provided) of 'completed for ROC compliance.'

2) Could you clarify exactly what 'completed for ROC compliance' actually covers – does this mean the station has been fully refurbished, or partly refurbished to an agreed minimum standard?

3) According to the Enterprise, Energy and Tourism Directorate of the Scottish Government, seven of the SSE-refurbished Schemes reduced their capacity from above 20MW to below 20MW before 1st April 2002. Could you please provide the names of these stations, and also the capacity before and after refurbishment? In addition, was there any *technical* reason for the reduction in capacity of these stations?

4) Could you please indicate how much was spent in refurbishing each of the following five small hydro stations: Mossford, Quioch, Ceanacroc, Grudie Bridge and Invergarry.

5) Finally, could you please provide an answer to the final question in my previous letter: *how much* have SSE received each year from the trading of ROCs gained from these hydro stations, since the ROC accreditation scheme commenced?

I thank you again for your assistance, and look forward to hearing from you.

Yours Sincerely

Alex Neil MSP

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200 Dunkeld Road
Perth
PH1 3GH

Telephone: 01738 458420
Facsimile: 01738 457790

Alex Neil MSP
Scottish Parliament
Holyrood
Edinburgh
EH99 1SP

Date: 14th April

Our Reference: let1355

Dear Alex

Thank you for your letter dated the 27 February regarding the refurbishment of our hydro power stations. I apologise for the delay in replying to you. I am, of course, very willing to meet with you to discuss these issues if that would be helpful and I would like to repeat my invitation to you to visit a hydro electric scheme.

Investment History

Prior to the Renewables Obligation being introduced, Scottish and Southern Energy was investing in the refurbishment of its hydro assets. This investment was required due to the age and condition of the stations, which had suffered from a lack of investment for many years during the period that the industry was nationalised. Nevertheless, the investment decisions, particularly for small stations were always marginal especially when compared to the cost of new gas-fired power stations.

The vast majority of SSE's stations were built in the 1950s and early 60s and were still operating with the original equipment. When the industry was privatised, SSE's predecessor company, Scottish Hydro Electric, realised that a refurbishment programme was required to bring the assets back to an acceptable standard both for safety and efficiency of operation. This could not be a quick fix and, indeed, that work is still continuing some 17 years later.

SSE owns 125 machines and the current aim is to refurbish an average of five machines per year, resulting in a rolling 25 year programme which, when complete, will require to be started again.

Impact of Renewables Obligation
The introduction of Renewables Obligation Certificates (ROCs) and the 20 megawatt (MW) limit secured the future refurbishment of all the hydro assets, including the smaller stations. It ensured that the existing hydro assets would contribute to renewable energy production well into the future.

To qualify for ROCs the legislation sets a standard which is, basically, renewal of all the turbine moving parts. This ensures improved efficiency to at least the original design. While it did not require any other station components to be refurbished, SSE has taken the view that over time it should completely refurbish all its sites.

Accelerated Refurbishment Programme
When this legislation was introduced, SSE embarked on an accelerated programme to refurbish the turbines in the stations which were less than 20 MW. It also re-rated machines in seven stations to allow them to qualify. The seven hydro power stations which were re-rated prior to 1 April 2002 did, once they were refurbished as per the legislation, become eligible for ROCs.

The re-rating did *not,* however, reduce the volumes of energy produced by these power stations; indeed, because they were all fitted with new turbine runners and had the fixed elements refurbished, they are more efficient than those they replaced. The reduced water velocities required for the lower outputs also adds to the efficiency gain. The average time a hydro station runs in Scotland, at full load equivalent output, is 34%. This means that there are long spells when some power stations do not run due to a lack of water. All of the re-rated stations have significant storage capacity which allows SSE to store the water and then run the power station when required. The lower installed capacity at these sites simply means they are run for a bit longer.

The accelerated programme SSE undertook on all its sub-20 MW stations, I believe, matched the letter and the spirit of the Renewables Obligation. It led to old hydro stations having new and refurbished turbine components fitted, in some cases many years before they otherwise would have. The Renewable Order stipulates that this must be done before a station qualifies for ROCs. SSE refurbished the turbines in the vast majority of its qualifying stations within 18 months. This was a fantastic effort by all the staff and contractors involved.

An additional knock on benefit of re-rating these stations has been to free up much needed capacity on the transmission system. This capacity will have undoubtedly been used to allow other renewable projects access to the system without which they could not operate.

While all of this work was going on we continued with our full refurbishment programme. By this I mean refurbishing all components associated with the power stations. When we start a refurbishment at a site we look at all the components and either replace or recondition them with a view to having a further 25 years of life. Obviously where new turbines have been fitted or other work has been carried out the scope is reduced accordingly. As I have already stated this work continues across all of our sites, large and small, and when combined with the investment in refurbished turbines, amounts to £172m since 2001.

Capacity Versus Output
SSE has been asked many times to explain why a reduction in capacity does not necessarily lead to a reduction in energy generated. Generally once the difference between size i.e. MW of installed capacity and energy i.e. MWhrs (megawatt hours) of electricity generated, is understood, the reasoning behind the re-rating is accepted as sound.

In this context, it is also worth emphasising again that investment of the kind undertaken by SSE is not subsidised; it is only output from certain stations in which there has been investment up to a required that qualifies for ROCs.

Total Investment
There is one error in the list of stations I previously sent to you, Clachan is listed as "Completed for ROC compliance" but as it is over 20 MW it does not receive ROCs. There are also three new stations included: Cuileig, Kingairloch and Fasnakyle compensation set. The investment in new sites is not included in the £172m. The remaining 40 sites have received investment of around £130m in their refurbishment and life extension. The remaining money has been spent on refurbishing larger stations and civil infrastructure such as dams, tunnels and roads, without which the stations could not operate.

In the table previously provided, the phrase "completed for ROC compliance" means that the station is accredited for ROCs. It does not indicate full or partial refurbishment.

Seven Sites
The seven sites which were re-rated are as follows:

Station	Before	After
Finlarig	30	16.5
Quoich	22	18
Shin	24	18.6
St Fillans	21	16.8
Grudie	24	18.7
Mossford	24	18.7
Culligran	24	19.1

Five Sites
The money spent at each of the five sites listed in your letter is:

Station	£m to date	Comments
Mossford	0.16	
Quioch	0.5	Completion 2008/09
Ceanacroc	9.3	Complete
Grudie	0.7	
Invergarry	9.7	Complete

I am unsure why you have selected these sites and what the answers convey to you. In the past two years we have completed the refurbishment of the following machines:

Station	No of Machines	Size (MW)
Loch Dubh	2	1.2
Deannie	2	38
Achanalt	1	3

Nostie	2	1.3
Clunie	2	41

This current year we aim to complete the third machine at Clunie along with the remaining station auxiliary plant, Quoich and Kerry Falls. The future programme is based on condition assessment, scope of work and available resources. The projected annual capital spend for the next 5 years is between £18m and £25m.

Summary
As I stated in my previous letter our annual report sets out how much of our output qualifies for ROCs. Further information about the operation of the Renewables Obligation is, however, available in the public domain from Ofgem.

I hope the above explanation answers yours questions. I feel that if you have further questions it would be far better to meet with either myself or Peter Donaldson our Renewable Generation Manager. If you would like to take up this offer or my previous offer of visiting a refurbished power station please contact our Public Affairs Manager, George Baxter on 01738 455120

Yours sincerely

Paul R. Smith

Paul R Smith
Director of Generation

Nick Dekker

1 Nairn Way

Cumbernauld

G68 0HX

Chief Executive
Scottish Power
Atlantic Quay
Glasgow.

26th Feb. 08

Dear Sir

Hydro Stations and Renewable Obligation Certificates

I understand that Scottish Power operate a number of Hydro stations (< 20MW capacity) that have been qualified by OFGEM for the issue of ROCs on the electricity they produce.

I would be grateful if you would provide me with the following information.

1. The names of these hydro stations.

2. Whether they have been refurbished since 2000 to qualify them for ROCs, and whether this was a full refurbishment or a minimum refurbishment to satisfy an OFGEM requirement standard.

3. If they have been refurbished, what was their installed capacity both before and after refurbishment.

4. Have any of your hydro stations been granted ROC status without having been refurbished.

4. How much **in total** have Scottish Power spent since 2000 in refurbishing these ROC - earning hydro schemes.

5. In each of the last three years how many ROCs have been earned by these stations from OFGEM.

6. In each of the last three years how much have Scottish Power gained financially by being granted ROCs, and trading in these ROCs.

Thank You

Nick Dekker

CC Mr Alex Neil MSP. Scottish Parliament.

ScottishPower

energy wholesale

Nick Dekker
1 Nairn Way
Cumbernauld
GLASGOW
G68 0HX

Your ref

Our ref

Date

25 April 2008

Contact/Extension

Fax No

Dear Mr Dekker

Hydro Stations and Renewable Obligation Certificates

Thank you for your letter addressed to our Chief Executive. I have been asked to respond to you in my capacity as Generation Director as the hydro stations fall under my responsibility.

I note from your letter that it includes two points numbered as item 4. I have responded using your numbering, and amended to reflect this.

1. ScottishPower operates eight conventional hydro stations in Scotland. These are Stonebyres, Bonnington, Drumjohn, Kendoon, Earlstoun, Carsfad, Glenlee and Tongland.

2. Five of these stations (Stonebyres, Bonnington, Drumjohn, Earlstoun, and Carsfad) have been refurbished since 2000. These refurbishments took place as part of our asset maintenance strategy, and further enabled us to have these stations qualify for ROCs.

3. With the exception of Drumjohn, each of the stations which qualifies for ROCs have two generating machines. The ROC qualified capacities of these sites are as follows:

Station	Capacity post-refurbishment
Stonebyres	6 MW
Bonnington	11 MW
Drumjohn	2.2 MW
Earlstoun	14 MW
Carsfad	12 MW

4. No.

5. As you will appreciate, the cost of the ROC refurbishments and all investment in our plant is commercially sensitive information. Regrettably I am unable to provide you with this information.

6. The following ROCs have been generated by ScottishPower from our 5 ROC qualified Hydro stations:

2005/6	100,513
2006/7	124,351
2007/8	To be confirmed.

7. The buy-out price of ROCs in each of the last 3 years is set by government and is publicly available. ScottishPower's trading operations around ROCs are commercially sensitive and I am therefore unable to provide you with this information.

I hope that the information in this letter answers your questions. Should you require further information, please refer to Ofgem's Renewables Obligation Annual Report 2006/7, which provides detailed market information relating to the renewables obligation. This can be obtained online at www.ofgem.gov.uk.

Yours sincerely

Frank Mitchell
Generation Director

The Renewables Obligation

Ofgem's first annual report

February 2004

Summary

This document describes the administration of the Renewables Obligation in England and Wales and in Scotland in the first year of its operation. It includes information on the generating stations accredited under the schemes, details of the Renewables Obligation Certificates ("ROCs") issued under both schemes and details of compliance by generators and by licensed suppliers in the first obligation period. It also describes some of the operational issues that have arisen during the first obligation period.

The Renewables Obligation, which came into force in April 2002, requires licensed electricity suppliers to source at least part of their electricity from renewable generation. The amount of the Renewables Obligation starts at 3% of total electricity supplied to customers in Great Britain in 2002/2003 and reaches 10.4% in 2010/2011. A licensed supplier can meet its Renewables Obligation by producing ROCs to Ofgem or making a buy-out payment or a combination of both.

The Government's recent Energy White Paper endorsed the importance of the Renewables Obligation as the Government's main policy measure to encourage the development of renewable forms of energy in the United Kingdom. The Government has reinforced its commitment to the scheme by announcing in December 2003 an intention to consult on an increase in the level of the Renewables Obligation for the years between 2010/2011 and 2015/2016.

The Renewables Obligation is complex and its administration has involved considerable resource within Ofgem. Ofgem has administered the scheme as efficiently and effectively as possible.

By and large, most operators of accredited generating stations have developed and improved their understanding of the requirements on them during the first obligation period. 431 stations were accredited at the start of the first obligation period and 505 by the end of the period. Ofgem has rejected 9 applications for accreditation and withdrawn one accreditation during the first obligation period.

5,562,669 ROCs were issued under the scheme in the period in question and 2,428 were revoked with 2,604 replacement ROCs being issued. Almost 50% of the ROCs issued were in respect of electricity from landfill gas generation with on-shore wind generation contributing around 20% of ROCs issued.

The total Renewables Obligation across Great Britain was 9,261,568 MWh for the first obligation period.

Suppliers' performance in terms of the correct production of ROCs and/or the payment of buy-out varied. Out of 71 supply licensees in England and Wales, 38 had a Renewables Obligation and 12 of those met their obligation wholly through producing ROCs. Nine suppliers made buy-out payments for 100% of their obligation. The equivalent figures for Scotland were that 28 out of 66 supply licensees had a Renewables Obligation and 16 of those met their obligation wholly through producing ROCs. Four suppliers paid 100% buy-out.

Seven supply licensees failed to produce the required number of ROCs or make the full alternative payment to the buy-out fund prior to 1 October 2003.

23 suppliers received buy-out recycling totalling £79,251,930 under the Renewables Obligation in England and Wales and 19 received buy-out redistribution of £11,267,124 in Scotland.

The document also highlights some of the issues that have arisen in operating the scheme and discusses briefly some of the amendments that have been proposed in the recent review.

Table of contents

1. Introduction

1.1 The Government's aim for renewable energy is that it should make an increasing contribution to UK energy supplies in the years to 2010 and beyond. The intention is that renewables will have a key role to play in the Government's wider Climate Change programme as sourcing 10% of electricity from renewable sources could result in an annual saving of around 2.5 million tonnes of carbon emissions in 2010[1]. The Government's renewable energy policy has five key aims, one of which is to assist the UK to meet national and international targets for the reduction of emissions including greenhouse gases. (The other aims can be found in DTI's Statutory Consultation on the Renewables Obligation[2].)

1.2 Section 32 of the Electricity Act 1989 provides that the Secretary of State may by order impose an obligation on suppliers falling within a specified description ("the Renewables Obligation"). This power has been devolved to the Scottish Executive in respect of suppliers in Scotland. The Gas and Electricity Markets Authority ("the Authority") is responsible for the implementation and administration of the provisions of all such orders. The Renewables Obligation Order 2002 ("RO") and the Renewables Obligation (Scotland) Order 2002 ("ROS") have been made under section 32 of the Electricity Act 1989.

1.3 The Renewables Obligation for England and Wales and the equivalent Renewables Obligation for Scotland place a legal obligation on all licensed electricity suppliers to produce evidence that either they have supplied a specified proportion of their electricity supplies from renewable energy sources to customers in Great Britain, or that other electricity suppliers have done so, or, that between them, they have done so.

1.4 Section 32B of the Electricity Act 1989 sets out the enabling provisions for green certificates that may be issued under the orders made under section 32 of the Act. Such certificates certify that a generating station has generated from

[1] Department for the Environment , Transport and the Regions (2000). Climate Change: The UK Programme
[2] Available at http://www2.dti.gov.uk/energy/renewables/policy/key_stages.shtml

renewable sources an amount of electricity **and** that it has been supplied to customers in Great Britain. These are known as Renewables Obligation Certificates ("ROCs") (issued under the RO) or Scottish Renewables Obligation Certificates ("SROCs") (issued under the ROS). These certificates can be purchased separately from the electricity.

1.5 Suppliers are required to produce evidence of compliance with their Renewables Obligation to the Authority before a specified day each year. This statutory deadline is 1 October each year. Evidence or part of the evidence can be via ROCs or SROCs. Alternatively, a supplier can discharge its Renewables Obligation, in whole or in part, by paying the buy-out price. The RO and the ROS came into effect on 1 April 2002 and are scheduled to stay in place until 31 March 2027. Each obligation period runs from 1 April to 31 March each year.

1.6 The Renewables Obligation is a significant part of the Government's Climate Change Programme and the recent Energy White Paper endorsed the importance of the scheme as the Government's main policy measure to encourage the development of renewable forms of energy in the United Kingdom. The Government has reinforced its commitment to the scheme by announcing in December 2003 an increase in the level of the Renewables Obligation for the years between 2010/2011 and 2015/2016. This proposal will require consultation with Ofgem, energywatch, licensed electricity suppliers and generators of electricity from renewable sources as statutory consultees.

Ofgem's role under the RO and the ROS

1.7 The Renewables Obligation Order 2002 and the Renewables Obligation (Scotland) Order 2002 ("the Orders") set out Ofgem's remit to administer the Renewables Obligation. Ofgem's functions under the Orders include:

- accrediting generating stations as being capable of generating electricity from eligible renewable sources

- issuing ROCs and SROCs and revoking these as necessary

- establishing and maintaining a Register of ROCs and SROCs and registering the transfer of ownership of ROCs and SROCs

- monitoring compliance with the RO and ROS

- adjusting the buy-out price by the RPI each year

- receiving buy-out payments and redistributing the buy-out fund, and

- reporting annually on the operation of and compliance with the RO and the ROS.

1.8 Ofgem carries out these functions according to the provisions of the Orders and as efficiently and effectively as possible. Ofgem has no remit to go outside of these functions set out in the Orders in its administration of the scheme. Similarly, while the Renewables Obligation is a market-driven mechanism for the promotion of renewable energy, Ofgem has no remit over the operation or regulation of the ROC market itself. Amendment of the Electricity Act 1989 or the Orders is a matter for DTI and the Scottish Executive.

1.9 Ofgem's costs in running the scheme are detailed as follows. Start-up costs were approximately £536,500 for Ofgem's two systems, the Renewables Trading Information Management System (RTIMS) and the ROC Register. The current estimated annual ongoing costs are approximately £518,800. This includes staffing; technical, legal and IT support; audits of generating stations; systems support; and maintenance of the bank accounts.

Key features of the Renewables Obligation

1.10 All licensed suppliers have to produce evidence that they have supplied a specified proportion of their electricity supplies to customers in Great Britain from eligible renewable sources. The relevant percentages are set out in Schedule 1 to the Orders. These begin with 3% of total supplies in 2002/2003

rising to 10.4% in 2010/2011 and thereafter remaining steady at 10.4% until the last period ending on 31 March 2027. The Government has recently announced that it will be consulting on increasing the targets each year from 10.4% in 2010/2011 to 15.4% in 2015/2016.

1.11 In order for ROCs to be issued, the generating station that generates the electricity must be accredited by Ofgem as capable of generating electricity from eligible renewable sources. The participation of a generating station in the scheme is voluntary and there are certain criteria that need to be met before a station can be accredited.

1.12 The Orders set out what sources of electricity are eligible renewable sources and also specify the exclusion of certain types of generating stations, eg stations incinerating waste. Time limits for eligibility are placed on stations co-firing, ie burning biomass and fossil fuel to generate electricity. Article 8 of the Orders provides the detail of what is eligible for accreditation by Ofgem.

1.13 On what basis and how ROCs are to be issued are two key, related features of the scheme. Again, the criteria and rules for these features that need to be met and complied with by generating stations are set out in the Orders. Certain measurements, eg of biomass fuel, and calculations are required to be undertaken. Article 9 of the Orders sets out the calculation requirements.

1.14 Article 5 details when and how Ofgem must revoke ROCs and when Ofgem has some discretion about revocation. It also sets out when and how Ofgem may issue replacement ROCs.

1.15 The Orders also set out the criteria for compliance by suppliers, eg how a supplier's total sales in England and Wales are to be calculated, the limits on certain types of ROCs that can be produced, eg co-firing ROCs and how many ROCs can be carried forward from the previous obligation period. The relevant articles in the Orders are articles 3 and 6.

1.16 How the buy-out payments are to be submitted to Ofgem and redistributed back to ROCs-compliant suppliers is also set out in the Orders. Article 7 sets out the arrangements for a supplier who chooses to make buy-out payments instead of

producing ROCs for all or part of its obligation. Article 12 provides for the total buy-out payments received by Ofgem together with any interest earned, known as the buy-out fund, to be distributed back to suppliers who have correctly produced ROCs in proportion to the total number of correctly produced ROCs for the obligation period.

1.17 The calculation of the buy-out price is detailed in article 7 and requires Ofgem to take into account the annual retail prices index for each calendar year. The buy-out price was set at £30 per MWh for the first obligation period (April 2002 to March 2003) and has been calculated at £30.51 per MWh for the second period (April 2003 to March 2004).

1.18 The buy-out price is intended to act as a cap on the costs to be charged to consumers. In 2002/2003, the total Renewables Obligation across Great Britain was 9,261,566 MWh. Multiplying this by £30 gives a total cost to consumers of £277,846,980.

Administration of the Renewables Obligation

1.19 As administrator of the scheme, Ofgem has put in place a number of procedures and systems, including those to assess whether a generating station is eligible for accreditation or whether accreditation should be withdrawn, to assess whether ROCs should be issued or revoked and to assess a supplier's compliance with its Renewables Obligation.

1.20 The accreditation of a generating station involves an assessment of the accreditation application form and accompanying diagrams and declarations as well as any other evidence or information provided by the applicant, eg fuel supply and metering arrangements. When a generating station is accredited as being capable of generating from eligible renewable sources, Ofgem records the details in its Renewables Trading Information Management System (RTIMS) and notifies the generating station of its unique accreditation number. Accreditation does not guarantee the issue of ROCs although accreditation is required before any ROCs can be issued.

1.21 Ofgem may request certain information from accredited generating stations and may request the operator of a generating station to grant access to the premises to any person authorised by Ofgem and provide reasonable assistance to that person, including allowing that person to perform random checks. Such information requirements are set out in more detail in Ofgem's procedures for the Renewables Obligation published in February 2002 on Ofgem's website, www.ofgem.gov.uk.

1.22 In order to assess whether ROCs should be issued, certain information, ie the gross output and any electricity used by the accredited generating station, has to be provided to Ofgem for each month of generation within the two month timetable set out in the Orders. Other information also needs to be provided, eg sampling information, the energy contents of the fuels being used and the monthly supply declaration. The onus is on the accredited generating station to ensure that this information is provided on time. Once Ofgem has checked the information and calculations provided by the generating station and carried out some sample checks, the information is used to issue ROCs via RTIMS into the ROC Register[3], Ofgem's web-based system for issuing and transferring ownership of ROCs. ROCs do not exist until they have been issued by Ofgem into the ROC Register.

1.23 As well as operating routine checks and controls, Ofgem carries out audits each year on a sample of generating stations. The sample is chosen partly at random but also taking account of particular factors which could include those generating stations with the most complexity or which attract the most ROCs. Ofgem normally authorises independent consultants to carry out these audits on its behalf but may request any station to provide access to Ofgem's own staff. The auditor is required to audit a sample of stations to check on whether:

- information that has been provided for accreditation is correct and the station has been properly accredited, and
- metering arrangements and meter readings/output volumes notified to Ofgem are such that the correct number of ROCs are being issued each month.

[3] Registration and Operational Procedures for the ROC Register are available on Ofgem's website, www.ofgem.gov.uk.

1.24 The Orders detail the procedure for revoking ROCs in specified circumstances such as fraud on behalf of a generator, the electricity not being supplied to customers in Great Britain or the ROC being inaccurate. Ofgem has discretion about whether it revokes ROCs in other circumstances, eg where Ofgem considers that the ROC should not have been issued or Ofgem has reasonable doubts as to the accuracy or reliability of the information relied upon for the issue of the ROC. Ofgem must revoke the appropriate number of ROCs from those issued to the generating station in the particular month, revoking the highest sequence numbers first. Ofgem may issue replacement ROCs in certain circumstances which are, again, set out in the Orders. Ofgem uses RTIMS and the ROC Register in carrying out these functions.

1.25 The ROC Register is also used by suppliers to produce ROCs to Ofgem before the specified day as part of their compliance report. A compliance report has to be completed for the RO and the ROS respectively and suppliers can only produce ROCs that are in their accounts on the ROC Register. Each compliance report allows suppliers to record what their Renewables Obligation is and the amount of any buy-out payments being made. Ofgem set up bank accounts for the receipt of buy-out payments from suppliers and the redistribution of the buy-out fund, including any interest, to ROCs-compliant suppliers. The buy-out fund is redistributed to suppliers according to the number of ROCs that each supplier correctly produces to discharge their obligation compared to the total amount of eligible electricity supplied represented by the total number of ROCs correctly produced to the Authority for the obligation period.

1.26 Ofgem calculates each supplier's obligation based upon the amount of electricity it supplied to customers in Great Britain during the obligation period, as set out in article 6 of the Orders. Suppliers are required to provide such information to Ofgem before 7 August after the end of each obligation period.

Interactions with other policy instruments

1.27 Many of the generating stations accredited are also accredited under the Climate Change Levy exemption for renewables. As the eligibility criteria and basis for

calculations for Renewables Levy Exemption Certificates ("LECs") are different to those for ROCs, Ofgem issues ROCs first of all in the majority of cases where stations are accredited for both schemes and then the Renewables LECs.

1.28 The main interaction to date has been in regard to the Non-Fossil Fuel Obligation Orders ("NFFO") and the Scottish equivalent, the Scottish Renewable Obligation Orders ("SRO"). These were Orders imposed by the Secretary of State under the Electricity Act 1989 and were the primary means used by the Government to implement its renewable energy policy prior to the introduction of the Renewables Obligation. Five NFFO Orders were made in England and Wales and three SRO Orders were made in Scotland. These required the Public Electricity Suppliers ("PESs") to purchase electricity from renewable generators and provided for this electricity to be purchased at fixed prices for long term contract periods (typically 15 years). The last contracts are due to terminate in 2018. 581 NFFO contracts were issued under the last three NFFO Orders with 236 stations currently commissioned. 109 SRO contracts were awarded under the SRO Orders with 37 stations currently commissioned.

1.29 The power purchaser under each NFFO contract is the Non Fossil Purchasing Agency Limited ("NFPA"). The PESs established NFPA in England and Wales to enable them to carry out their obligations to collectively contract with renewable generators and so comply with the NFFO Orders. By entering into power purchase agreements at fixed prices with renewable generators, the PESs became eligible to be compensated for the differences between the Pool price (the reference price) and the contract prices through a levy, the "Fossil Fuel Levy", on electricity sales. This levy is paid by all electricity consumers.

1.30 With the implementation of the New Electricity Trading Arrangements and the Renewables Obligation, arrangements were put in place by Government to maintain the existing NFFO and SRO contracts. These arrangements include NFPA (now acting on behalf of the PES supply successor companies) carrying out an auction that is open to all licensed electricity suppliers in Great Britain for the NFFO electricity and accompanying ROCs (and Renewables LECs). A subsidiary of NFPA carries out a similar auction for SROCs only from SRO projects which the Scottish PES supply successor companies ("SSSCs") administer. Once the premium prices under the contracts have been paid to generators and

administration costs for the auctions have been met, the Fossil Fuel Levy account receives the additional proceeds from these auctions. This has enabled Ofgem to set the Fossil Fuel Levy rate at zero per cent following the introduction of the Renewables Obligation.

1.31 Provisions in the Orders, referred to as the 'site sterilisation' provisions, mean that any station at the location of an existing NFFO or SRO contract is excluded until the NFFO or SRO project is commissioned and selling electricity under that contract. These restrictions also apply where NFFO or SRO contract holders have defaulted on their contract obligations. These provisions mean that any other station at the location of the NFFO or SRO contract will not qualify for ROCs unless the NFFO or SRO station is generating and selling electricity under the contract. Paragraphs 5.15 to 5.19 provide more detail on issues that have arisen as a result of these interactions.

The annual report

1.32 This report fulfils the requirement on the Authority to produce an annual report in relation to the first obligation period (1 April 2002 to 31 March 2003) under both the RO and the ROS. This report incorporates information on both the RO and ROS and uses the term RO to denote both the RO and the ROS and the terms ROCs to denote both ROCs and SROCs unless otherwise indicated.

1.33 Chapters 2, 3, 4 and 5 fulfil the reporting requirements of providing details on:

- the total number of ROCs issued by Ofgem during the first obligation period
- that number broken down by the technologies of the different types of eligible generating stations
- the total number of ROCs correctly produced to Ofgem during the first obligation period
- the total number of ROCs remaining on the ROC Register for use in the next period
- the extent of compliance by each individual licensed supplier

- how each individual licensed supplier has complied with their obligation (produced ROCs, made buy-out payments or a combination of both)
- the amount of redistributed buy-out fund each licensed supplier has received
- summaries of the outcomes of any enquiries or investigations regarding implementation of the RO and compliance by suppliers and operators of generating stations, and
- any other matters which Ofgem considers relevant to the implementation of the Orders.

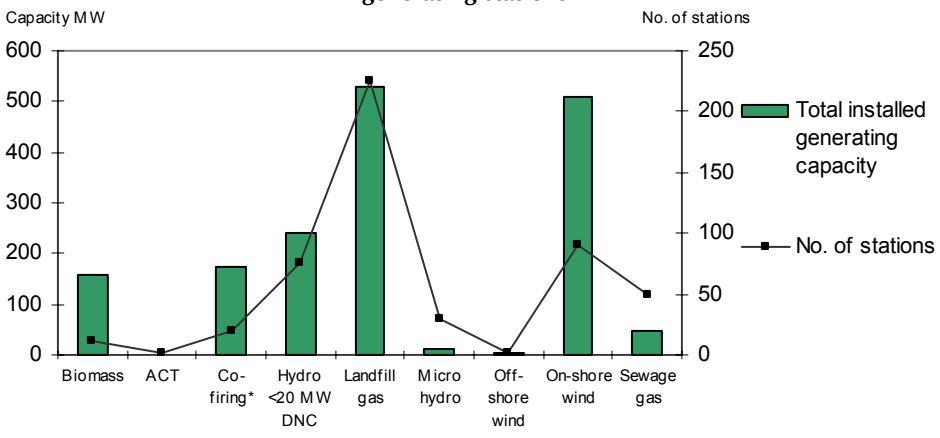
1.34 Chapter 6 focuses on the recent review of the RO and the ROS consulted on by DTI and the Scottish Executive respectively.

2. Compliance by operators of generating stations

Accreditation of generating stations

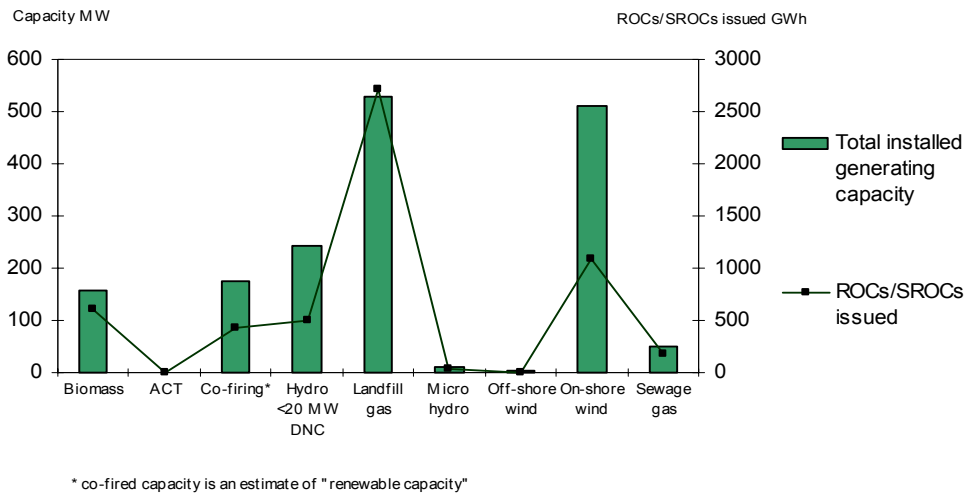
2.1 Ofgem accredited 431 generating stations when the RO took effect on 1 April 2002. 74 more were accredited during the first obligation period with 57 of these being newly commissioned stations. Table A1 in Appendix 1 shows the breakdown of these stations by technology and country as of 31 March 2003 with the majority being landfill gas stations located in England. Table A2 details the total installed generating capacity with the English stations providing over two thirds of that capacity[4]. Figure 1 provides a comparison of the number of accredited stations and their capacity by technology while Figure 2 compares this to the ROCs issued.

Figure1:A comparison of the capacity and number of accredited generating stations



[4] This includes an estimate of the renewable capacity for the co-firing stations.

Figure 2:A comparison of the capacity and ROCs and SROCs issued for accredited generating stations



* co-fired capacity is an estimate of "renewable capacity"

2.2 The pie charts in Figures 3 and 4 compare the number and capacity by percentage of the accredited stations by country. The Scottish stations' total capacity is higher in comparison to the total number of Scottish stations (as is that for stations located in Wales) than for English stations.

Figure 3:A comparison of the number of accredited generating stations by location

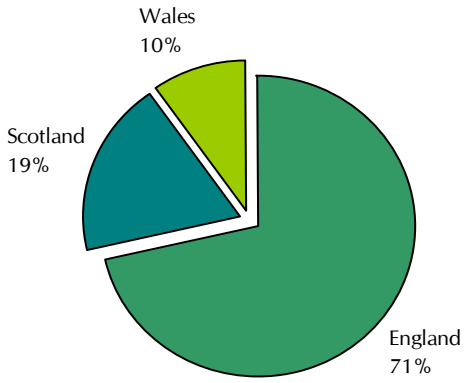
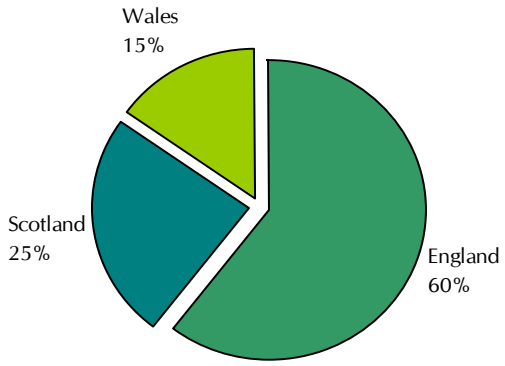


Figure 4:A comparision of the capacity of accredited generating stations by location*



*co-fired capacity is an estimate of "renewable capacity"

2.3 216 NFFO and 34 SRO stations were accredited in the first obligation period as shown in Table A3 in Appendix 1. This compares to 193 non-NFFO and 62 non-SRO stations. The capacities are very similar however as Table A4 demonstrates. Although fewer non-SRO stations were accredited in the year compared to non-NFFO, the capacity was just under three times as much. This demonstrates that stations being built in Scotland were usually larger during the first obligation period.

2.4 Tables A5 to A8 in Appendix 1 provide detailed information on the technology, capacity and commissioning of accredited stations. Figures 5 and 6 represent some of this information. Figure 5 shows the percentages of the technologies of the stations accredited at 1 April 2002 compared to the technologies of those accredited after that date and before 1 April 2003. Figure 6 provides detail on the percentages of capacity for those stations, again comparing this to the technology types.

Figure 5:A comparison of the number of generating stations accredited at or after the start of the Renewables Obligation in the first period

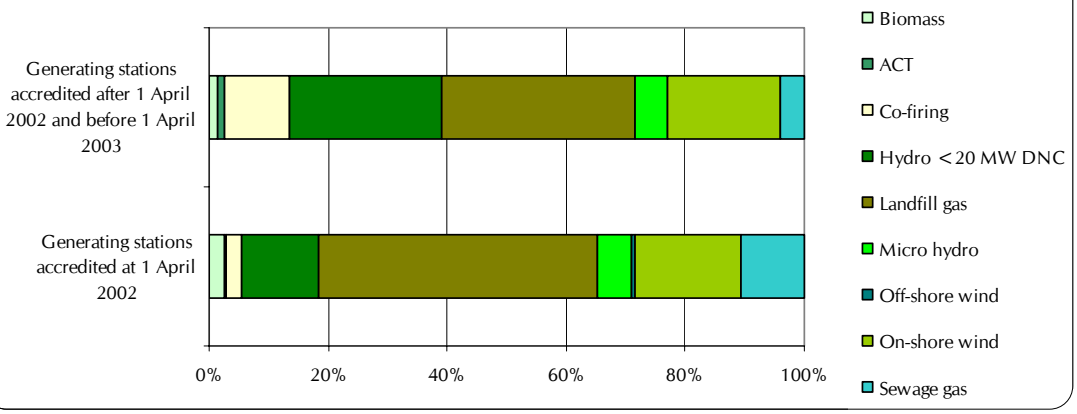
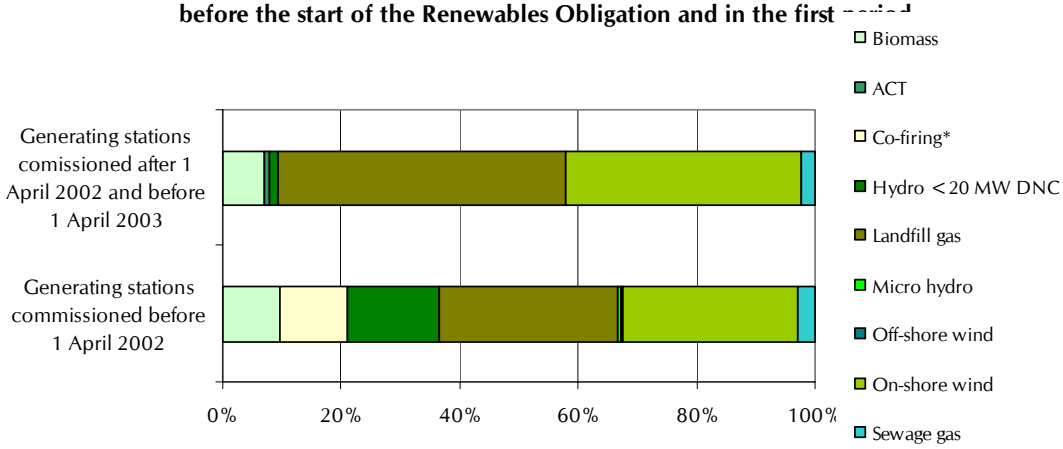


Figure 6:A comparison of the capacities of generating stations commissioned before the start of the Renewables Obligation and in the first period



* co-firing is an estimate of "renewable capacity"

2.5 Table A9 in Appendix 1 provides some detail on those stations classified as "co-firing biomass with fossil fuel". It shows the maximum renewable qualifying percentage achieved in any month during the first obligation period and an estimate of "renewable" capacity for each co-fired station. Small amounts of biomass have been burned by the originally coal-fired stations while they were testing the use of biomass in the stations.

Compliance by generating stations

2.6 Ofgem carried out 20 audits of accredited generating stations throughout the first obligation period. While most of the outcomes were satisfactory, some recurring

issues did arise. The main issues have been picked out and are described in more detail in chapter 5.

2.7 Given the complexities of the Orders, it might be expected that generators, especially the smaller and independent ones, would have experienced some confusion and misunderstanding at the start of the scheme and the audits seem to bear this out. As more queries are dealt with and further clarification is given, Ofgem would expect the scope for such misunderstanding and confusion to reduce.

2.8 As a result of the audits, Ofgem has issued further clarification to generators and has entered into detailed correspondence with many generators to ensure that electricity is being classified and measured correctly as either "input electricity" or 'eligible own use'.

2.9 The audits highlighted that generators were not always completing application forms correctly and so Ofgem has revised the form and the accompanying guidance notes with the aim of reducing the occurrence of common mistakes.

2.10 Some of the generating stations audited had not been advising Ofgem of certain information of relevance to the issue of ROCs, eg that metering data was in fact estimated, that they had diesel standby generators or that biomass sampling was not carried out in the particular month of electricity generation for which the ROCs were to be issued. Ofgem will accept estimated output data in certain cases but only where it is notified and agreed in advance. However, the sampling and measurement of biomass and other fuels must always be carried out in respect of the fuel burned in the month in question. Ofgem's Procedures on the Renewables Obligation and its guidance on fuel sampling and measurement, both available on Ofgem's website, www.ofgem.gov.uk, provide more detail.

2.11 Ofgem expects generators to provide accurate and complete information and to notify Ofgem of any changes to the information originally provided. This is so that Ofgem can properly assess the accreditation, including where reassessment might be required, and properly issue the correct number of ROCs each month. While the majority of generators have been forthcoming with such information,

this has not always been the case. Indeed, certain information has only come to light as a result of the audits with Ofgem refusing to issue ROCs until satisfied of the reliability and accuracy of the information being presented to it.

2.12 Ofgem has increased the percentage size of the sample for audits in the second obligation period and will continue to review what size of sample it considers necessary to ensure the integrity of the scheme going forward.

Rejection of applications for accreditation

2.13 Ofgem rejected 9 applications for accreditation under the RO. The reasons for the rejections include: the generating station not being under the 20 MW declared net capacity threshold for hydro generating stations; a waste generating station not using one or more of the advanced conversion technologies; the generating station being located at the location of an unfulfilled NFFO/SRO contract; the generating station not being a micro hydro station; and a generating station commissioned prior to 1 January 1990 not having renewed the main components of the station.

Withdrawal of accreditation

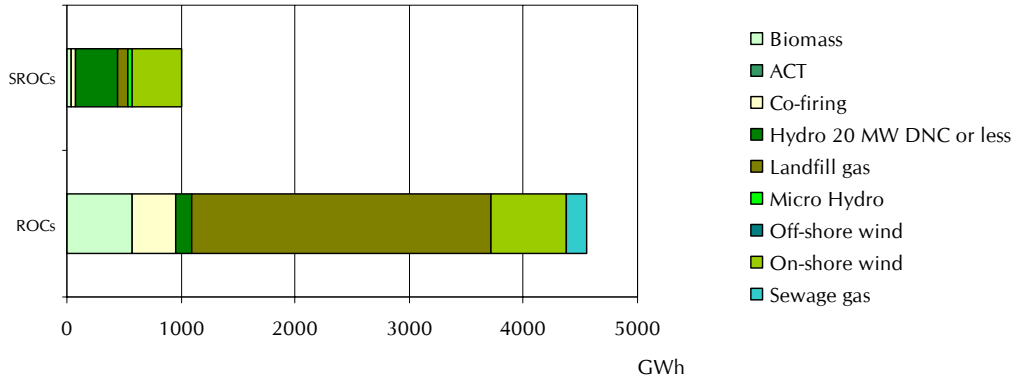
2.14 Ofgem withdrew accreditation from one station located at the location of an unfulfilled NFFO contract. This came to Ofgem's attention as a result of routine internal compliance checks and accreditation was withdrawn before any ROCs were issued.

3. Certificates issued

ROCs and SROCs issued

3.1 Ofgem issued 5,562,669[5] certificates with respect to electricity generated between 1 April 2002 and 31 March 2003. This was made up of 4,552,524 ROCs and 1,010,145 SROCs. Appendix 2 includes various tables showing further detail on ROCs and SROCs issued in the first period. For example, the breakdown by generation technology, ie the description of generating station, of the ROCs and SROCs issued is shown in Table B1 with the breakdown by month being shown in Table B2. Figure 7 represents the former graphically.

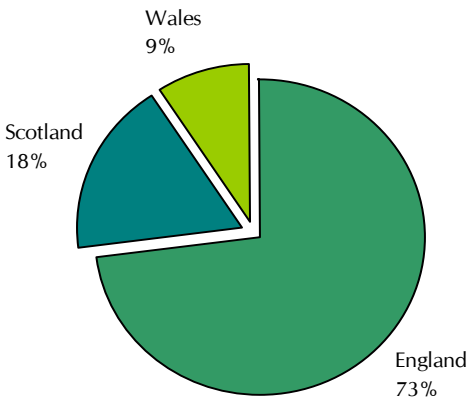
Figure 7:A comparison of ROCs and SROCs issued by generation technology



3.2 Figure 8[6] shows that renewable generating stations located in England receive the majority of ROCs; 73% compared to 18% and 9% for accredited generating stations sited in Scotland and Wales respectively.

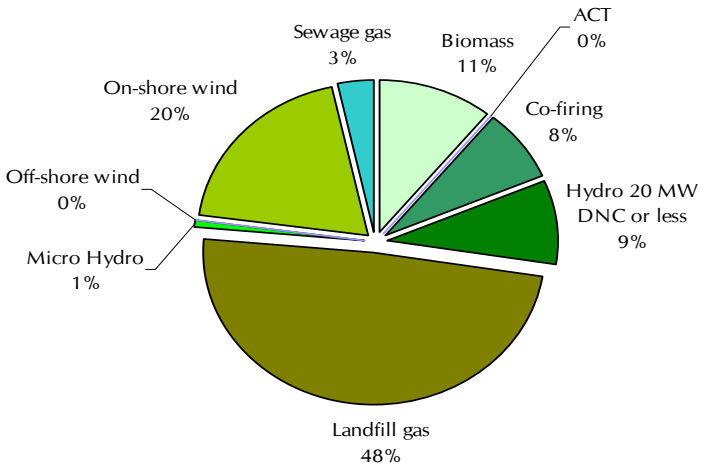
[5] This number is different to previously published numbers as certificates will have been issued on a back-dated basis. Each ROC represents one MWh of eligible renewable electricity generated.
[6] Please note that all percentages have been rounded.

Figure 8:ROCs and SROCs issued by generation location



3.3 Figure 9 below shows the percentages of ROCs issued by each technology for both the RO and the ROS. Landfill gas generation attracts almost 50% of the ROCs issued to date with on-shore wind generation being the next largest technology. Co-firing generation attracted just under 8% of the total ROCs.

Figure 9:ROCs and SROCs issued by generation technology



3.4 Figures 10, 11 and 12 represent the percentages of ROCs issued by technology for each country in Great Britain. Landfill gas generation dominates in England while on-shore wind generation is the largest originator of ROCs in both Scotland and Wales. Hydro generating stations (those with a declared net capacity of 20 MW or below and which are not micro hydro) represent the second largest technology contributing ROCs in Scotland with over a third being generated from that source and the second largest contributor in Wales representing just under a quarter of ROCs.

Figure 10:ROCs and SROCs issued for generation in England by technology

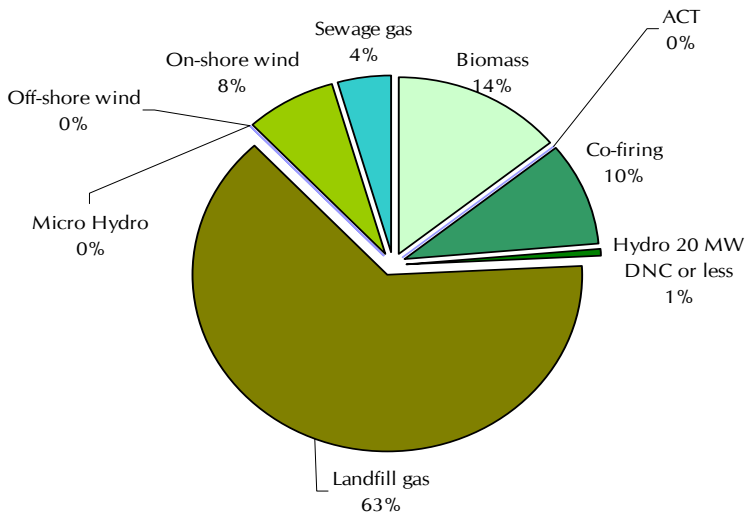


Figure 11:ROCs and SROCs issued for generation in Scotland by technology

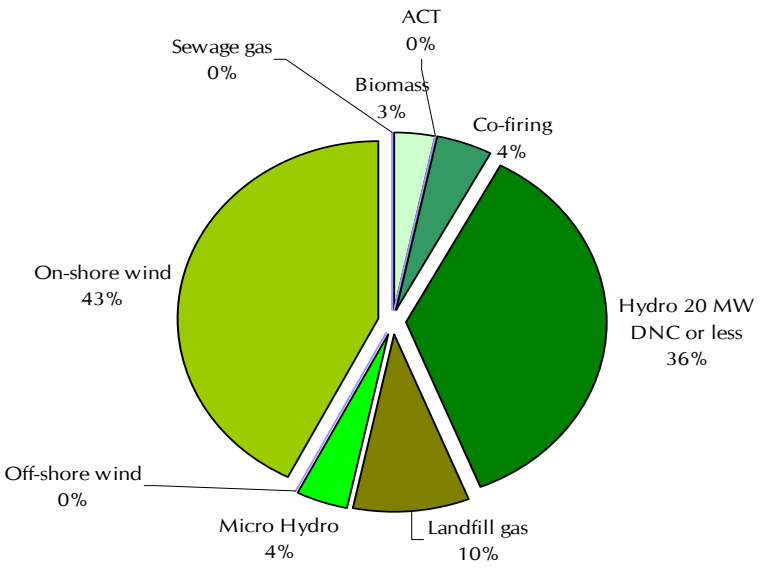
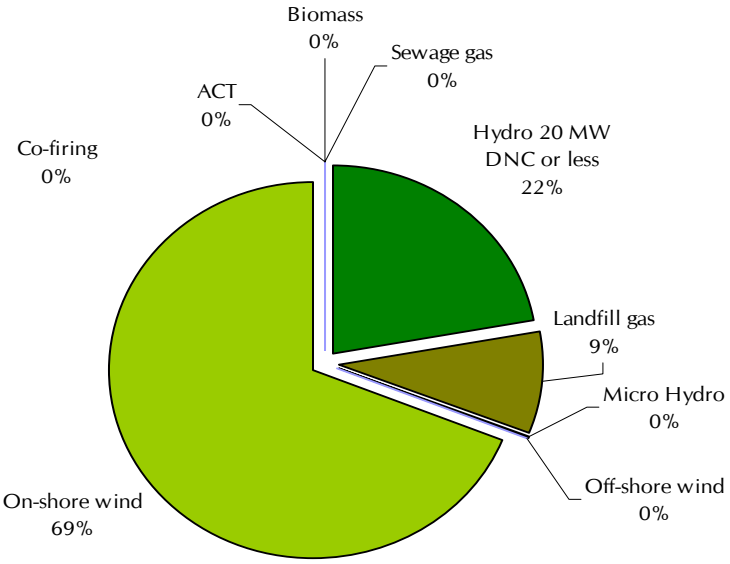


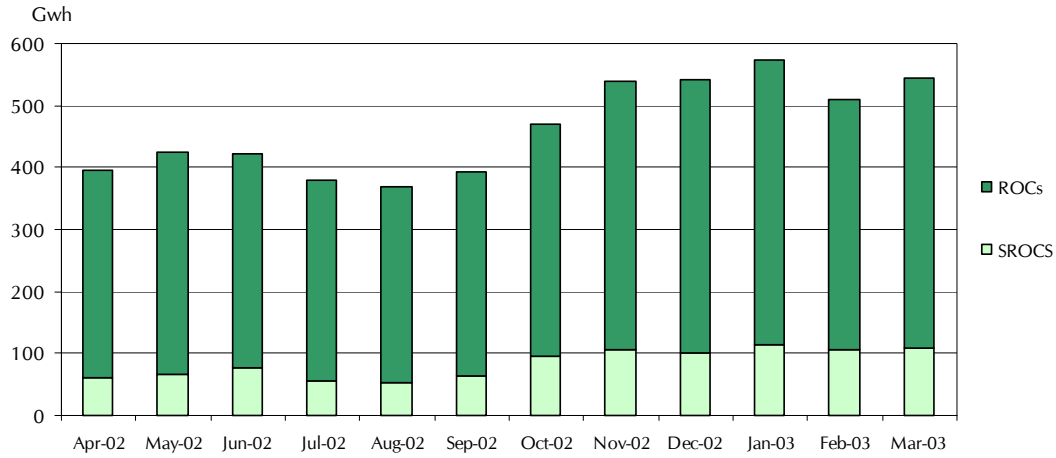
Figure 12:ROCs and SROCs issued for generation in Wales by technology



3.5 The bar chart shown in Figure 13 represents the breakdown of ROCs issued each month in the first obligation period as detailed in Table B2 in Appendix 2. As should be expected, there is indication of a seasonal spread (with more electricity generated in the winter months) but it will be interesting to compare

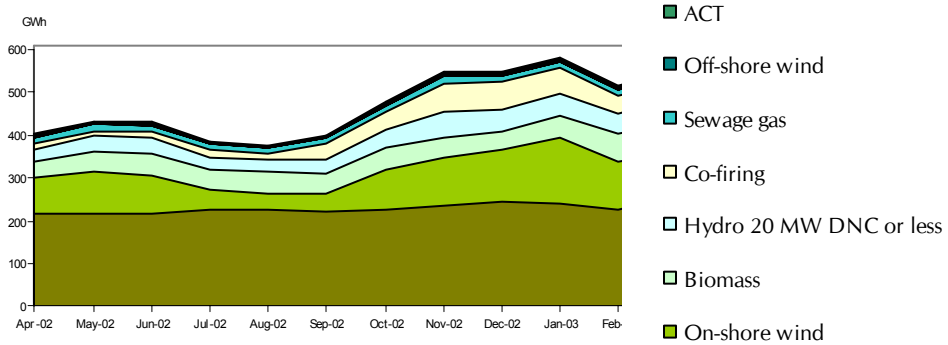
(on a month by month basis) how many more ROCs are issued for the second period given the increase in the number of accredited stations.

Figure 13:ROCs and SROCs issued by month of generation



3.6 The following graph shows the number of ROCs issued by technology and by month since the beginning of the Renewables Obligation.

Figure 14:ROCs and SROCs issued by generation technology



ROCs and SROCS revoked

3.7 Ofgem revoked 2,428 ROCs and no SROCs in the first Obligation period. In the one case in which Ofgem revoked ROCs, more replacement ROCs were issued subsequently.

3.8 The 2,428 ROCs were revoked because correspondence with the operator of a generating station led Ofgem to determine that the station should be accredited under both the biomass and co-firing technology codes, and the ROCs in question should have been issued as biomass ROCs. This was because the percentage of fossil fuel the generating station used could vary from month to month and that use was not always for one or more of the specified minimal fossil uses. 2,604 replacement ROCs were issued with the additional number being due to some of the fossil use being determined not to have contributed to electricity generation.

4. Compliance by suppliers

4.1 Suppliers are required to comply with the Renewables Obligation which is also a relevant requirement of the supply licence. If any supplier fails to meet any duty or other requirement imposed on them by the Orders, the supplier may be in breach of a relevant requirement of their supply licence. If after considering the case, the Authority found a supplier to be in breach of a relevant requirement of their supply licence, the Authority may consider imposing a financial penalty.

4.2 Ofgem started corresponding with all licensed suppliers at the end of May 2003 to remind them of their obligations and to start to put in place the necessary arrangements for compliance. A workshop for suppliers was held on 29 July 2003.

Total Renewables Obligation for England and Wales and for Scotland

4.3 For the first obligation period, the total Renewables Obligation for electricity supplied to customers in England and Wales was 8,393,972 MWh, and for electricity supplied to customers in Scotland was 867,596 MWh.

4.4 The total numbers of ROCs and SROCs correctly produced to Ofgem before the 1 October 2003 statutory deadline were 4,973,091 for England and Wales and 478,358 for Scotland.

4.5 The total buy-out payments received before the 1 October 2003 statutory deadline were £78,853,260 for England and Wales and £11,210,730 for Scotland.

4.6 The total buy-out funds for the first obligation period to be redistributed, including interest, were £79,251,930 for England and Wales and £11,267,124 for Scotland.

4.7 This meant that each supplier who correctly produced ROCs or SROCs under the RO received £15.94[7] back per certificate and each supplier who correctly produced SROCs or ROCs under the ROS received £23.55 back per certificate, giving a difference of £7.61.

4.8 105,535 ROCs and 5,685 SROCs issued during the first obligation period were not produced before 1 October 2003 and remain on the ROC Register for use in the next obligation period.

Licensed suppliers who had an obligation

4.9 Out of 71 licensed suppliers in England and Wales, 38 had a Renewables Obligation under the RO because they were supplying in England and Wales and out of 66 licensed suppliers in Scotland, 28 had a Renewables Obligation under the ROS as they were supplying in Scotland. 27 had an obligation under both Orders. The tables in Appendix 3 provide the amounts of Renewables Obligation under each Order for each supply licensee.

4.10 Powergen Retail had the largest obligation in England and Wales at 1,108,123 MWh (3% of its total sales) followed by EDF Energy plc and Npower Ltd. ScottishPower Energy Retail Ltd was the largest supplier in Scotland with an obligation amounting to 412,252 MWh with SSE Energy Supply Ltd having one of 223,344 MWh and British Gas Trading Ltd's obligation coming to 87,634 MWh.

4.11 The tables in Appendix 3 also provide the compliance details for each licensed supplier by Order. They highlight how each of these suppliers met their obligations, whether through producing ROCs, making a buy-out payment or a combination of both.

4.12 Tables C1 and C2 in Appendix 3 show that 12 licensed suppliers in England and Wales and 16 licensed suppliers in Scotland met their obligations wholly through producing ROCs.

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[7] All the amounts in this paragraph have been rounded.

4.13 The tables also show which licensed suppliers met their obligations wholly by making buy-out payments.

4.14 Figures 19 and 20 represent what each supplier who correctly produced ROCs against their RO or ROS respectively produced in terms of co-fired ROCs. For ease of reference, these graphs group together each of the supply licences, against which there were Renewables Obligations, held by a group company. The detail by each licence is provided in Tables C3 and C4 in Appendix 3.

Figure 19:A comparison of the percentage of each supplier's RO that was satisfied by ROCs or SROCs

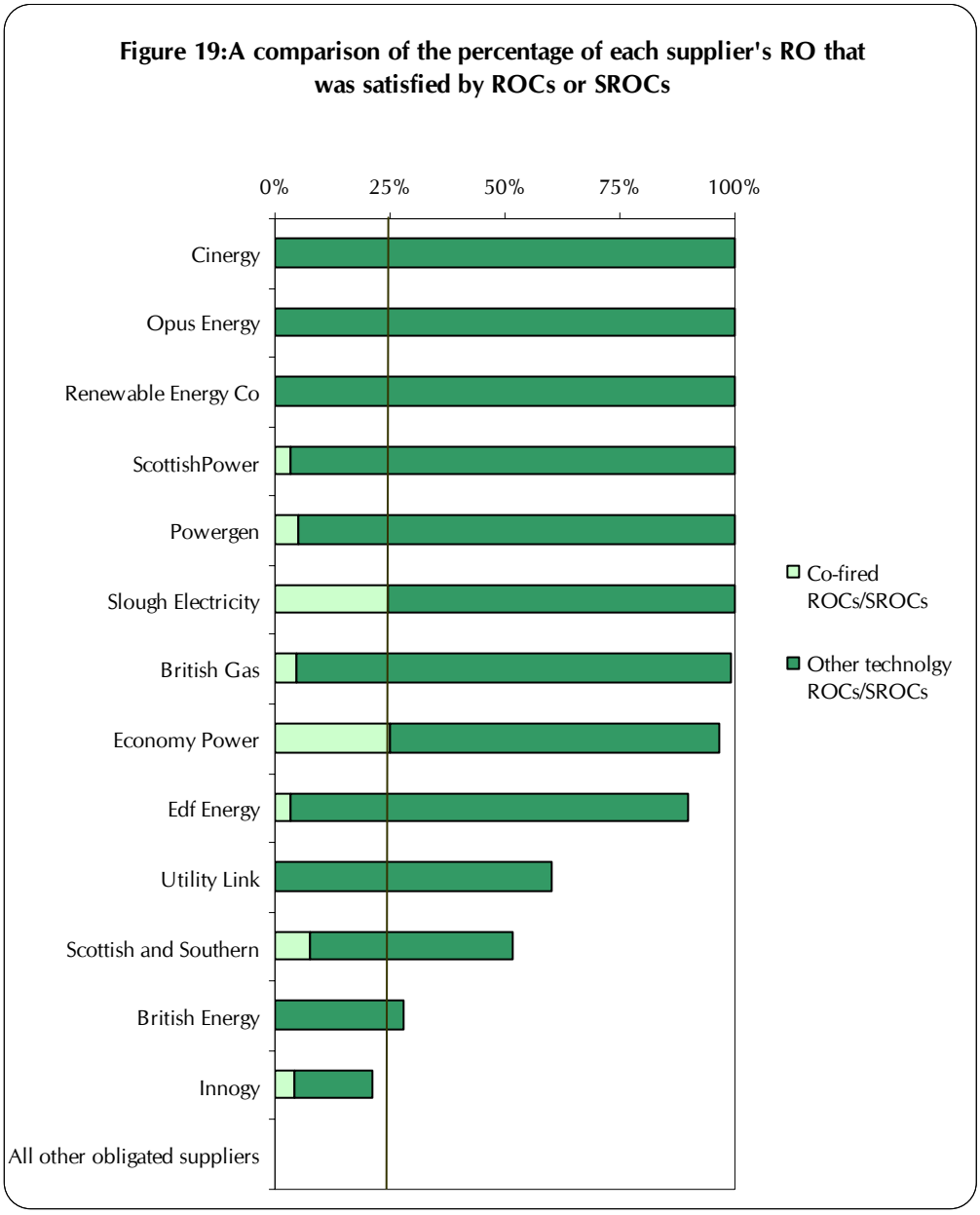
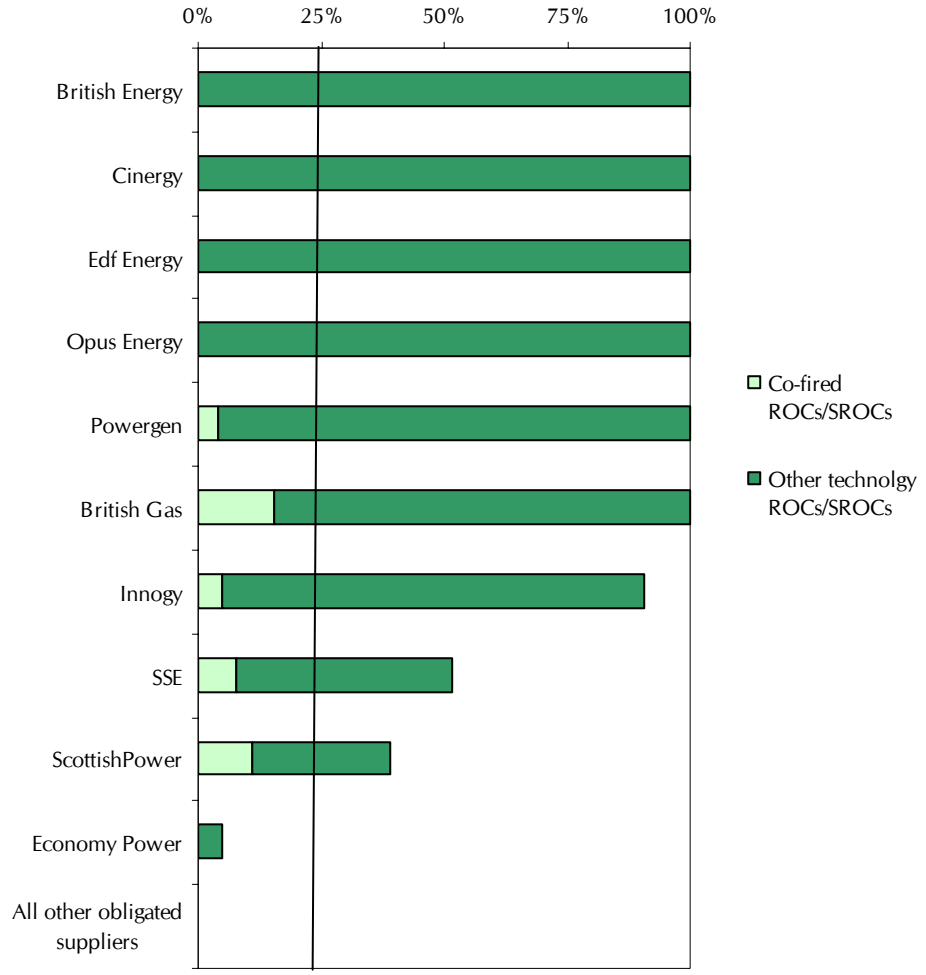


Figure 20:A comparison of the percentage of each supplier's ROS that was satisfied by ROCs or SROCs



4.15 23 licensed suppliers received buy-out redistribution totalling £79,251,930 under the RO with 19 receiving buy-out redistribution totalling £11,267,124 under the ROS. Tables C5 and C6 provide the detail of what each supplier received back under each Order by percentage and amount. Powergen Retail Ltd received the largest amount under the RO, £17,659,217 and ScottishPower Energy Retail Ltd received the largest amount under the ROS, £3,778,730. Figures 21 and 22 compare the amounts received by each supplier (or group) under the RO and the ROS.

Figure 21:A comparison of the buy-out fund paid to suppliers under the RO

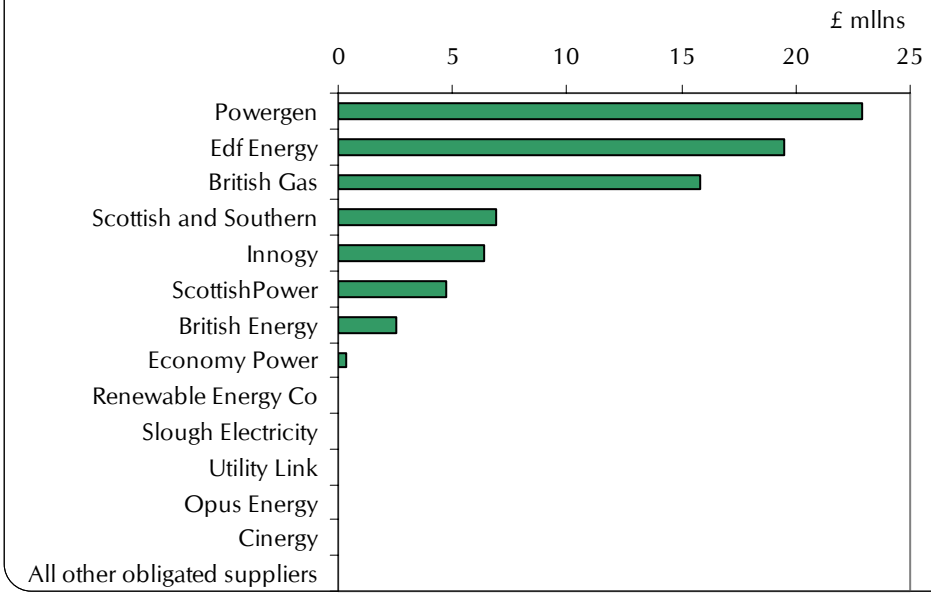
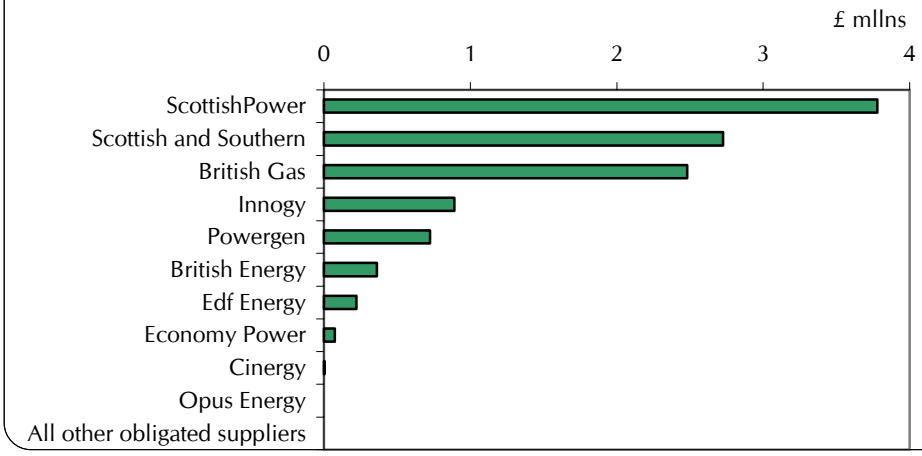


Figure 22:A comparison of the buy-out fund paid to suppliers under the ROS



Licensed suppliers who did not provide information to DTI on their sales volumes

4.16 The requirement in article 6(5) of the Orders is that licensed electricity suppliers must provide to DTI their estimated figures relating to their total sales of electricity to customers in England and Wales and Scotland during an obligation period by no later than 20 June immediately following the end of the obligation

period. 31 licensed suppliers failed to provide information to DTI as required by the due date. These suppliers are shown in the table below.

Accord Energy Ltd	Enron Direct Ltd
AEP Energy Services Ltd	Essential Power Ltd
AES Power Direct (UK) Ltd	Fortum Direct
AES Barry Operations Ltd (Centrica)	Gaz De France Marketing Ltd
Affinity Power Ltd	International Power plc
Allied Domecq (Holdings) plc	Midlands Gas Ltd
Atlantic Electric and Gas Ltd	OwnLabel Energy Ltd
BP Power Trading Ltd	Opus Energy Ltd
British Gas Trading Ltd	Pentex Oil and Gas Ltd
Cinergy Global Trading Ltd	Seeboard Powerlink Ltd
Citigen (London) Ltd	SmartestEnergy Ltd
Commercial Electricity Supplies Ltd	Telecom Plus plc
Corona Energy 4 Retail Ltd	TXU Europe (AHG) Ltd
EDF Trading Ltd	Unit Energy Ltd
Electricity Direct (UK) Ltd	Wilton Energy Ltd
Enizade Ltd	

4.17 While these suppliers are in breach of a relevant requirement of their supply licence, as the breach related to the first obligation period under the Orders and suppliers may not have been clear as to their obligations in this respect, Ofgem does not intend to pursue this matter at this time.

Licensed suppliers who did not provide information to Ofgem on their sales volumes

4.18 The requirement in article 6(6) of the Orders is that each electricity supplier must provide to Ofgem the amounts in MWh of their Renewables Obligations for the obligation period in question and the amounts of all electricity supplied to customers in England and Wales and in Scotland during an obligation period before 7 August immediately following the end of the obligation period. 29 licensed suppliers failed to provide information to Ofgem as required by the due

date. They subsequently provided the information in order to enable their obligations to be calculated. These suppliers are shown in the following table.

AEP Energy Services Ltd	Fortum Direct
AES Power Direct (UK) Ltd	Gaz De France Marketing Ltd
AES Barry Operations Ltd (Centrica)	Ineos Chlor Ltd
AES New Energy Ltd	International Power plc
Affinity Power Ltd	OwnLabel Energy Ltd
Allied Domecq (Holdings) plc	Opus Energy Ltd
Atlantic Electric and Gas	Pentex Oil and Gas Ltd
BizzEnergy Ltd	Powergen (UK) plc
BP Power Trading Ltd	Renewable Energy Company Ltd
Cinergy Global Trading Ltd	SmartestEnergy Ltd
Commercial Electricity Supplies Ltd	SSE Energy Supply Ltd
Corona Energy 4 Retail Ltd	Telecom Plus plc
EDF Trading Ltd	UK Electric Power Ltd
Enron Direct Ltd	Unit Energy Ltd
Essential Power Ltd	

4.19 While these suppliers are in breach of a relevant requirement of their supply licence, as the breach related to the first obligation period under the Orders and suppliers may not have been clear as to their obligations in this respect, Ofgem does not intend to pursue this matter at this time.

Licensed suppliers who had no obligation

4.20 33 licensed suppliers had no obligation under the RO and 38 had no obligation under the ROS either because they had no sales to customers in the first obligation period or because all their sales were to transmission connected customers only. Supply to transmission connected customers is not supply within the meaning of the Electricity Act 1989 and so is also not subject to the Renewables Obligation. The Energy Bill currently before Parliament contains

provision to amend the definition of supply in the Electricity Act 1989 so as to include supply to transmission connected customers

4.21 Tables C7 and C8 in Appendix 3 show these suppliers. All of them had either no sales to customers for the period in question or their sales were only to transmission connected customers.

Licensed suppliers who failed to produce the required number of ROCs or make the full alternative payment to the buy-out fund before 1 October 2003

4.22 Seven suppliers failed to produce the required number of ROCs or make the full alternative payment to the buy-out fund before 1 October 2003. The following table summarises the details.

Supplier	Reason	Obligation
TXU (UK) Ltd	Company in administration (£22,778,310 and £327,960 buy-out respectively owed)	RO and ROS
Maverick Energy Ltd	Company in administrative receivership (£515,640 and £13,770 buy-out respectively owed)	RO and ROS
Electricity Direct (UK) Ltd	More than 25% of ROCs produced were co-fired (26% = 1455 additional ROCs)	RO
Npower Direct Ltd	More than 25% of ROCs produced were co-fired (100% = 3839 additional ROCs)	ROS
Economy Power Ltd	More than 25% of ROCs produced were co-fired (28% = 735 additional ROCs)	RO
BizzEnergy Ltd	Produced ROCs (6969) after the statutory deadline	RO
Corona Energy 4 Retail Ltd	Submitted the correct buy-out payments (£204,450 and £9,510 respectively) after the statutory deadline	RO and ROS

4.23 As stated in paragraph 4.2, Ofgem began communicating with all licensed suppliers at the end of May 2003 to remind them of their obligations and to start to put in place the necessary arrangements for compliance.

4.24 This correspondence led to TXU (UK) Ltd's ("TXU") Administrator, Ernst & Young, indicating that they could not yet confirm what they were planning to do to ensure compliance with TXU's Renewables Obligation. Ofgem notified industry of this in its Information Note R/76 published on 12 August 2003 and of the estimated potential amount of any buy-out shortfall. Further communication with the Administrator led to Ofgem being advised that TXU would be unable to meet its Renewables Obligation. Ofgem subsequently issued a Provisional Order under section 25(2) of the Electricity Act 1989 on 25 September 2003 requiring TXU to either produce ROCs or pay the total calculated buy-out amount of £23,106,270 before 1 October 2003, after which date the Provisional Order would cease to have effect.

4.25 In parallel, Ofgem was also in communication with Maverick Energy Ltd ("Maverick") who had gone into administrative receivership in June 2003. This correspondence also led to a Provisional Order under section 25(2) of the Electricity Act 1989 being issued on 25 September 2003 requiring Maverick to either produce ROCs or pay the total calculated buy-out amount of £529,410 before 1 October 2003, after which date the Provisional Order would cease to have effect. Information Note R/92 advising of both these Provisional Orders was published on 26 September 2003.

4.26 On 1 October 2003, Ofgem confirmed that both TXU and Maverick had failed to discharge their Renewables Obligations by not producing ROCs and by not paying the appropriate amount of buy-out before that date.

4.27 The Authority is currently considering whether further enforcement action will be taken against TXU and Maverick.

4.28 Ofgem is aware that TXU's Administrator made a successful application to court on 29 September 2003 to seek leave to negotiate directly with suppliers who make claims for direct losses sustained as a result of TXU's failure to pay into the buy-out fund. Ofgem is also aware that such claims have been made by suppliers.

4.29 The remaining five companies agreed to make voluntary payments pro rata to suppliers who had correctly produced ROCs for the first obligation period.

These payments totalled £606, 863 (when rounded) with interest included and should have been paid by 1 December 2003. A breakdown of this total is given in the table below.

Supplier	**RO**	**ROS**
Bizzenergy Ltd	£210,102.51	
Corona Energy 4 Retail Ltd	£205,441.41	£9,556.12
Economy Power Ltd	£22,158.90	
Electricity Direct (UK) Ltd	£43,865.57	
Npower Direct Ltd	£115,738.77	

4.30 Ofgem returned the excess co-fired ROCs, and the ROCs produced and buy-out payments made after the statutory deadline to the companies in question.

4.31 Ofgem confirmed with the affected suppliers that all but one of the voluntary payments had been made by 1 December 2003. The one outstanding payment is for £8.95 and is expected to be settled shortly.

5. Issues raised

5.1 The administration of the RO during the first obligation period has highlighted some operational issues which are described in the following paragraphs.

Definition of a generating station

5.2 A number of the provisions of the Orders refer to a generating station. There is no definition of a generating station in the Electricity Act 1989 or the Orders although there is a definition of a hydro generating station.

"Input electricity"

5.3 "Input electricity" is defined in the Orders as "all the electricity used by a generating station in that month (whether generated by that generating station or not) for a purpose directly relating to the operation of that generating station, including fuel handling, fuel preparation and pumping water". The Orders are clear that this electricity has to be deducted regardless of whether the station is itself generating electricity or not at the time the "input electricity" is used. However, this seems not to have been understood by all generators.

"Eligible own use"

5.4 For electricity to be eligible for ROCs, it must have been supplied to a customer in Great Britain by a licensed supplier. Article 10 provides for electricity to be treated as if it had been supplied by a licensed supplier to a customer in Great Britain where it is sold by the operator of a generating station to a licensed electricity supplier and is then purchased and consumed by the operator of the generating station. Such an arrangement is known as a 'sell-and-buy-back' contract. Suppliers entering into these contracts should be aware of the requirements of Schedule 7 to the Electricity Act 1989 which relates to the metering of supplies to customers. This Schedule provides that meters measuring the supply of electricity to customers have to be appropriate, of an approved pattern or construction, installed in an approved manner and, in certain circumstances, certified.

"Minimal fossil use"

5.5 Some participants were unclear about the specified purposes for minimal fossil use as defined in the Orders and considered that fossil fuel used for maintenance of the generating station was a specified use when this is not the case.

Classification and calculations for ROCs

5.6 A related issue concerned the classification of generating stations according to their use of fossil fuel. The provisions in articles 8 and 9 are complicated and require Ofgem to consider what is "fuelling" the generating station, what "fuel" the generating station is "using" in respect of minimal fossil use (which refers to "use" rather than "fuel"), and the amount of electricity being generated from respective fuel sources.

5.7 In calculating the amount of electricity generated from eligible renewable sources under article 9, electricity which is used by the generating station when the station is not generating electricity is taken into account and is deducted from the output but fuel used by the generating station when the station is not generating electricity is excluded from the calculations.

5.8 Ofgem issued guidelines in April 2003[8], to provide clarification on the issues outlined above. In particular, they provide guidance on what Ofgem considers to be a generating station for the purposes of the Orders, "input electricity", specified purposes for minimal fossil use and what fuel is used for generating electricity. This guidance, available on Ofgem's website, www.ofgem.gov.uk, is likely to be reviewed and may be revised should the Renewables Obligation (Amendment) Order 2004 and the Renewables Obligation (Scotland) Order 2004 receive Parliamentary approval.

[8] The Renewables Obligation – definition of a generating station, Ofgem's guidelines

Down-rating of hydro generating stations

5.9 The Orders define a hydro generating station (see paragraph 5.2). They also define a large hydro generating station as being one "which has, or has had at any time since 1 April 2002, a declared net capacity of more than 20 MW". This provision allowed what would otherwise have been large hydro generating stations to down-rate their declared net capacity (DNC) to 20 MW or below before 1 April 2002 in order to be eligible for accreditation under the Orders. In relation to a hydro generating station, the Orders define DNC as:

"the highest generation of electricity (calculated by adding together the highest generation of electricity at the main terminals of each alternator and dynamo) which, on the assumption that the source of power is available uninterruptedly, can be maintained indefinitely without causing damage to the plant less so much of that electricity as is consumed by the plant".

5.10 Ofgem is aware that ten stations have taken advantage of this provision and have undertaken activity to ensure that their DNCs were under or at the threshold prior to the statutory deadline of 1 April 2002. The details are provided in the following table:

Hydro generating station	**Original DNC in MW**	**DNC at 31/3/03**	**Accreditation date**
Kinlochleven	30	19.5	April 2002
Dolgarrog High Head*	37	18.4	April 2002
Dolgarrog Low Head*		14.98	April 2002
St Fillians	21	16.83	September 2002
Mossford	24	18.6	February 2003
Shin	24	18.62	June 2003
Quoich	22	18.05	July 2003
Finlarig	30	16.05	December 2003
Grudie Bridge**	24	18.66	
Culligran**	24	17.1	
Total	236	176.79	

*Dolgarrog was previously treated as one hydro generating station but took action to be treated as two hydro generating stations as per the definition in the Orders. **These stations are either only recently accredited or have not yet sought accreditation as, having commissioned prior to 1 January 1990, they would have been required to also renew the main components of the generating stations before they would be eligible for accreditation.

5.11 The capacity that was down-rated equated to 59.21 MW in total. This ranged from 3.62 MW for the down-rating in respect of the Dolgarrog stations together to 13.95 MW for Finlarig. This capacity would have contributed to the Government's targets for renewable generation.

Treatment of standby generators

5.12 An issue arose in regard to the treatment of fossil fuel standby generators. The Orders exclude stations fuelled by fossil fuel and renewable sources unless the renewable source is biomass. So, a sewage gas station with a diesel standby generator would be treated as a co-firing station in any month in which the standby generator was used: the standby generator would be considered as part of the generating station which would then be considered to be fuelled by fossil fuel as well as renewable sources. Any such station that was not using biomass as fuel would have been excluded under the terms of the Order. Ofgem determined that it would not consider generating stations (but not wind, water or solar driven generating stations as they are not "fuelled") which have fossil fuel standby generators as co-fired or excluded stations providing they have interlocking arrangements or the equivalent in place to prevent the electricity being exported for supply.

Back-dated accreditation

5.13 Ofgem's initial interpretation of the Orders regarding the timetable for accreditation was that applications for accreditation could not be back-dated, eg that an eligible renewable generating station had to have sent in their application form and had it processed and accepted by Ofgem before 1 April 2002 in order for ROCs to be issued for electricity generated during April 2002. The initial applications were treated in this way. However, on further consideration, Ofgem revised this interpretation and determined that accreditation could be

back-dated to such time as a particular station would be eligible for accreditation. Accordingly, Ofgem notified all generators and back-dated accreditation where appropriate.

Timetable for receipt of certain information

5.14 Ofgem has also dealt with queries about the timetable for receipt of certain information in order to be able to issue ROCs. Originally, Ofgem was of the view that information could be provided later than two months after the end of the month in which generation took place. On further consideration, Ofgem determined that the information regarding gross output and input electricity had to be provided no later than the end of the second month following the month of generation. All affected generators were notified, the timetable was amended with time being given to allow generators to become used to the change and reminders were sent.

NFFO/SRO queries

5.15 The 'site sterilisation' provisions referred to in paragraph 1.31 above apply where a NFFO or SRO contract holder has defaulted on their contract obligations, where NFFO or SRO generating stations have not yet been built and where they are not selling electricity under the NFFO or SRO contract. These provisions mean that any other station at the location of the NFFO or SRO contract will not qualify for ROCs unless the NFFO or SRO station is generating and selling electricity under the NFFO/SRO contract. Developers have queried with Ofgem whether NFFO or SRO stations are located at certain sites. However, this is not information that is readily available to Ofgem and, in any case, it would not be appropriate for Ofgem to provide such information given its particular role and functions under the Orders.

5.16 The interpretation of article 8(11) of the Orders which sets out one of the 'site sterilisation' provisions led to queries being raised about which stations should in fact be excluded. For example, there might be two NFFO contracts at one location (as the boundaries of the locations were generally drawn quite widely) and one contract might not yet have been fulfilled. Or there might have been an ex-NFFO station (ie one whose term of contract has completed because the particular NFFO Order governing it has expired – NFFO 1 and 2 contracts fall

into this category) at the same location as an existing NFFO contract, again which has not yet been fulfilled. Ofgem issued its interpretation on this in March 2003[9] and this is available on Ofgem's website, www.ofgem.gov.uk.

NFFO/SRO requests for economic termination

5.17 The 'site sterilisation' provisions have highlighted the fact that the NFFO/SRO contracts allow a generator to request that the contract be terminated because it is no longer, or can reasonably be expected no longer to be, economically viable in certain circumstances. Such a termination has to be agreed by Ofgem and would result in the 'site sterilisation' provisions not applying. This means that existing NFFO or SRO generating stations (and those to be commissioned once commissioned and generating electricity) could claim ROCs which the developers would benefit from if the contracts were so terminated. Currently, ROCs in respect of NFFO stations are sold along with the electricity (and Renewables LECs) via the NFPA's auctions while SROCs in respect of SRO stations are sold via separate auctions. The proceeds from such auctions are used to reduce and maintain the Fossil Fuel Levy at 0% with any surplus being planned to be used by the Secretary of State to promote renewables under the provisions of the Sustainable Energy Act 2003.

5.18 There are four tests which a generator needs to meet for economic termination of a NFFO/SRO contract and further details of these and Ofgem's procedures can be found in Procedure for dealing with request for economic termination of NFFO/SRO contracts, available on Ofgem's website, www.ofgem.gov.uk.

5.19 During the first period, Ofgem has received 16 requests for economic termination of NFFO/SRO contracts. Seven NFFO contracts and one SRO contract have been terminated on economic grounds with two requests being rejected based on the evidence provided.

[9] Interpretation of Article 8(11) of the Renewables Obligation Order

Measurement and sampling of fuels

5.20 It has come to Ofgem's attention that some co-firing generating stations were planning to import biomass and measure and 'blend' it at other locations either overseas or in Great Britain. Other co-firing stations were using United Kingdom sourced biomass but again were mixing it with fossil fuel before the fuels were delivered to the generating station. All of the stations involved wanted to use this 'blended' material to claim ROCs. In all the cases, the measurement and sampling required would have occurred away from the generating station. Ofgem does not consider that the Orders allow for measurement and sampling to occur away from the generating station.

5.23 Ofgem issued guidelines on this issue on 12 August 2003[10]. The guidelines leave it open to a generator to come up with a proposal for a sampling method to be used on site that would allow 'pre-blending'. To date, no proposal has been forthcoming but some co-firing generators are mixing the fuels and measuring them at the generating station.

[10] Renewables Obligation – measurement and sampling of fuels, Ofgem's Guidelines

6. Review of the Renewables Obligation

The 2003 review and late payment into the buy-out fund consultations

6.1 DTI published their statutory consultation on proposed changes to the RO in August 2003 and the Scottish Executive published an equivalent consultation in relation to proposed changes to the ROS at the same time. Responses were due by 21 November 2003.

6.2 The consultations proposed changes in a number of areas: to the rules on co-firing of energy crops; to allow fossil fuel generating stations commissioned before 1 January 1990 which convert entirely to biomass to qualify for ROCs without renewing the main components of the generating station; to clarify the definitions of micro hydro generating stations and fuel used by a generating station; to allow small amounts of input electricity to be disregarded for ROC calculations purposes; to add a definition of energy content; to enable ROCs to be issued to small generators; to clarify the 'site sterilisation' provisions; to enable the supplier who successfully bids for the NFFO output to provide the necessary declaration about where the electricity has been supplied; and to provide more flexibility to Ofgem as to the timescales in which it deals with transfer requests.

6.3 Further consultations were issued in October on allowing Ofgem to accept late payments into the buy-out fund.

6.4 Ofgem is a statutory consultee and welcomed the opportunity to respond formally to those consultations. Ofgem also acknowledges the in-depth discussions it has been able to have with DTI and the Scottish Executive. The Renewables Obligation (Amendment) Order 2004 and the Renewables Obligation (Scotland) Order 2004 have now been laid before the respective Parliaments and, subject to Parliamentary approval, are due to take effect from 1 April 2004.

6.5 While Ofgem had no substantive comments to make on a number of the proposals, it did welcome the clarification on the definitions described above and the new definition of energy content. It also welcomed the proposal to simplify some of the complex calculations involved in the issue of ROCs, the flexibility to deal with transfer requests in a more timely manner and the proposal that suppliers can provide the necessary supply declarations on behalf of NFFO and SRO generating stations. Ofgem also supported the proposed idea to allow it to accept late payments into the buy-out fund.

6.6 Administering the Orders with all their complexities has been challenging for Ofgem and has created a great deal of administrative, technical and legal work. This work has been increased by the lack of clarity in various areas. Ofgem acknowledges Government's efforts to deal with these complexities. However, Ofgem has no doubt that the amendments to the Orders, once they take effect, will lead to further queries about interpretation and perhaps additional administration work. Ofgem will continue to administer the scheme so as to facilitate the Government's renewable energy targets being met. In the meantime, Ofgem will be revising its original procedures including the accreditation application form and guidance notes in anticipation of the changes expected to take effect from 1 April 2004.

6.7 Ofgem has been participating in discussions with DTI and industry where various proposals have been put forward to address the concerns expressed by market participants as a result of the failures by TXU and Maverick. These discussions are ongoing and Ofgem does not intend to comment on these proposals further at this stage except to state that Ofgem's principal objective is to protect the interests of consumers, wherever appropriate by promoting effective competition. Any proposals involving an extended role for Ofgem must be considered in this light.

Extension of the Renewables Obligation targets

6.8 As stated earlier, the Government has announced its intention to increase the amount of the Renewables Obligation for the years 2010/2011 to 2015/2016. Ofgem looks forward to participating in that consultation process which, in

Ofgem's view, will need to set out clearly the increased costs to consumers of the additional support being provided to renewable generation.

Creation of a UK wide Renewables Obligation

6.9 The Government is currently considering creating a UK wide Renewables Obligation to take effect from 1 April 2005. This is intended to be brought into effect via an Order under The Energy (Northern Ireland) Order 2003 and amendments to the Great Britain Orders.

6.10 The Energy Bill currently going through Parliament contains provisions which will allow the Great Britain Orders to be amended to provide that Northern Ireland Renewables Obligation Certificates (NIROCs) may be used to discharge a supplier's Renewables Obligation under the RO and ROS. The provisions will also allow the Great Britain Orders to be amended so that the buy-out fund under the RO and ROS may be redistributed to Northern Ireland suppliers.

6.11 It is intended that Ofreg will be given the same specific functions as Ofgem has in its administration of the Northern Ireland Renewables Obligation. The Energy Bill also contains a provision which would allow Ofreg to authorise Ofgem to carry out the relevant functions on its behalf.

6.12 Ofgem has been discussing the creation and administration of a UK wide Renewables Obligation with DTI and the Department of Environment, Trade and Industry in NI ("DETINI") for some time and has also entered into discussions with Ofreg.

6.13 Ofgem understands the Government is committed to ensuring that the requirements on all licensed suppliers and all accredited generating stations are the same across the UK. Ofgem regards it as fairer to all those parties for a single buy-out fund to be established as soon as possible.

The 2005/2006 review

6.14 The Government has committed to carrying out a full review of the Renewables Obligation in 2005/2006. In Ofgem's view, such a review will need to assess whether the Government's target for renewable generation is going to be met, the effect of the Renewables Obligation on any other policies, eg NFFO/SRO and the Renewables CCL exemption as well as its potential interactions with schemes such as the Emissions Trading Scheme. Ofgem would expect that the Government will publish the scope of this fundamental review to allow the detailed work to commence in 2004/2005.

6.15 Ofgem will play its part in that process and will continue to work closely with DTI and the Scottish Executive to ensure that the Renewables Obligation continues to work as effectively and efficiently as possible.

Appendix 1 - Statistics on accredited generating stations

Table A1:A comparison of the number of accredited generating stations

	England	Scotland	Wales	Total
Biomass	11	1	0	**12**
ACT	2	0	0	**2**
Co-firing	18	1	0	**19**
Hydro < 20 MW DNC	23	34	18	**75**
Landfill gas	210	9	7	**226**
Micro hydro	3	25	1	**29**
Off-shore wind	2	0	0	**2**
On-shore wind	42	26	23	**91**
Sewage gas	49	0	0	**49**
Total	**360**	**96**	**49**	**505**

Table A2:A comparison of the total installed generating capacity of accredited generating stations

	England (kWh)	Scotland (kWh)	Wales (kWh)	Total (kWh)
Biomass	145,425	12,500	0	**157,925**
ACT	1,785	0	0	**1,785**
Co-firing*	159,347	14,160	0	**173,507**
Hydro < 20 MW DNC	8,155	160,605	73,643	**242,403**
Landfill gas	495,428	20,888	11,321	**527,637**
Micro hydro	297	9,907	60	**10,264**
Off-shore wind	3,800	0	0	**3,800**
On-shore wind	145,415	192,888	171,288	**509,591**
Sewage gas	48,364	0	0	**48,364**
Total	**1,008,016**	**410,948**	**256,312**	**1,675,276**

*** co-fired capacity is an estimate of the "renewable capacity"**

Table A3:A comparison of generating stations accredited at 1 April 2002 and after 1 April 2002

	Non-NFFO	NFFO	Non-SRO	SRO	Total
Accredited at 1 April 2002	162	204	39	26	**431**
Accredited after 1 April 2002 and before 1 April 2003	31	12	23	8	**74**
Total	**193**	**216**	**62**	**34**	**505**

Table A4:A comparison of the total installed generating capacity of generating stations accredited at 1 April 2002 and after 1 April 2002

	Non-NFFO *(kWh)	NFFO* (kWh)	Non-SRO* (kWh)	SRO (kWh)	Total (kWh)
Accredited at 1 April 2002	564,421	629,672	93,782	164,136	**145,2011**
Accredited after 1 April 2002 and before 1 April 2003	43,951	26,284	114,292	38,738	**223,265**
Total	**608,372**	**655,956**	**208,074**	**202,874**	**1,675,276**

*** co-fired capacity is an estimate of the "renewable capacity"**

Table A5:A comparison of generating stations accredited at 1 April 2002 and after 1 April 2002

	Generating stations accredited at 1 April 2002	Generating stations accredited after 1 April 2002 and before 1 April 2003	Capacity of generating stations at 1 April 2002 (kWh)	Capacity of generating stations accredited after 1 April 2002 and before 1 April 2003 (kWh)
Biomass	11	1	157,686	239
ACT	1	1	1,560	225
Co-firing*	11	8	170,863	2,644
Hydro < 20 MW DNC	56	19	132,266	110,137
Landfill gas	202	24	473,786	53,851
Micro hydro	25	4	9,622	642
Off-shore wind	2	0	3,800	0
On-shore wind	77	14	457,530	52,061
Sewage gas	46	3	44,898	3,466
Total	**431**	**74**	**1,452,011**	**223,265**

*** co-fired capacity is an estimate of the "renewable capacity"**

Table A6:A comparison of accredited generating stations commissioned before 1 April 2002 and after 1 April 2002

Technology	Generating stations commissioned before 1 April 2002	Generating stations commissioned after 1 April 2002 and before 1 April 2003	Capacity of generating stations commissioned at 1 April 2002 (kWh)	Capacity of generating stations commissioned after 1 April 2002 and before 1 April 2003 (kWh)
Biomass	9	3	148,186	9,739
ACT	1	1	225	1,560
Co-firing*	19	0	173,507	0
Hydro < 20 MW DNC	69	6	240,653	1,750
Landfill gas	195	31	458,924	68,713
Micro hydro	29	0	10,264	0
Off-shore wind	2	0	3,800	0
On-shore wind	79	12	453,245	56,346
Sewage gas	46	3	44,898	3,466
Total	**449**	**56**	**1533702**	**141574**

*** co-fired capacity is an estimate of the "renewable capacity"**

Table A7:A comparison of generating stations accredited at 1 April 2002 and after 1 April 2002

	Generating stations accredited at 1 April 2002	Generating stations accredited after 1 April 2002 and before 1 April 2003	Capacity of accredited generating stations at 1 April 2002 (kWh)*	Capacity of accredited generating stations after 1 April 2002 and before 1 April 2003 (kWh)*
England	324	36	954,514	53,502
Scotland	65	31	257,918	153,030
Wales	42	7	239,579	16,733
Total	**431**	**74**	**1452011**	**223265**

*** co-fired capacity is an estimate of the "renewable capacity"**

Table A8:A comparison of generating stations commissioned before 1 April 2002 and after 1 April 2002

Country	Generating stations commissioned before 1 April 2002	Generating stations commissioned after 1 April 2002 and before 1 April 2003	Capacity of generating stations commissioned before 1 April 2002 (kWh)*	Capacity of generating stations commissioned after 1 April 2002 and before 1 April 2003 (kWh)*
England	326	34	934,284	73,732
Scotland	83	13	355,584	55,364
Wales	40	9	243,834	12,478
Total	**449**	**56**	**1,533,702**	**14,1574**

*** co-fired capacity is an estimate of the "renewable capacity"**

Table A9:Estimation of co-fired generating stations' "renewable capacity"

Generating Station	Accreditation ID	Total installed generating capacity (kWh)	Maximum renewable qualifying percentage achieved in any month	Estimate of "renewable" capacity (kWh)
Avonmouth	R00010RBEN	5,750	72%	**4,123**
Beckton	R00003RBEN	11,400	85%	**9,742**
Cottam	R00015RBEN	2,000,000	0%	**0**
Crossness	R00004RBEN	5,900	94%	**5,564**
Drakelow	R00007RBEN	333,000	0%	**0**
Didcot A	R00018RBEN	2,100,000	0%	**0**
Drax	R00035RBEN	40,650	0%	**0**
Ferrybridge C	R00005RBEN	2,035,000	4%	**87,302**
FibrePower (Slough)	R00034RBEN	12,000	0%	**0**
Fiddler's Ferry	R00006RBEN	1,995,000	1%	**16,160**
High Marnham	R00009RBEN	756,000	0%	**0**
Ironbridge	R00008RBEN	970,000	0%	**1,261**
Kingsnorth	R00014RBEN	2,034,000	0%	**2,644**
Rugeley	R00019RBEN	1,000,000	0%	**0**
Shell Green	R00002RBEN	4,200	81%	**3,420**
Slough Electricity	R00001RBEN	35,000	83%	**29,131**
Tilbury	R00013RBEN	1,085,000	0%	**0**
West Burton	R00017RBEN	2,040,000	0%	**0**
Longannet	R00001SBSC	2,400,000	1%	**14,160**
		Estimate of total "renewable" capacity		**173507**

Appendix 2 – Statistics on ROCs and SROCs issued

Table B1:ROCs and SROCs issued by generation technology

	ROCs	SROCs	Total	Proportion of total
Biomass	574,828	33,266	**608,094**	10.93%
ACT	173	0	**173**	0.00%
Co-firing	385,106	44,753	**429,859**	7.73%
Hydro 20 MW DNC or less	136,085	362,487	**498,572**	8.96%
Landfill gas	2,620,211	96,533	**2,716,744**	48.84%
Micro Hydro	1,151	39,769	**40,920**	0.74%
Off-shore wind	2,347	0	**2,347**	0.04%
On-shore wind	657,216	430,441	**1,087,657**	19.55%
Sewage gas	178,303	0	**178,303**	3.21%
Total	**4,555,420**	**1,007,249**	**5,562,669**	100.00%

Table B2:ROCs and SROCs issued by month of generation

	ROCs	SROCS	Total
Apr-02	335,325	60,114	**395,439**
May-02	358,574	66,753	**425,327**
Jun-02	346,335	76,950	**423,285**
Jul-02	322,279	56,958	**379,237**
Aug-02	317,905	52,034	**369,939**
Sep-02	328,128	64,874	**393,002**
Oct-02	374,875	94,457	**469,332**
Nov-02	431,550	107,456	**539,006**
Dec-02	440,930	99,910	**540,840**
Jan-03	459,302	114,867	**574,169**
Feb-03	403,807	105,263	**509,070**
Mar-03	436,410	107,613	**544,023**
Total	**4,555,420**	**1,007,249**	**5,562,669**

Table B3:ROCs issued by generation technology and month

	Biomass	ACT	Co-firing	Hydro 20 MW DNC or less	Landfill gas	Micro Hydro	Off-shore wind	On-shore wind	Sewage gas	Total
Apr-02	33,435	0	13,421	7,889	207,248	86	0	57,795	15,451	**335,325**
May-02	38,107	0	11,090	12,577	209,552	99	233	70,380	16,536	**358,574**
Jun-02	46,186	0	15,454	10,280	206,624	98	221	54,041	13,431	**346,335**
Jul-02	39,403	0	18,603	7,030	215,826	118	144	28,133	13,022	**322,279**
Aug-02	51,663	0	10,581	6,873	214,248	40	174	21,354	12,972	**317,905**
Sep-02	44,244	0	33,219	6,421	210,481	24	95	20,475	13,169	**328,128**
Oct-02	46,487	0	38,370	7,987	215,110	108	510	51,303	15,000	**374,875**
Nov-02	47,063	0	62,762	18,996	222,551	137	335	64,484	15,222	**431,550**
Dec-02	44,422	0	58,421	16,446	230,961	124	213	74,175	16,168	**440,930**
Jan-03	51,675	33	53,399	16,765	226,827	127	95	94,733	15,648	**459,302**
Feb-03	62,599	59	36,444	12,052	215,553	95	312	61,308	15,385	**403,807**
Mar-03	69,544	81	33,342	12,769	245,230	95	15	59,035	16,299	**436,410**
Total	**574,828**	**173**	**385,106**	**136,085**	**2,620,211**	**1,151**	**2,347**	**657,216**	**178,303**	**4,555,420**

Table B4:SROCs issued by generation technology and month

	Biomass	ACT	Co-firing	Hydro 20 MW DNC or less	Landfill gas	Micro Hydro	Off-shore wind	On-shore wind	Sewage gas	Total
Apr-02	3,657	0	458	22,512	5,012	2,571	0	25,904	0	**60,114**
May-02	5,988	0	439	23,818	4,754	2,856	0	28,898	0	**66,753**
Jun-02	4,687	0	422	27,127	6,624	3,630	0	34,460	0	**76,950**
Jul-02	6,144	0	241	22,345	7,903	3,274	0	17,051	0	**56,958**
Aug-02	3,644	0	2,392	19,924	8,350	3,006	0	14,718	0	**52,034**
Sep-02	3,587	0	3,961	26,184	9,765	2,599	0	18,778	0	**64,874**
Oct-02	5,559	0	4,826	32,056	8,799	2,632	0	40,585	0	**94,457**
Nov-02	0	0	5,538	40,099	8,732	4,352	0	48,735	0	**107,456**
Dec-02	0	0	6,292	33,178	9,729	3,640	0	47,071	0	**99,910**
Jan-03	0	0	6,523	35,982	8,888	3,904	0	59,570	0	**114,867**
Feb-03	0	0	6,440	35,624	8,284	3,752	0	51,163	0	**105,263**
Mar-03	0	0	7,221	43,638	9,693	3,553	0	43,508	0	**107,613**
Total	**33,266**	**0**	**44,753**	**362,487**	**96,533**	**39,769**	**0**	**430,441**	**0**	**1,007,249**

Table B5:ROCs issued by location and month

	England	Scotland	Wales	Total
Apr-02	292,715	257	42,353	**335,325**
May-02	306,603	256	51,715	**358,574**
Jun-02	307,631	282	38,422	**346,335**
Jul-02	299,052	282	22,945	**322,279**
Aug-02	299,633	251	18,021	**317,905**
Sep-02	309,908	207	18,013	**328,128**
Oct-02	339,463	116	35,296	**374,875**
Nov-02	375,609	189	55,752	**431,550**
Dec-02	380,790	283	59,857	**440,930**
Jan-03	388,020	242	71,040	**459,302**
Feb-03	356,365	269	47,173	**403,807**
Mar-03	387,670	262	48,478	**436,410**
Total	**4,0434,59**	**2,896**	**509,065**	**4,555,420**

Table B6:ROCs issued by location and technology

	England	Scotland	Wales	Total
Biomass	574,828	0	0	**574,828**
ACT	173	0	0	**173**
Co-firing	385,106	0	0	**385,106**
Hydro 20 MW DNC or less	20,725	2,896	112,464	**136,085**
Landfill gas	2,575,315	0	44,896	**2,620,211**
Micro Hydro	772	0	379	**1,151**
Off-shore wind	2,347	0	0	**2,347**
On-shore wind	305,890	0	351,326	**657,216**
Sewage gas	178,303	0	0	**178,303**
Total	**4,043,459**	**2,896**	**509,065**	**4,555,420**

Table B7:SROCs issued by location and month

	England	Scotland	Wales	Total
Apr-02	0	60,114	0	**60,114**
May-02	0	66,753	0	**66,753**
Jun-02	0	76,950	0	**76,950**
Jul-02	0	56,958	0	**56,958**
Aug-02	0	52,034	0	**52,034**
Sep-02	0	64,874	0	**64,874**
Oct-02	0	94,457	0	**94,457**
Nov-02	0	107,456	0	**107,456**
Dec-02	0	99,910	0	**99,910**
Jan-03	0	114,867	0	**114,867**
Feb-03	0	105,263	0	**105,263**
Mar-03	0	107,613	0	**107,613**
Total	**0**	**1,007,249**	**0**	**1,007,249**

Table B8:SROCs issued by location and technology

	England	Scotland	Wales	Total
Biomass	0	33,266	0	**33,266**
ACT	0	0	0	**0**
Co-firing	0	44,753	0	**44,753**
Hydro 20 MW DNC or less	0	362,487	0	**362,487**
Landfill gas	0	96,533	0	**96,533**
Micro Hydro	0	39,769	0	**39,769**
Off-shore wind	0	0	0	**0**
On-shore wind	0	430,441	0	**430,441**
Sewage gas	0	0	0	**0**
Total	**0**	**1,007,249**	**0**	**1,007,249**

Table B9:ROCs and SROCs issued by generation location and month

	England	Scotland	Wales	Total
Apr-02	292,715	60,371	42,353	**395,439**
May-02	306,603	67,009	51,715	**425,327**
Jun-02	307,631	77,232	38,422	**423,285**
Jul-02	299,052	57,240	22,945	**379,237**
Aug-02	299,633	52,285	18,021	**369,939**
Sep-02	309,908	65,081	18,013	**393,002**
Oct-02	339,463	94,573	35,296	**469,332**
Nov-02	375,609	107,645	55,752	**539,006**
Dec-02	380,790	100,193	59,857	**540,840**
Jan-03	388,020	115,109	71,040	**574,169**
Feb-03	356,365	105,532	47,173	**509,070**
Mar-03	387,670	107,875	48,478	**544,023**
Total	**4,043,459**	**1,010,145**	**509,065**	**5,562,669**

Table B10:ROCs and SROCs issued by generation location and technology

	England	Scotland	Wales	Total
Biomass	574,828	33,266	0	**608,094**
ACT	173	0	0	**173**
Co-firing	385,106	44,753	0	**429,859**
Hydro 20 MW DNC or less	20,725	365,383	112,464	**498,572**
Landfill gas	2,575,315	96,533	44,896	**2,716,744**
Micro Hydro	772	39,769	379	**40,920**
Off-shore wind	2,347	0	0	**2,347**
On-shore wind	305,890	430,441	351,326	**1,087,657**
Sewage gas	178,303	0	0	**178,303**
Total	**4,043,459**	**1,010,145**	**509,065**	**5,562,669**

Appendix 3 – Statistics on supplier compliance

Table C1:Suppliers' compliance with the RO 2002/2003

Supplier licence	RO (3% of sales) (MWh)	Produced ROCs/SROCs	Money paid into buy-out fund (£)	RO met by ROCs/SROCs	RO met by buy-out	Remaining money that would have covered the RO (£)	Did the combination of ROCs/SROCs and buy-out cover the RO?
Atlantic Electric and Gas Ltd	68,137	0	2,044,110	0%	100%	0	yes
BizzEnergy Limited	53,520	0	1,396,530	0%	87%	209,070	no - ROCs produced late
BP Power Trading Ltd	471	0	14,130	0%	100%	0	yes
British Energy Generation Ltd	564,622	158,376	12,187,380	28%	72%	0	yes
British Gas Trading Limited	885,118	885,118	0	100%	0%	0	yes
Cinergy Global Trading Ltd	212	212	0	100%	0%	0	yes
Economy Power Ltd	22,323	21,588	0	97%	0%	22,050	no - produced over 25% co-fired ROCs
Electricity Direct (UK) Ltd	114,937	107,108	191,220	93%	6%	43,650	no - produced over 25% co-fired ROCs
Enron Gas & Petrochemicals Trading Ltd	3,626	0	108,780	0%	100%	0	yes
Fortum Energy Plus Limited	6,815	0	0	0%	0%	204,450	no - late payment
Gaz De France Marketing Limited	32,554	0	976,620	0%	100%	0	yes
Innogy Cogen Ltd	116,767	0	3,503,010	0%	100%	0	yes
Innogy Cogen Trading Ltd	43,661	0	1,309,830	0%	100%	0	yes

Table C1 continued

Supplier licence	RO (3% of sales) (MWh)	Produced ROCs/SROCs	Money paid into buy-out fund (£)	RO met by ROCs/SROCs	RO met by buy-out	Remaining money that would have covered the RO (£)	Did the combination of ROCs/SROCs and buy-out cover the RO?
London Electricity plc	1,037,179	931,276	3,177,090	90%	10%	0	yes
Maverick Energy Ltd	17,188	0	0	0%	0%	515,640	no - in administration
Norweb Energi Ltd	171,421	0	0	0%	0%	5,142,630	no - in administration
Npower Direct Ltd	103,545	23,717	2,394,840	23%	77%	0	yes
Npower Ltd	1,007,419	235,751	23,150,040	23%	77%	0	yes
Npower Northern Ltd	364,638	83,521	8,433,510	23%	77%	0	yes
Npower Yorkshire Ltd	248,398	56,896	5,745,060	23%	77%	0	yes
Opus Energy Ltd	369	369	0	100%	0%	0	yes
Powergen (UK) plc	312,012	312,012	0	100%	0%	0	yes
Powergen Retail Ltd	1,108,123	1,108,123	0	100%	0%	0	yes
Renewable Energy Company Ltd	7,701	7,701	0	100%	0%	0	yes
ScottishPower Energy Retail Ltd	295,004	295,004	0	100%	0%	0	yes
Seeboard Energy Ltd	324,032	290,264	1,013,040	90%	10%	0	yes
Severn Trent Energy Ltd	624	624	0	100%	0%	0	yes
Slough Energy Supplies Ltd	2,835	2,835	0	100%	0%	0	yes
SmartestEnergy Limited	463	0	13,890	0%	100%	0	yes
SSE Energy Supply Ltd	839,310	434,999	12,129,330	52%	48%	0	yes
TotalFinaElf Gas & Power Ltd	9,059	0	271,770	0%	100%	0	yes
TXU Direct Sales Ltd	24,694	0	0	0%	0%	740,820	no - in administration

Table C1 continued

Supplier licence	RO (3% of sales) (MWh)	Produced ROCs/SROCs	Money paid into buy-out fund (£)	RO met by ROCs/SROCs	RO met by buy-out	Remaining money that would have covered the RO (£)	Did the combination of ROCs/SROCs and buy-out cover the RO?
TXU Europe (Ah Online) Ltd	7,279	7,279	0	100%	0%	0	yes
TXU Europe (AHGD) Ltd	6,972	6,972	0	100%	0%	0	yes
TXU UK Ltd	563,162	0	0	0%	0%	16,894,860	no - in administration
UK Electric Power Ltd	24,627	0	738,810	0%	100%	0	yes
Utility Link Ltd	4,561	2,752	54,270	60%	40%	0	yes
Western Gas Ltd	594	594	0	100%	0%	0	yes
Total	**8,393,972**	**4,973,091**	**78,853,260**	**59%**	**31%**	**23,773,170**	**no**

Table C2:Suppliers' compliance with the ROS 2002/2003

Supplier licence	ROS (3% of sales) (MWh)	Produced ROCs/SROCs	Money paid into buy-out fund (£)	ROS met by ROCs/SROCs	ROS met by buy-out	Remaining money that would have covered the ROS (£)	Did the combination of ROCs/SROCs and buy-out cover the ROS?
Atlantic Electric and Gas Ltd	1,690	0	50,700	0%	100%	0	yes
British Energy Generation Ltd	15,384	15,384	0	100%	0%	0	yes
British Gas Trading Limited	87,634	87,623	330	100%	0%	0	yes
Cinergy Global Trading Ltd	156	156	0	100%	0%	0	yes
Economy Power Ltd	3,154	3,154	0	100%	0%	0	yes
Electricity Direct (UK) Ltd	17,750	17,750	0	100%	0%	0	yes
Fortum Direct	12,472	0	374,160	0%	100%	0	yes
Fortum Energy Plus Limited	317	0	0	0%	0%	9,510	no - late payment
London Electricity plc	7,916	7,916	0	100%	0%	0	yes
Maverick Energy Ltd	459	0	0	0%	0%	13,770	no - in administration
Norweb Energi Ltd	851	0	0	0%	0%	25,530	no - in administration
Npower Direct Ltd	5,118	1,279	0	25%	0%	115,170	no - produced over 25% co-fired ROCs
Npower Ltd	28,564	28,564	0	100%	0%	0	yes
Npower Northern Ltd	3,943	3,943	0	100%	0%	0	yes
Npower Yorkshire Ltd	4,052	4,052	0	100%	0%	0	yes
Opus Energy Ltd	10	10	0	100%	0%	0	yes
Powergen (UK) plc	10,249	10,249	0	100%	0%	0	yes
Powergen Retail Ltd	19,960	19,960	0	100%	0%	0	yes

Table C2 continued

Supplier licence	ROS (3% of sales) (MWh)	Produced ROCs/SROCs	Money paid into buy-out fund (£)	ROS met by ROCs/SROCs	ROS met by buy-out	Remaining money that would have covered the ROS (£)	Did the combination of ROCs/SROCs and buy-out cover the ROS?
ScottishPower Energy Retail Ltd	412,252	160,430	7,554,660	39%	61%	0	yes
Seeboard Energy Ltd	1,548	1,548	0	100%	0%	0	yes
Severn Trent Energy Ltd	2	2	0	100%	0%	0	yes
SSE Energy Supply Ltd	223,344	115,755	3,227,670	52%	48%	0	yes
TotalFinaElf Gas & Power Ltd	31	0	930	0%	100%	0	yes
TXU Direct Sales Ltd	1,967	0	0	0%	0%	59,010	no - in administration
TXU Europe (Ah Online) Ltd	363	363	0	100%	0%	0	yes
TXU Europe (AHGD) Ltd	220	220	0	100%	0%	0	yes
TXU UK Ltd	8,114	0	0	0%	0%	243,420	no - in administration
UK Electric Power Ltd	76	0	2,280	0%	100%	0	yes
Total	**867,596**	**478,358**	**11,210,730**	**55%**	**43%**	**466,410**	**no**

Table C3:ROCs produced under the RO

Supplier licence	Produced co-fired ROCs/SROCs	Produced non - co-fired ROCs/SROCs	RO met by co-fired ROCs/SROCs	RO met by ROCs/SROCs
Atlantic Electric and Gas Ltd	0	0	0%	0%
BizzEnergy Limited	0	0	0%	0%
BP Power Trading Ltd	0	0	0%	0%
British Energy Generation Ltd	0	158,376	0%	28%
British Gas Trading Limited	18,570	866,548	2%	100%
Cinergy Global Trading Ltd	0	212	0%	100%
Economy Power Ltd	5,580	16,008	25%	97%
Electricity Direct (UK) Ltd	28,734	78,374	25%	93%
Enron Gas & Petrochemicals Trading Ltd	0	0	0%	0%
Fortum Energy Plus Limited	0	0	0%	0%
Gaz De France Marketing Limited	0	0	0%	0%
Innogy Cogen Ltd	0	0	0%	0%
Innogy Cogen Trading Ltd	0	0	0%	0%
London Electricity plc	34,390	896,886	3%	90%
Maverick Energy Ltd	0	0	0%	0%
Norweb Energi Ltd	0	0	0%	0%
Npower Direct Ltd	21,623	2,094	21%	23%
Npower Ltd	59,850	175,901	6%	23%
Npower Northern Ltd	0	83,521	0%	23%
Npower Yorkshire Ltd	0	56,896	0%	23%
Opus Energy Ltd	0	369	0%	100%
Powergen (UK) plc	496	311,516	0%	100%
Powergen Retail Ltd	71,981	1,036,142	6%	100%
Renewable Energy Company Ltd	0	7,701	0%	100%
ScottishPower Energy Retail Ltd	10,000	285,004	3%	100%
Seeboard Energy Ltd	10,992	279,272	3%	90%
Severn Trent Energy Ltd	0	624	0%	100%
Slough Energy Supplies Ltd	700	2,135	25%	100%
SmartestEnergy Limited	0	0	0%	0%
SSE Energy Supply Ltd	65,254	369,745	8%	52%
TotalFinaElf Gas & Power Ltd	0	0	0%	0%
TXU Direct Sales Ltd	0	0	0%	0%
TXU Europe (Ah Online) Ltd	0	7,279	0%	100%
TXU Europe (AHGD) Ltd	0	6,972	0%	100%
TXU UK Ltd	0	0	0%	0%
UK Electric Power Ltd	0	0	0%	0%

Supplier licence	Produced co-fired ROCs/SROCs	Produced non - co-fired ROCs/SROCs	RO met by co-fired ROCs/SROCs	RO met by ROCs/SROCs
Utility Link Ltd	0	2,752	0%	60%
Western Gas Ltd	0	594	0%	100%
Total	**328,170**	**4,644,921**	**4%**	**59%**

Table C4:ROCs produced under the ROS

Supplier licence	Produced co-fired ROCs/SROCs	Produced non - co-fired ROCs/SROCs	ROS met by co-fired ROCs/SROCs	ROS met by ROCs/SROCs
Atlantic Electric and Gas Ltd	0	0	0%	0%
British Energy Generation Ltd	0	15,384	0%	100%
British Gas Trading Limited	16,022	71,601	18%	100%
Cinergy Global Trading Ltd	0	156	0%	100%
Economy Power Ltd	435	2,719	14%	100%
Electricity Direct (UK) Ltd	106	17,644	1%	100%
Fortum Direct	0	0	0%	0%
Fortum Energy Plus Limited	0	0	0%	0%
London Electricity plc	0	7,916	0%	100%
Maverick Energy Ltd	0	0	0%	0%
Norweb Energi Ltd	0	0	0%	0%
Npower Direct Ltd	1,279	0	25%	25%
Npower Ltd	0	28,564	0%	100%
Npower Northern Ltd	0	3,943	0%	100%
Npower Yorkshire Ltd	707	3,345	17%	100%
Opus Energy Ltd	0	10	0%	100%
Powergen (UK) plc	1,277	8,972	12%	100%
Powergen Retail Ltd	0	19,960	0%	100%
ScottishPower Energy Retail Ltd	44,753	115,677	11%	39%
Seeboard Energy Ltd	0	1,548	0%	100%
Severn Trent Energy Ltd	0	2	0%	100%
SSE Energy Supply Ltd	17,364	98,391	8%	52%
TotalFinaElf Gas & Power Ltd	0	0	0%	0%
TXU Direct Sales Ltd	0	0	0%	0%
TXU Europe (Ah Online) Ltd	0	363	0%	100%
TXU Europe (AHGD) Ltd	0	220	0%	100%
TXU UK Ltd	0	0	0%	0%
UK Electric Power Ltd	0	0	0%	0%
Total	**81,943**	**396,415**	**9%**	**55%**

Table C5:Redistribution of RO buy-out

Supplier licence	Buy-out redistributed for ROCs/SROCs produced (£)
Atlantic Electric and Gas Ltd	0
BizzEnergy Limited	0
BP Power Trading Ltd	0
British Energy Generation Ltd	2,523,904
British Gas Trading Limited	14,105,376
Cinergy Global Trading Ltd	3,378
Economy Power Ltd	344,029
Electricity Direct (UK) Ltd	1,706,889
Enron Gas & Petrochemicals Trading Ltd	0
Fortum Energy Plus Limited	0
Gaz De France Marketing Limited	0
Innogy Cogen Ltd	0
Innogy Cogen Trading Ltd	0
London Electricity plc	14,840,957
Maverick Energy Ltd	0
Norweb Energi Ltd	0
Npower Direct Ltd	377,957
Npower Ltd	3,756,964
Npower Northern Ltd	1,331,003
Npower Yorkshire Ltd	906,703
Opus Energy Ltd	5,880
Powergen (UK) plc	4,972,271
Powergen Retail Ltd	17,659,217
Renewable Energy Company Ltd	122,724
ScottishPower Energy Retail Ltd	4,701,228
Seeboard Energy Ltd	4,625,691
Severn Trent Energy Ltd	9,944
Slough Energy Supplies Ltd	45,178
SmartestEnergy Limited	0
SSE Energy Supply Ltd	6,932,210
TotalFinaElf Gas & Power Ltd	0
TXU Direct Sales Ltd	0
TXU Europe (Ah Online) Ltd	111,106
TXU Europe (AHGD) Ltd	115,999
TXU UK Ltd	0
UK Electric Power Ltd	0
Utility Link Ltd	43,856
Western Gas Ltd	9,466
Total	**79,251,930**

Table C6:Redistribution of ROS buy-out

Supplier licence	Buy-out redistributed for ROCs/SROCs produced (£)
Atlantic Electric and Gas Ltd	0
British Energy Generation Ltd	362,351
British Gas Trading Limited	2,063,851
Cinergy Global Trading Ltd	3,674
Economy Power Ltd	74,288
Electricity Direct (UK) Ltd	418,079
Fortum Direct	0
Fortum Energy Plus Limited	0
London Electricity plc	186,451
Maverick Energy Ltd	0
Norweb Energi Ltd	0
Npower Direct Ltd	30,125
Npower Ltd	672,789
Npower Northern Ltd	92,872
Npower Yorkshire Ltd	95,439
Opus Energy Ltd	235
Powergen (UK) plc	241,402
Powergen Retail Ltd	470,133
ScottishPower Energy Retail Ltd	3,778,730
Seeboard Energy Ltd	36,461
Severn Trent Energy Ltd	47
SSE Energy Supply Ltd	2,726,466
TotalFinaElf Gas & Power Ltd	0
TXU Direct Sales Ltd	0
TXU Europe (Ah Online) Ltd	8,550
TXU Europe (AHGD) Ltd	5,181
TXU UK Ltd	0
UK Electric Power Ltd	0
Total	**11,267,124**

Table C7:Suppliers with no RO

Supplier licence
Accord Energy Limited
AEP Energy Services Limited
AES Barry Operations Ltd
AES New Energy Ltd
Affinity Power Limited
Allied Domecq (Holdings) plc
Aquila Energy Supplies Ltd
Citigen (London) Ltd
Commercial Electricity Supplies Ltd
EDF Trading Ltd
Eledor Limited
Enizade Ltd
Enron Direct Ltd
Essential Power Limited
Fellside Heat and Power Ltd
Fortum Direct
Ineos Chlor Energy Ltd
International Power plc
Magnox Electric plc
Midlands Gas Ltd
Npower Northern Supply Ltd
Npower Yorkshire Supply Limited
OwnLabel Energy Ltd
Pentex Oil and Gas Ltd
Seeboard Powerlink Limited
Shell Gas Direct Ltd
South Wales Electricity Ltd
SSE Energy Ltd
SWEB Ltd
Telecom Plus PLC
TXU Europe (AHG) Ltd
Unit Energy Limited
Wilton Energy Limited

Table C8:Suppliers with no ROS

Supplier licence
Accord Energy Limited
AEP Energy Services Limited
AES New Energy Ltd
Affinity Power Limited
Allied Domecq (Holdings) plc
Aquila Energy Supplies Ltd
BizzEnergy Limited
Citigen (London) Ltd
Commercial Electricity Supplies Ltd
EDF Trading Ltd
Eledor Limited
Enizade Ltd
Enron Direct Ltd
Enron Gas & Petrochemicals Trading Ltd
Essential Power Limited
Gaz De France Marketing Limited
Ineos Chlor Energy Ltd
Innogy Cogen Ltd
Innogy Cogen Trading Ltd
International Power plc
Magnox Electric plc
Midlands Gas Ltd
Npower Northern Supply Ltd
Npower Yorkshire Supply Limited
OwnLabel Energy Ltd
Pentex Oil and Gas Ltd
Renewable Energy Company Ltd
Shell Gas Direct Ltd
SmartestEnergy Limited
South Wales Electricity Ltd
SSE Energy Ltd
SWEB Ltd
Telecom Plus PLC
TXU Europe (AHG) Ltd
Unit Energy Limited
Utility Link Ltd
Western Gas Ltd
Wilton Energy Limited

Table C9:ROCs and SROCs issued and redeemed for RO or ROS compliance

	ROCs	SROCs	Total
Redeemed	4,449,885	1,001,564	**5,451,449**
Not redeemed	105,535	5,685	**111,220**
Total issued	**4,555,420**	**1,007,249**	**5,562,669**

Renewables Obligation: Third annual report

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Overview:

The Government has introduced a number of schemes to encourage the development of renewable generation in the UK.

In April 2002, the Renewables Obligation came into force. In April 2004, the Renewables Obligation (Scotland) came into force. Ofgem administers these schemes on behalf of the Department of Trade and Industry and the Scottish Executive respectively.

This report provides information in respect of the third period of the Renewables Obligation (1 April 2004 to 31 March 2005), including information on how licensed electricity suppliers have complied with their obligations, the number of ROCs issued by Ofgem and the number and type of generating stations accredited for the schemes.

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Target Audience: This document provides information to parties with an interest in the Renewables Obligation.

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Context

The Government's aim is that renewable energy will make an increasing contribution to energy supplies in the UK, with renewable energy playing a key role in the wider climate change programme.

Sections 32 to 32C of the Electricity Act 1989 ("the Act") empower the Secretary of State and the Scottish Ministers to impose obligations on licensed electricity suppliers ("suppliers") to source a proportion of their supplies from renewable sources. These obligations are referred to collectively as the Renewables Obligation. The Gas and Electricity Markets Authority ("the Authority"), whose day to day functions are performed by Ofgem, is given powers and functions under the Orders.

The obligation in respect of those suppliers supplying customers in England and Wales is set out in the Renewables Obligation Order 2002 (as amended) ("the RO") whilst the obligation in respect of those suppliers supplying customers in Scotland is set out in the Renewables Obligation (Scotland) Order 2004 ("the ROS"). These obligations are referred to collectively as the Orders.

"Green certificates" are issued under the RO and the ROS. They certify that a generating station has generated from renewable sources an amount of electricity and that it has been supplied to customers in Great Britain. These are known as ROCs (Renewables Obligation Certificates) or SROCs (Scottish Renewables Obligation Certificates).

An obligation period runs from 1 April to 31 March each year. Suppliers are required to produce evidence to Ofgem of compliance with their Renewables Obligation before a specified day each year. The specified day for the 2004/05 compliance period was 1 October 2005. Evidence can be via ROCs or SROCs. Alternatively, a supplier can discharge its Renewables Obligation, in whole or in part, by paying the buy-out price. The Government intends that suppliers will be subject to a renewables obligation until 31 March 2027.

This third annual report is based on the requirements on the Authority and obligations on suppliers under the RO and the ROS referred to above. For the avoidance of doubt, in respect of later obligation periods, other RO orders will apply.

Associated Documents

Readers should be aware of the following documents which support this publication. These documents are available on our website at www.ofgem.gov.uk.

- Renewables Obligation: Third annual report - appendices (ref 35/06)
- The Renewables Obligation second annual report (ref 44/05), and
- The Renewables Obligation first annual report (ref 45/04)

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Summary

The Renewables Obligation Orders[1] ("the Orders") detail Ofgem's powers and functions in respect of the Renewables Obligation. Those functions include:

- accrediting generating stations as being capable of generating electricity from eligible renewable energy sources
- issuing Renewable Obligation Certificates ("ROCs") and Scottish Renewable Obligation Certificates ("SROCs")
- establishing and maintaining a register of ROCs and SROCs
- revoking ROCs where necessary
- monitoring compliance with the requirements of the Orders
- calculating annually the buy-out price resulting from the adjustments made to reflect changes in the RPI
- receiving buy-out payments and redistributing the buy-out fund
- receiving late payments and redistributing the late payment fund, and
- publishing an annual report on the operation of and compliance with the requirements of the Orders.

We carry out these functions as efficiently and effectively as possible according to the provisions of the Orders. We cannot act beyond the scope of the powers laid down in the Orders. For example, we have no remit over the operation or regulation of the ROC market itself. Amendments to the relevant legislation in respect of the Renewables Obligation are a matter for the Secretary of State and Scottish Ministers.

Ofgem's costs of exercising its functions under the Orders were around £600,000 in 2004-05. These costs included:

- staffing costs
- IT system support costs
- technical, legal and IT support
- undertaking audits of generating stations
- undertaking audits of suppliers, and
- the maintenance of bank accounts.

[1] Renewables Obligation Order 2002 (as amended) and Renewables Obligation (Scotland) Order 2004

Because of a significant increase in the volume of activity under the RO, these costs will rise to around £700,000 in 2005-06 and are expected to rise further in 2006-07. This is, in part, because of the need to review our IT systems. It is also to allow us to improve service standards. Full details of Ofgem's costs of administering the environmental programmes, including the RO, are set out in our Corporate Strategy and Plan[2], published in January 2006.

This annual report incorporates information on both the RO and the ROS. Unless otherwise stated, where "RO" and "ROC" are used below they denote both the RO and the ROS and ROCs and SROCs respectively.

The use of "Ofgem", "us", "our" and "we" are used interchangeably when referring to the exercise of the Authority's powers and functions under the RO.

Chapters 1 to 4 provide details on:

- how each supplier has complied with its obligation (in terms of ROCs presented, the buy-out payments made or a combination of both as appropriate)
- the amount of the buy-out fund and late payment fund each licensed supplier received
- summaries of the outcomes of any enquiries or investigations regarding implementation of the RO and compliance by suppliers and operators of generating stations
- the total number of ROCs issued by us during the third obligation period
- ROCs issued disaggregated by the different eligible renewable technologies
- the number of ROCs accepted by us as evidence of compliance
- the total number of ROCs issued but not deleted from the ROC Register for use in the next period (April 2005 - March 2006), and
- any other matters which we consider relevant.

Chapter 5 provides a summary of legislative changes made since April 2005.

Further information on the RO, including our role and key features of the obligation, can be found in chapter 1 of our second annual report, published on 14 February 2005.

Enquiries on any aspect of this report should be emailed to renewable@ofgem.gov.uk with the email clearly marked "3rd annual report". Alternatively, you can telephone Yvonne Naughton on 0141 331 6006.

[2] Ofgem document 13/06: 'Corporate Strategy and Plan 2006-2011'

1. Compliance by licensed electricity suppliers

This chapter, when read with Appendix 3, provides information on:

- the extent of compliance by each licensed electricity supplier ("supplier")
- how each supplier has complied with its obligation (in terms of ROCs presented, the buy-out payment made or a combination of both)
- the total number of ROCs correctly presented against each supplier's obligation
- the amount of the buy-out fund and late payment fund each supplier received, and
- the total number of ROCs that remain on the ROC Register for use in the next obligation period (April 2005 - March 2006).

Publication of this information is a requirement on Ofgem under the Renewables Obligation 2002 (as amended) Order and the Renewables Obligation (Scotland) 2004 Order ("the Orders").

Total Renewables Obligation for England & Wales and for Scotland

1.1. The RO requires each supplier to source a proportion of the electricity that it has supplied in Great Britain from eligible[3] renewable sources. The proportion for the third obligation period was 4.9 per cent. This proportion increases each year.

1.2. The RO also requires each supplier to provide evidence that it has done this, that another supplier has done this or that between them they have done this. In practice, this means that suppliers meet their obligations by presenting ROCs, making buy-out payments to cover any shortfall in the presentation of sufficient ROCs or by a combination of both.

Headline figures

1.3. For the third obligation period, the total Renewables Obligation for electricity supplied to customers in England & Wales was 14,315,784 MWh and 1,445,283 MWh for electricity supplied to customers in Scotland.

1.4. The total number of ROCs correctly presented before the 1 October 2005 statutory deadline was 9,971,851 for England & Wales and 883,997 for Scotland.

1.5. The total buy-out payments made and received before the 1 October 2005 statutory deadline were £135,657,001.57 for England and Wales and £17,602,787.25 for Scotland.

1.6. The total amounts of the buy-out funds that we redistributed, including interest, were £136,169,908 for England & Wales and £17,667,485 for Scotland. This meant that each supplier who correctly presented ROCs in respect of its RO received £13.66 back per certificate. Each supplier who correctly presented ROCs in respect of its ROS received £19.99 back per certificate.

[3] See Article 2(1) of the Orders for the definition of eligible renewable sources

1.7. The total amounts of the late payment funds that we redistributed, including interest, were £6 for England and Wales and £907 for Scotland.

1.8. 43,576 ROCs and 53,515 SROCs issued during the third obligation period were not presented back to us for compliance purposes in 2004/05. These remain on the ROC Register for use in the fourth obligation period.

1.9. Tables 1 and 2 summarise the headline figures and make comparisons to earlier obligation periods. Further detail can be found in tables A1, A2, A5 and A6 in Appendix 3.

Table 1: 2004/05 RO compliance compared to 2003/04 and 2002/03 (England & Wales)

	2004/05	2003/04	2002/03
Total obligation (MWh)	14,315,784	12,387,720	8,393,972
ROCs produced	9,971,851	6,914,524	4,973,091
Buy-out paid (£)	£135,657,001	£157,960,978	£78,853,260
Shortfall in buy-out fund (£)	£699,055.30	£9,026,232	£23,773,170
Percentage obligation met by ROCs	70%	56%	59%
Buy-out redistributed (including late payment fund)	£136,169,914	£158,466,502	£79,251,930
Buy-out paid per ROC produced (£)	£13.66	£22.92	£15.94
What a ROC was "worth"[4] to a supplier (£)	£45.05	£53.43	£45.94

Table 2: 2004/05 RO compliance compared to 2003/04 and 2002/03 (Scotland)

	2004/05	2003/04	2002/03
Total obligation (MWh)	1,445,283	1,239,692	867,596
ROCs produced	883,997	695,620	478,358
Buy-out paid (£)	£17,602,787	£16,436,835	£11,210,730
Shortfall in buy-out fund (£)	£15,067.20	£162,801	£466,410
Percentage obligation met by ROCs	61%	56%	55%
Buy-out redistributed	£17,668,392	£16,488,755	£11,267,124
Buy-out paid per ROC produced (£)	£19.99	£23.70	£23.55
What a ROC was "worth"[5] to a supplier (£)	£51.38	£54.21	£53.55

1.10. 38 suppliers in England and Wales had an obligation under the RO. 24 suppliers in Scotland had an obligation under the ROS in 2004/05. Of these, 23

[4] When combined with the buy-out price that suppliers effectively avoid paying by presenting ROCs, a ROC produced against the RO was "worth" £45.05 to suppliers, or £51.38 if produced against the ROS in 2004/05.
[5] See Article 2(1) of the Orders for the definition of eligible renewable sources

suppliers had an obligation under both the RO and the ROS.

1.11. 47 suppliers had no obligation under the RO and 56 had no obligation under the ROS either because they had no sales to customers or all their sales were to transmission connected customers.

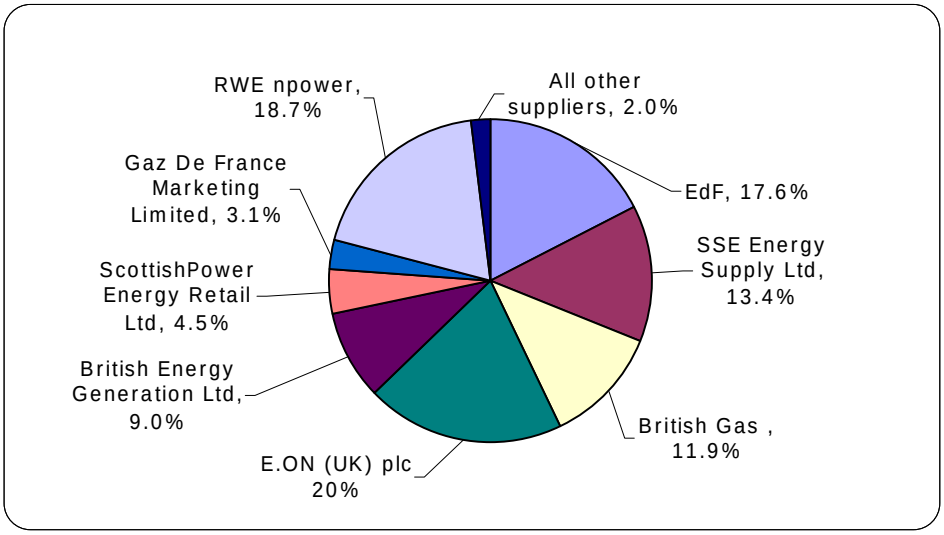
Detail about ROCs presented

1.12. London Energy plc (part of EdF group) had the largest obligation in England and Wales (2,035,827 MWh) followed by SSE Energy Supply Limited and British Gas Trading Limited with obligations of 1,920,605MWh and 1,618,131 MWh respectively.

1.13. ScottishPower Energy Retail Limited had the largest obligation in Scotland (647,050 MWh) followed by SSE Energy Supply Limited and British Gas Trading Limited with obligations of 397,831 MWh and 154,846 MWh respectively.

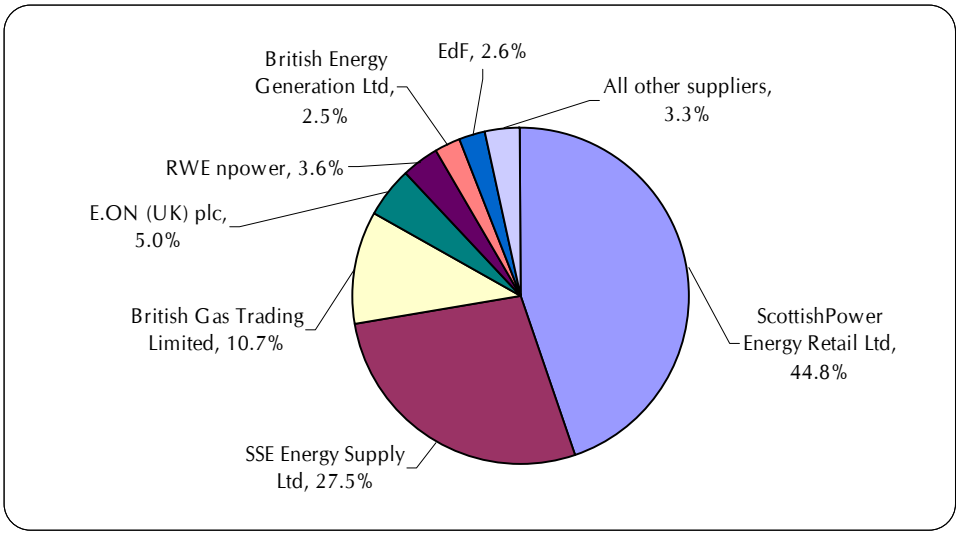
1.14. Figures 1 and 2 show the breakdown of the total obligation by supplier group.

Figure 1: Comparison of the relative size of suppliers' RO by supplier group[6]



[6] A list of supplier groups and their individual supply licences can be found in table A9 in Appendix 3

Figure 2: Comparison of the relative size of suppliers' ROS by supplier group[7]



1.15. Four suppliers fulfilled both obligations entirely by presenting ROCs:

- British Gas Trading Limited
- Electricity Direct (UK) Limited
- Cinergy Global Trading Limited, and
- Total Gas & Power Limited.

1.16. SSE Energy Supply Limited presented the most ROCs under the RO in England and Wales - 1,632,514. This made up 85 per cent of its obligation.

1.17. Scottish Power Energy Retail Limited presented the most ROCs under the RO in Scotland – 301,934. This made up 47 per cent of its obligation.

Co-fired ROCs

1.18. Under current rules, each supplier is allowed to meet 25 per cent of its obligation by presenting ROCs that have been issued to co-firing generating stations (i.e. those fuelled partly by fossil fuels).

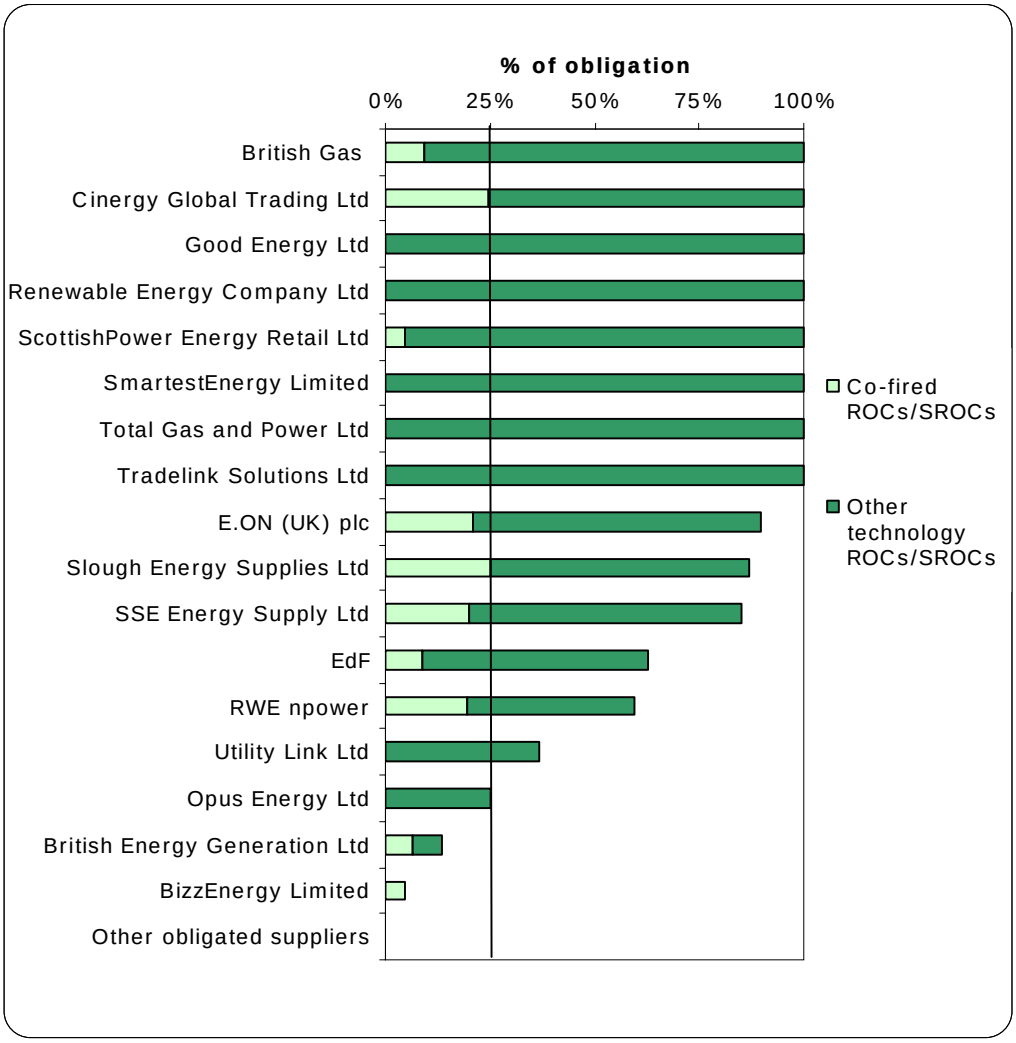
1.19. The number of co-fired ROCs that can be presented by suppliers will decrease to 10 per cent for the period April 2006 to March 2011, and to 5 per cent from April 2011 to March 2016.

1.20. Figures 3 and 4 compare the proportion of ROCs and co-fired ROCs presented by suppliers in meeting their obligations in England and Wales and Scotland

[7] A list of supplier groups and their individual supply licences can be found in table A9 in Appendix 3

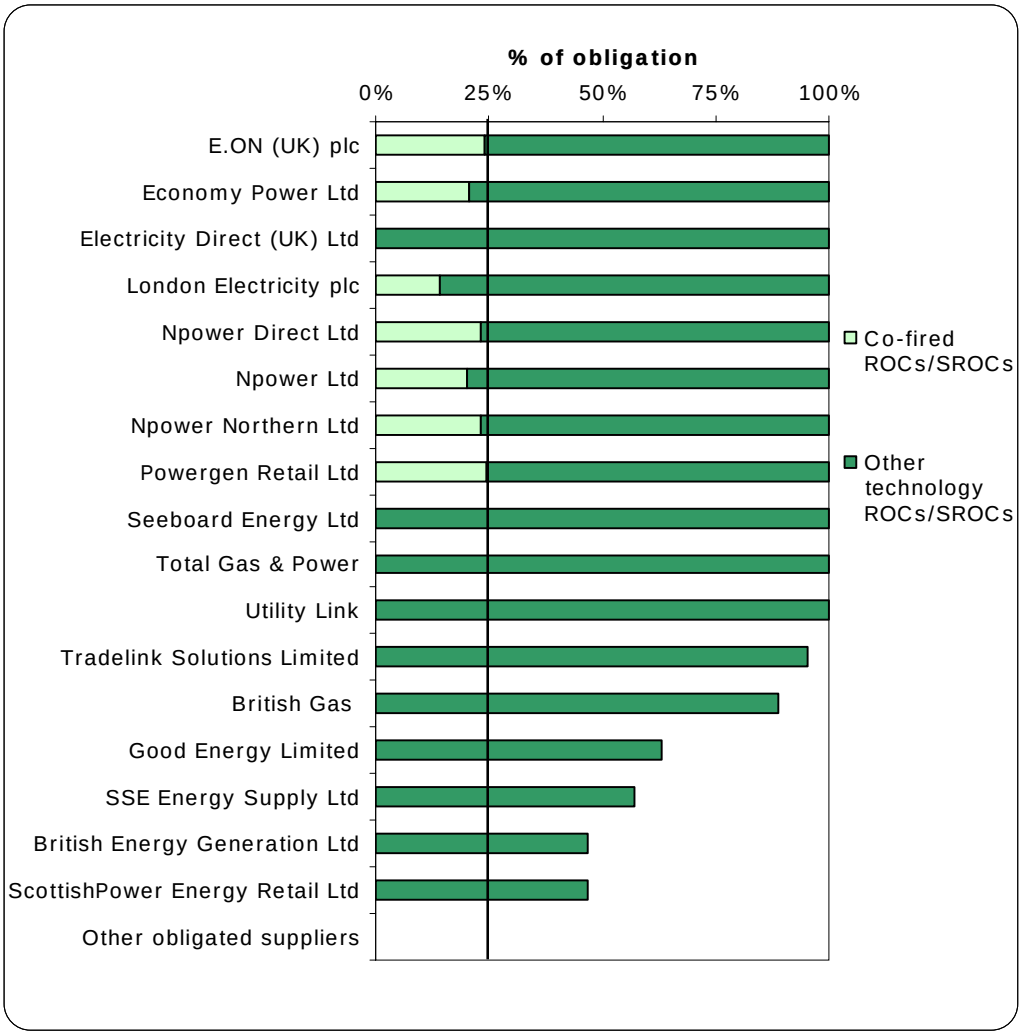
respectively in 2004/05. Further detail can be found in tables A3 and A4 in Appendix 3.

Figure 3: Comparison of the percentage of each supplier's RO that was satisfied by ROCs[8]



[8] A list of supplier groups and their individual supply licences can be found in table A9 in Appendix 3

Figure 4: Comparison of the percentage of each supplier's ROS that was satisfied by ROCs[9]



The buy-out fund and its redistribution

1.21. 23 suppliers received a share of the England and Wales buy-out fund. Of these, SSE Energy Supply Limited received the largest payment of £22,292,681. Both British Gas Trading Limited and Powergen Retail Limited also received payments in excess of £20m.

1.22. 18 suppliers received a share of the buy-out fund in Scotland. Of these, Scottish Power Energy Retail Limited received the largest payment of £6,034,429.

[9] A list of supplier groups and their individual supply licences can be found in table A9 in Appendix 3

1.23. Figures 5 and 6 compare the amount of buy-out fund redistributed to each supplier group. More detail on a supplier basis can be found in tables A5 and A6 in Appendix 3.

Figure 5: The amount of the England & Wales buy-out fund redistributed to each supplier group under the RO

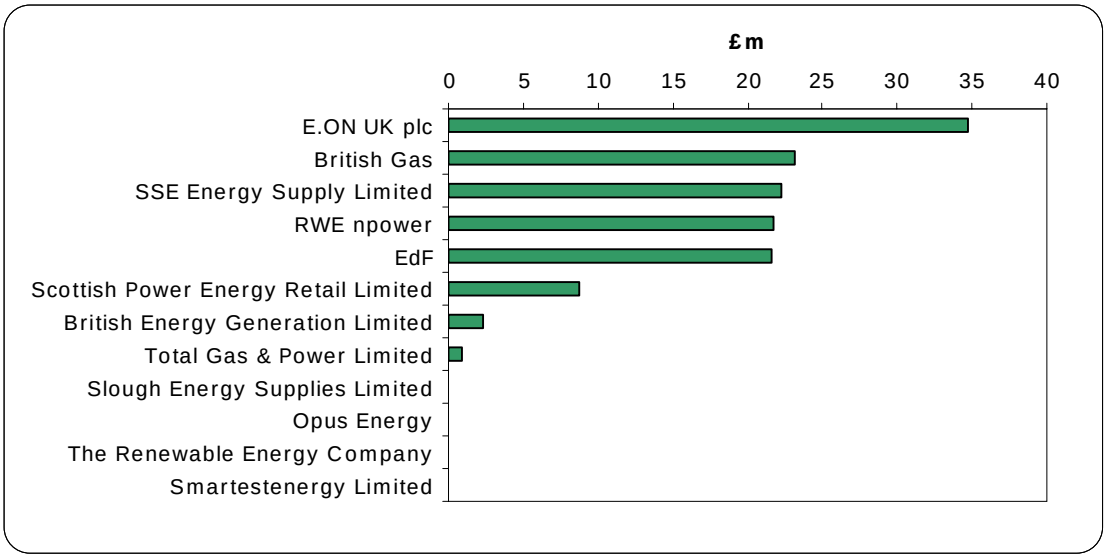
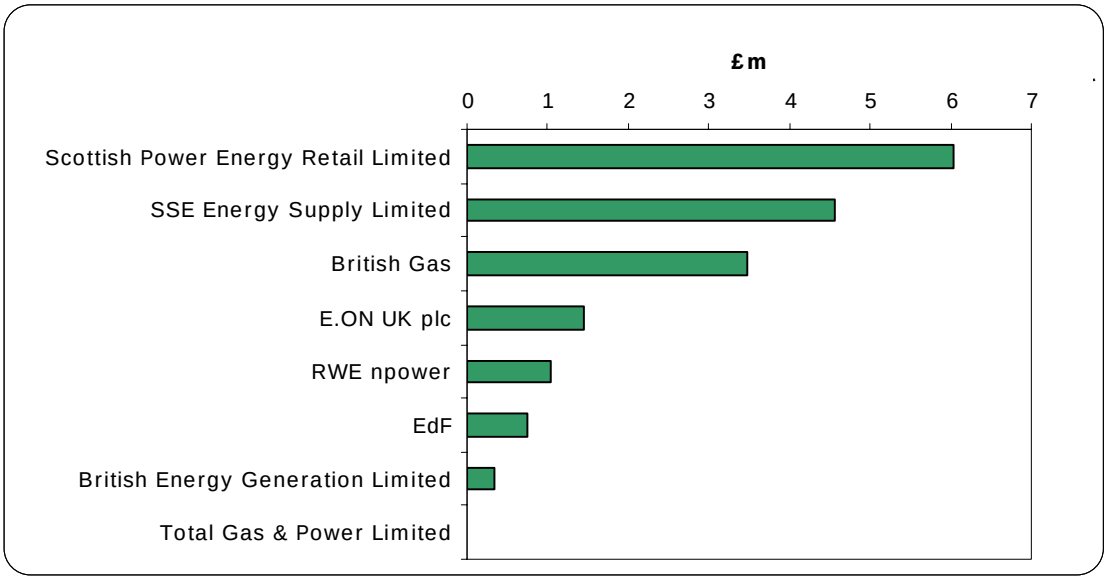


Figure 6: The amount of the Scotland buy-out fund redistributed to each supplier group under the ROS



1.24. The buy-out fund available for redistribution was less than the amount available in 2003/04. This was due to a higher number of ROCs available and

presented by suppliers for compliance.

1.25. There was, correspondingly, a decrease in the amount of buy-out redistributed per ROC to suppliers in 2004/05 compared to last year. This value fell from £22.92 to £13.66 for England and Wales and from £23.70 to £19.99 for Scotland.

1.26. When combined with the buy-out price that suppliers effectively avoid paying, a ROC produced against the RO was "worth" £45.05 to suppliers or £51.38 if produced against the ROS.

1.27. Table 3 shows the residual balances of the RO bank accounts after all funds were redistributed on 31 October 2005. The small amounts arise from rounding down the buy-out payments to the nearest pound and interest earned on the small surpluses carried over.

Table 3: Residual balances

RO buy-out fund	£11.23
ROS buy-out fund	£27.28
RO late payment fund	£4.17
ROS late payment fund	£8.37

Compliance by suppliers

1.28. Any duty or other requirement placed on a supplier under sections 32 to 32C of the Act is a "relevant requirement" under the Act which Ofgem may enforce by way of an order for securing compliance or a financial penalty.

1.29. A number of suppliers failed to meet requirements of the Orders in the third obligation period. The Authority decided not to make any orders or place financial penalties on these suppliers.

1.30. The following sections provide details of those suppliers that failed to meet the requirements of the Orders in one or more stages of the compliance process.

Suppliers that failed to provide information to Ofgem on the amount of their obligation by 7 August 2005

1.31. A supplier's obligation is based on the amount of electricity supplied to customers in England and Wales and Scotland respectively during an obligation period. Each supplier must inform us of the amount of sales and also its obligation by 7 August each year[10].

1.32. One supplier, Smartest Energy Limited, failed to provide this information to us by the statutory deadline. Smartest Energy Limited was in breach of Article 6(6) of the Orders.

[10] See Article 6(6) of the Orders

1.33. Another supplier, British Energy Generation Limited incorrectly rounded its obligation. British Energy Generation Limited was in breach of Article 6(1) of the Orders.

1.34. BP Power Trading Limited incorrectly calculated its obligation by using the previous year's percentage. BP Power Trading Limited was in breach of Article 6(2) of the Orders.

1.35. Each of these suppliers provided the relevant information within a few days of receiving a reminder from us.

1.36. Suppliers who did not supply electricity to customers during an obligation period are required to confirm this before 7 August each year[11]. We wrote to each supplier in June 2005 reminding them of their obligations and set out the timetable for submissions. Twelve suppliers failed to provide this information to us before the required date:

- EdF Trading Limited
- Energy Co2 Limited
- Electricity 4 Business
- Essential Power Limited
- Fellside Heat & Power Limited
- Ineos Chlor Limited
- International Power plc
- Norweb Energi Limited
- Primary Connections Limited
- Shell Gas Direct Limited
- Team Group of Companies Limited, and
- PowerRelate Limited

1.37. These suppliers provided the relevant information within a few days of receiving a reminder from us.

1.38. Each of these suppliers was in breach of Article 6(6) of the Orders.

[11] Standard Licence Condition 19 of the electricity supply licence.

Suppliers that failed to provide their estimate of total sales to the DTI by 20 June 2005

1.39. Suppliers are required to provide DTI with their estimate of total sales of electricity to customers in England & Wales and Scotland during an obligation period, by no later than 20 June immediately following the obligation period[12]. Four suppliers failed to provide any sales figures to DTI:

- SmartestEnergy Limited
- Tradelink Solutions Limited
- Utilita Electricity, and
- Zest4 Electricity Limited

1.40. Slough Energy Supplies Limited provided information for part of the compliance year only. British Gas Trading Limited and Electricity Direct (UK) Limited provided figures to DTI on a group rather than on an individual licensee basis.

1.41. Each of these suppliers was in breach of Article 6(5) of the Orders.

Suppliers that failed to copy to Ofgem the information provided to the DTI

1.42. To enable us to be satisfied that a supplier has discharged its obligation, we asked suppliers to provide us with a copy of the estimated figures for total sales of electricity as provided to DTI by 20 June 2005[13]. We requested this information be provided before 7 August 2005. Eight suppliers failed to provide this information:

- Bizz Energy Limited
- Eledor Limited
- Gaz de France Limited
- Good Energy Limited
- Opus Energy Limited
- The Renewable Energy Company Limited
- Total Gas and Power Limited, and
- Utility Link

1.43. Each of these suppliers was in breach of Article 11(1) of the Orders.

[12] Article 6(5) of Orders.
[13] We requested this information under Article 11(1) of the Orders

Suppliers that failed to produce the correct number of ROCs or make full payment into the buy-out fund before 1 October 2005

1.44. Each supplier that has an obligation under the RO must present sufficient ROCs or make sufficient payment into the buy-out fund (or comply by a combination of these) to meet its obligation.

1.45. Atlantic Electric and Gas Limited failed to meet its obligation at all due to the company being in administrative receivership. The company's administrators advised us that there were insufficient funds available to enable it to meet its obligations, and we notified this to industry on 31 August 2005[14]. We were satisfied that no further steps could be taken by this company to comply with the Orders and that it would serve no practical effect to issue a provisional or final enforcement order on Atlantic Electric and Gas Limited.

1.46. Fortum Direct Limited failed to make sufficient payment into the Scotland buy-out fund before 1 October 2005 (it was short by £2.78). However, it did make full payment into the late payment fund immediately to rectify this administrative oversight once the error was pointed out. Fortum Direct Limited was in breach of Article 7(1) of the ROS.

1.47. Good Energy Limited presented excessive "banked"[15] ROCs in meeting its ROS. Suppliers are able to present up to 25 per cent ROCs that were issued in the preceding obligation period, in this case 2003/04. The company did make full payment into the late payment fund immediately to rectify this administrative oversight once the error was pointed out. Good Energy Limited was in breach of Article 3 (3) of the ROS.

Information checking

1.48. We performed a number of checks on the information provided by suppliers in relation to their compliance with the RO during the third obligation period. These checks are important not only to confirm the size of the RO but also serve to identify the extent of any non-compliance by suppliers.

1.49. We compared the information provided to us with the information provided to DTI. These checks resulted in us corresponding with a number of suppliers to confirm the accuracy of the information. All suppliers we contacted provided an explanation which was sufficient to enable us to be satisfied that the figures submitted were accurate.

1.50. In addition, we selected two suppliers to audit the data provided. The suppliers selected were Opus Energy Limited and Scottish Power Energy Retail Limited. Prior to the audit visit, we provided each supplier with a questionnaire which set out the scope of the subsequent visit. During the on-site visit, we assessed:

[14] See Ofgem Information Note 195/05.
[15] ROCS issued in the compliance period immediately preceding that period.

- the information systems used to compile the electricity supply information provided
- any other information used to compile the figures
- how updated information was incorporated, for example any information updated as a result of settlements between the estimate of sales provided to DTI before 20 June 2005 and final sales information provided to us by 7 August
- how sales figures for customers directly connected to the transmission system were removed from the figures provided to us (where applicable), and
- how information on electricity supplied under "sell-and-buy-back" contracts[16] were incorporated into the data provided to us (where applicable)

1.51. We intend to continue to carry out similar audits each year going forward. We expect all suppliers to ensure that their processes are fully auditable and that the processes incorporate an appropriate senior level sign off on figures provided to us.

[16] See Article 10 of the Orders.

2. Renewable Obligation Certificates ("ROCs")

This chapter, together with Appendix 4, provides information on the number of Renewable Obligation Certificates ("ROCs") and Scottish Renewable Obligation Certificates ("SROCs") issued in the third compliance period (April 2004 to March 2005). It details information on:

- ➔ The total number of ROCs issued by Ofgem, and
- ➔ This total broken down by technology type.

Publication of this information is a requirement on Ofgem under the Renewables Obligation 2002 (as amended) Order and the Renewables Obligation (Scotland) 2004 Order ("the Orders").

Renewable Obligation Certificates ("ROCs") issued in the third obligation period

2.1. The Orders require us to issue ROCs to accredited generating stations that have generated electricity from eligible renewable sources. One ROC is issued for each MWh of electricity generated.

Headline figures

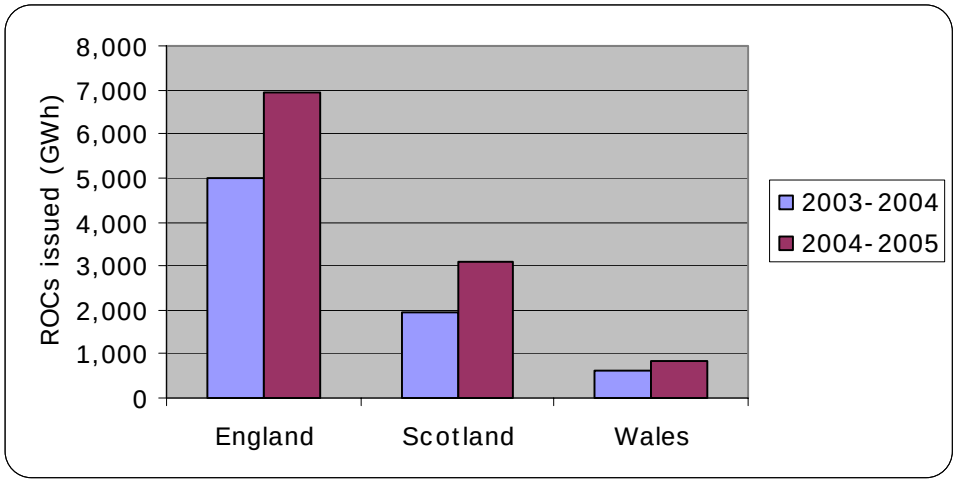
2.2. We issued 10,870,929 ROCs in total for electricity generated between 1 April 2004 and 31 March 2005 - made up of 7,867,819 ROCs and 3,003,110 SROCs.

2.3. The majority of ROCs issued in England and Wales were issued to landfill gas and co-firing generating stations. On-shore wind and biomass generation were also issued significant numbers of ROCs. Smaller contributions were made by sewage gas and off-shore wind generation.

2.4. This compares to ROCs in Scotland which were mainly issued to hydro generating stations with a declared net capacity ("DNC") under 20MW and on-shore wind generating stations.

2.5. There has been an increase in the number of ROCs issued to generating stations in all three countries since 2003/04. This is illustrated in Figure 7.

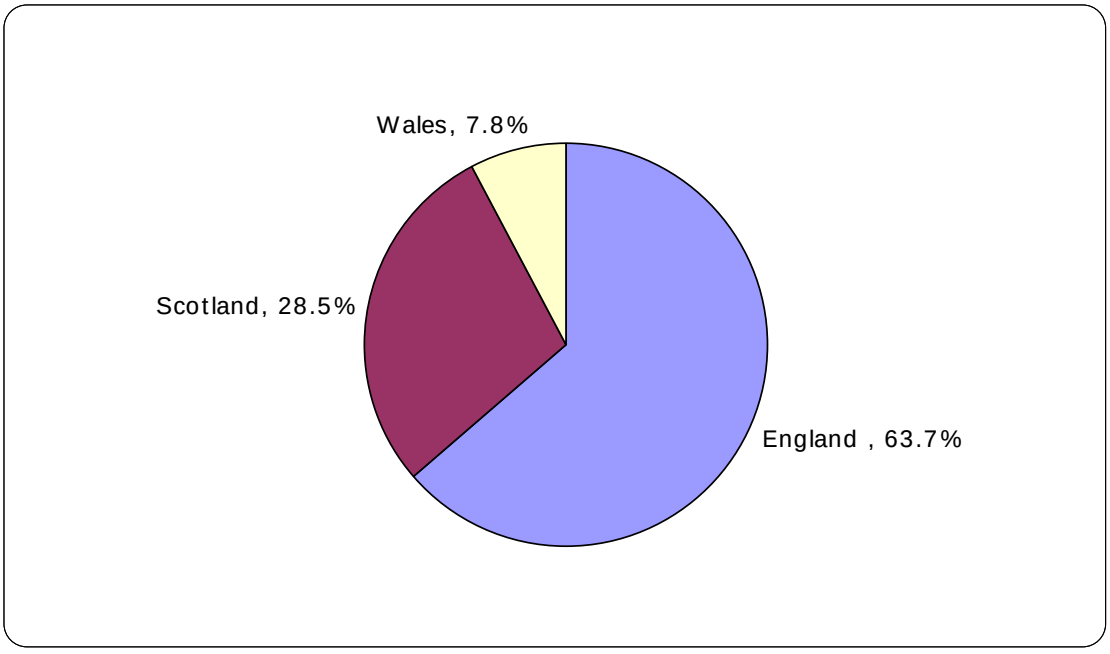
Figure 7: The total number of ROCs issued to each country in the second and third obligation periods



2.6. Renewable generating stations located in England received over 60 per cent of all ROCs issued in the third obligation period. This compares with just under a third issued to generating stations in Scotland and one tenth to generating stations in Wales. This reflects the capacity available in each country as shown in Figure 17.

2.7. Figure 8 compares the total number of ROCs issued in each country in the third obligation period.

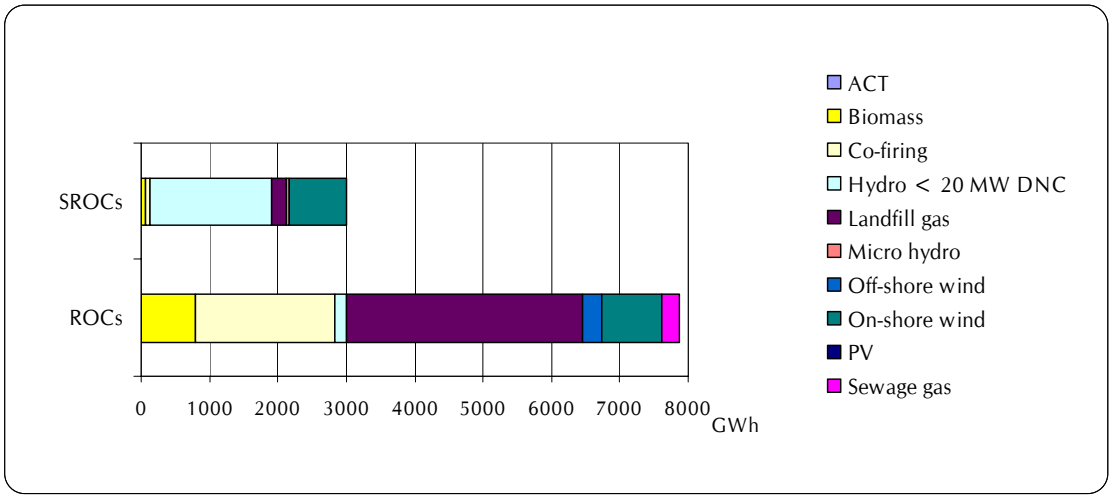
Figure 8: Comparison of the total number of ROCs issued in each country



Technology type

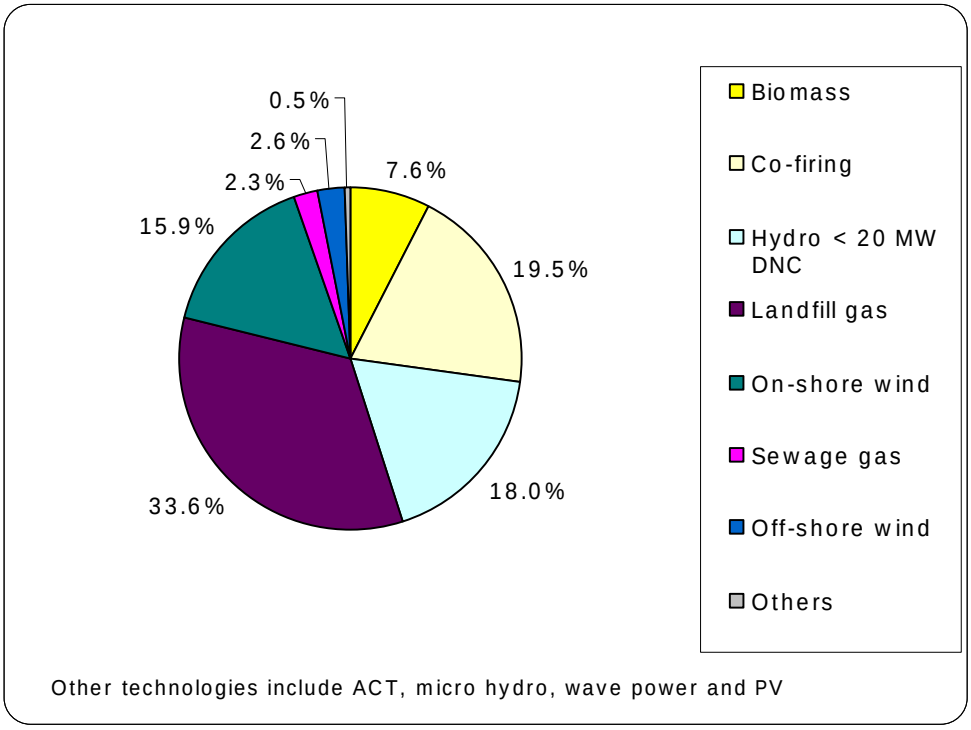
2.8. We issued ROCs to an array of different eligible renewable technologies in 2004/05. The technology that received the largest number of ROCs in this period was landfill gas, receiving 3,335,570 ROCs. This compares with 3,151,530 in 2003/04. The next biggest beneficiary was co-firing generation. Co-firing generation received 2,116,599 ROCs in 2004/05 compared with 796,151 in 2003/04. Figure 9 illustrates the breakdown of ROCs issued by technology for the RO and the ROS. More detail can be found in table B1 in Appendix 4.

Figure 9: Comparison of the total number of ROCs issued by technology type



2.9. Figure 10 shows the percentage breakdown of the total ROCs issued by technology type.

Figure 10: Breakdown of ROCs issued by technology type

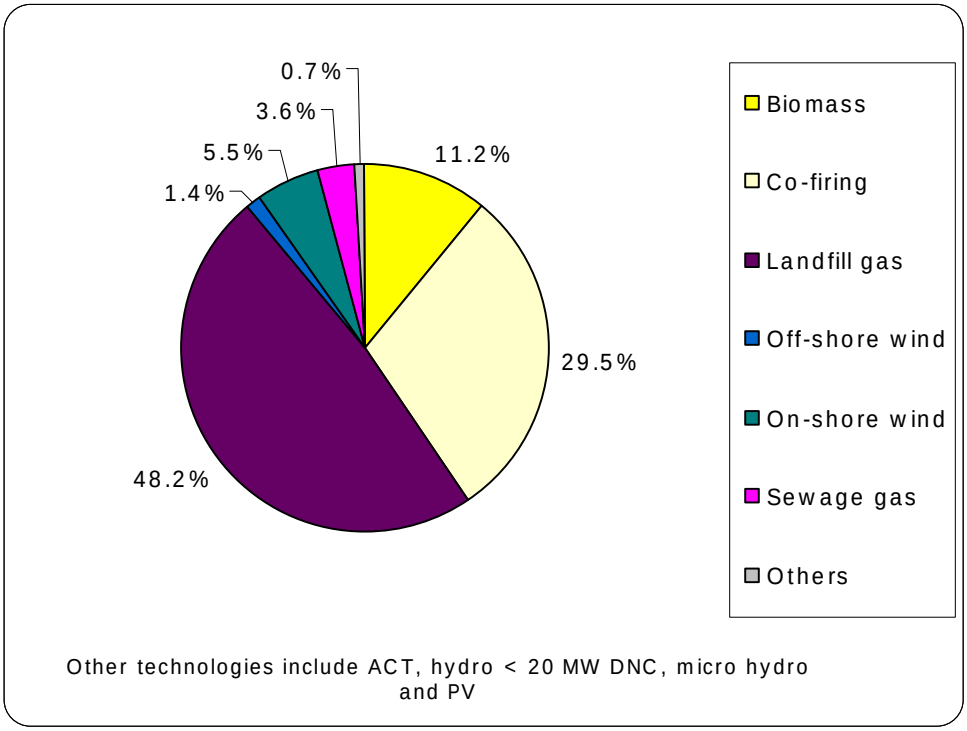


Other technologies include ACT, micro hydro, wave power and PV

2.10. Landfill gas generation attracted over 30 per cent of the total ROCs issued in 2004/05. This is slightly lower than in the second obligation period. Hydro generating stations and co-firing generation stations received 18 per cent and 19 per cent respectively. On-shore wind attracted almost 16 per cent of the total ROCs issued.

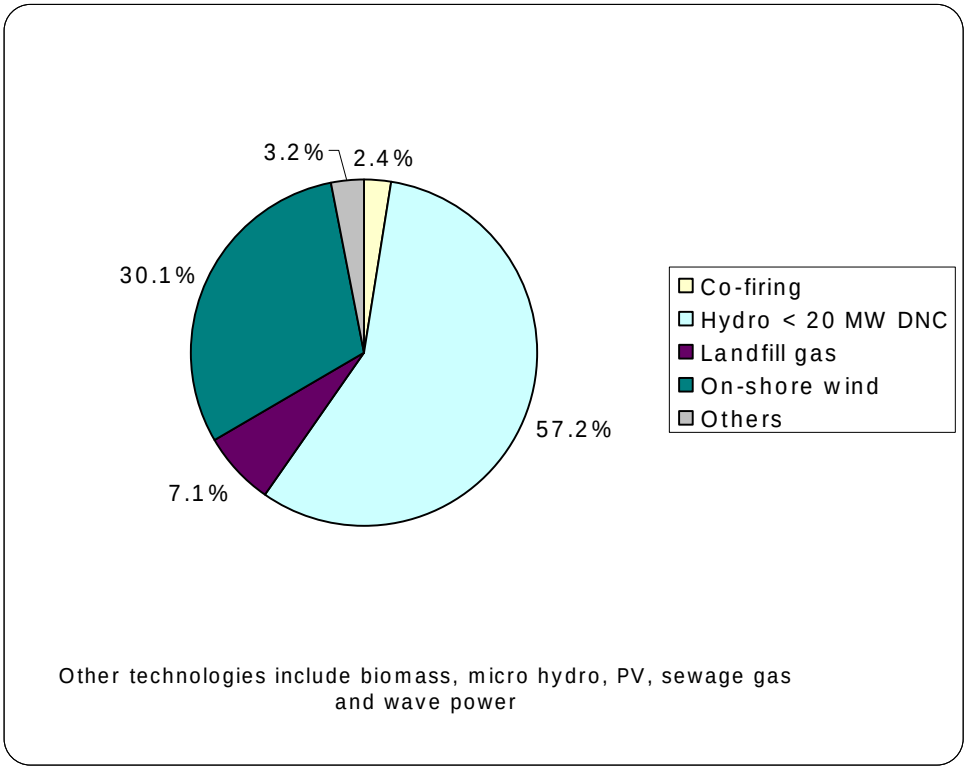
2.11. Figures 11, 12 and 13 disaggregate the information in Figure 10 for England, Wales and Scotland.

Figure 11: Breakdown of ROCs issued by technology type in England



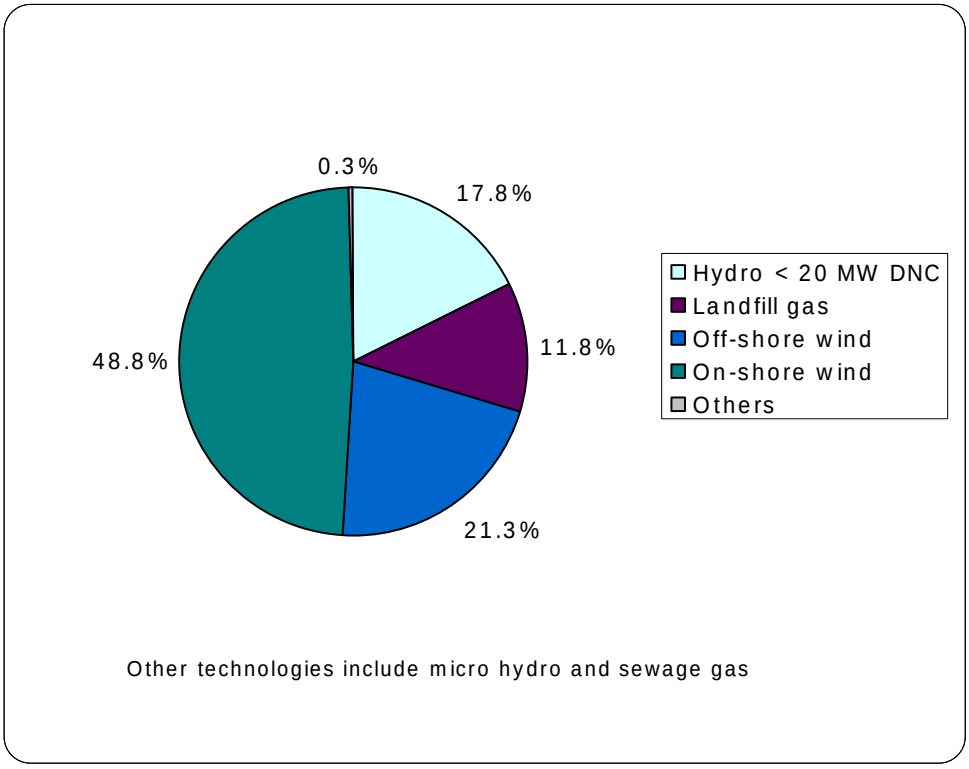
2.12. Almost half of all ROCs issued in England were to generating stations fuelled by landfill gas. Co-firing generating stations received around 30 per cent of ROCs issued and biomass stations received around 11 per cent of ROCs issued.

Figure 12: Breakdown of ROCs issued by technology type in Scotland



2.13. The majority of ROCs issued in Scotland were to hydro generating stations. On-shore wind generating stations received around 30 per cent of ROCs issued with around 12 per cent going to other technology types.

Figure 13: Breakdown of ROCs issued by technology type in Wales



2.14. Almost half of the ROCs issued in Wales went to on-shore wind generating stations. The remaining half was split between hydro, landfill gas and off-shore wind generating stations.

ROCs issued per month

2.15. We issue ROCs to generating stations on a monthly basis, three months after the month of generation. This lag reflects both the time allowed to generating stations to collate the metering information and our processing of that data.

2.16. Figures 14 and 15 compare the ROCs issued in each month for the three obligation periods.

Figure 14: Total number of ROCs issued per month

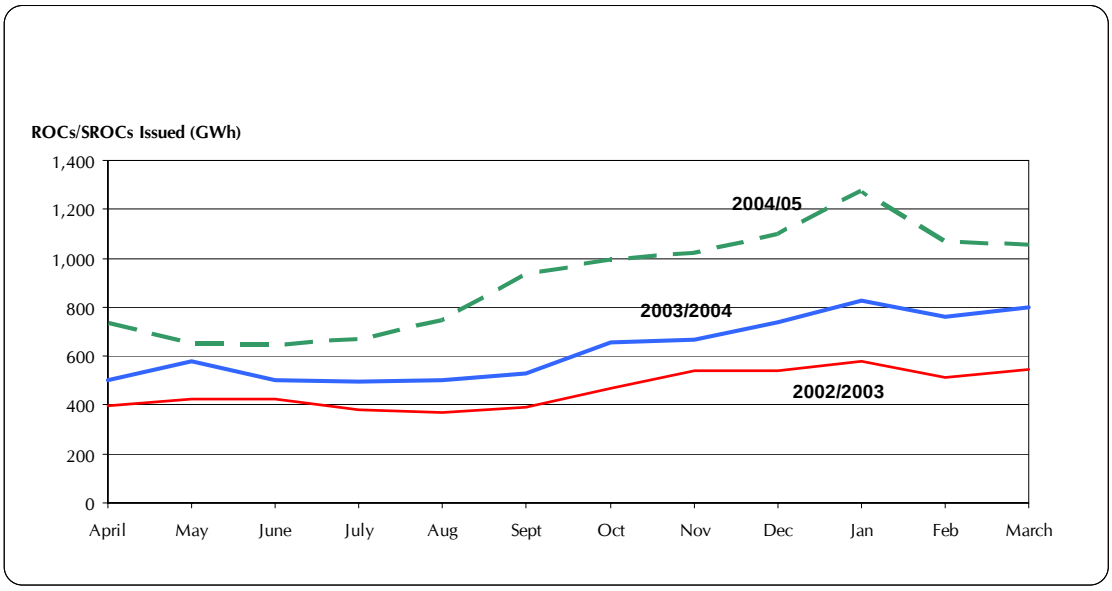
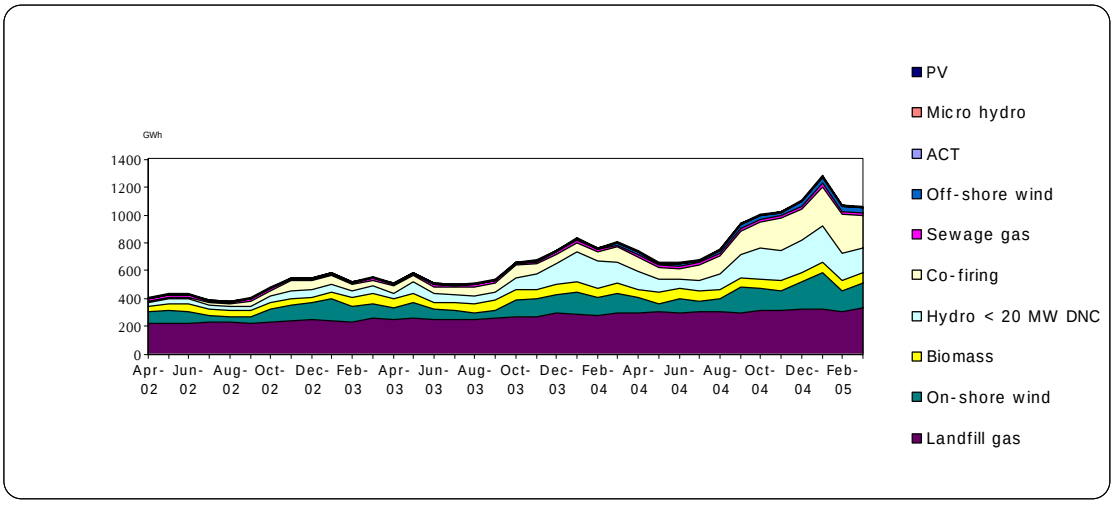


Figure 15: ROCs issued by generation technology per month



2.17. There is a clear upward seasonal trend with more ROCs being issued in winter months, especially January. This could be the result of a number of factors including more suitable weather conditions for some technology types.

ROC revocation

2.18. Ofgem revoked 101,676 ROCs and 5,197 SROCs in the third obligation period. 64,899 replacement ROCs and 5,158 replacement SROCs were issued. 36,777 ROCs and 39 SROCs were not replaced. Further detailed information can be found in table B12 in Appendix 4.

2.19. 34 separate ROC ranges were revoked. Details including sequence numbers of revoked ROCs, reasons for revocation and sequence numbers of any replacement ROCs are published on our website.

3. Accredited generating stations

This chapter, together with Appendix 5, provides information on the number and type of generating stations accredited under the Renewables Obligations.

This information is based on requirements set out the Renewables Obligation 2002 (as amended) Order and the Renewables Obligation (Scotland) 2004 Order ("the Orders").

Accreditation of generating stations

3.1. The Orders require us to accredit eligible generating stations for the RO. We have put in place appropriate application forms and guidance in order for us to carry out this function.

Headline figures

3.2. Ofgem accredited 179 generating stations during the third obligation period with 126 of these being commissioned in that period. There was a total of 788 generating stations accredited for the RO at the end of 2004/05.

3.3. At the end of the first obligation period there were 505 generating stations accredited for the scheme. This increased to 616 at the end of the second obligation period.

3.4. Seven generating stations were decommissioned or ceased generating from renewable sources during the third obligation period.

3.5. Three applications for accreditation were withdrawn in the third obligation period. One application for accreditation was rejected by Ofgem.

Generating stations accredited by country

3.6. Generating stations accredited in England account for around 70 per cent of the total number of stations accredited and have just over 60 per cent of the total generating capacity. Generating stations located in Scotland account for just over 20 per cent of the total number of stations with nearly 30 per cent of the total generating capacity. Generating stations in Wales account for around 10 per cent of both the number of stations accredited and the capacity.

3.7. This reflects the different technologies accredited for the scheme in each country.

3.8. The majority of eligible renewable generation in England comes from landfill gas whereas in Scotland it comes from hydro generation. The majority of eligible renewable generation in Wales comes from on-shore wind.

3.9. This breakdown is illustrated in figures 16 and 17. Further detail can be found in table C1 in Appendix 5.

Figure 16: Comparison of the number of generating stations accredited under the RO, by location

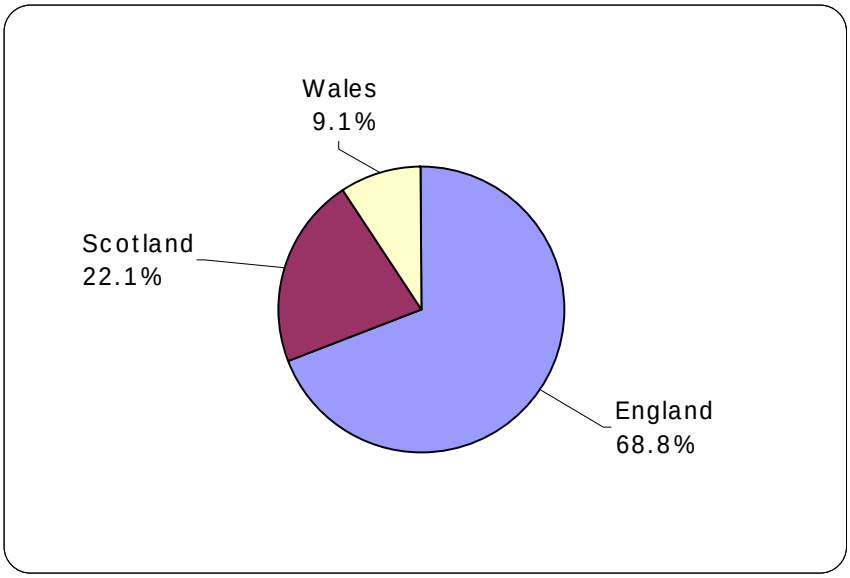
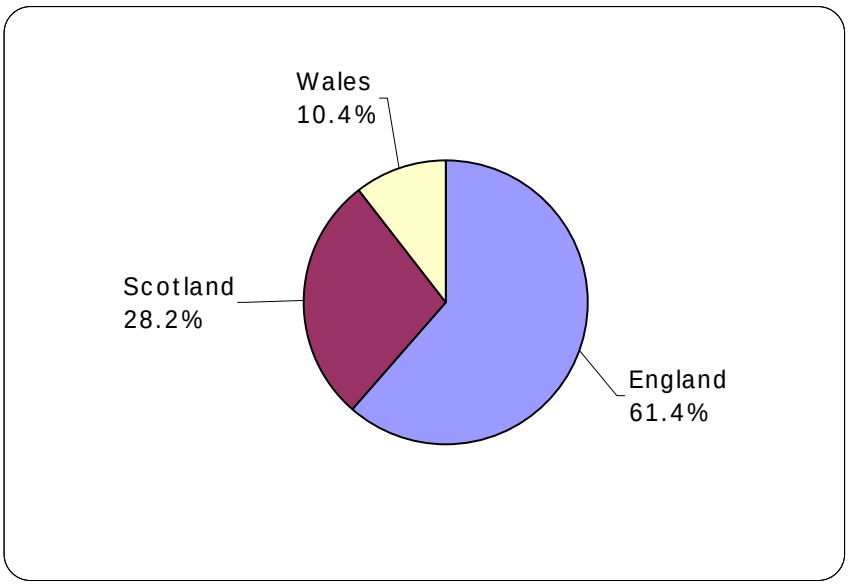


Figure 17: Comparison of the capacity of generating stations accredited under the RO, by location



3.10. This is similar in pattern to the second obligation period, where England had around 58 per cent of the total installed capacity of accredited generating stations, Scotland had 29 per cent and Wales had 13 per cent.

NFFO and SRO generating stations

3.11. 22 generating stations that receive support under the Non- Fossil Fuel Obligation ("NFFO")[17] and 3 generating stations that receive support under the Scottish Renewables Obligation ("SRO")[18] were accredited for the RO in the third obligation period.

3.12. NFFO generating stations made up 22 per cent of the accredited RO capacity in the third obligation period. SRO generating stations made up 6 per cent.

3.13. Further detailed information can be found in tables C7 and C8 in Appendix 5.

Trends in generating stations accredited (by technology type)

3.14. When the RO was first introduced, the most prevalent technology type (in terms of the number of accredited generating stations) was landfill gas with 202 stations accredited at 1 April 2002.

3.15. The number of landfill gas stations being accredited reduced significantly in the first obligation period but increased slightly in the second and third periods. In 2002/03 we accredited 24 landfill gas generating stations with 31 being accredited in 2003/04. In 2004/05, we accredited 42 landfill gas generating stations.

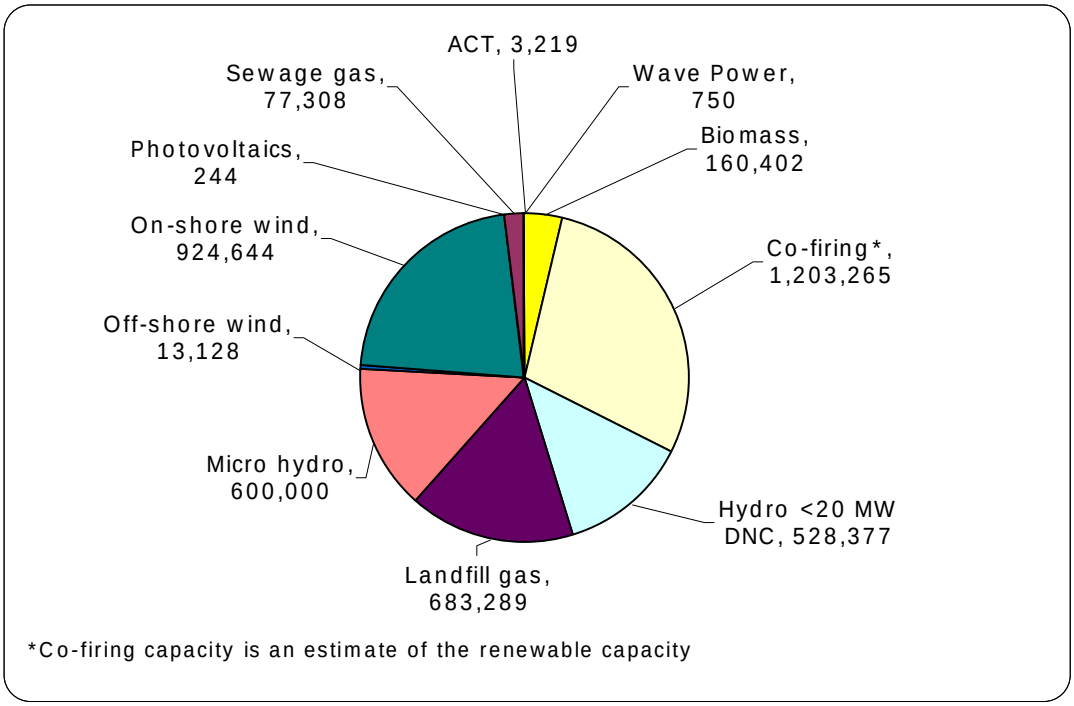
3.16. During the third obligation period, the most prevalent technology (in terms of generation capacity) was on-shore wind, followed closely by hydro generating stations with a DNC less than 20MW and then landfill gas.

3.17. Further detail can be found in table C3 in Appendix 5.

3.18. Co-firing and on-shore wind made up more than half of the total renewable capacity installed and accredited under the RO. This was followed closely by landfill gas and hydro with a DNC less than 20 MW. The total installed capacity for each technology is shown in Figure 18.

[17] See the Electricity (Non-Fossil Fuel Sources) (England & Wales) Orders
[18] See the Electricity (Non-Fossl Fuel Sources) (Scotland) Orders

Figure 18: Total capacity (kW) accredited for the RO and ROS by technology



Checks undertaken on accredited generating stations

3.19. We expect the operators of generating stations applying for accreditation to give us complete and accurate information. They should tell us about subsequent changes that might affect their accredited status. This helps us to ensure that accreditation remains valid, and to make certain that we issue the correct number of ROCs. A programme of audits gives us assurance of compliance with the requirements of the RO.

3.20. During the third obligation period, we carried out 65 audits of accredited generating stations. Most of the findings were satisfactory, but some revealed irregularities that either called in question the validity of a station's accreditation or indicated that the operator had received more ROCs than it should. We took appropriate remedial action in these instances. The following table summarises the audit results.

Table 4: Summary of audit results

Generating technology	No. of stations audited	Types of irregularity detected
Advanced conversion technology	2	Non-compliant metering.
Biomass	3	Metering and off-site fuel storage. Two separate schemes accredited as one.
Co-firing	16	Flawed fuel measurement.
Hydro	2	Incorrect calibration of meters.
Landfill gas	23	Failure to report meter readings for input electricity[19].
On-shore wind	7	None
Sewage gas	12	Non-compliant metering.

3.21. The most common findings threatening accreditation related to metering equipment. In some cases this was not of an approved type. In a number of other cases, station operators were failing correctly to meter, and to take account of, electricity used as an input to the generation process. Operators can usually avoid withdrawal of accreditation by rectifying their metering arrangements. Where incorrect information has been given on application, it is more difficult to maintain accredited status. In one example, two separate generating technologies had been presented as a single generating station. When this was revealed by audit, we withdrew the station's accreditation.

3.22. During the compliance period, we conducted a full review of our strategy and methodology for audit of accredited generating stations. Building on experience of more than 170 technical audits of generating stations, we identified how we could better target stations for audit. Revisions to the way in which we manage the audit programme are intended to secure greater assurance of compliance, while delivering improved value for money.

[19] Input electricity is used by the generating station itself for a purpose directly related to the operation of the generating station.

4. Issues raised

This chapter sets out the issues that have been raised by stakeholders and that we have considered since April 2004. Our second annual report sets out some of the issues that came up prior to April 2004.

Data submission deadline

4.1. We have continued to receive data from generating stations after the two month deadline. The legislation makes clear that generating stations must submit their ROC data by the end of the second month following the month of generation. We have taken a number of steps to help generating stations with this. We now issue a reminder to all generating stations each month, just before the data submission deadline. We also carry out high level checks of the data upon receipt.

Fuel measurement

4.2. Under the RO, biomass and co-firing generating stations are required to provide us with accurate and reliable information on the fuel they burn each month. To do so, they need to accurately measure the Gross Calorific Value and volume or mass of that fuel. We agree fuel measurement and sampling procedures with individual generating stations.

4.3. We are working with generating stations, via the DTI's Biomass Working Group, to produce a fuel measurement and sampling guidance document which will be published in April 2006. This document will make transparent the range of ways in which we consider that generating stations can meet the legislative requirements and will include examples of good practice.

Late issue of ROCs

4.4. In the 2004/05 compliance period a number of ROCs were issued after the main batch issue. This was because there were issues we needed to follow up with some generating stations before we could be satisfied as to the accuracy of their data. A large number of these ROCs were issued shortly before the 1 October 2005 compliance deadline and stakeholders raised a concern about the impact of this on ROC prices. In the majority of cases, it was fuel measurement issues that caused the delay to the issue of ROCs. The fuel measurement guidance should help to deal with these.

Calculation of input electricity

4.5. We issued an information note on 26 August 2004[20] which clarified how to calculate input electricity. This note was issued as a number of generating stations were not providing correct figures for both output and input electricity. Input electricity is deducted from gross output as part of the calculation to ascertain how

[20] Information note: Deduction of input electricity for ROC issue purposes.

many ROCs may be issued. No input electricity needs to be deducted from the gross output to calculate the net output of the generating station where input electricity does not exceed 0.5 per cent of gross output in the month in question.

5. Changes to the legislation

Renewables Obligation 2005

5.1. The Renewables Obligation Order 2005, the Renewables Obligation (Scotland) Order 2005 and the Renewables Obligation (Northern Ireland) Order 2005 ("NIRO") came into force on 1st April 2005. This legislation introduced a number of changes to the RO including:

- an increase in the required amount of electricity to be sourced from eligible renewable sources from 10.4 per cent in 2010/11 to 15.4 per cent in 2015/06
- the introduction of Northern Ireland Renewables Obligation certificates ("NIROCs") in Great Britain
- the introduction of a mutualisation provision to secure the buy-out fund in the event of a shortfall occurring due to a supplier failing (mutualisation provisions do not apply under the NIRO)
- the introduction of surcharges on late payments
- the introduction of a single recycling mechanism for the buyout fund, and
- the introduction of more flexibility for small generating stations (i.e. less than 50kW DNC) so that they can receive ROCs on an annual or monthly basis.

5.2. These changes did not affect the requirements in respect of this report.

Renewables Obligation 2006

5.3. Subject to Parliamentary approval, the legislation will change again on 1 April 2006 when new Orders will come into effect for England and Wales, Scotland and Northern Ireland. The new Orders will introduce further changes to the scheme including:

- the ability for generating stations to be granted preliminary accreditation for the RO once they have obtained planning permission
- expanding eligibility for the scheme to include energy from waste CHP stations
- giving Ofgem greater flexibility to issue ROCs and to correct ROC issue after the two month deadline
- bringing forward the timeframes on which suppliers are required to comply with the RO
- allowing for offsite measurement of biomass fuels

- reducing the purity rule in the definition of biomass from 98 per cent to 90 per cent
- requiring us to publish statistics on the number of ROCs claimed but not issued
- reduced fuel sampling requirements where the generator has a year's worth of consistent evidence of Gross Calorific Value, and
- a technical change to the definition of input electricity in the case of a generating station fuelled wholly or partly by hydrogen to prevent double counting in respect of ROCs claimed.

5.4. Guidance on these latter points will be included in the guidance on fuel measurement and sampling document which will make transparent the range of ways in which generating stations can meet the necessary legislative requirements and will include examples of best practice. This will be published in April 2006.

5.5. With regards to compliance, many of these changes will not take effect until the 2006/07 compliance period when the timetable for compliance changes.

5.6. Our fifth annual report, due to be published by 1st April 2008, will take into account these changes to the Renewables Obligation.

Appendices

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Appendix 1 - Ofgem's Statutory Responsibilities

1.1. Ofgem is the Office of Gas and Electricity Markets, regulating the gas and electricity industries in Great Britain. Ofgem operates under the direction and governance of the Gas and Electricity Markets Authority. The Gas and Electricity Markets Authority has the ultimate responsibility for all that Ofgem does. It determines strategy and decides on major policy issues.

1.2. Ofgem's powers and duties are provided for under the Gas Act 1986, the Electricity Act 1989, as amended principally by the Utilities Act 2000, Competition Act 1998, Enterprise Act 2002 and Energy Act 2004. Ofgem has concurrent powers with the Office of Fair Trading ("OFT") to apply the Competition Act 1998 to the gas and electricity sectors in Great Britain.

1.3. Ofgem's principal objective is to protect the interests of consumers present and future, wherever appropriate by promoting effective competition. We must also have regard to:

- The need to ensure that all reasonable demands for electricity and, so far as is economical, gas are met
- The need to secure that licence holders are able to finance their obligations, and
- The interests of those people who are disabled or chronically sick, of pensionable age, living on low incomes, or living in rural areas.

1.4. We are also required to carry out our functions in the manner, which we consider best calculated:

- To promote efficiency and economy including efficient use of energy
- To protect the public from dangers
- To contribute to the achievement of sustainable development
- To secure a diverse and viable long term energy supply, and
- Shall have regard, in carrying out those functions, to the impact on the environment of the gas and electricity industries.

1.5. In carrying out our functions we must also have regard to the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed; and any other principles that appear to us to represent the best regulatory practice.

1.6. Furthermore, we must have regard to social and environmental guidance issued by Ministers. Ofgem also has a duty to consult and take into account any advice given by the Health and Safety Executive about all gas and electricity safety issues that may be relevant to our functions under the Gas Act and the Electricity Act.

Appendix 2 - Glossary

A	
Act	Electricity Act 1989
ACT	Advanced Conversion Technology
D	
DNC	Declared net capacity
DTI	Department of Trade and Industry
K	
kW	Kilowatt
kWh	Kilowatt/hour
M	
MW	Megawatt
MWh	Megawatt/hour
N	
NIRO	Renewables Obligation Order (Northern Ireland)
NIROC	Northern Ireland Renewables Obligation Certificates
NFFO	Non-Fossil Fuel Obligation
NFPA	Non-fossil Fuel Purchasing Agency
P	
PV	Photovoltaics
R	
RO	Renewables Obligation 2002 (as amended 2004)
ROC	Renewable Obligation Certificate
ROS	Renewables Obligation (Scotland) 2004
S	
SRO	Scottish Renewables Obligation
SROC	Scottish Renewable Obligation Certificate

Renewables Obligation: Third annual report - appendices

Document Type: Appendices

Ref: 35b/06

Date of Publication: 27 February 2006

Overview:

The Government has introduced a number of schemes to encourage the development of renewable generation in the UK.

In April 2002, the Renewables Obligation came into force. In April 2004, the Renewables Obligation (Scotland) came into force. Ofgem administers these schemes on behalf of the Department of Trade and Industry and the Scottish Executive respectively.

This report provides information in respect of the third period of the Renewables Obligation (1 April 2004 to 31 March 2005), including information on how licensed electricity suppliers have complied with their obligations, the number of ROCs issued by Ofgem and the number and type of generating stations accredited for the schemes.

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Team: Renewables & CHP Team

Target Audience: This document provides information to parties with an interest in the Renewables Obligation

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Context

The Government's aim is that renewable energy will make an increasing contribution to energy supplies in the UK, with renewable energy playing a key role in the wider climate change programme.

Sections 32 to 32C of the Electricity Act 1989 ("the Act") empower the Secretary of State and the Scottish Ministers to impose obligations on licensed electricity suppliers ("suppliers") to source a proportion of their supplies from renewable sources. These obligations are referred to collectively as the Renewables Obligation. The Gas and Electricity Markets Authority ("the Authority"), whose day to day functions are performed by Ofgem, is given powers and functions under the Orders.

The obligation in respect of those suppliers supplying customers in England and Wales is set out in the Renewables Obligation Order 2002 (as amended) ("the RO") whilst the obligation in respect of those suppliers supplying customers in Scotland is set out in the Renewables Obligation (Scotland) Order 2004 ("the ROS"). These obligations are referred to collectively as the Orders.

"Green certificates" are issued under the RO and the ROS. They certify that a generating station has generated from renewable sources an amount of electricity and that it has been supplied to customers in Great Britain. These are known as ROCs (Renewables Obligation Certificates) or SROCs (Scottish Renewables Obligation Certificates).

An obligation period runs from 1 April to 31 March each year. Suppliers are required to produce evidence to Ofgem of compliance with their Renewables Obligation before a specified day each year. The specified day for the 2004/05 compliance period was 1 October 2005. Evidence can be via ROCs or SROCs. Alternatively, a supplier can discharge its Renewables Obligation, in whole or in part, by paying the buy-out price. The Government intends that suppliers will be subject to a renewables obligation until 31 March 2027.

This third annual report is based on the requirements on the Authority and obligations on suppliers under the RO and the ROS referred to above. For the avoidance of doubt, in respect of later obligation periods, other RO orders will apply.

Associated Documents

Readers should be aware of the following documents which support this publication. These documents are available on our website at www.ofgem.gov.uk.

- Renewables Obligation: Third annual report (ref 35/06)
- The Renewables Obligation second annual report (ref 44/05), and
- The Renewables Obligation first annual report (ref 45/04)

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Appendix 3 – Compliance by licensed electricity suppliers: detailed information

Table A1: 2004/05 supplier compliance with the RO

Licensed electricity supplier	RO (MWh)	ROCs presented	Money paid into buy-out fund (£)	% RO met by ROCs	% RO met by buy-out	Shortfall (£)
Atlantic Electric and Gas Ltd	22,270	0	£0.00	0.00%	0.00%	£699,055.30
BizzEnergy Ltd	110,276	4,952	£3,306,120.36	4.50%	95.50%	£0.00
BP Power Trading Ltd	533	0	£16,730.87	0.00%	100.00%	£0.00
British Energy Generation Ltd	1,282,627	170,722	£34,902,697.95	13.31%	86.69%	£0.00
British Gas Trading Ltd	1,618,131	1,618,131	£0.00	100.00%	0.00%	£0.00
Cinergy Global Trading Ltd	976	976	£0.00	100.00%	0.00%	£0.00
Economy Power Ltd	71,443	0	£2,242,595.77	0.00%	100.00%	£0.00
Electricity Direct (UK) Ltd	78,942	78,942	£0.00	100.00%	0.00%	£0.00
Eledor Ltd	1,294	0	£40,618.66	0.00%	100.00%	£0.00
Gaz De France Marketing Ltd	449,369	0	£14,105,692.91	0.00%	100.00%	£0.00
Good Energy Ltd	3,071	3,071	£0.00	100.00%	0.00%	£0.00
London Energy plc	2,035,827	1,277,321	£23,809,503.34	62.74%	37.26%	£0.00
Npower Commercial Gas Ltd	198,263	0	£6,223,475.57	0.00%	100.00%	£0.00
Npower Cogen Trading Ltd	76,540	0	£2,402,590.60	0.00%	100.00%	£0.00
Npower Direct Ltd	185,636	122,767	£1,973,457.91	66.13%	33.87%	£0.00
Npower Ltd	1,593,050	1,053,536	£16,935,344.46	66.13%	33.87%	£0.00
Npower Northern Ltd	402,771	268,234	£4,223,116.43	66.60%	33.4%	£0.00
Npower Yorkshire Ltd	224,150	148,238	£2,382,877.68	66.13%	33.87%	£0.00
Opus Energy Ltd	37,528	9,340	£884,821.32	24.88%	75.12%	£0.00

E.ON (UK) plc	1,171,041	983,777	£5,878,216.96	84.00%	16.00%	£0.00
Powergen Retail Ltd	1,597,634	1,561,269	£1,141,497.35	97.72%	2.28%	£0.00
Renewable Energy Company Ltd	8,468	8,468	£0.00	100.00%	0.00%	£0.00
Scottish Power Energy Retail Ltd	643,435	643,435	£0.00	100.00%	0.00%	£0.00
Seeboard Energy Ltd	479,132	300,618	£5,603,554.46	62.74%	37.26%	£0.00
Slough Energy Supplies Ltd	12,934	11,233	£53,394.39	86.85%	13.15%	£0.00
SmartestEnergy Ltd	7,745	7,745	£0.00	100.00%	0.00%	£0.00
SSE Energy Supply Ltd	1,920,605	1,632,514	£9,043,176.49	84.99%	15.01%	£0.00
Total Gas and Power Ltd	62,675	62,675	£0.00	100.00%	0.00%	£0.00
Tradelink Solutions Ltd	161	161	£0.00	100.00%	0.00%	£0.00
TXU Europe (Ah Online) Ltd	13	0	£408.07	0.00%	100.00%	£0.00
TXU Europe (AHGD) Ltd	11	0	£345.29	0.00%	100.00%	£0.00
TXU Europe (AHST) Ltd	2	0	£62.78	0.00%	100.00%	£0.00
UK Electric Power Ltd	2,683	0	£84,219.37	0.00%	100.00%	£0.00
Utilita Electricity Ltd	115	0	£3,609.85	0.00%	100.00%	£0.00
Utility Link Ltd	10,188	3,726	£202,842.18	36.60%	63.4%	£0.00
Western Gas Ltd	1	0	£31.39	0.00%	100.00%	£0.00
Wilton Energy Ltd	6,054	0	£190,035.06	0.00%	100.00%	£0.00
Zest4Electricity	190	0	£5,964.10	0.00%	100.00%	£0.00
Total	14,315,784	9,971,851	£135,657,001.57			£699,055.30

Table A2: 2004/05 supplier compliance with the ROS

Licensed electricity supplier	RO (MWh)	ROCs presented	Money paid into buy-out fund (£)	Money paid into late payment fund (£)	% RO met by ROCs	% RO met by buy-out	Shortfall (£)
Atlantic Electric and Gas Ltd	480	0	0	0	0.00%	0.00%	£15,067.20
BizzEnergy Ltd	842	0	£26,430.38	£0.00	0.00%	100.00%	£0.00
British Energy Generation Ltd	35,977	16,885	£599,297.88	£0.00	46.93%	53.07%	£0.00
British Gas Trading Ltd	154,846	154,846	£0.00	£0.00	100.00%	0.00%	£0.00
Cinergy Global Trading Ltd	147	147	£0.00	£0.00	100.00%	0.00%	£0.00
Economy Power Ltd	7,631	7,631	£0.00	£0.00	100.00%	0.00%	£0.00
Electricity Direct (UK) Ltd	19,192	19,192	£0.00	£0.00	100.00%	0.00%	£0.00
Fortum Direct	19,702	0	£618,443.00	£2.78	0.00%	100.00%	£2.78
Gaz de France Marketing	3,297	0	£103,492.83	£0.00	0.00%	100.00%	£0.00
Good Energy Ltd	79	50	£0.00	£910.31	63.30%	36.70%	£910.31
London Energy plc	35,196	35,196	£0.00	£0.00	100.00%	0.00%	£0.00
Npower Direct Ltd	11,764	11,764	£0.00	£0.00	100.00%	0.00%	£0.00
Npower Ltd	38,742	38,742	£0.00	£0.00	100.00%	0.00%	£0.00
Npower Northern Ltd	1,302	1,302	£0.00	£0.00	100.00%	0.00%	£0.00
Opus Energy Ltd	2,768	0	£86,887.52	£0.00	0.00%	100.00%	£0.00
E.ON (UK) plc	31,316	31,316	£0.00	£0.00	100.00%	0.00%	£0.00
Powergen Retail Ltd	33,532	33,532	£0.00	£0.00	100.00%	0.00%	£0.00

Scottish Power Energy Retail Ltd	647,050	301,934	£10,833,191.24	£0.00	46.66%	53.34%	£0.00
Seeboard Energy Ltd	1,807	1,807	£0.00	£0.00	100.00%	0.00%	£0.00
SSE Energy Supply Ltd	397,831	227,888	£5,334,510.77	£0.00	57.30%	42.7%	£0.00
Total Gas & Power Ltd	1,688	1,688	£0.00	£0.00	100.00%	0.00%	£0.00
Tradelink Solutions Ltd	43	41	£62.78	£0.00	95.35%	4.65%	£0.00
UK Electric Power Ltd	15	0	£470.85	£0.00	0.00%	100.00 %	£0.00
Utility Link Ltd	36	36	£0.00	£0.00	100.00%	0.00%	£0.00
Total	1,445,283	883,997	£17,602,787.25	£913.09			£15,980.29

Table A3: ROCs presented in England and Wales

Licensed electricity supplier	Co-fired ROCs presented	2003/04 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% RO met by co-fired ROCs	% RO met by 2003/04 ROCs	% RO met by other ROCs
Atlantic Electric and Gas Ltd	0	0	0	0.00%	0.00%	0.00%
BizzEnergy Ltd	4,952	0	0	4.49%	0.00%	0.00%
BP Power Trading Ltd	0	0	0	0.00%	0.00%	0.00%
British Energy Generation Ltd	85,986	0	84,736	6.70%	0.00%	6.61%
British Gas Trading Ltd	160,189	2,609	1,455,333	9.90%	0.16%	89.94%
Cinergy Global Trading Ltd	242	0	734	24.80%	0.00%	75.20%
Economy Power Ltd	0	0	0	0.00%	0.00%	0.00%
Electricity Direct (UK) Ltd	0	0	78,942	0.00%	0.00%	100.00%
Eledor Ltd	0	0	0	0.00%	0.00%	0.00%
Gaz De France Marketing Ltd	0	0	0	0.00%	0.00%	0.00%
Good Energy Ltd	0	81	2,990	0.00%	2.64%	97.36%

London Energy plc	179,780	14,647	1,082,894	8.83%	0.72%	53.19%
Npower Commercial Gas Ltd	0	0	0	0.00%	0.00%	0.00%
Npower Cogen Trading Ltd	0	0	0	0.00%	0.00%	0.00%
Npower Direct Ltd	42,696	0	80,071	23.00%	0.00%	43.13%
Npower Ltd	366,401	0	687,135	23.00%	0.00%	43.13%
Npower Northern Ltd	66,127	41	202,066	16.42%	0.01%	50.17%
Npower Yorkshire Ltd	51,554	0	96,684	23.00%	0.00%	43.13%
Opus Energy Ltd	0	0	9,340	0.00%	0.00%	24.89%
E.ON (UK) plc	229,368	0	754,409	19.59%	0.00%	64.42%
Powergen Retail Ltd	364,713	10,756	1,185,800	22.83%	0.67%	74.22%
Renewable Energy Company Ltd	0	0	8,468	0.00%	0.00%	100.00%
ScottishPower Energy Retail Ltd	29,500	6,425	607,510	4.58%	1.00%	94.42%
Seeboard Energy Ltd	42,505	14,148	243,965	8.87%	2.95%	50.92%
Slough Energy Supplies Ltd	3,233	0	8,000	25.00%	0.00%	61.85%
SmartestEnergy Ltd	0	836	6,909	0.00%	10.79%	89.21%
SSE Energy Supply Ltd	380,457	19	1,252,038	19.81%	0.00%	65.19%
Total Gas and Power Ltd	0	1,090	61,585	0.00%	1.74%	98.26%
Tradelink Solutions Ltd	0	0	161	0.00%	0.00%	100.00%
TXU Europe (Ah Online) Ltd	0	0	0	0.00%	0.00%	0.00%
TXU Europe (AHGD) Ltd	0	0	0	0.00%	0.00%	0.00%
TXU Europe (AHST) Ltd	0	0	0	0.00%	0.00%	0.00%
UK Electric Power Ltd	0	0	0	0.00%	0.00%	0.00%
Utilita Electricity Ltd	0	0	0	0.00%	0.00%	0.00%
Utility Link Ltd	0	66	3,660	0.00%	0.65%	35.92%
Western Gas Ltd	0	0	0	0.00%	0.00%	0.00%
Wilton Energy Ltd	0	0	0	0.00%	0.00%	0.00%
Zest4Electricity	0	0	0	0.00%	0.00%	0.00%

Total	2,007,703	50,718	7,913,430			

Table A4: ROCs presented in Scotland

Licensed electricity supplier	Co-fired ROCs presented	2003/04 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% RO met by co-fired ROCs	% RO met by 2003/04 ROCs	% RO met by other ROCs
Atlantic Electric and Gas Ltd	0	0	0	0.00%	0.00%	0.00%
BizzEnergy Ltd	0	0	0	0.00%	0.00%	0.00%
British Energy Generation Ltd	0	0	16,885	0.00%	0.00%	46.93%
British Gas Trading Ltd	0	0	154,846	0.00%	0.00%	100.00%
Cinergy Global Trading Ltd	9	0	138	6.12%	0.00%	93.88%
Economy Power Ltd	1,556	0	6,075	20.39%	0.00%	79.61%
Electricity Direct (UK) Ltd	0	2	19,190	0.00%	0.01%	99.99%
Fortum Direct	0	0	0	0.00%	0.00%	0.00%
Gaz de France Marketing Ltd	0	0	0	0.00%	0.00%	0.00%
Good Energy Ltd	0	19	31	0.00%	24.05%	39.24%
London Energy plc	5,020	70	30,106	14.26%	0.20%	85.54%
Npower Direct Ltd	2,705	2,705	6,354	22.99%	22.99%	54.01%
Npower Ltd	7,776	4,940	26,026	20.07%	12.75%	67.18%
Npower Northern Ltd	299	299	704	22.96%	22.96%	54.07%
Opus Energy Ltd	0	0	0	0.00%	0.00%	0.00%
E.ON (UK) plc	7,468	0	23,848	23.85%	0.00%	76.15%
Powergen Retail Ltd	8,215	0	25,317	24.50%	0.00%	75.50%
ScottishPower Energy Retail Ltd	0	0	301,934	0.00%	0.00%	46.66%

Seeboard Energy Ltd	0	0	1,807	0.00%	0.00%	100.00%
SSE Energy Supply Ltd	0	0	227,888	0.00%	0.00%	57.28%
Total Gas & Power	0	0	1,688	0.00%	0.00%	100.00%
Tradelink Solutions Ltd	0	0	41	0.00%	0.00%	95.35%
UK Electric Power Ltd	0	0	0	0.00%	0.00%	0.00%
Utility Link Ltd	0	0	36	0.00%	0.00%	100.00%
Total	33,048	8,035	842,914			

Table A5: Distribution of buyout and late payment funds to suppliers with an obligation in England & Wales

Licensed electricity supplier	Amount of buy-out fund paid back (£)	Amount of late payment paid back (£)	Total amount of funds paid back (£)
Atlantic Electric and Gas Ltd	£0.00	£0.00	£0.00
BizzEnergy Ltd	£67,621.00	£0.00	£67,621.00
BP Power Trading Ltd	£0.00	£0.00	£0.00
British Energy Generation Ltd	£2,331,282.00	£0.00	£2,331,282.00
British Gas Trading Ltd	£22,096,275.00	£1.00	£22,096,276.00
Cinergy Global Trading Ltd	£13,327.00	£0.00	£13,327.00
Economy Power Ltd	£0.00	£0.00	£0.00
Electricity Direct (UK) Ltd	£1,077,987.00	£0.00	£1,077,987.00
Eledor Ltd	£0.00	£0.00	£0.00
Gaz De France Marketing Ltd	£0.00	£0.00	£0.00
Good Energy Ltd	£41,935.00	£0.00	£41,935.00
London Energy plc	£17,442,368.00	£1.00	£17,442,369.00
Npower Commercial Gas Ltd	£0.00	£0.00	£0.00
Npower Cogen Trading Ltd	£0.00	£0.00	£0.00
Npower Direct Ltd	£1,676,436.00	£0.00	£1,676,436.00

Npower Ltd	£14,386,487.00	£1.00	£14,386,488.00
Npower Northern Ltd	£3,662,850.00	£0.00	£3,662,850.00
Npower Yorkshire Ltd	£2,024,253.00	£0.00	£2,024,253.00
Opus Energy Ltd	£127,541.00	£0.00	£127,541.00
E.ON (UK) plc	£13,433,898.00	£1.00	£13,433,899.00
Powergen Retail Ltd	£21,319,800.00	£1.00	£21,319,801.00
Renewable Energy Company Ltd	£115,634.00	£0.00	£115,634.00
ScottishPower Energy Retail Ltd	£8,786,381.00	£0.00	£8,786,381.00
Seeboard Energy Ltd	£4,105,068.00	£0.00	£4,105,068.00
Slough Energy Supplies Ltd	£153,391.00	£0.00	£153,391.00
SmartestEnergy Ltd	£105,761.00	£0.00	£105,761.00
SSE Energy Supply Ltd	£22,292,681.00	£1.00	£22,292,682.00
Total Gas and Power Ltd	£855,854.00	£0.00	£855,854.00
Tradelink Solutions Ltd	£2,198.00	£0.00	£2,198.00
TXU Europe (Ah Online) Ltd	£0.00	£0.00	£0.00
TXU Europe (AHGD) Ltd	£0.00	£0.00	£0.00
TXU Europe (AHST) Ltd	£0.00	£0.00	£0.00
UK Electric Power Ltd	£0.00	£0.00	£0.00
Utilita Electricity Ltd	£0.00	£0.00	£0.00
Utility Link Ltd	£50,880.00	£0.00	£50,880.00
Western Gas Ltd	£0.00	£0.00	£0.00
Wilton Energy Ltd	£0.00	£0.00	£0.00
Zest4Electricity	£0.00	£0.00	£0.00
Total	£136,169,908.00	£6.00	£136,169,914.00

Table A6: Distribution of buyout and late payment funds to suppliers with an obligation in Scotland

Licensed electricity supplier	Amount of buy-out fund paid back (£)	Amount of late payment paid back (£)	Total amount of funds paid back (£)
Atlantic Electric and Gas Ltd	£0.00	£0.00	£0.00
BizzEnergy Ltd	£0.00	£0.00	£0.00
British Energy Generation Ltd	£337,462.00	£17.00	£337,479.00
British Gas Trading Ltd	£3,094,739.00	£160.00	£3,094,899.00
Cinergy Global Trading Ltd	£2,937.00	£0.00	£2,937.00
Economy Power Ltd	£152,512.00	£7.00	£152,519.00
Electricity Direct (UK) Ltd	£383,569.00	£19.00	£383,588.00
Fortum Direct	£0.00	£0.00	£0.00
Gaz de France Marketing	£0.00	£0.00	£0.00
Good Energy Ltd	£999.00	£0.00	£999.00
London Energy plc	£703,424.00	£36.00	£703,460.00
Npower Direct Ltd	£235,114.00	£12.00	£235,126.00
Npower Ltd	£774,294.00	£40.00	£774,334.00
Npower Northern Ltd	£26,021.00	£1.00	£26,022.00
Opus Energy Ltd	£0.00	£0.00	£0.00
E.ON (UK) plc	£625,879.00	£32.00	£625,911.00
Powergen Retail Ltd	£670,167.00	£34.00	£670,201.00
ScottishPower Energy Retail Ltd	£6,034,429.00	£312.00	£6,034,741.00
Seeboard Energy Ltd	£36,114.00	£1.00	£36,115.00
SSE Energy Supply Ltd	£4,554,551.00	£235.00	£4,554,786.00
Total Gas & Power	£33,736.00	£1.00	£33,737.00

Tradelink Solutions Ltd	£819.00	£0.00	£819.00
UK Electric Power Ltd	£0.00	£0.00	£0.00
Utility Link Ltd	£719.00	£0.00	£719.00
Total	£17,667,485.00	£907.00	£17,668,392.00

Table A7: Suppliers with no RO

Licensed electricity supplier	
730 Energy Ltd	Npower Northern Supply Ltd
Abington Energy Ltd	Npower Yorkshire Ltd
Accord Energy Ltd	Npower Yorkshire Supply Ltd
AEP Energy Services Ltd	Pan-Utility Ltd
AES Energy Ltd	Pentex Oil and Gas Ltd
Affinity Power Ltd	Powergen Retail Gas (Eastern) Ltd
Allied Domecq (Holdings) plc	PowerRelate Ltd
Banbury Energy Ltd	Primary Connections Ltd
Cherwell Energy Ltd	Renewable Energy Company Ltd
Citigen (London) Ltd	R S Energy Ltd
Commercial Electricity Supplies Ltd	Shell Gas Direct Ltd
Corona Energy 4 Retail Ltd	SmartestEnergy Ltd
EDF Trading Ltd	SME Energy Ltd
Electricity for Business	South Wales Electricity Ltd
Energy CO2 Ltd	SSE Energy Ltd
Energy Data Company	SWEB Ltd
Enizade Ltd	Team Group of Companies Ltd
Enron Direct Ltd	Telecom Plus PLC
Enron Gas & Petrochemicals Trading Ltd	TXU Europe (AH-online) Ltd

Essential Power Ltd	TXU Europe (AHG) Ltd
Ineos Chlor Energy Ltd	TXU Europe (AHGD) Ltd
International Power plc	TXU Europe (AHST) Ltd
Magnox Electric plc	TXU UK Ltd
Maverick Energy Ltd	Utilita Electricity Ltd
Midlands Gas Ltd	Utilitease Ltd
Norweb Energy Ltd	Zest 4 Electricity
Npower Cogen Trading Ltd	Western Gas Ltd
Npower Commercial Gas Ltd	Wilton Energy Ltd

Table A8: Suppliers with no ROS

Licensed electricity supplier	
730 Energy Ltd	International Power plc
Abington Energy Ltd	Magnox Electric plc
Accord Energy Ltd	Maverick Energy Ltd
AEP Energy Services Ltd	Midlands Gas Ltd
AES Energy Ltd	Norweb Energy Ltd
Banbury Energy Ltd	Npower Northern Supply Ltd
Affinity Power Ltd	Npower Yorkshire Supply Ltd
Allied Domecq (Holdings) plc	Pan-Utility Ltd
Cherwell Energy Ltd	Pentex Oil and Gas Ltd
Citigen (London) Ltd	Powergen Retail Gas (Eastern) Ltd
Commercial Electricity Supplies Ltd	PowerRelate Ltd
Corona Energy 4 Retail Ltd	Primary Connections Ltd
EdF Energy Powerlink Ltd	RS Energy Ltd
EDF Trading Ltd	Shell Gas Direct Ltd

Electricity for Business	SME Energy Ltd
Enizade Ltd	South Wales Electricity Ltd
Energy CO2 Ltd	SSE Energy Ltd
Energy Data Company	SWEB Ltd
Enron Direct Ltd	Team Group of Companies Ltd
Enron Gas & Petrochemicals Trading Ltd	Telecom Plus PLC
Essential Power Ltd	TXU Europe (AHG) Ltd
Fellside Heat and Power Ltd	TXU UK Ltd
Fortum Direct	Utilitease Ltd
Ineos Chlor Energy Ltd	

Table A9: A list of suppliers groups and their supply licences

Group	Supply licences
British Gas	British Gas Trading Ltd
	Electricity Direct Ltd
	Accord Energy Ltd
EdF	London Energy Plc
	Seeboard Energy Ltd
	SWEB Energy Ltd
Opus Energy	Abingdon Energy Ltd
	Banbury Energy Ltd
	Cherwell Energy Ltd
	Opus Energy Ltd
E.ON UK	Citigen London Ltd
	Economy Power Ltd
	E.ON UK Plc
	Enizade Ltd
	Midlands Gas Ltd
	Powergen Retail Ltd
	Powergen Retail Gas (Eastern) Ltd

	TXU Europe (AHG) Ltd
	TXU Europe (AHGD) Ltd
	TXU Europe (AH Online) Ltd
	TXU Europe (AHST) Ltd
	Western Gas Ltd
RWE Npower	npower Ltd
	Npower Direct Ltd
	Npower Cogen Trading Ltd
	Npower Commercial Gas Ltd
	Npower Northern Ltd
	Npower Northern Supply Ltd
	Npower Yorkshire Ltd
	Npower Yorkshire Supply Ltd
Scottish & Southern Energy (SSE)	SSE Energy Supply Ltd
	SSE Energy Ltd
	South Wales Electricity Ltd

Appendix 4 - Renewables Obligation Certificates issued: detailed information

Table B1: 2004/05 ROCs issued by generation technology type

Technology type	ROCs	SROCs	Total	Proportion of total
ACT	9,903	0	9,903	0.09%
Biomass	775,568	54,356	829,924	7.63%
Co-firing	2,035,490	81,109	2,116,599	19.47%
Hydro < 20 MW DNC	189,288	1,769,842	1,959,130	18.02%
Landfill gas	3,435,455	221,114	3,656,569	33.64%
Micro hydro	2,859	43,945	46,804	0.43%
Off-shore wind	277,351	0	277,351	2.55%
On-shore wind	895,969	829,171	1,725,140	15.87%
PV	28	0	28	0.00%
Sewage gas	245,908	3,573	249,481	2.29%
Total	7,867,819	3,003,110	10,870,929	100

Table B2: 2004/05 ROCs issued by month of generation

Month	ROCs	SROCS	Total
Apr-04	533,363	197,453	730,816
May-04	497,712	151,263	648,975
Jun-04	500,034	146,640	646,674
Jul-04	525,803	142,418	668,221
Aug-04	570,186	175,132	745,318
Sep-04	667,238	265,178	932,416
Oct-04	706,898	287,980	994,878

Nov-04	710,660	306,525	1,017,185
Dec-04	752,647	345,219	1,097,866
Jan-05	872,203	402,093	1,274,296
Feb-05	769,905	293,184	1,063,089
Mar-05	761,170	290,025	1,051,195
Total	7,867,819	3,003,110	10,870,929

Table B3: 2004/05 ROCs issued by generation technology type and month (in England and Wales and Scotland)

Month	ACT	Biomass	Co-firing	Hydro < 20 MW DNC	Landfill gas	Micro hydro	Off-shore wind	On-shore wind	PV	Sewage gas	Total
Apr-04	618	60,734	107,434	122,819	291,953	3,615	13,448	110,973	0	19,222	730,816
May-04	843	78,835	80,113	100,621	301,852	2,329	7,551	56,482	0	20,349	648,975
Jun-04	875	66,750	78,079	66,194	286,843	2,067	15,575	111,370	0	18,921	646,674
Jul-04	883	66,574	109,217	78,242	296,545	2,699	11,919	82,421	0	19,721	668,221
Aug-04	1,003	68,864	134,773	108,139	298,115	3,583	15,625	96,048	0	19,168	745,318
Sep-04	1,014	69,876	170,893	168,437	294,748	4,546	24,890	178,682	0	19,330	932,416
Oct-04	924	67,171	192,292	218,967	312,160	4,660	20,128	156,561	0	22,015	994,878
Nov-04	875	67,058	233,173	216,291	306,485	3,975	22,625	147,560	0	19,143	1,017,185
Dec-04	770	69,220	224,714	228,956	319,977	4,938	34,190	193,132	0	21,969	1,097,866
Jan-05	659	71,833	278,766	268,918	318,955	5,012	46,000	262,208	0	21,945	1,274,296
Feb-05	695	67,686	281,394	200,039	297,237	4,168	33,553	155,432	0	22,885	1,063,089
Mar-05	744	75,323	225,751	181,507	331,699	5,212	31,847	174,271	28	24,813	1,051,195
Total	9,903	829,924	2,116,599	1,959,130	3,656,569	46,804	277,351	1,725,140	28	249,481	10,870,929

Table B4: 2004/05 ROCs issued by generation technology type and month (in England and Wales)

Month	ACT	Biomass	Co-firing	Hydro < 20 MW DNC	Landfill gas	Micro hydro	Off-shore wind	On-shore wind	PV	Sewage gas	Total
Apr-04	618	56,781	99,052	10,690	276,855	98	13,448	57,016	0	18,805	533,363
May-04	843	74,759	73,595	9,094	284,765	124	7,551	26,806	0	20,175	497,712
Jun-04	875	61,035	72,288	6,365	270,052	134	15,575	54,789	0	18,921	500,034
Jul-04	883	61,875	101,414	7,631	278,879	154	11,919	43,836	0	19,212	525,803
Aug-04	1,003	65,160	128,798	11,570	280,881	186	15,625	48,170	0	18,793	570,186
Sep-04	1,014	66,308	164,634	18,144	277,314	183	24,890	95,919	0	18,832	667,238
Oct-04	924	63,267	185,779	28,813	293,970	233	20,128	92,073	0	21,711	706,898
Nov-04	875	62,577	226,836	20,168	288,029	212	22,625	70,224	0	19,114	710,660
Dec-04	770	63,667	217,397	18,804	299,947	203	34,190	95,994	0	21,675	752,647
Jan-05	659	66,048	273,109	28,765	298,326	188	46,000	137,386	0	21,722	872,203
Feb-05	695	63,639	274,351	16,948	277,648	180	33,553	80,364	0	22,527	769,905
Mar-05	744	70,452	218,237	12,296	308,789	964	31,847	93,392	28	24,421	761,170
Totals	9,903	775,568	2,035,490	189,288	3,435,455	2,859	277,351	895,969	28	245,908	7,867,819

Table B5: 2004/05 ROCs issued by generation technology type and month (in Scotland)

Month	ACT	Biomass	Co-firing	Hydro < 20 MW DNC	Landfill gas	Micro hydro	Off-shore wind	On-shore wind	Sewage gas	Total
Apr-04	0	3,953	8,382	112,129	15,098	3,517	0	53,957	417	197,453
May-04	0	4,076	6,518	91,527	17,087	2,205	0	29,676	174	151,263
Jun-04	0	5,715	5,791	59,829	16,791	1,933	0	56,581	0	146,640
Jul-04	0	4,699	7,803	70,611	17,666	2,545	0	38,585	509	142,418
Aug-04	0	3,704	5,975	96,569	17,234	3,397	0	47,878	375	175,132
Sep-04	0	3,568	6,259	150,293	17,434	4,363	0	82,763	498	265,178
Oct-04	0	3,904	6,513	190,154	18,190	4,427	0	64,488	304	287,980
Nov-04	0	4,481	6,337	196,123	18,456	3,763	0	77,336	29	306,525
Dec-04	0	5,553	7,317	210,152	20,030	4,735	0	97,138	294	345,219
Jan-05	0	5,785	5,657	240,153	20,629	4,824	0	124,822	223	402,093
Feb-05	0	4,047	7,043	183,091	19,589	3,988	0	75,068	358	293,184
Mar-05	0	4,871	7,514	169,211	22,910	4,248	0	80,879	392	290,025
Total	0	54,356	81,109	1,769,842	221,114	43,945	0	829,171	3,573	3,003,110

Table B6: 2004/05 ROCs and SROCs issued by location and month

Month	England	Scotland	Wales	Total
Apr-04	475,666	197,173	57,977	730,816
May-04	462,773	152,014	34,188	648,975
Jun-04	441,850	150,050	54,774	646,674
Jul-04	476,218	146,605	45,398	668,221
Aug-04	514,240	183,940	47,138	745,318
Sep-04	571,458	275,041	85,917	932,416
Oct-04	608,113	296,247	90,518	994,878
Nov-04	632,036	316,518	68,631	1,017,185
Dec-04	650,769	359,165	87,932	1,097,866
Jan-05	735,473	419,696	119,127	1,274,296
Feb-05	686,029	301,813	75,247	1,063,089
Mar-05	668,879	301,595	80,721	1,051,195
Total	6,923,504	3,099,857	847,568	10,870,929

Table B7: 2004/05 ROCs and SROCs issued by location and generation technology type

Technology type	England	Scotland	Wales	Total
ACT	9,903	0	0	9,903
Biomass	775,568	54,356	0	829,924
Co-firing	2,041,014	75,585	0	2,116,599
Hydro < 20 MW DNC	36,302	1,771,825	151,003	1,959,130
Landfill gas	3,335,570	221,114	99,885	3,656,569
Micro hydro	2,244	43,945	615	46,804

Off-shore wind	96,664	0	180,687	277,351
On-shore wind	378,400	933,032	413,708	1,725,140
PV	28	0	0	28
Sewage gas	247,811	0	1,670	249,481
Total	6,923,504	3,099,857	847,568	10,870,929

Table B8: 2004/05 ROCs issued by location and month

Month	England	Scotland	Wales	Total
Apr-04	475,249	137	57,977	533,363
May-04	462,599	925	34,188	497,712
Jun-04	441,850	3,410	54,774	500,034
Jul-04	475,709	4,696	45,398	525,803
Aug-04	513,865	9,183	47,138	570,186
Sep-04	570,960	10,361	85,917	667,238
Oct-04	607,809	8,571	90,518	706,898
Nov-04	631,377	10,652	68,631	710,660
Dec-04	649,581	15,134	87,932	752,647
Jan-05	733,889	19,187	119,127	872,203
Feb-05	683,682	10,976	75,247	769,905
Mar-05	667,837	12,612	80,721	761,170
Total	6,914,407	105,844	847,568	7,867,819

Table B9: 2004/05 ROCs issued by location and generation technology type

Technology type	England	Scotland	Wales	Total
ACT	9,903	0	0	9,903
Biomass	775,568	0	0	775,568
Co-firing	2,035,490	0	0	2,035,490
Hydro < 20 MW DNC	36,302	1,983	151,003	189,288
Landfill gas	3,335,570	0	99,885	3,435,455
Micro hydro	2,244	0	615	2,859
Off-shore wind	96,664	0	180,687	277,351
On-shore wind	378,400	103,861	413,708	895,969
PV	28	0	0	28
Sewage gas	244,238	0	1,670	245,908
Total	6,914,407	105,844	847,568	7,867,819

Table B10: 2004/05 SROCs issued by location and month

Month	England	Scotland	Wales	Total
Apr-04	417	197,036	0	197,453
May-04	174	151,089	0	151,263
Jun-04	0	146,640	0	146,640
Jul-04	509	141,909	0	142,418
Aug-04	375	174,757	0	175,132
Sep-04	498	264,680	0	265,178
Oct-04	304	287,676	0	287,980

Nov-04	659	305,866	0	306,525
Dec-04	1,188	344,031	0	345,219
Jan-05	1,584	400,509	0	402,093
Feb-05	2,347	290,837	0	293,184
Mar-05	1,042	288,983	0	290,025
Total	9,097	2,994,013	0	3,003,110

Table B11: 2004/05 SROCs issued by location and generation technology type

Technology type	England	Scotland	Wales	Total
ACT	0	0	0	0
Biomass	0	54,356	0	54,356
Co-firing	5,524	75,585	0	81,109
Hydro < 20 MW DNC	0	1,769,842	0	1,769,842
Landfill gas	0	221,114	0	221,114
Micro hydro	0	43,945	0	43,945
Off-shore wind	0	0	0	0
On-shore wind	0	829,171	0	829,171
Sewage gas	3,573	0	0	3,573
PV	0	0	0	0
Total	9,097	2,994,013	0	3,003,110

Table B12: Revoked and replaced ROCs/SROCs

Technology type	Total number of revoked ROCs	Total number of replacement ROCs	Total number of revoked SROCs	Total number of replacement SROCs
Biomass	33741	33529		
Co-firing	31821	29851		
Hydro < 20 MW DNC	89	54	4744	4675
Landfill gas	2608	1441	364	395
Micro hydro			89	88
On-shore wind	33417	24		
Totals	101676	64899	5197	5158

Appendix 5 - Accredited generating stations: detailed information

Table C1: Comparison of the number of accredited stations by generation technology type and location

Technology type	England	Scotland	Wales	Total
ACT	3	0	0	3
Biomass	11	2	0	13
Co-firing	28	2	0	30
Hydro <20 MW DNC	34	78	24	136
Landfill gas	269	20	10	299
Micro hydro	18	31	4	53
Off-shore wind	3	0	1	4
On-shore wind	70	38	27	135
Photovoltaics	12	1	0	13
Sewage gas	94	1	6	101
Wave Power	0	1	0	1
Total	542	174	72	788

Table C2: Comparison of the total installed generating capacity of accredited generating stations by technology type and location

Technology type	England (kW)	Scotland (kW)	Wales (kW)	Total (kW)
ACT	3,219	0	0	3,219
Biomass	147,725	12,677	0	160,402
Co-firing*	1,168,705	34,560	0	1,203,265
Hydro <20 MW DNC	13,543	439,032	75,802	528,377
Landfill gas	619,059	44,309	19,921	683,289
Micro hydro	702	12,297	129	13,128
Off-shore wind	63,800	0	60,000	123,800
On-shore wind	189,546	504,202	230,896	924,644
Photovoltaics	243	1	0	244
Sewage gas	74,793	1,006	1,509	77,308
Wave Power	0	750	0	750
Total	2,281,335	1,048,834	388,257	3,718,426

Table C3: Comparison of generating stations accredited before 1 April 2004 and after 1 April 2004 by technology type

Technology type	No of generators accredited before 1st April 2004	No of generators accredited after 1st April 2004	Capacity of generators accredited before 1st April 2004 (kW)	Capacity of generators accredited after 1st April 2004 (kW)
ACT	2	1	1,785	1,434
Biomass	12	1	160,102	300
Co-firing*	28	2	1,195,943	7,322
Hydro <20 MW DNC^	109	27	416,463	111,914
Landfill gas	257	42	600,790	82,499
Micro hydro^	37	16	11,802	1,326
Off-shore wind	3	1	63,800	60,000
On-shore wind	99	36	622,777	301,867
Photovoltaics	0	13	0	244
Sewage gas	62	39	58,227	19,081
Wave Power	0	1	0	750
Totals	609	179	3,131,689	586,737

* co-firing capacity is an estimate of the renewable capacity
^ a number of hydro <20MW DNC stations have been reaccredited as micro hydro stations

A similar comparison (for the first two years of the RO) can be found in our Second Annual report published in February 2005 (Ref 44/05) which is available on our website www.ofgem.gov.uk

Table C4: Comparison of generating stations commissioned before 1 April 2004 and after 1 April 2004 by technology type

Technology type	No of generators commissioned before 1st April 2004	No of generators commissioned after 1 April 2004	Capacity of generators commissioned before 1st April 2004 (kW)	Capacity of generators commissioned after 1st April 2004 (kW)
ACT	2	1	1,785	1,434
Biomass	12	1	160,102	300
Co-firing*	29	1	1,203,265	0
Hydro <20 MW DNC	130	6	491,875	36,502
Landfill gas	259	40	603,906	79,383
Micro hydro	47	6	12,057	1,071
Off-shore wind	3	1	63,800	60,000
On-shore wind	105	30	624,110	300,534
Photovoltaics	9	4	213	31
Sewage gas	66	35	59,766	17,542
Wave Power	0	1	0	750
Totals	662	126	3,220,879	497,547

*co-fired capacity is an estimate of the "renewable capacity". ROCs have not yet been issued to the newly commissioned station

Table C5: Comparison of generating stations accredited before 1 April 2004 and after 1 April 2004 by location

Country	No of generators accredited before 1st April 2004	No of generators accredited after 1st April 2004	Capacity of generators accredited before 1st April 2004 (kW)	Capacity of generators accredited after 1st April 2004 (kW)
England	420	122	2,092,273	189,062
Scotland	129	45	714,044	334,790
Wales	60	12	325,372	62,885
Totals	609	179	3,131,689	586,737

*co-fired capacity is an estimate of the "renewable capacity".

Table C6: Comparison of generating stations commissioned before 1 April 2004 and after 1 April 2004 by location

Country	No of generators commissioned before 1st April 2004	No of generators commissioned after 1st April 2004	Capacity of generators commission before 1st April 2004 (kW)	Capacity of generators commission after 1st April 2004 (kW)
England	443	99	2,103,325	178,010
Scotland	154	20	791,467	257,367
Wales	65	7	326,087	62,170
Totals	662	126	3,220,879	497,547

*co-fired capacity is an estimate of the "renewable capacity".

Table C7: Comparison of the number of NFFO/SRO and non-NFFO/non-SRO generating stations accredited before and after 1 April 2004

	Non-NFFO	NFFO	Non-SRO	SRO
Accredited before April 2004	252	226	100	34
Accredited after April 2004	114	22	37	3

Table C8: Comparison of the total installed capacity of NFFO/SRO and non-NFFO/non-SRO generating stations accredited before and after 1 April

	Non-NFFO (kW)	NFFO (kW)	Non-SRO (kW)	SRO (kW)	Totals
Accredited before April 2004	1,769,030	660,268	587,087	200,888	3,217,273
Accredited after April 2004	111,432	128,862	252,338	8,521	501,153

Table C9: Estimation of co-fired generating stations' "renewable capacity"

Generating station	Accreditation ID	Total installed generating capacity (kW)	Maximum renewable qualifying percentage in any month to date	Estimate of "renewable capacity"
Aberthaw B Power Station -A,C,E	R00036RBEN	1552500	1.62%	25151
Alcan Lynemouth Power Station	R00038RBEN	420000	98.94%	415548
Avonmouth STW CHP Generation - A,C,D,E	R00010RBEN	5750	98.94%	5689
Beckton STW Sludge Powered Generator - A, C, D	R00003RBEN	11400	96.59%	11011
Beddington STW	R00045RBEN	2520	65.95%	1662
Cottam Power Station - A,B,C,E	R00015RBEN	2000000	1.35%	27000
RB Crossness STW Sludge Powered Generator - A, C, D	R00004RBEN	5900	96.42%	5689
Deephams STW A, B, C, D, E	R00042RBEN	3320	75.73%	2514
Didcot 'A' Power Station - A, C	R00018RBEN	2100000	1.28%	26880
Drakelow Power Station - A,C,E	R00007RBEN	333000	0.00%	
Drax Power Station- A,C,E	R00035RBEN	4065000	2.13%	86585
Eggborough Power Ltd - A, C	R00039RBEN	2000000	1.13%	22600
Ferrybridge C Power Station - A,C,E	R00005RBEN	2035000	5.19%	105617
Fibrepower (Slough)-A,B,C (RB)	R00034RBEN	12000	98.55%	11826
Fiddler's Ferry Power Station - A,C,E	R00006RBEN	1995000	6.06%	120897
Ironbridge Power Station - A,C	R00008RBEN	970000	3.62%	35114
Kingsnorth Power Station	R00014RBEN	2034000	2.06%	41900
Longreach STW - A, C, D, E	R00040RBEN	2300	100.00%	2300
Maple Lodge STW - A, C, D, E	R00043RBEN	2880	90.70%	2612
Npower Cogen Ltd (Aylesford) CHP - C, D	R00049RBEN	99800	0.00%	
Ratcliffe-On-Soar Power Station	R00047RBEN	2034000	0.36%	7322
Rugeley Power Station - A,C, E	R00019RBEN	1000000	3.86%	38600
Shell Green Generation Plant - A,C,D,E	R00002RBEN	4200	0.00%	

Slough Electricity Contracts Ltd - C	R00001RBEN	88100	88.54%	78004
The Heat Station - A,B,C	R00050RBEN	7140	0.00%	
Tilbury Power Station - A,C,E	R00013RBEN	1085000	0.36%	3906
West Burton Power Station - A,C	R00017RBEN	2040000	0.29%	5916
Wilton International - C, D	R00044RBEN	196650	42.90%	84363
Cockenzie Power Station	R00004SBEN	1200000	0.00%	
Longannet Power Station	R00001SBSC	2400000	1.44%	

Promoting choice and value for all gas and electricity customers

Renewables Obligation: Annual report 2005-06

Document type: Annual report

Ref: 36/07

Date of publication: 28 February 2007

Target audience: All stakeholders with an interest in the Renewables Obligations.

Overview:

The Government has introduced a number of schemes to encourage the development of renewable generation in the UK.

In April 2002, the Renewables Obligation and Renewables Obligation (Scotland) came into effect, with the Northern Ireland Renewables Obligation coming into effect on 1 April 2005. Ofgem administers these schemes on behalf of the Department of Trade and Industry, the Scottish Executive and Department of Enterprise, Trade and Investment respectively.

This report provides information in respect of the 2005-06 obligation period. It includes information on how licensed electricity suppliers complied with their obligations in this period, the number of ROCs we issued and detail on generators we accredited for the schemes.

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Context

The Government's aim is that renewable energy will make an increasing contribution to energy supplies in the UK, with renewable energy playing a key role in the wider climate change programme.

The Renewables Obligation, the Renewables Obligation (Scotland) and the Renewables Obligation (Northern Ireland) are designed to incentivise renewable generation into the electricity generation market. These schemes were introduced by the Department of Trade and Industry, the Scottish Executive and the Department of Enterprise, Trade and Investment respectively and are administered by the Gas and Electricity Markets Authority (whose day to day functions are performed by Ofgem).

The first Renewables Obligation Order came into force in April 2002, as did the first Renewables Obligation Order (Scotland). These Orders were subject to review in 2004, 2005 and 2006. The first Renewables Obligation Order (Northern Ireland) came into force in April 2005. New Orders came into force on 1 April 2005 and 1 April 2006. In April 2007 the Renewables Obligation Order 2006 will be amended and new Orders for Scotland and Northern Ireland will come into force.

These Orders place an obligation on licensed electricity suppliers in England and Wales, Scotland and Northern Ireland to source an increasing proportion of electricity from renewable sources. In 2005-06 it was 5.5 per cent in England and Wales and Scotland and 2.5 per cent in Northern Ireland.

Suppliers meet their obligations by presenting sufficient Renewables Obligation Certificates (ROCs) to cover their obligations. Where suppliers do not have sufficient ROCs to meet their obligation, they must pay an equivalent amount into a fund, the proceeds of which are paid back on a pro-rated basis to those suppliers that have presented ROCs. The Government intends that suppliers will be subject to a renewables obligation until 31 March 2027.

This annual report is based on the requirements on the Authority and obligations on suppliers under the Orders which came into force in April 2005.

Associated Documents

Readers should be aware of the following documents which support this publication. These documents are available on our website at www.ofgem.gov.uk.

- The Renewables Obligation: Third annual report (ref 35/06)
- The Renewables Obligation: Third annual report - appendices (ref 35/06)
- The Renewables Obligation: Second annual report (ref 44/05), and
- The Renewables Obligation: First annual report (ref 45/04)

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Summary

The Renewables Obligation Order (RO) and the Renewables Obligation (Scotland) (ROS) Order detail Ofgem's powers and functions in respect of the Renewables Obligation in England and Wales and in Scotland, respectively. Those functions include:

- accrediting generating stations as being capable of generating electricity from eligible renewable energy sources
- issuing Renewable Obligation Certificates (ROCs) and Scottish Renewable Obligation Certificates (SROCs)
- establishing and maintaining a register of ROCs and SROCs
- revoking ROCs and SROCs where necessary
- monitoring compliance with the requirements of the Orders
- calculating annually the buy-out price resulting from the adjustments made to reflect changes in the RPI
- receiving buy-out payments and redistributing the buy-out fund
- receiving late payments and redistributing the late payment fund, and
- publishing an annual report on the operation of and compliance with the requirements of the Orders.

We carry out these functions as efficiently and effectively as possible according to the provisions of the Orders. We cannot act beyond the scope of the powers laid down in the Orders. For example, we have no remit over the operation or regulation of the ROC market itself. Amendments to the relevant legislation in respect of the Renewables Obligation are a matter for the Secretary of State, Scottish Ministers and the Secretary of State for Northern Ireland.

We administer the Northern Ireland Renewables Obligation (NIRO) on behalf of the Northern Ireland Authority for Energy Regulation (NIAER) under an Agency Services Agreement. Under this agreement the Authority is required to carry out the functions listed above in respect of Northern Ireland Renewables Obligation Certificates (NIROCs). However the NIAER continues to retain legislative responsibility for the NIRO.

Ofgem's costs of exercising its functions under the Orders were around £600,000 in 2005-06. These costs included:

- staffing costs
- IT system support costs
- technical, legal and IT support

- undertaking audits of generating stations
- undertaking audits of suppliers, and
- the maintenance of bank accounts.

This annual report incorporates information on the RO, ROS and NIRO. Unless apparent from the context, where "RO" is used it denotes the RO, ROS and NIRO and where "ROC" is used it denotes ROCs, SROCs and NIROCs. The use of "GB ROCs" denotes ROCs and SROCs only and does not include NIROCs.

The use of "Ofgem", 'us", "our" and "we" are used interchangeably when referring to the exercise of the Authority's powers and functions under the RO.

Chapters 1 to 4 provide details on:

- how each supplier has complied with its obligation (in terms of ROCs presented, the buy-out payments made or a combination of both as appropriate)
- the amount of the buy-out fund and late payment fund each licensed supplier received
- summaries of the outcomes of any enquiries or investigations regarding implementation of the RO and compliance by suppliers and operators of generating stations
- the total number of ROCs issued by us during the 2005-06 obligation period
- the number of ROCs issued disaggregated by the different eligible renewable technologies
- the number of ROCs accepted by us as evidence of compliance
- the total number of ROCs issued but not deleted from the ROC Register for use in the next period (April 2006 - March 2007), and
- any other matters which we consider relevant.

Chapter 5 provides a summary of legislative changes made in April 2006 and changes we expect to be made in April 2007. It also summarises proposals for changes to be made to the RO in the longer term.

Enquiries on any aspect of this report should be emailed to renewable@ofgem.gov.uk with the email clearly marked "2005-06 annual report". Alternatively, you can telephone Yvonne Naughton on 0141 331 6006.

1. Compliance by licensed electricity suppliers

This chapter, when read with Appendix 2, provides information on:

- ➔ how each licensed electricity supplier (supplier) complied with its obligation in 2005-06 (in terms of ROCs presented, the buy-out and/or late payment made or a combination of these)
- ➔ the total number of ROCs correctly presented against each supplier's obligation
- ➔ the money each supplier received from the distribution of the buy-out and late payment funds, and
- ➔ the total number of ROCs that remain on the ROC Register for use in the next obligation period (i.e. April 2006 - March 2007).

We are required to publish this information under the Orders.

Total Renewables Obligation for England & Wales, Scotland and Northern Ireland

1.1. The RO and ROS requires each supplier to source a proportion of the electricity that it has supplied in Great Britain from eligible renewable sources[1]. The NIRO requires each supplier to source a proportion of the electricity that it has supplied in Northern Ireland from eligible renewable sources[2]. The proportion for the 2005-06 obligation period was 5.5 per cent in England & Wales and Scotland and 2.5 per cent in Northern Ireland. This proportion increases each year as set out in the Orders.

1.2. The Orders require each supplier to provide evidence that it has done this, that another supplier has done this or that between them they have done this. In practice, this means that suppliers meet their obligations by presenting ROCs, making buy-out payments to cover any shortfall in the presentation of sufficient ROCs or by a combination of both.

Headline figures

1.3. The key headline figures about compliance by suppliers in 2005-06 in England & Wales, Scotland and Northern Ireland are set out in Tables 1, 2 and 3 respectively. Further detail can be found in Appendix 2.

1.4. In summary, 35 suppliers had an obligation under the RO, 25 had an obligation under the ROS, and 7 had an obligation under the NIRO.

[1] See Article 2(1) of the RO and ROS for the definition of eligible renewable sources.
[2] See Article 2(1) of the NIRO for the definition of eligible renewable sources.

1.5. Fifty-one suppliers did not have an obligation under the RO, 61 did not have an obligation under the ROS, and 5 did not have an obligation under the NIRO. This was because they either had no sales to customers or all their sales were to transmission connected customers.

1.6. For the 2005-06 obligation period, the total Renewables Obligation for electricity supplied to customers in England & Wales was 16,175,906 MWh, 1,648,679 MWh for electricity supplied to customers in Scotland and 208,319 MWh for electricity supplied to customers in Northern Ireland.

1.7. The amount of buy-out paid per ROC presented for the 2005-06 obligation period was £10.21. The buy-out paid per ROC was equal across all three obligations. This was due to the introduction of the single recycling mechanism in the 2005-06 obligation period. Further information on the single recycling mechanism can be found in paragraph 1.23.

1.8. The percentage of suppliers' obligations met by presenting ROCs increased under the RO and ROS for the third year since the introduction of the RO. This has resulted in a reduction in the total buy-out funds redistributed to suppliers.

1.9. A total of 175,800 ROCs issued during the 2005-06 obligation period was not presented back to us for compliance purposes in 2005-06. This number consisted of 65,431 ROCs, 110,213 SROCs and 156 NIROCs. These ROCs remain on the ROC Register for use in the 2006-07 obligation period.

1.10. Tables 1, 2 and 3 summarise the headline figures and make comparisons to earlier obligation periods. Detailed information can be found in appendix 2.

Table 1: How suppliers complied with their obligations in England & Wales (2005-06)

	2002-03	**2003-04**	**2004-05**	**2005-06**
Total obligation (MWh)	8,393,972	12,387,720	14,315,784	**16,175,906**
Total number of ROCs presented	4,973,091	6,914,524	9,971,851	**12,232,153**
Number of GB ROCs presented (included in total above)	4,973,091	6,914,524	9,971,851	**11,986,983**
Total number of NIROCs presented (included in total above)	n/a	n/a	n/a	**245,170**

	2002-03	2003-04	2004-05	2005-06
Percentage obligation met by ROCs	59%	56%	70%	**76%**
Total Buy-out paid	£78,853,260	£157,960,978	£135,657,001	**£126,704,565**
Total late payments paid[3] [4]	n/a	n/a	n/a	**£32.36**
Shortfall in buy-out fund	£23,773,170	£9,026,232	£699,055	**£796,935**
Total buy-out redistributed	£79,251,930	£158,466,502	£136,169,914	**£127,167,900**
Total late payments redistributed	n/a	n/a	n/a	**£34**
Buy-out paid per ROC produced[5]	£15.94	£22.92	£13.66	**£10.21**
What a ROC was "worth" to a supplier[6]	£45.94	£53.43	£45.05	**£42.54**

Table 2: How suppliers complied with their obligations in Scotland (2005-06)

	2002-03	2003-04	2004-05	2005-06
Total obligation (MWh)	867,596	1,239,692	1,445,283	**1,648,679**
Total number of ROCs presented	478,358	695,620	883,997	**1,425,869**
Number of GB ROCs presented (included in total above)	478,358	695,620	883,997	**1,418,183**

[3] If a supplier does not meet its obligation in full by 1 October, it can make a late payment up until 30 November. Late payments are subject to an interest charge in addition to the amount owed. Interest is charged at 5 percentage points above the Bank of England base rate as at the first day of the late payment period (i.e. 1 October).
[4] Late payments were included in the Orders from 1 April 2005. Prior to that date any supplier who did not meet its obligation in full by 1 October was in breach of the Orders.
[5] £10.21 includes sums redistributed from the buy-out and late payment funds.
[6] When combined with the buy-out price that suppliers effectively avoid paying by presenting ROCs, a ROC produced against the RO was "worth" £42.54 to suppliers in 2005-06.

	2002-03	2003-04	2004-05	2005-06
Total number of NIROCs presented (included in total above)	n/a	n/a	n/a	**7,686**
Percentage obligation met by ROCs	55%	56%	61%	**86%**
Total Buy-out paid	£11,210,730	£16,436,835	£17,602,787	**£7,086,897**
Total late payments paid	n/a	n/a	n/a	**£114,766.78**
Shortfall in buy-out fund	£466,410	£162,801	£15,067.20	**£1,972**
Total Buy-out redistributed	£11,267,124	£16,488,755	£17,668,392	**£7,112,617**
Total late payments redistributed	n/a	n/a	n/a	**£115,070**
Buy-out paid per ROC produced[7]	£23.55	£23.70	£19.99	**£10.21**
What a ROC was "worth" to a supplier	£53.55	£54.21	£51.38	**£42.54**

Table 3: How suppliers complied with their obligations in Northern Ireland (2005-06)[8]

	2005-06
Total obligation (MWh)	**208,319**
Total number of ROCs presented	**41,295**
Number of GB ROCs presented (included in total above)	**20,868**
Total number of NIROCs presented (included in total above)	**20,427**
Percentage obligation met by ROCs	**20%**
Total Buy-out paid	**£5,354,332.86**
Total late payments paid	**£45,613.90**
Shortfall in buy-out fund	**£0**
Total Buy-out redistributed	**£5,373,877**
Total late payments redistributed	**£45,697**
Buy-out paid per ROC produced[9]	**£10.21**
What a ROC was "worth" to a supplier	**£42.54**

[7] £10.21 includes sums redistributed from the buy-out and late payment funds.
[8] The Northern Ireland Renewables Obligation came into effect on 1 April 2005.
[9] £10.21 includes sums redistributed from the buy-out and late payment funds.

Detail about ROCs presented

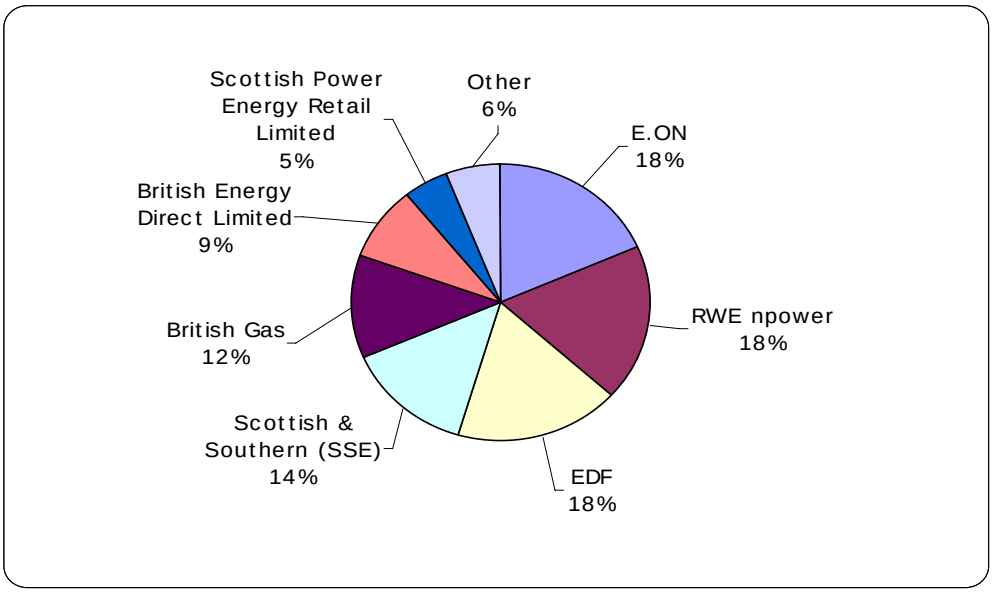
1.11. London Energy plc (part of EdF group) had the largest obligation in England and Wales (2,317,990 MWh) followed by SSE Energy Supply Limited and nPower Limited (part of RWE nPower Group) with obligations of 2,272,034 MWh and 2,018,965 MWh respectively.

1.12. Scottish Power Energy Retail Limited had the largest obligation in Scotland (655,204 MWh) followed by SSE Energy Supply Limited and British Gas Trading Limited with obligations of 455,525 MWh and 199,397 MWh respectively.

1.13. Northern Ireland Electricity plc had the largest obligation in Northern Ireland (118,073 MWh) followed by ESB Independent Energy and Viridian Energy Supply Limited (Energia) with obligations of 42,530 MWh and 40,242 MWh respectively.

1.14. Figures 1, 2 and 3 show the breakdown of the total obligation by supplier group.

Figure 1: Proportion of the total size of the RO by supplier group[10]



[10] A list of supplier groups and their individual supply licences can be found in table A10 in Appendix 2.

Figure 2: Proportion of the total size of the ROS by supplier group [11]

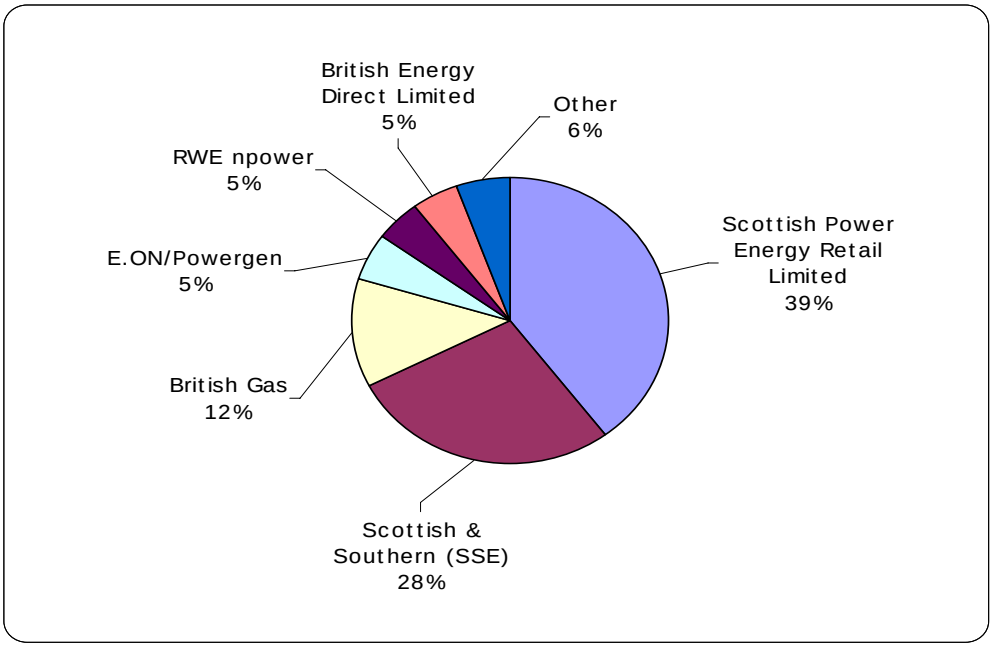
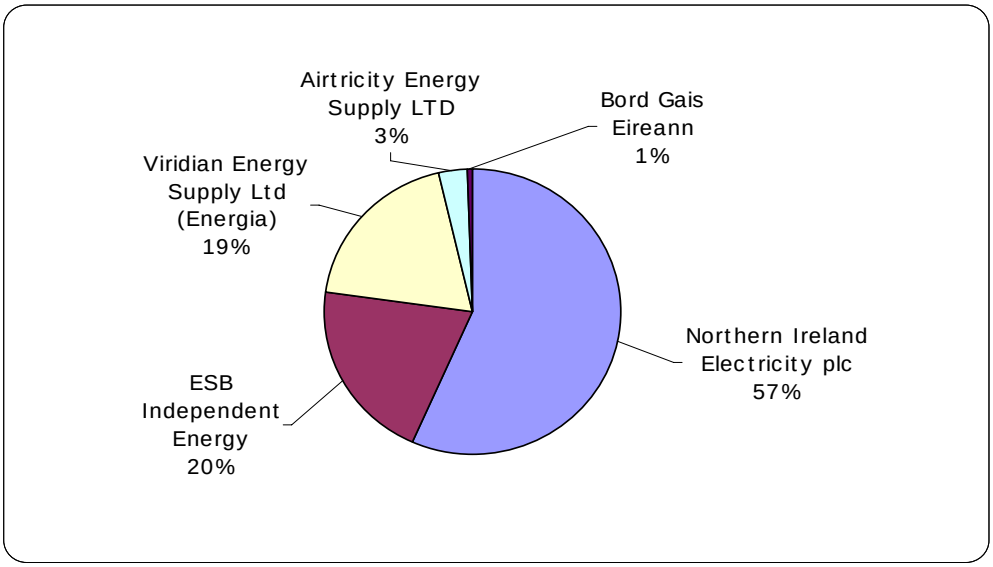


Figure 3: Proportion of the total size of the NIRO by supplier group [12]



[11] A list of supplier groups and their individual supply licences can be found in table A10 in Appendix 2.
[12] Due to small number of suppliers in Northern Ireland, shown by licensee rather than supplier group.

1.15. Five suppliers fulfilled their obligations under the RO entirely by presenting ROCs. These were:

- British Gas Trading Ltd
- Electricity Direct (UK) Ltd (part of the British Gas Group)
- Good Energy Ltd
- The Renewable Energy Company Ltd, and
- Scottish Power Energy Retail Ltd.

1.16. Seven suppliers fulfilled their obligations under the ROS entirely by presenting ROCs. These were:

- British Energy Direct Ltd
- British Gas Trading Ltd (part of the British Gas Group)
- Electricity Direct (UK) Ltd (part of the British Gas Group)
- Good Energy Ltd
- Opus Energy Ltd
- The Renewable Energy Company Ltd, and
- Tradelink Solutions Ltd.

1.17. Two suppliers fulfilled their obligations under the NIRO entirely by presenting ROCs. These were:

- Airtricity, and
- Tradelink Solutions Ltd.

1.18. In terms of the volume of ROCs presented, SSE Energy Supply Limited presented the most ROCs under the RO (2,095,802), which made up 92 per cent of its obligation.

1.19. Scottish Power Energy Retail Limited presented the most ROCs under the ROS (636,671). This made up 97 per cent of its obligation.

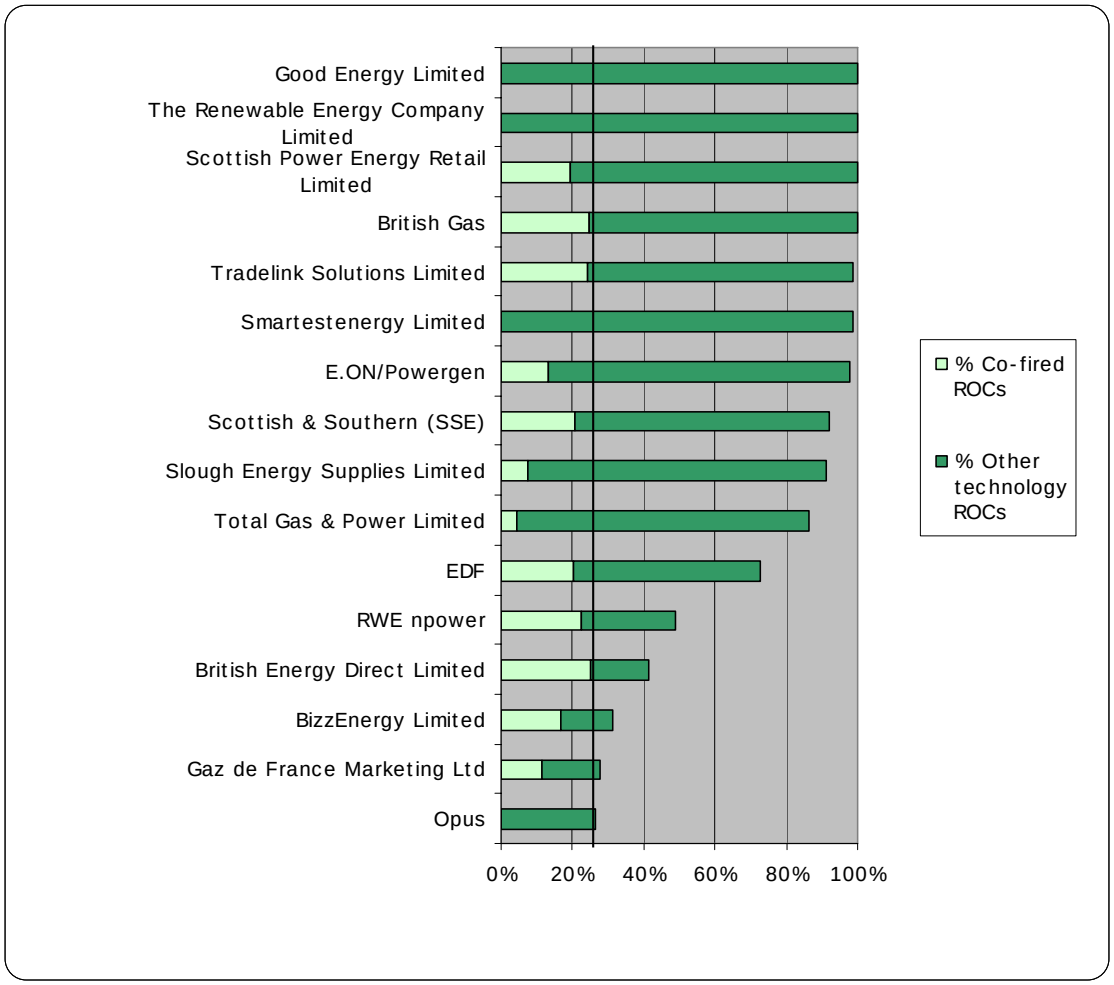
1.20. ESB Independent Energy presented the most ROCs under the NIRO (35,270). This made up 83 per cent of its obligation.

Co-fired ROCs

1.21. Under the 2005 Orders, each supplier is allowed to meet 25 per cent of its obligation by presenting ROCs that have been issued to co-firing generating stations (i.e. those fuelled partly by fossil fuels and partly by biomass).

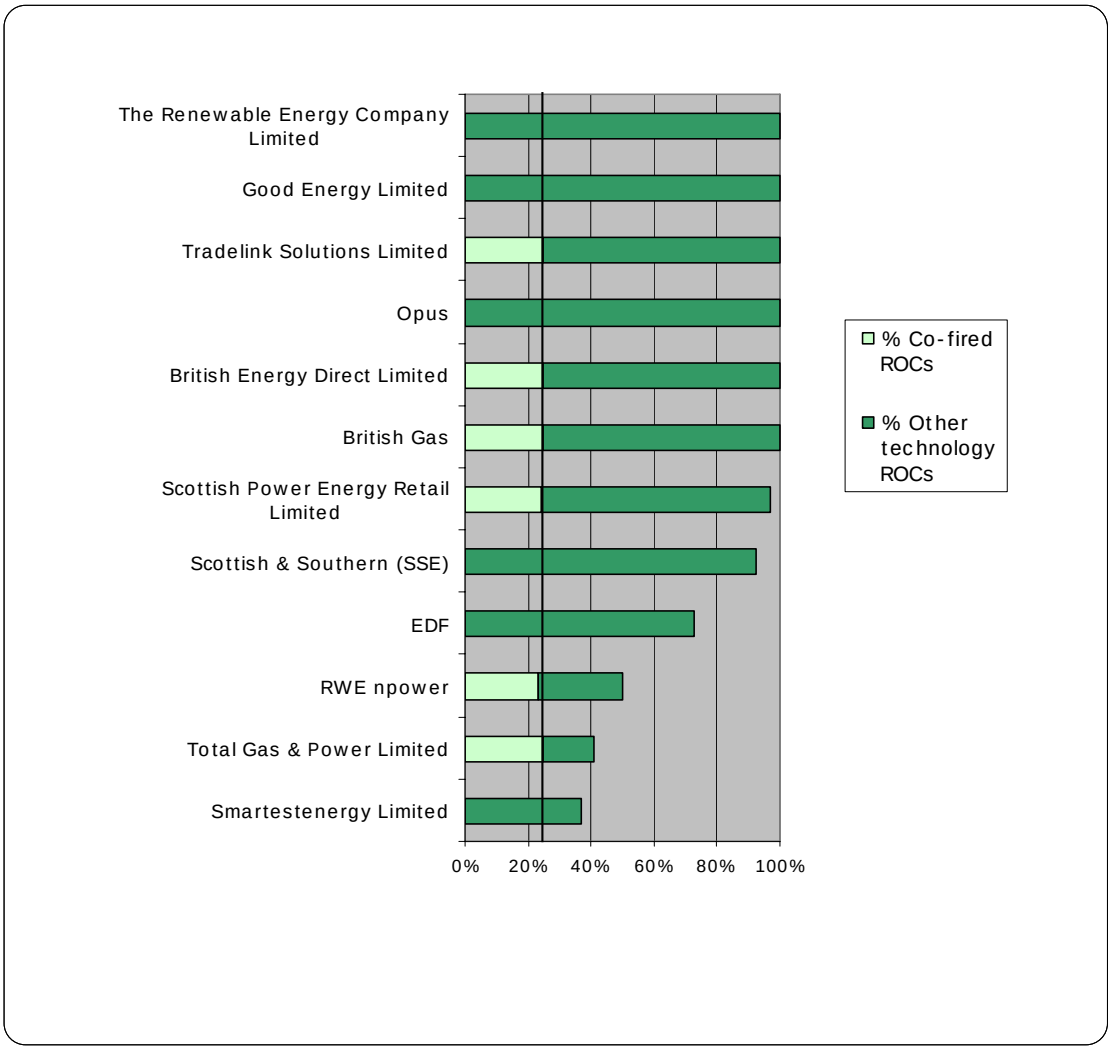
1.22. Figures 4, 5 and 6 compare the proportion of ROCs and co-fired ROCs presented by suppliers in meeting their obligations in England and Wales, Scotland and Northern Ireland respectively in 2005-06. Further detail can be found in Appendix 2.

Figure 4: Proportion of RO that was satisfied by co-fired ROCs[13]



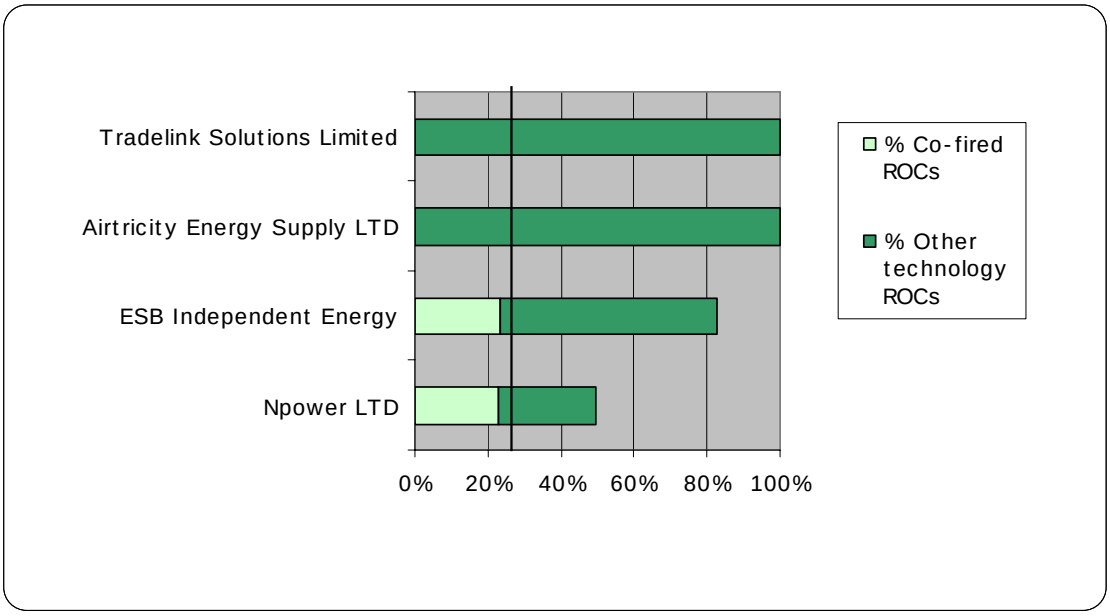
[13] A list of supplier groups and their individual supply licences can be found in table A10 in Appendix 2.

Figure 5: Proportion of ROS that was satisfied by co-fired ROCs[14]



[14] A list of supplier groups and their individual supply licences can be found in table A10 in Appendix 2.

Figure 6: Proportion of NIRO that was satisfied by co-fired ROCs



The buy-out and late payment funds and their redistribution

1.23. The buy-out funds and late payment funds, including any interest accrued, are recycled through the single recycling mechanism. The funds are redistributed to suppliers in proportion to the total number of ROCs that each has presented across the three obligations. For example, a supplier that presented ROCs representing 3 per cent of the total number of ROCs presented across all three obligations would get back 3 per cent of the total sum of the three buy-out funds and any late payment funds. That would still be the case if that supplier had only presented ROCs in respect of just one of the obligations.

1.24. Table 4 shows the proportion of the buy-out and late payment funds received by each supplier.

Table 4: Proportion of total ROCs presented by each licensee across the three obligations

Licence	Proportion
BizzEnergy Limited	0.272524535%
British Energy Direct Limited	4.810487997%
British Gas Trading Limited	15.703593106%
Electricity Direct (UK) Ltd	0.075668006%
London Energy Plc	12.599993124%
SEEBOARD Energy Limited	2.784839565%

Licence	Proportion
Gaz de France Marketing Ltd	1.277173161%
Good Energy Limited	0.038439873%
Opus Energy Ltd	0.106041783%
Economy Power Limited	0.179877581%
E.ON UK Plc	8.042189257%
Powergen Retail Ltd	13.168656510%
The Renewable Energy Company Limited	0.056586763%
Npower Ltd	7.687361348%
Npower Direct Ltd	0.862429857%
Npower Yorkshire Ltd	0.780527964%
Npower Northern Ltd	1.484957243%
SSE Energy Supply Ltd	18.365835319%
Scottish Power Energy Retail Limited	10.467784635%
Slough Energy Supplies Limited	0.102384666%
Smartestenergy Limited	0.079617108%
Total Gas & Power Limited	0.740051493%
Tradelink Solutions Limited	0.011540721%
Airtricity Energy Supply LTD	0.043688309%
ESB Independent Energy	0.257458091%
Npower Limited (NI)	0.000284685%
Tradelink Solutions Limited (NI)	0.000007299%
Total	100%

1.25. Twenty-seven suppliers received a share of each of the buy-out funds and late payment funds. Of these, SSE Energy Supply Limited received the largest payments.

1.26. Figures 7, 8, and 9 compare the amount of buy-out and late payment funds redistributed to each supplier group. More detail on a supplier basis can be found in Appendix 2.

Figure 7: Redistribution of RO buy-out and late payment funds (by supplier group)

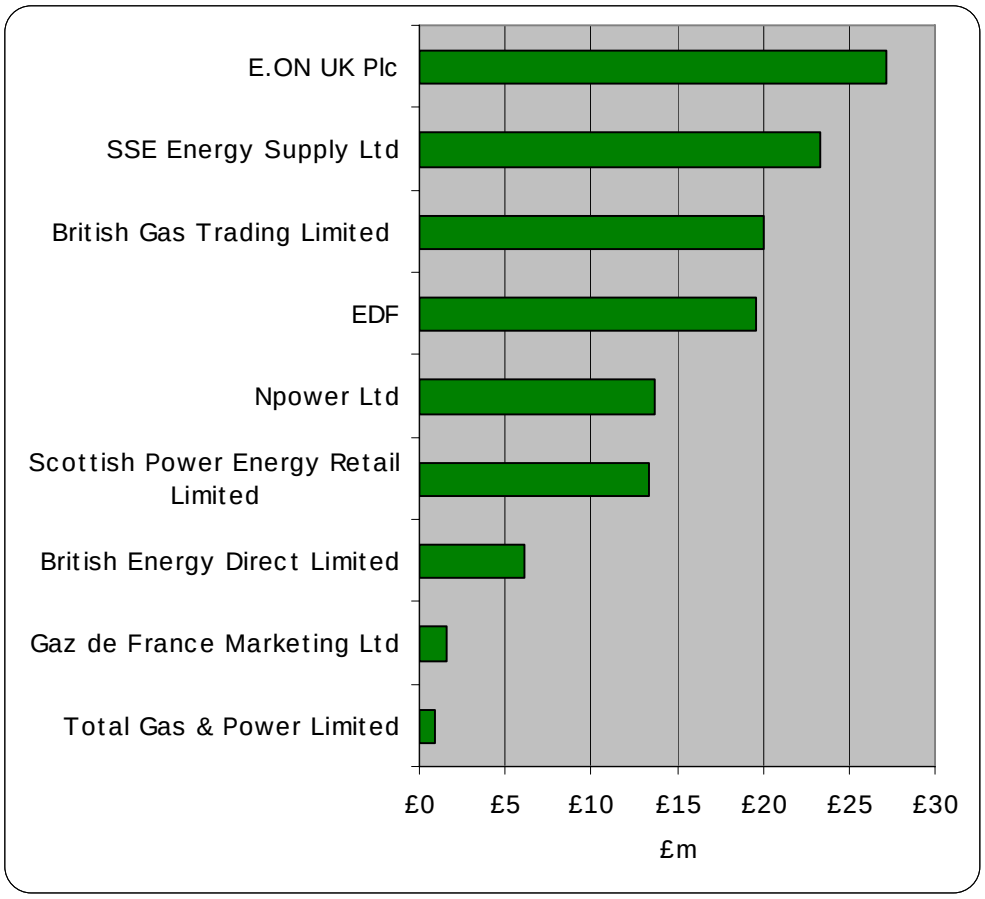


Figure 8: The amount of the Scotland buy-out and late payment funds redistributed

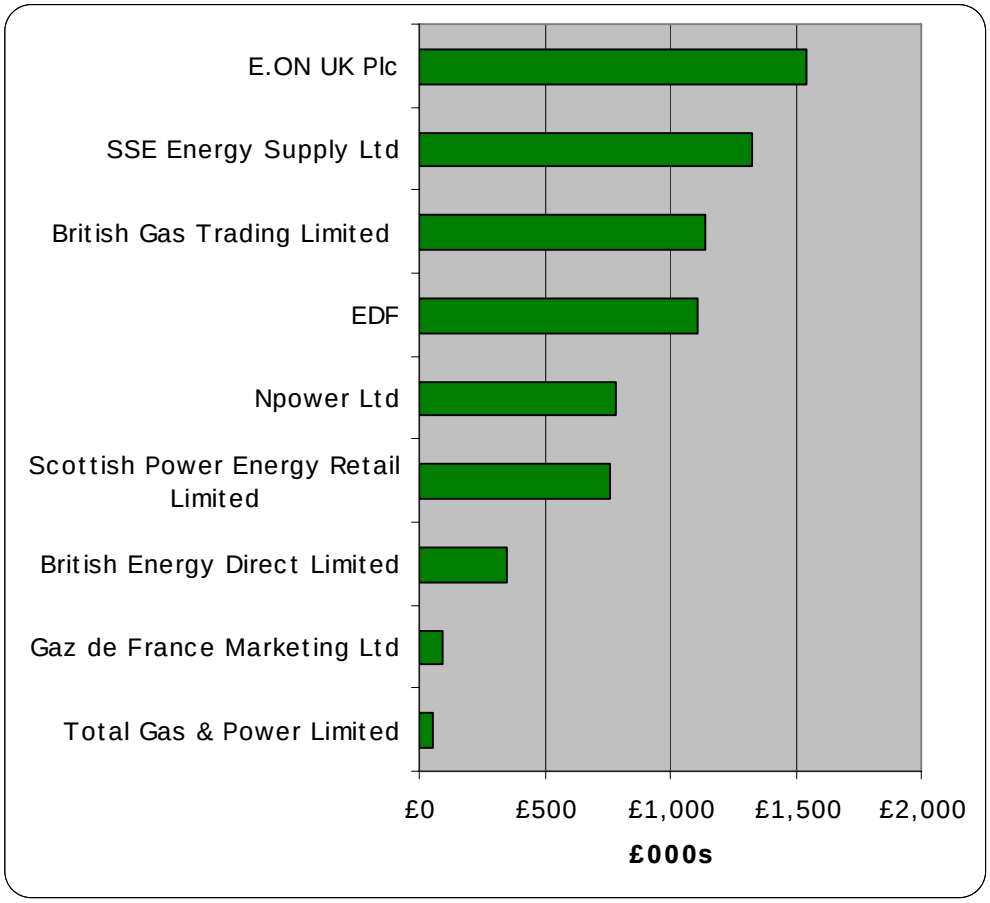
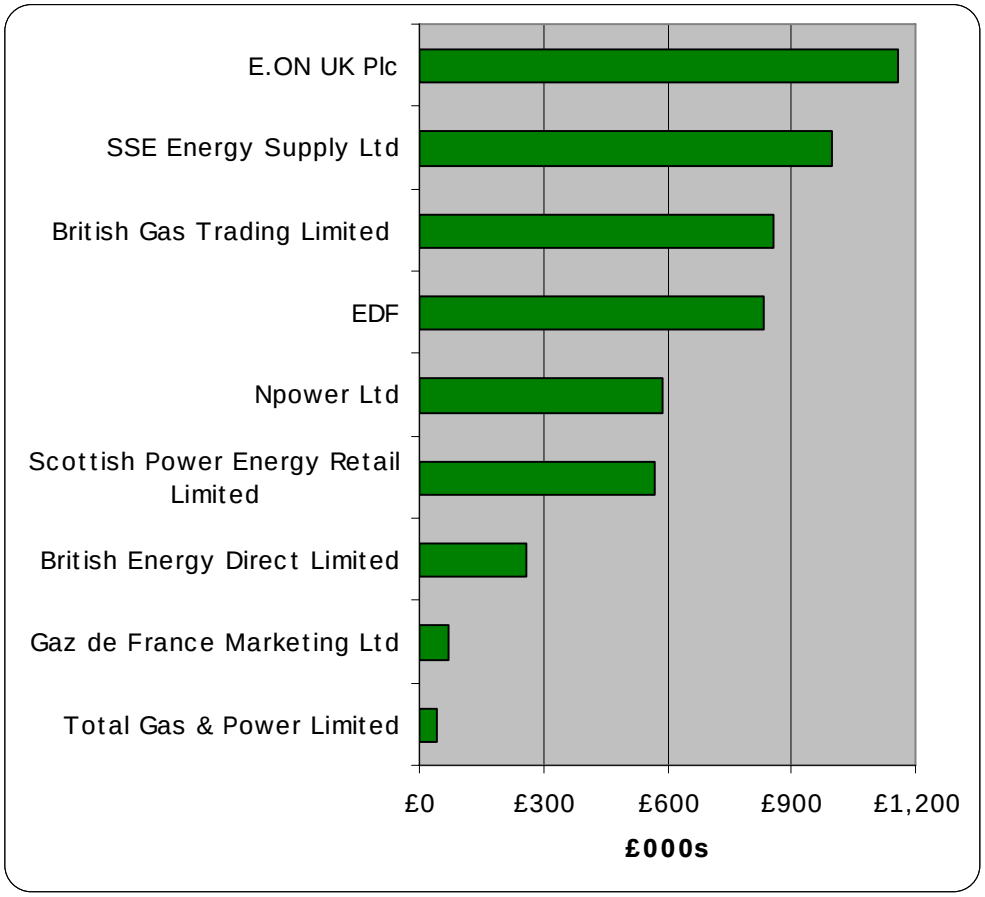


Figure 9: The amount of the Northern Ireland buy-out and late payment funds redistributed



1.27. Table 5 shows the residual balances of the RO bank accounts after all funds were redistributed on 31 October 2006. The small amounts arise from rounding down the buy-out payments to the nearest pound and interest earned on the small surpluses carried over.

Table 5: Residual balances

RO buy-out fund	£46.35
ROS buy-out fund	£11.50
NIRO buy-out fund	£12.71
RO late payment fund	£5.36
ROS late payment fund	£13.92
NIRO late payment fund	£9.15

Non-compliance by suppliers

1.28. The Orders place a number of obligations on suppliers including a requirement to:

- Provide information to DTI/DETI before 20 June 2006
- Provide us with a copy of the information to DTI/DETI before 7 August 2006
- Provide us with the amount of electricity that they have supplied during the obligation period and the level of their obligation before 7 August 2006
- Present ROCs, make a buy-out payment, or a combination of both to meet their total obligation before 1 October 2006, and
- Make a late payment, where required, to meet any outstanding obligation by 30 November 2006.

1.29. The Authority has the powers to take enforcement action against any supplier who fails to meet the requirements of the Orders.

1.30. Three suppliers did not send correct information on electricity sales to DTI by 20 June 2006.

1.31. Five suppliers did not send us a copy of electricity sales information provided to DTI.

1.32. Thirteen suppliers did not send correct information on electricity sales to Ofgem by 7 August 2006.

1.33. One supplier incorrectly calculated its RO.

1.34. In the majority of cases, this was the first time that the supplier had not submitted correct sales information on time or correctly calculated its RO. However, Total Gas and Power Ltd has not provided Ofgem with a copy of sales information provided to DTI in three consecutive years. In all cases, the issues were resolved quickly and the late or incorrect provision of this information did not affect our ability to confirm suppliers' obligations ahead of the compliance date of 1 October 2006.

1.35. Given that compliance with the RO is a relevant requirement of the Electricity Supply Licence, the Authority may use its enforcement powers in the same way that it can in respect of breaches of other licence conditions. We make decisions on whether or not to take enforcement action on a case-by-case basis. To date, we have not taken this type of action in respect of non-compliance with the RO. We may take a different view in future years, particularly if breaches are repeated and/or have a material impact.

1.36. The following four suppliers failed to meet their obligations as the company had gone into administration.

- Eledor Limited
- Team Group of Companies Limited
- Utility Link, and
- Zest4 Electricity.

1.37. This resulted in a shortfall in the England and Wales buy-out fund of £796,935 and £1,972 in Scotland.

Mutualisation

1.38. In the event of a supplier being unable to meet its RO and/or ROS, for example the supplier has gone into administration during the obligation period, there may be a shortfall in the buy-out fund. This means that the buy-out fund would be less than the total amount which would have been paid in if all suppliers had properly discharged their RO and/or ROS.

1.39. Where the shortfall reaches a certain level, known as the 'relevant shortfall' a mutualisation process applies where all suppliers who have met their obligations will be required to make additional payments to make up the relevant shortfall.

1.40. These additional payments, known as the mutualisation fund are redistributed to suppliers in the same way as the buy-out and late payment funds. Additional payments were capped at £200m in England and Wales and £20m in Scotland for the 2005-06 obligation period. This cap is adjusted each year by RPI.

1.41. Mutualisation provisions did not apply in the 2005-06 obligation period as the shortfall did not reach the relevant shortfall level of £5.5m in England and Wales and £0.55m in Scotland.

1.42. Mutualisation does not apply in Northern Ireland; however suppliers in Northern Ireland will receive a share of any mutualisation funds.

2. Renewable Obligation Certificates

This chapter, together with Appendix 3, provides information on the number of Renewable Obligation Certificates (ROCs), Scottish Renewable Obligation Certificates (SROCs) and Northern Ireland Renewable Certificates (NIROCs) issued in the 2005-06 obligation period (April 2005 to March 2006). It details information on:

- ➔ The total number of ROCs issued by Ofgem, and
- ➔ This total broken down by technology type.

We are required to publish this information under the Orders.

Information on the number of ROCs that have been issued since April 2006 can be found on the Renewable Statistics page of our website www.ofgem.gov.uk

Renewable Obligation Certificates (ROCs)

2.1. The Orders require us to issue ROCs to accredited generating stations that have generated electricity from eligible renewable sources[15]. One ROC is issued for each MWh of electricity generated.

Headline figures

2.2. We issued 13,767,375 ROCs in total between 1 April 2005 and 31 March 2006. This total was made up of 9,940,828 ROCs, 3,553,108 SROCs and 273,439 NIROCs.

2.3. There have been year-on-year increases in the total number of ROCs we have issued since the RO began, illustrated in Figures 10 and 11.

[15] See Article 2(1) of the Orders for the definition of eligible renewable sources.

Figure 10: Total number of ROCs issued since 2002

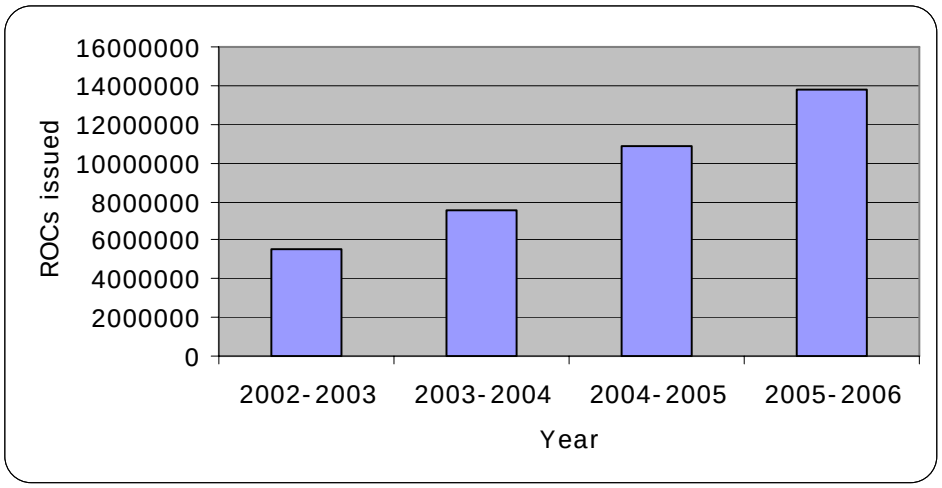
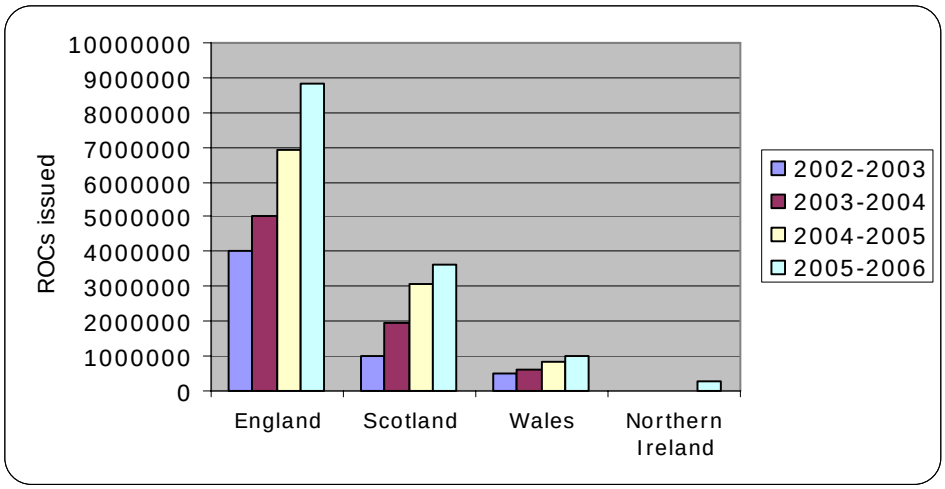
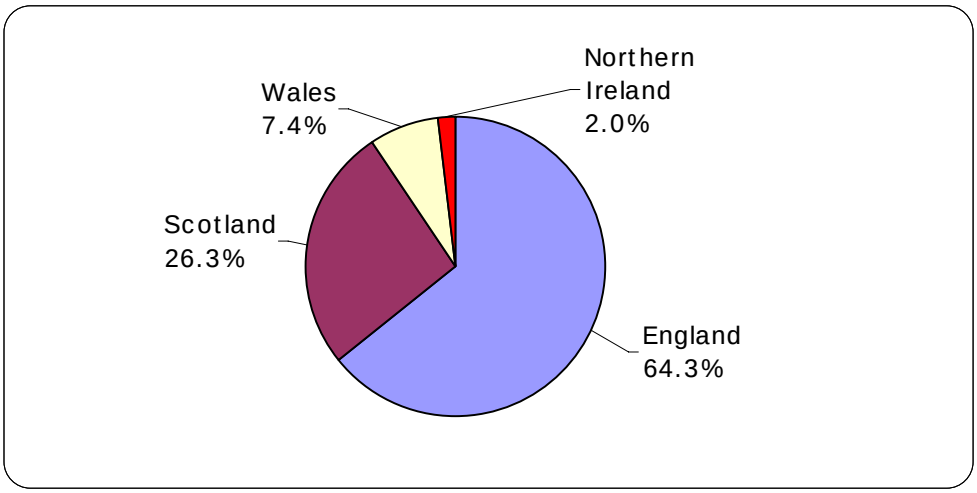


Figure 11: Total number of ROCs issued since 2002 by country



2.4. Renewable generating stations located in England received just under two thirds of all ROCs issued in 2005-06. This compares with just over a quarter to generating stations located in Scotland and around 7 per cent to generating stations located in Wales. Generating stations located in Northern Ireland received 2 per cent of the total number of ROCs issued in this period. This is illustrated in figure 12.

Figure 12: Comparison of the number of ROCs issued in each country in the 2005-06 obligation period

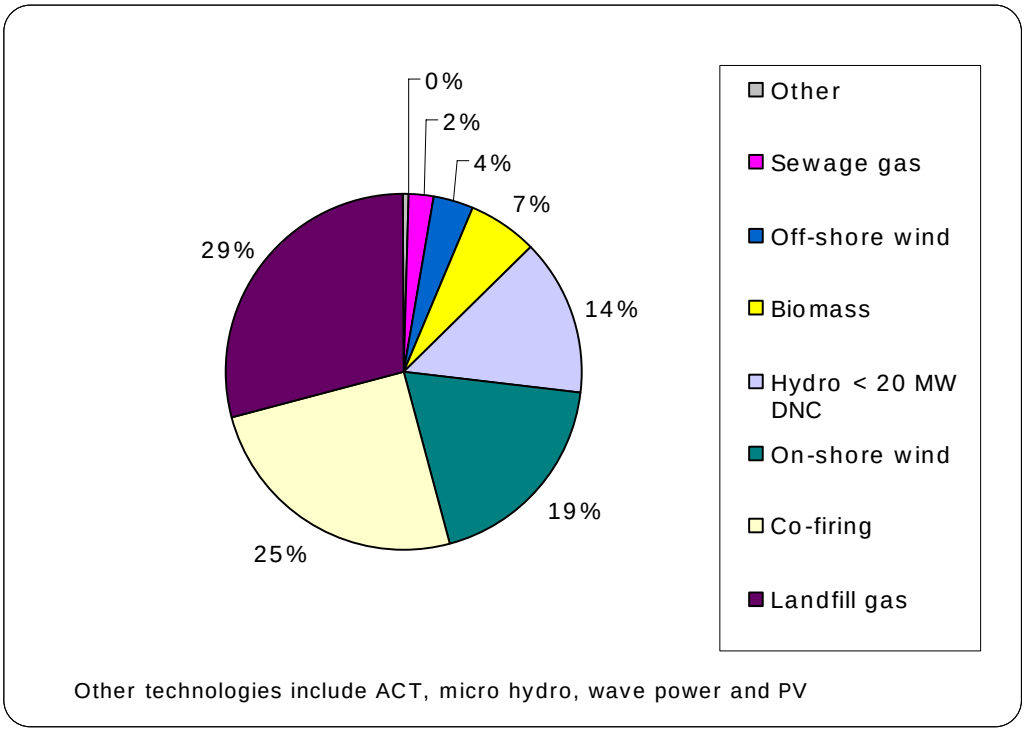


ROCs issued by technology type and country

2.5. Landfill gas sites received the largest number of ROCs in the 2005-06 obligation period (4,028,642 ROCs). In 2004-05, this technology type received 3,335,570 and 3,151,530 in 2003-04. In terms of total ROCs issued the next biggest beneficiary was co-firing sites, who received 3,441,641 ROCs. On-shore wind generating stations were issued 2,595,267 in total in the period. Further detail on the spread of ROCs issued can be found in table B1 in Appendix 3.

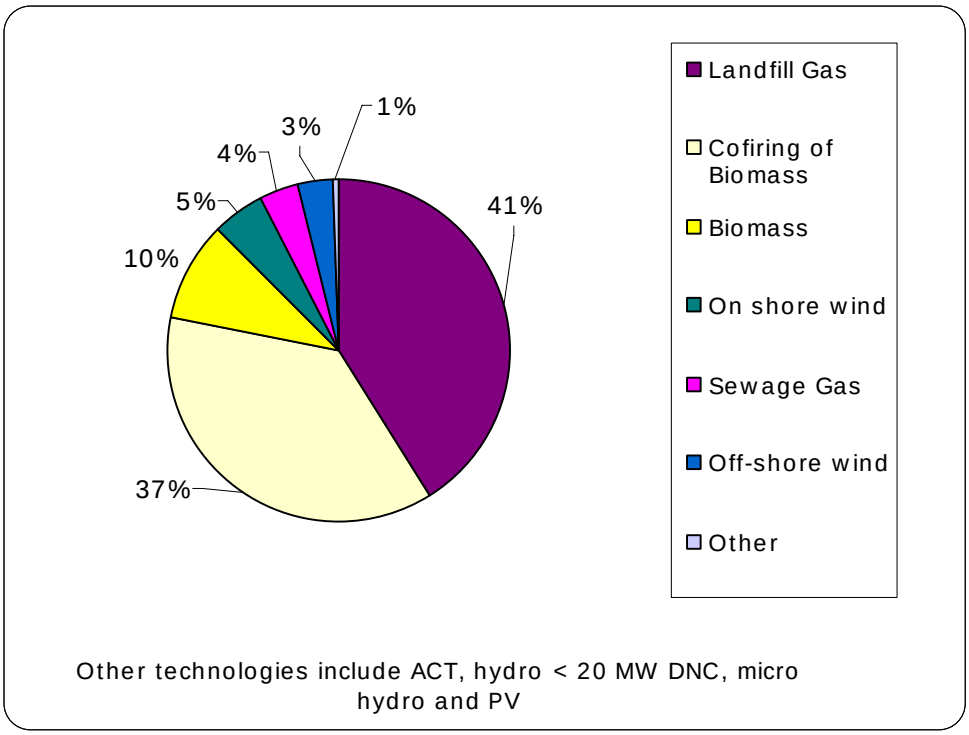
2.6. Figure 13 shows the percentage breakdown of the total ROCs issued by technology type.

Figure 13: Breakdown of ROCs issued by technology type



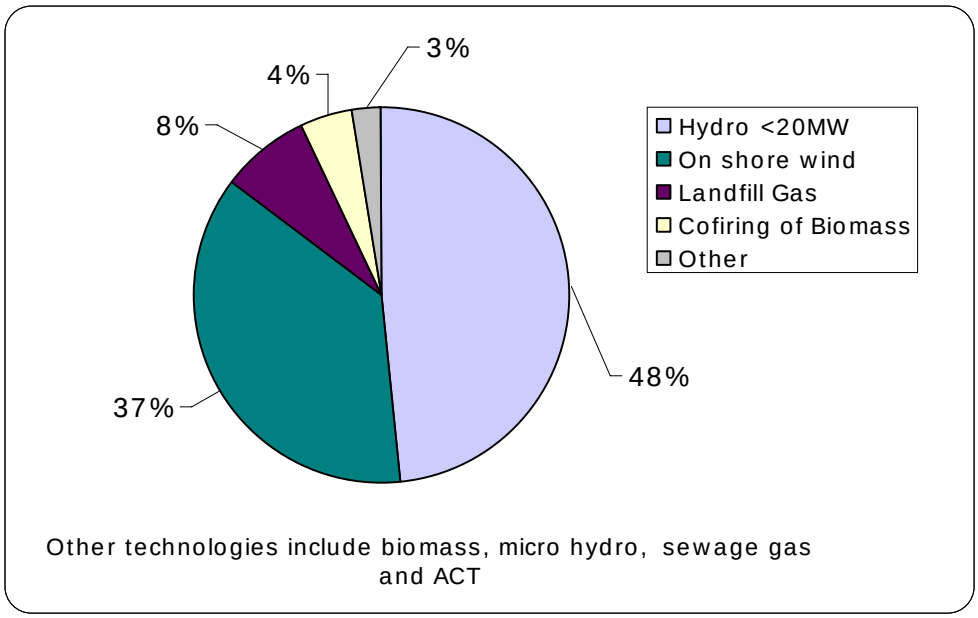
2.7. As can be seen from Figure 13, landfill gas generation attracted just under 30 per cent of the total ROCs issued in 2005-06, which is comparable to the share it received in 2004-05 (33%). Co-firing generating stations received 25 per cent of total ROCs with on-shore wind receiving 19 per cent. Figures 14, 15, 16 and 17 disaggregate this information by country.

Figure 14: Breakdown of ROCs issued by technology type in England



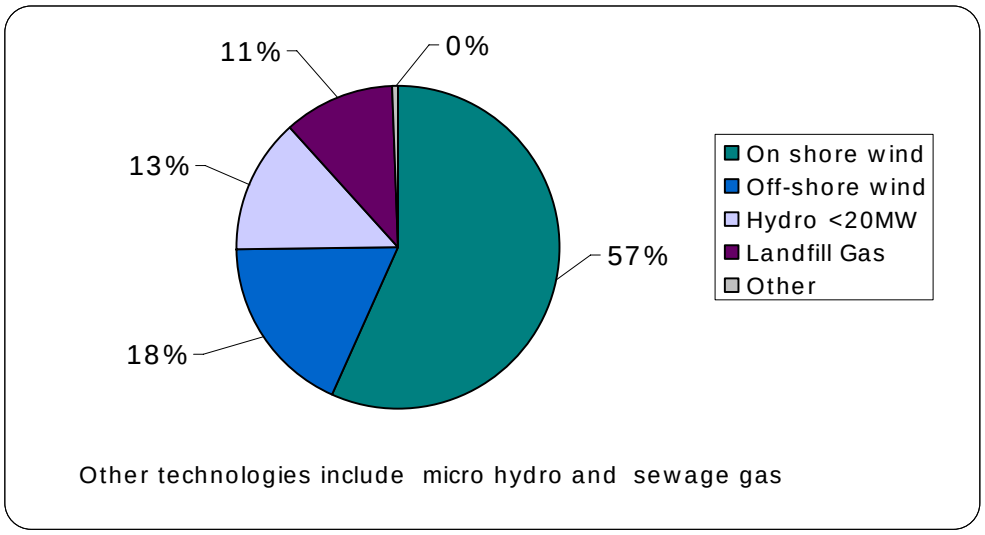
2.8. The majority of ROCs issued in England went to landfill gas and co-firing generating stations. Biomass stations were also issued a significant number of ROCs.

Figure 15: Breakdown of ROCs issued by technology type in Scotland



2.9. The majority of ROCs issued in Scotland went to hydro generating stations with a Declared Net Capacity (DNC) of under 20MW and on-shore wind generating stations.

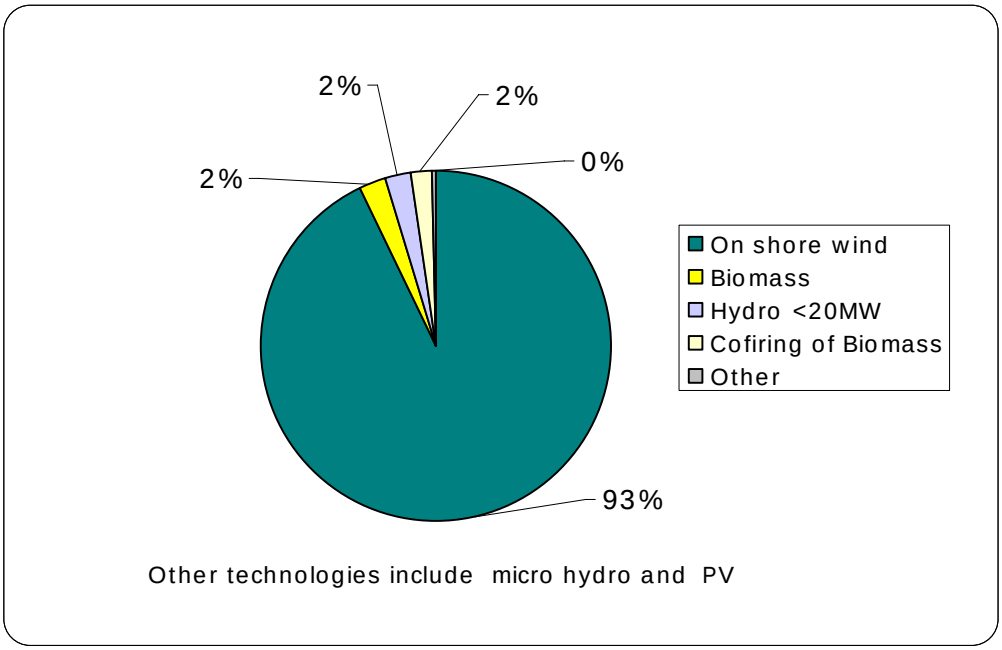
Figure 16: Breakdown of ROCs issued by technology type in Wales



2.10. The majority of ROCs issued in Wales went to on-shore wind generating stations. Off-shore wind, hydro generating stations with a DNC under 20 MW and

landfill gas generating stations received the bulk of the remaining ROCs issued to generating stations in Wales.

Figure 17: Breakdown of ROCs issued by technology type in Northern Ireland



2.11. The vast majority of ROCs issued in Northern Ireland went to on-shore wind generating stations.

ROCs issued per month

2.12. Ordinarily, we issue ROCs to generating stations on a monthly basis. However, small generators (i.e. those with a declared net capacity (DNC) of 50kW and under) can opt to receive ROCs annually. Typically, domestic-scale generators choose this option to minimise the administrative burden they face when claiming ROCs.

2.13. ROCs issued on a monthly basis are done so three months after the month of generation. ROCs issued on an annual basis are issued three months after the end

of the obligation year. This lag reflects the legislative timeframe for the provision of data to us (i.e. the two-month[16] window), and also our data processing time.

2.14. Figure 18 demonstrates the trend in ROC issue each year since 2002-03. Figure 19 compares the ROCs issued per month in the obligation periods:

Figure 18: ROCs issued per month

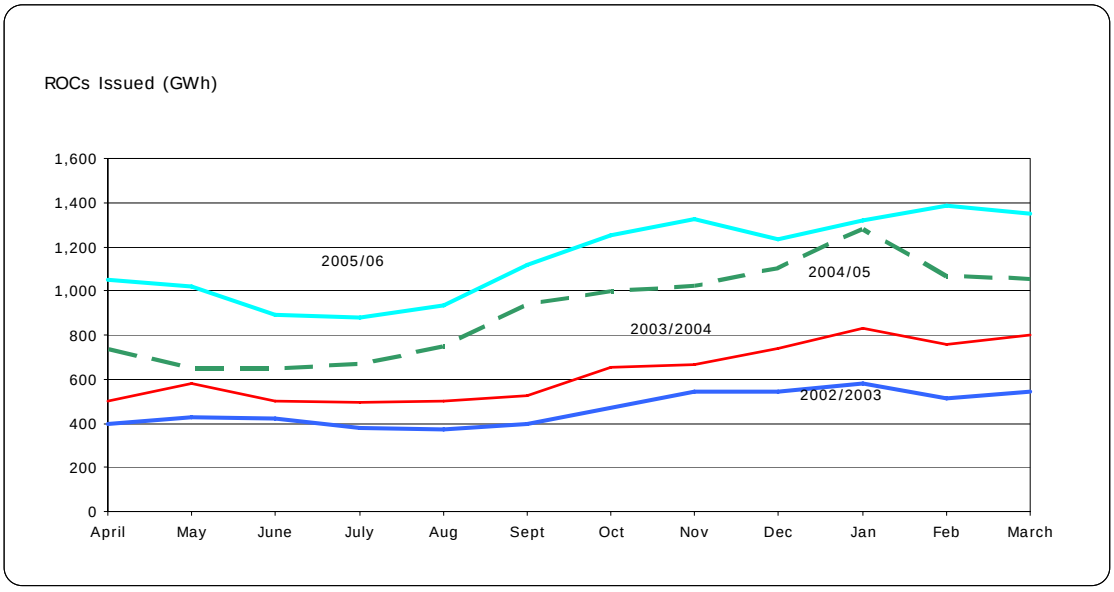
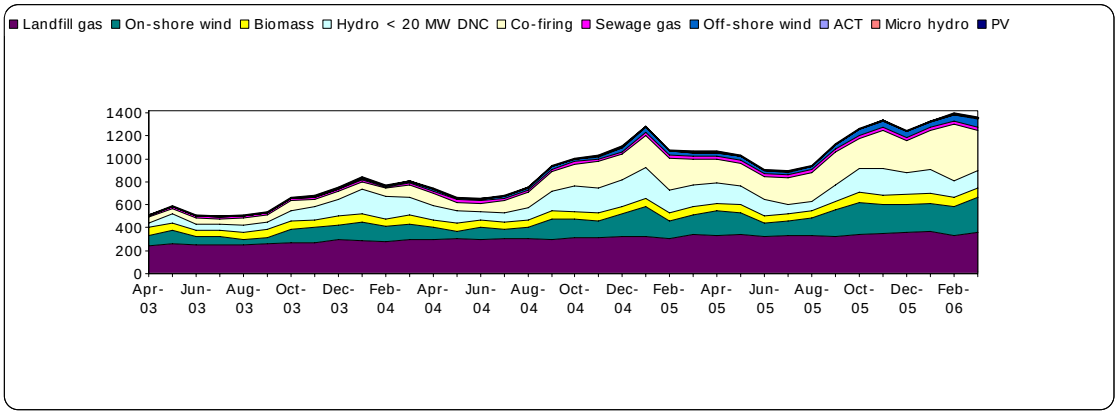


Figure 19: ROCs issued by technology type per month



[16] Generating stations have two months from the month of generation to provide us with their metered monthly output. We then have a further one month in which to issue ROCs.

2.15. Taking into account the bulk issue of ROCs in March (the annual issue), there is a clear trend across the periods of more ROCs being issued in winter months. This could be a result of a number of factors, including favourable weather conditions for some technology types.

ROC revocation and replacement

2.16. We revoked 31,279 ROCs and 8 SROCs in the 2005-06 obligation period. We issued 29,590 replacement ROCs. We did not issue any replacement SROCs. We did not revoke or replace any NIROCs in 2005-06. Further detail on ROC revocation and the replacement ROCs we issued in table B15 of Appendix 3. This information is also published regularly on the "Renewable Statistics" section of our website.

3. Generators accredited for the Renewables Obligation

This chapter, together with Appendix 4, provides information on the number and type of generating stations accredited under the Renewables Obligations.

We are required to publish this information under the Orders.

A detailed list of all stations accredited under the Orders can be found on the Renewable Statistics page of our website www.ofgem.gov.uk

Accreditation of generating stations

3.1. The Orders require us to accredit eligible renewable generating stations for the RO. We have put in place appropriate application forms and guidance to assist us to carry out this function.

Headline figures

3.2. We accredited 188 generating stations during the 2005-06 obligation period. 113 of these were commissioned in that period. There were a total of 975 generating stations accredited for the RO as of 31 March 2006.

3.3. At the end of the 2002-03 obligation period, we had accredited 505 generating stations, with that number increasing to 616 at the end of the 2003-04 obligation period, and to 787 at the end of the 2004-05 obligation period.

3.4. One generating station decommissioned or ceased generating from renewable sources during the 2005-06 obligation period.

Accreditations by country

3.5. England accounts for around 65 per cent of the total number of stations accredited for the RO in the United Kingdom, which equates to nearly 68 per cent of the total eligible generating capacity. This compares with Scotland, which has just over 22 per cent of the total number and just under 24 per cent of the total generating capacity, and Wales, which has around 9 per cent of the number of generators and just under 7 per cent of the total generating capacity.

3.6. Generating stations located in Northern Ireland account for under 5 per cent of the total number of eligible generators accredited for the RO in the United Kingdom, accounting for just under 2 per cent of total generating capacity.

3.7. This is illustrated in figures 20 and 21. Further detail can be found in table C1 and C2 in Appendix 4.

Figure 20: Comparison of the number of generating stations accredited under the RO, ROS and NIRO by location in 2005-06 obligation period

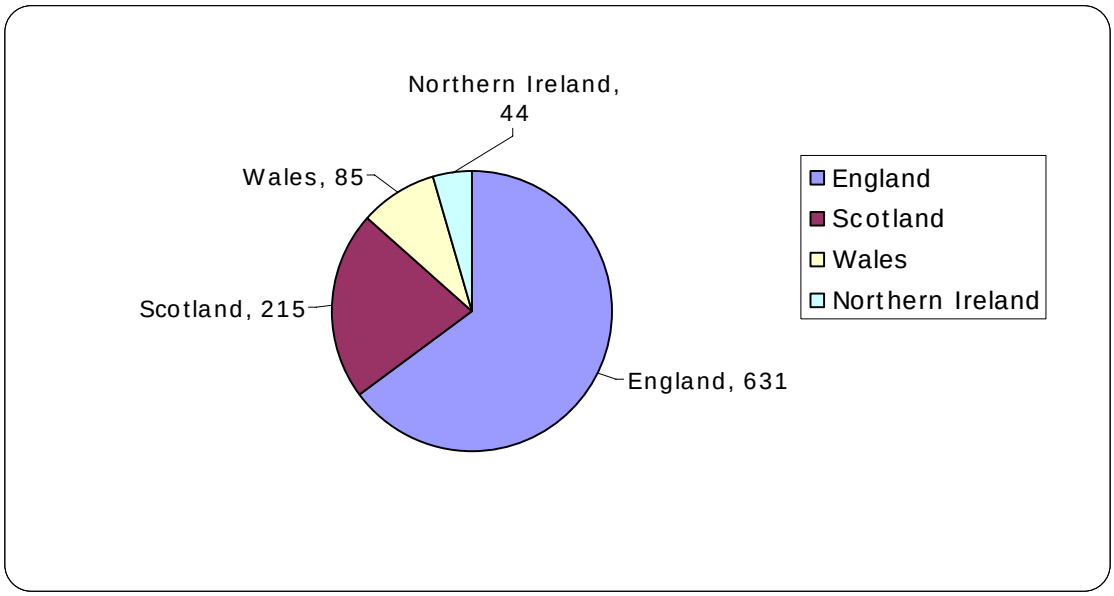
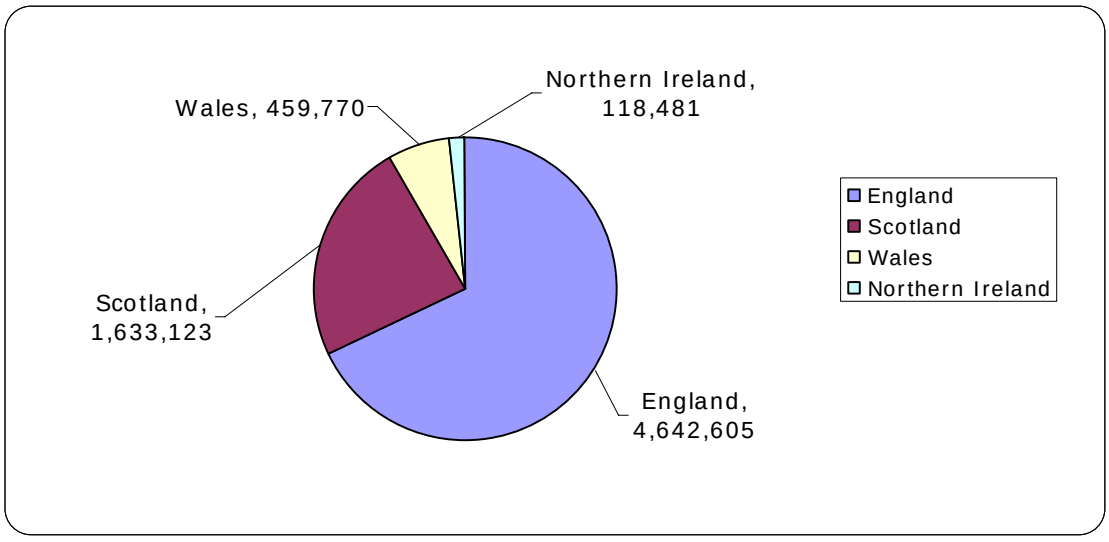


Figure 21: Comparison of capacity (kWh) of generating stations accredited under the RO, ROS and NIRO by location in 2005-06 obligation period



NFFO and SRO generating stations

3.8. Under the 1989 Electricity Act, Orders were introduced in England and Wales, Scotland and Northern Ireland requiring the Regional Electricity Companies to contract for certain amounts of electricity generating capacity from renewable sources. These Orders are known as Non-Fossil Fuel Obligations (NFFO and NI NFFO) and the Scottish Renewables Obligation (SRO)[17].

3.9. Article 6 of the Orders sets out specific eligibility requirements in respect of generating stations situated at locations where a NFFO, SRO or NI NFFO contract (known as "qualifying arrangements" in the legislation) exists.

3.10. 11 generating stations that receive support under NFFO were accredited for the RO in the 2005-06 obligation period. 17 generating stations that receive support under NI NFFO were accredited for the RO. We did not accredit any generating stations that receive support under the SRO in this period.

3.11. NFFO generating stations made up around 15 per cent of the accredited RO capacity in England and Wales. NI NFFO generating stations make up 33 per cent of the accredited RO capacity in Northern Ireland. SRO generating stations made up 13 per cent.

3.12. Further detailed information can be found in Appendix 4.

Types of generating station we accredited

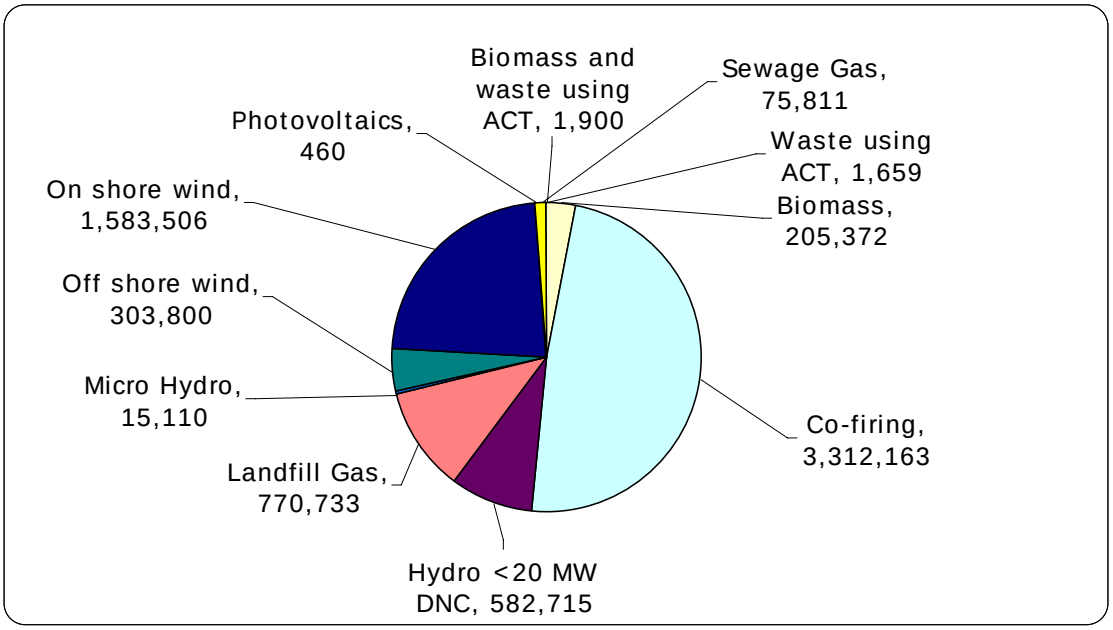
3.13. When the RO was first introduced, the most prevalent technology type (in terms of the number of accredited generating stations) was landfill gas with 202 stations accredited at 1 April 2002. In 2005-06 we accredited 41 landfill gas generating stations.

3.14. The most prevalent technology in the 2005-06 obligation period in terms of the number of stations and capacity was on-shore wind with 63 stations (629,948 kW) being accredited.

3.15. Co-firing and on-shore wind stations made up around 70 per cent of the total renewable capacity installed and accredited under the RO in 2005-06 obligation period. The total installed capacity for each technology is shown in Figure 22. Further detail can be found in Appendix 4.

[17] See the Electricity (Non-Fossil Fuel Sources) (England & Wales) Orders, the Electricity (Non-Fossil Fuel Sources) (Northern Ireland) Orders and the Electricity (Non-Fossil Fuel Sources) (Scotland) Orders.

Figure 22: Total capacity (kW) accredited for the RO, ROS and NIRO by technology



Our audit process

3.16. We expect the operators of generating stations applying for accreditation to give us complete and accurate information. They should tell us about subsequent changes that might affect their accredited status. This helps us to ensure that accreditation remains valid, and to make certain that we issue the correct number of ROCs. A programme of audits gives us assurance of compliance with the requirements of the RO.

3.17. During the 2005-06 obligation period, we carried out 20 audits of accredited generating stations across England and Wales, Scotland and Northern Ireland. Similar issues were identified in all three regions. Most of the findings were satisfactory, but some revealed either irregularities that called into question the number of ROCs that the operator received or a failure to report modifications at the generating station. The following table summarises the audit results.

Table 6: Summary of audit results

Generating technology	No. of stations audited	Types of irregularity detected
Biomass	4	Failure to meter and report 'input electricity'[18] loads. Non-compliant metering. Lack of evidence of fuel sampling. Incorrect fuel data submitted. Failure to report station modifications.
Co-firing	3	Non-compliant metering. Incorrect fuel data submitted. No formal fuel measurement and sampling procedures.
Hydro	3	Failure to report change in station capacity.
Landfill gas	4	Non-compliant metering. Failure to report station modifications. Lack of mechanical interlocking on standby generator.
On-shore wind	4	Non-compliant metering. Failure to meter and report 'input electricity'.
Sewage gas	2	Failure to report station modifications.

3.18. The audit findings did not identify any issue that threatened accreditation. The most common findings were in relation to the accuracy of the information submitted for ROC claims because of issues with metering equipment or the incorrect reporting of data. We notified each operator of the issues identified by the audit and requested that the operator provide assurances that the issues would be rectified. We are also carrying out a follow-up exercise to ensure that the issues have been addressed.

3.19. In relation to metering equipment, there were some cases where the meter was not of an approved type. In these cases operators were required to rectify the situation by installing approved meters. In a number of other cases, station operators were failing to either correctly meter or report data that took account of electricity used as an input to the generation process. We took appropriate remedial action in these instances.

3.20. At one generating station where we found metering irregularities, the operator took a decision to conduct an internal audit of all of its accredited stations. Where the operator found that 'input electricity' was not fully deducted from the gross generation reported it provided assurances that the metering problem would be rectified.

[18] 'Input electricity' means all the electricity used by a generating station for a purpose directly relating to the operating of that generating station.

3.21. In March 2006, we published guidance on fuel measurement and sampling[19] following discussion and consultation with the DTI Biomass Working Group. This guidance makes it clear that generator's fuel measurement and sampling procedures will be subject to audit by Ofgem.

3.22. We have introduced another audit programme specifically aimed at securing assurance of compliance with the fuel measurement and sampling guidance. The fuel measurement and sampling audits are being conducted in the 2006-07 obligation period and the results will be reported in the next annual report.

[19] Renewables Obligation: Fuel measurement and Sampling Guidance Ref 59/06.

4. Implementation issues

This chapter sets out the issues that arose in the 2005-06 obligation period.

It also looks at the issues that have come up in 2006-07 obligation period that are ongoing at the time this report was published.

Our third annual report sets out some of the issues that came up prior to April 2005.

2005-06 obligation period

IT systems review

4.1. The IT systems that we use to administer the RO are at their operational limit. Generators, suppliers and Ofgem staff have experienced a number of problems with the IT systems. These problems have impacted on the ROC issue process, causing delays, and on the supplier compliance process.

4.2. Examples of some of the problems experienced with the ROC Register in relation to supplier compliance are set out below:

- The system did not allow ROCs or SROCs to be presented against the NIRO.
- The system "timed out" when a large number of ROCs were presented.
- The system did not always calculate a supplier's obligation correctly because of a problem with rounding.

4.3. We were forced to implement a contingency plan as a small number of suppliers were unable to submit their compliance reports via the ROC Register.

4.4. The issues were all ultimately resolved. However, the IT problems resulted in extra work for all parties and meant that there was a large amount of system "down-time" in the critical period leading up to the compliance deadline. Suppliers worked with us to resolve these issues and to implement contingency plans. We are grateful to them for their co-operation.

4.5. Going forward, we are building a new IT system to administer all of the renewable schemes, including the RO. We have established an expert industry group to assist with its development. This new system will allow us to increase automation, increase flexibility and maximise synergies. We hope to implement this in April 2008.

RO buy-out fund

4.6. We redistributed the buy-out and late payment funds on 27 October 2006. Shortly after payments had been released our bank noticed an error in its calculation of the interest credited to our RO account (England and Wales). This meant that we had redistributed too much money to suppliers. We are disappointed that this error occurred and have taken action to ensure that errors of this type do not occur in the future. We are grateful to all suppliers for their prompt payment of the overpaid amounts.

Size of late payment fund

4.7. We are required to redistribute the late payment fund(s) before a specified day set out in the Orders. In the 2005-06 obligation period, all payments from the England and Wales late payment fund and many of the payments from the Northern Ireland late payment fund were of small value[20]. Some suppliers commented that their costs of processing these transactions exceeded the value of the payments. They asked us to explore the possibility of carrying forward small amounts to the following obligation year rather than redistributing them. We will discuss this with the DTI, Scottish Executive and DETI as it will require changes to the Orders.

2006-07 obligation period

Fuel measurement and sampling of waste

4.8. We are finding it problematic to administer the RO in relation to waste. Although it is clear that generators burning waste are eligible for the RO, the fuel measurement and sampling requirements set out in the legislation make it very difficult for these sites to get accredited and receive ROCs. The legislation places the same requirements for fuel measurement and sampling on waste generators as it does for biomass generators and this creates difficulties as waste is particularly heterogeneous and therefore very difficult to measure. We have worked with generators since April 2006 to find a workable solution to this but to date have not been successful.

Funding the RO

4.9. Details of Ofgem's costs of administering the RO are set out in our Corporate Plan and Strategy, published in January 2007[21]. There is a continuing upward pressure on these costs because of the increase in scale and complexity of the scheme since we started to administer it. Our costs of administering the RO are currently recovered from network businesses through the licence fee procedure. We

[20] Details of the amounts redistributed can be found in Appendix 2 in Tables A9, A10 and A11.
[21] Ofgem document 6/07b : "Proposed Corporate Plan and Strategy 2007-2012"

do not think this is appropriate and we are discussing alternative funding arrangements with government.

5. Changes in legislation

Renewables Obligation 2006

5.1. The Renewables Obligation Order 2006, the Renewables Obligation (Scotland) Order 2006 and the Renewables Obligation Order (Northern Ireland) 2006 (NIRO) came into force on 1 April 2006. This legislation introduced a number of changes to the RO including:

- the ability for generating stations to be granted preliminary accreditation for the RO once they have obtained planning permission
- expanding eligibility for the scheme to include energy from waste CHP stations
- giving Ofgem greater flexibility to issue ROCs and to correct ROC issue after the two month deadline
- bringing forward the timeframes on which suppliers are required to comply with the RO
- allowing for offsite measurement of biomass fuels
- reducing the purity rule in the definition of biomass from 98 per cent to 90 per cent
- requiring us to publish statistics on the number of ROCs claimed but not issued
- reduced fuel sampling requirements where the generator has a year's worth of consistent evidence of Gross calorific value, and
- a technical change to the definition of input electricity in the case of a generating station fuelled wholly or partly by hydrogen to prevent double counting in respect of ROCs claimed.

5.2. In addition, Section 179 of the Energy Act amended the definition of 'supply'. From 1 April 2006, electricity supplied to customers directly connected to the transmission system will form part of a supplier's obligation.

5.3. Our annual report due to be published in spring 2008 will take account of these changes to the Renewables Obligation.

Renewables Obligation 2007

RO Review - UK wide

5.4. Subject to Parliamentary approval, the legislation will change on 1 April 2007 when the renewables Obligation will be amended and new Orders for Scotland and Northern Ireland will come into force. The following changes will be introduced:

- allow agents to act fully on behalf of small generators, including receiving ROCs
- allow agents to amalgamate output for the purposes of ROC claims where they are representing two or more small generators
- allow ROCs to be issued for electricity consumed by the generator without the need for "sell-and-buy-back" contracts[22]
- make a minor amendment to the definition of energy crops, and
- make a minor amendment to the definition of biomass.

Marine Supply Obligation - Scotland only

5.5. Subject to Parliamentary approval, further changes will be made to the Renewables Obligation (Scotland) Order to introduce a Marine Supply Obligation (MSO). We anticipate that from 1 April 2008[23], a supplier who supplies customers in Scotland will be obliged to meet a proportion of its ROS from ROCs issued to generating stations that generate electricity from wave and tidal devices.

5.6. Information on the extent of compliance with the MSO will be reported in future annual reports.

Renewables Obligation 2008 and beyond

5.7. In October 2006, the DTI issued a preliminary consultation on a number of changes to the Renewables Obligation.

5.8. The proposed changes include:

- Banding the RO so that more support is provided to emerging technologies

[22] Under these contracts, generators sell their electricity to a licensed supply and then purchase it back for their own consumption.
[23] The Marine Supply Obligation is due to come into force on 1 April 2007. However, the level of this obligation is set to zero for the 2007-08 obligation period.

- Extending obligation levels up to 20% on a "guaranteed headroom" basis
- Freezing the buy out price in 2015 by removing the annual increase in line with RPI, and
- Introducing a mechanism to ensure ROC prices taper down smoothly rather than collapse in the event of an over supply of ROCs.

5.9. These proposals will require changes to primary legislation so cannot be introduced until 1 April 2009 at the earliest and will be subject to further consultation.

Appendices

Index

Appendix 1 The Authority's Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority (the Authority), the regulator of the gas and electricity industries in Great Britain. This Appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.[24]

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly[25].

1.4. The Authority's principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of consumers, present and future, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions have regard to:

- The need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- The need to secure that all reasonable demands for electricity are met;
- The need to secure that licence holders are able to finance the activities which are the subject of obligations on them[26]; and
- The interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[27]

[24] entitled "Gas Supply" and "Electricity Supply" respectively.
[25] However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.
[26] under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Act in the case of Electricity Act functions.
[27] The Authority may have regard to other descriptions of consumers.

1.6. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

- Promote efficiency and economy on the part of those licensed[28] under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- Protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity;
- Contribute to the achievement of sustainable development; and
- Secure a diverse and viable long-term energy supply.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- The effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- The principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- Certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation[29] and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

[28] Or persons authorised by exemptions to carry on any activity.
[29] Council Regulation (EC) 1/2003

Appendix 2 Compliance by licensed electricity suppliers

Table A1: 2005-06 supplier compliance with the RO

Licence name	RO (MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)	Shortfall (£)
BizzEnergy Limited	118,627	37,334	0	37,334	£2,628,202.69	£0.00
BP Power Trading Limited	171	0	0	0	£5,528.43	£0.00
British Energy Direct Limited	1,398,613	580,977	0	580,977	£26,434,171.88	£0.00
British Gas Trading Ltd	1,951,888	1,946,164	5,724	1,951,888	£0.00	£0.00
Cinergy Global Trading	295	0	0	0	£9,537.35	£0.00
E.ON UK Plc	1,102,003	1,070,240	31,485	1,101,725	£8,987.74	£0.00
Economy Power	81,158	24,642	0	24,642	£1,827,162.28	£0.00
Electricity Direct (UK) Ltd	8,173	8,173	0	8,173	£0.00	£0.00
Electricity for Business	10	0	0	0	£323.30	£0.00
Electricity Plus Supply Limited	11,708	0	0	0	£378,519.64	£0.00
Eledor Limited	2,839	0	0	0	£0.00	£91,784.87
Gaz de France Marketing Ltd	628,453	166,678	8,286	174,964	£14,661,299.37	£0.00
Good Energy Limited	4,988	4,988	0	4,988	£0.00	£0.00
London Energy Plc	2,317,990	1,616,020	68,289	1,684,309	£20,486,906.73	£0.00
npower Cogen Trading Ltd	61,107	0	0	0	£1,975,589.31	£0.00
Npower Commercial Gas LTD	13,602	0	0	0	£439,752.66	£0.00
npower Direct Ltd	221,007	111,570	0	111,570	£3,538,098.21	£0.00
npower Ltd	2,018,965	1,021,064	0	1,021,064	£32,262,139.33	£0.00
npower Northern Ltd	401,942	202,912	0	202,912	£6,434,639.90	£0.00
npower Yorkshire Ltd	211,808	106,927	0	106,927	£3,390,802.73	£0.00

Licence name	RO (MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)	Shortfall (£)
Opus Energy Ltd	46,328	12,181	0	12,181	£1,103,972.51	£0.00
Powergen Retail Ltd	1,809,539	1,804,016	0	1,804,016	£178,558.59	£0.00
Scottish Power Energy Retail Limited	797,344	782,456	14,888	797,344	£0.00	£0.00
Seeboard Energy Ltd	522,642	340,078	39,661	379,739	£4,620,053.99	£0.00
Slough Energy Supplies Limited	15,348	14,026	0	14,026	£42,740.26	£0.00
Smartestenergy Limited	11,033	697	10,192	10,889	£4,655.52	£0.00
SSE Energy Supply Ltd	2,272,034	2,029,157	66,645	2,095,802	£5,697,580.56	£0.00
The Renewable Energy Company Limited	7,655	7,655	0	7,655	£0.00	£0.00
The Team Group of Companies UK Limited	9,890	0	0	0	£0.00	£319,743.70
Total Gas & Power Limited	114,478	98,946	0	98,946	£502,149.56	£0.00
Tradelink Solutions Limited	83	82	0	82	£32.33	£0.00
Utilita Electricity Limited	804	0	0	0	£25,993.32	£0.00
Utility Link Limited	9,189	0	0	0	£0.00	£297,080.37
Wilton Energy Limited	1,460	0	0	0	£47,201.80	£0.00
Zest4 Electricity Limited	2,732	0	0	0	£0.00	£88,325.56

Table A2: 2005-06 supplier compliance with the ROS

Licence name	ROS (MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)	Shortfall (£)
BizzEnergy Limited	2,944	0	0	0	£95,179.52	£0.00
British Energy Direct Limited	78,027	78,027	0	78,027	£0.00	£0.00
British Gas Trading Ltd	199,397	191,711	7,686	199,397	£0.00	£0.00

Licence name	ROS (MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)	Shortfall (£)
Cinergy Global Trading	46	0	0	0	£1,487.18	£0.00
E.ON UK Plc	36,030	0	0	0	£1,164,849.90	£0.00
Economy Power	8,480	0	0	0	£274,158.40	£0.00
Electricity Direct (UK) Ltd	2,193	2,193	0	2,193	£0.00	£0.00
Electricity Plus Supply Limited	850	0	0	0	£27,480.50	£0.00
Fortum Direct Ltd	3	0	0	0	£96.99	£0.00
Gaz de France Marketing Ltd	17,817	0	0	0	£576,023.61	£0.00
Good Energy Limited	278	278	0	278	£0.00	£0.00
London Energy Plc	57,536	41,804	0	41,804	£508,615.56	£0.00
npower Direct Ltd	13,028	6,577	0	6,577	£208,560.83	£0.00
npower Ltd	63,492	32,052	0	32,052	£1,016,455.20	£0.00
npower Northern Ltd	1,022	517	0	517	£16,326.65	£0.00
Opus Energy Ltd	2,346	2,346	0	2,346	£0.00	£0.00
Powergen Retail Ltd	44,377	0	0	0	£1,434,708.41	£0.00
Scottish Power Energy Retail Limited	655,204	636,671	0	636,671	£599,171.89	£0.00
Seeboard Energy Ltd	2,429	1,765	0	1,765	£21,467.12	£0.00
Smartestenergy Limited	49	18	0	18	£1,002.23	£0.00
SSE Energy Supply Ltd	455,525	420,192	0	420,192	£1,142,315.89	£0.00
The Renewable Energy Company Limited	97	97	0	97	£0.00	£0.00
Total Gas & Power Limited	5,949	2,436	0	2,436	£113,575.29	£0.00
Tradelink Solutions Limited	1,499	1,499	0	1,499	£0.00	£0.00
Utility Link Limited	61	0	0	0	£0.00	£1,972.13

Table A3: 2005-06 supplier compliance with the NIRO

Licence name	NIRO (MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)	Shortfall (£)
Airtricity Energy Supply LTD	5,985	0	5,985	5,985	£0.00	£0.00
Bord Gais Eireann	1,409	0	0	0	£45,552.97	£0.00
ESB Independent Energy	42,530	20,828	14,442	35,270	£234,715.80	£0.00
Northern Ireland Electricity plc	118,073	0	0	0	£3,817,300.09	£0.00
Npower LTD	79	39	0	39	£1,293.20	£0.00
Tradelink Solutions Limited	1	1	0	1	£0.00	£0.00
Viridian Energy Supply Ltd (Energia)	40,242	0	0	0	£1,301,023.86	£0.00

Table A4: ROCs presented in England and Wales

Licensed electricity supplier	RO (MWh)	Eligible Co-fired ROCs presented	Eligible 2004-05 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% RO met by co-fired ROCs	% RO met by 2004-05 ROCs	% RO met by other ROCs
BizzEnergy Limited	118,627	20,000	0	17,334	16.86%	0.00%	14.61%
BP Power Trading Limited	171	0	0	0	0.00%	0.00%	0.00%
British Energy Direct Limited	1,398,613	349,640	0	231,337	25.00%	0.00%	16.54%
British Gas Trading Ltd	1,951,888	487,337	9,183	1,455,368	24.97%	0.47%	74.56%
Cinergy Global Trading	295	0	0	0	0.00%	0.00%	0.00%
E.ON UK Plc	1,102,003	89,464	658	1,011,603	8.12%	0.06%	91.80%

Licensed electricity supplier	RO (MWh)	Eligible Co-fired ROCs presented	Eligible 2004-05 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% RO met by co-fired ROCs	% RO met by 2004-05 ROCs	% RO met by other ROCs
Economy Power	81,158	3,818	0	20,824	4.70%	0.00%	25.66%
Electricity Direct (UK) Ltd	8,173	0	7	8,166	0.00%	0.09%	99.91%
Electricity for Business	10	0	0	0	0.00%	0.00%	0.00%
Electricity Plus Supply Limited	11,708	0	0	0	0.00%	0.00%	0.00%
Gaz de France Marketing Ltd	628,453	72,301	0	102,663	11.50%	0.00%	16.34%
Good Energy Limited	4,988	0	228	4,760	0.00%	4.57%	95.43%
London Energy Plc	2,317,990	488,725	11,041	1,184,543	21.08%	0.48%	51.10%
npower Cogen Trading Ltd	61,107	0	0	0	0.00%	0.00%	0.00%
Npower Commercial Gas LTD	13,602	0	0	0	0.00%	0.00%	0.00%
npower Direct Ltd	221,007	51,542	0	60,028	23.32%	0.00%	27.16%
npower Ltd	2,018,965	470,852	16,371	533,841	23.32%	0.81%	26.44%
npower Northern Ltd	401,942	93,739	0	109,173	23.32%	0.00%	27.16%
npower Yorkshire Ltd	211,808	49,397	0	57,530	23.32%	0.00%	27.16%
Opus Energy Ltd	46,328	0	0	12,181	0.00%	0.00%	26.29%
Powergen Retail Ltd	1,809,539	304,263	43,193	1,456,560	16.81%	2.39%	80.49%
Scottish Power Energy Retail Limited	797,344	152,797	1,925	642,622	19.16%	0.24%	80.60%
Seeboard Energy Ltd	522,642	82,589	0	297,150	15.80%	0.00%	56.86%
Slough Energy Supplies Limited	15,348	1,131	0	12,895	7.37%	0.00%	84.02%
Smartestenergy Limited	11,033	0	77	10,812	0.00%	0.70%	98.00%
SSE Energy Supply Ltd	2,272,034	471,284	7,974	1,616,544	20.74%	0.35%	71.15%
The Renewable Energy Company Limited	7,655	0	2	7,653	0.00%	0.03%	99.97%

Licensed electricity supplier	RO (MWh)	Eligible Co-fired ROCs presented	Eligible 2004-05 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% RO met by co-fired ROCs	% RO met by 2004-05 ROCs	% RO met by other ROCs
Total Gas & Power Limited	114,478	5,000	7,311	86,635	4.37%	6.39%	75.68%
Tradelink Solutions Limited	83	20	4	58	24.10%	4.82%	69.88%
Utilita Electricity Limited	804	0	0	0	0.00%	0.00%	0.00%
Wilton Energy Limited	1,460	0	0	0	0.00%	0.00%	0.00%

Table A5: ROCs presented in Scotland

Licensed electricity supplier	ROS (MWh)	Eligible Co-fired ROCs presented	Eligible 2004-05 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% ROS met by co-fired ROCs	% ROS met by 2004-05 ROCs	% ROS met by other ROCs
BizzEnergy Limited	2,944	0	0	0	0.00%	0.00%	0.00%
British Energy Direct Limited	78,027	19,506	0	58,521	25.00%	0.00%	75.00%
British Gas Trading Ltd	199,397	49,381	0	150,016	24.77%	0.00%	75.23%
Cinergy Global Trading	46	0	0	0	0.00%	0.00%	0.00%
E.ON UK Plc	36,030	0	0	0	0.00%	0.00%	0.00%
Economy Power	8,480	0	0	0	0.00%	0.00%	0.00%
Electricity Direct (UK) Ltd	2,193	0	0	2,193	0.00%	0.00%	100.00%
Electricity Plus Supply Limited	850	0	0	0	0.00%	0.00%	0.00%

Licensed electricity supplier	ROS (MWh)	Eligible Co-fired ROCs presented	Eligible 2004-05 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% ROS met by co-fired ROCs	% ROS met by 2004-05 ROCs	% ROS met by other ROCs
Fortum Direct Ltd	3	0	0	0	0.00%	0.00%	0.00%
Gaz de France Marketing Ltd	17,817	0	0	0	0.00%	0.00%	0.00%
Good Energy Limited	278	0	0	278	0.00%	0.00%	100.00%
London Energy Plc	57,536	0	0	41,804	0.00%	0.00%	72.66%
npower Direct Ltd	13,028	3,038	0	3,539	23.32%	0.00%	27.16%
npower Ltd	63,492	14,807	0	17,245	23.32%	0.00%	27.16%
npower Northern Ltd	1,022	239	0	278	23.39%	0.00%	27.20%
Opus Energy Ltd	2,346	0	0	2,346	0.00%	0.00%	100.00%
Powergen Retail Ltd	44,377	0	0	0	0.00%	0.00%	0.00%
Scottish Power Energy Retail Limited	655,204	157,883	6,565	472,223	24.10%	1.00%	72.07%
Seeboard Energy Ltd	2,429	0	0	1,765	0.00%	0.00%	72.66%
Smartestenergy Limited	49	0	12	6	0.00%	24.49%	12.24%
SSE Energy Supply Ltd	455,525	0	2,412	417,780	0.00%	0.53%	91.71%
The Renewable Energy Company Limited	97	0	0	97	0.00%	0.00%	100.00%
Total Gas & Power Limited	5,949	1,487	311	638	25.00%	5.23%	10.72%
Tradelink Solutions Limited	1,499	374	0	1,125	24.95%	0.00%	75.05%

Table A6: ROCs presented in Northern Ireland

Licensed electricity supplier	NIRO (MWh)	Eligible Co-fired ROCs presented	Eligible 2004-05 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% NIRO met by co-fired ROCs	% NIRO met by 2004-05 ROCs	% NIRO met by other ROCs
Airtricity Energy Supply LTD	5,985	0	0	5,985	0.00%	0.00%	100.00%
Bord Gais Eireann	1,409	0	0	0	0.00%	0.00%	0.00%
ESB Independent Energy	42,530	9905	0	25,365	23.29%	0.00%	59.64%
Northern Ireland Electricity plc	118,073	0	0	0	0.00%	0.00%	0.00%
Npower LTD	79	18	0	21	22.78%	0.00%	26.58%
Tradelink Solutions Limited	1	0	0	1	0.00%	0.00%	100.00%
Viridian Energy Supply Ltd (Energia)	40,242	0	0	0	0.00%	0.00%	0.00%

Table A7: Total number of GB ROCs and NIROCs presented under each obligation

Obligation	GB ROCs	NIROCs	Total
Renewables Obligation	11,986,983	245,170	12,232,153
Renewables Obligation (Scotland)	1,418,183	7,686	1,425,869
Northern Ireland Renewables Obligation	20,868	20,427	41,295

Table A8: Late payments and interest

Licensed electricity supplier	Obligation	Outstanding payment	Number of days until payment was received (inc 1st Oct and date of payment)	Interest due	Total late payment due	Total paid per obligation
Tradelink Solutions Limited	RO	£32.33	3	£0.03	£32.36	£32.36
Total Gas & Power Limited	ROS	£113,575.29	6	£182.03	£113,757.32	
Smartestenergy Limited		£1,002.23	27	£7.23	£1,009.46	£114,766.78
Bord Gais Eireann	NIRO	£45,552.97	5	£60.84	£45,613.81	
Northern Ireland Electricity plc		£0.09	1	£0.00	£0.09	£45,613.90

Table A9: Distribution of England and Wales buyout and late payment funds to suppliers[30]

Licensed electricity supplier	Amount of buy-out fund redistributed (1st recycle)	Amount of late payment redistributed (1st recycle)	Amount of late payment redistributed (2nd recycle)	Total amount of funds redistributed
Airtricity Energy Supply LTD	£55,557	£0	£0	£55,557
BizzEnergy Limited	£346,563	£0	£0	£346,563
British Energy Direct Limited	£6,117,397	£1	£0	£6,117,398
British Gas Trading Limited	£19,969,931	£6	£0	£19,969,937
E.ON UK Plc	£10,227,083	£3	£0	£10,227,086
Economy Power Limited	£228,746	£0	£0	£228,746
Electricity Direct (UK) Ltd	£96,225	£0	£0	£96,225
ESB Independent Energy	£327,404	£0	£0	£327,404
Gaz de France Marketing Ltd	£1,624,154	£0	£0	£1,624,154
Good Energy Limited	£48,883	£0	£0	£48,883
London Energy Plc	£16,023,147	£4	£0	£16,023,151
Npower Direct Ltd	£1,096,734	£0	£0	£1,096,734
Npower Ltd	£9,775,856	£3	£0	£9,775,859
Npower Ltd	£362	£0	£0	£362
Npower Northern Ltd	£1,888,389	£0	£0	£1,888,389
Npower Yorkshire Ltd	£992,581	£0	£0	£992,581
Opus Energy Ltd	£134,851	£0	£0	£134,851
Powergen Retail Ltd	£16,746,305	£5	£0	£16,746,310
Scottish Power Energy Retail Limited	£13,311,662	£4	£0	£13,311,666
SEEBOARD Energy Limited	£3,541,422	£1	£0	£3,541,423

[30] The buy-out and late payment funds were redistributed on 27 October 2006 (1st recycle). We redistributed payments made into the late payment fund after 27 October at a later date (2nd recycle).

Licensed electricity supplier	Amount of buy-out fund redistributed (1st recycle)	Amount of late payment redistributed (1st recycle)	Amount of late payment redistributed (2nd recycle)	Total amount of funds redistributed
Slough Energy Supplies Limited	£130,200	£0	£0	£130,200
Smartestenergy Limited	£101,247	£0	£0	£101,247
SSE Energy Supply Ltd	£23,355,448	£7	£0	£23,355,455
The Renewable Energy Company Limited	£71,960	£0	£0	£71,960
Total Gas & Power Limited	£941,108	£0	£0	£941,108
Tradelink Solutions Limited	£14,676	£0	£0	£14,676
Tradelink Solutions Limited	£9	£0	£0	£9

Table A10: Distribution of Scotland buyout and late payment funds paid to suppliers

Licensed electricity supplier	Amount of buy-out fund redistributed (1st recycle)	Amount of late payment redistributed (1st recycle)	Amount of late payment redistributed (2nd recycle)	Total amount of funds redistributed
Airtricity Energy Supply LTD	£3,107	£49	£0	£3,156
BizzEnergy Limited	£19,383	£310	£2	£19,695
British Energy Direct Limited	£342,152	£5,487	£49	£347,688
British Gas Trading Limited	£1,116,938	£17,912	£161	£1,135,011
E.ON UK Plc	£572,011	£9,173	£82	£581,266
Economy Power Limited	£12,794	£205	£1	£13,000
Electricity Direct (UK) Ltd	£5,381	£86	£0	£5,467
ESB Independent Energy	£18,312	£293	£2	£18,607
Gaz de France Marketing Ltd	£90,840	£1,456	£13	£92,309
Good Energy Limited	£2,734	£43	£0	£2,777
London Energy Plc	£896,190	£14,372	£129	£910,691
Npower Direct Ltd	£61,341	£983	£8	£62,332
Npower Ltd	£546,773	£8,768	£79	£555,620

Licensed electricity supplier	Amount of buy-out fund redistributed (1st recycle)	Amount of late payment redistributed (1st recycle)	Amount of late payment redistributed (2nd recycle)	Total amount of funds redistributed
Npower Ltd (NI)	£20	£0	£0	£20
Npower Northern Ltd	£105,619	£1,693	£15	£107,327
Npower Yorkshire Ltd	£55,516	£890	£8	£56,414
Opus Energy Ltd	£7,542	£120	£1	£7,663
Powergen Retail Ltd	£936,637	£15,021	£135	£951,793
Scottish Power Energy Retail Limited	£744,534	£11,940	£107	£756,581
SEEBOARD Energy Limited	£198,075	£3,176	£28	£201,279
Slough Energy Supplies Limited	£7,282	£116	£1	£7,399
Smartestenergy Limited	£5,662	£90	£0	£5,752
SSE Energy Supply Ltd	£1,306,293	£20,949	£189	£1,327,431
The Renewable Energy Company Limited	£4,024	£64	£0	£4,088
Total Gas & Power Limited	£52,637	£844	£7	£53,488
Tradelink Solutions Limited	£820	£13	£0	£833
Tradelink Solutions Limited (NI)	£0	£0	£0	£0

Table A11: Distribution of Northern Ireland buyout and late payment funds paid to suppliers

Licensed electricity supplier	Amount of buy-out fund redistributed (1st recycle)	Amount of late payment redistributed (1st recycle)	Amount of late payment redistributed (2nd recycle)	Total amount of funds redistributed
Airtricity Energy Supply LTD	£2,347	£19	£0	£2,366
BizzEnergy Limited	£14,645	£124	£0	£14,769
British Energy Direct Limited	£258,510	£2,195	£3	£260,708
British Gas Trading Limited	£843,893	£7,167	£11	£851,071
E.ON UK Plc	£432,178	£3,670	£6	£435,854
Economy Power Limited	£9,666	£82	£0	£9,748

Licensed electricity supplier	Amount of buy-out fund redistributed (1st recycle)	Amount of late payment redistributed (1st recycle)	Amount of late payment redistributed (2nd recycle)	Total amount of funds redistributed
Electricity Direct (UK) Ltd	£4,066	£34	£0	£4,100
ESB Independent Energy	£13,835	£117	£0	£13,952
Gaz de France Marketing Ltd	£68,633	£582	£0	£69,215
Good Energy Limited	£2,065	£17	£0	£2,082
London Energy Plc	£677,109	£5,751	£9	£682,869
Npower Direct Ltd	£46,346	£393	£0	£46,739
Npower Ltd	£413,110	£3,508	£5	£416,623
Npower Ltd (NI)	£15	£0	£0	£15
Npower Northern Ltd	£79,799	£677	£1	£80,477
Npower Yorkshire Ltd	£41,944	£356	£0	£42,300
Opus Energy Ltd	£5,698	£48	£0	£5,746
Powergen Retail Ltd	£707,669	£6,010	£9	£713,688
Scottish Power Energy Retail Limited	£562,527	£4,778	£7	£567,312
SEEBOARD Energy Limited	£149,654	£1,271	£2	£150,927
Slough Energy Supplies Limited	£5,502	£46	£0	£5,548
Smartestenergy Limited	£4,278	£36	£0	£4,314
SSE Energy Supply Ltd	£986,959	£8,383	£13	£995,355
The Renewable Energy Company Limited	£3,040	£25	£0	£3,065
Total Gas & Power Limited	£39,769	£337	£0	£40,106
Tradelink Solutions Limited	£620	£5	£0	£625
Tradelink Solutions Limited (NI)	£0	£0	£0	£0

Table A12: Suppliers with no obligation

RO	ROS	NIRO
AEP Energy Services Limited	AEP Energy Services Limited	Nigen Now AES Kilroot
AES Energy Limited	AES Energy Limited	Premier Power
Allied Domecq (Holdings) Plc	Allied Domecq (Holdings) Plc	Powergen
Atlantic Electric and Gas Limited	Atlantic Electric and Gas Limited	SSE Energy Supply LTD
Accord Energy Ltd	BP Power Trading Limited	Scottish Power Energy Retail Ltd
Corona Energy Retail 4 Limited	Accord Energy Ltd	
SWEB Energy Ltd	Corona Energy Retail 4 Limited	
EDF Trading Limited	SWEB Energy Ltd	
EdF Energy Powerlink Limited	EDF Trading Limited	
Energy Co2 Limited	EdF Energy Powerlink Limited	
Energy Data Company	Electricity for Business	
Enron Direct Limited	Eledor Limited	
Enron Gas & petrochemicals Ltd	Energy Co2 Limited	
Essential Power Limited	Energy Data Company	
Fellside Heat & Power Ltd	Enron Direct Limited	
First Utility Limited	Enron Gas & petrochemicals Ltd	
Fortum Direct Ltd	Essential Power Limited	
Ineos Chlor Energy Limited	Fellside Heat & Power Ltd	
International Power Plc	First Utility Limited	
Magnox Electric Plc	Ineos Chlor Energy Limited	
Morgan Stanley Capital Group Inc	International Power Plc	
Norweb Energi Limited	Magnox Electric Plc	
Cherwell Energy Limited	Morgan Stanley Capital Group Inc	

RO	ROS
Star Energy Oil and Gas Limited	Norweb Energi Limited
TXU Europe (AHG) Ltd	Cherwell Energy Limited
Western Gas Ltd	Star Energy Oil and Gas Limited
TXU Europe (AH Online) Ltd	TXU Europe (AHG) Ltd
Midlands Gas Ltd	Western Gas Ltd
TXU Europe (AHST) Ltd	TXU Europe (AH Online) Ltd
Powergen Retail Gas (Eastern) Ltd	Midlands Gas Ltd
Citigen London Ltd	TXU Europe (AHST) Ltd
Enizade Ltd	Powergen Retail Gas (Eastern) Ltd
TXU Europe (AHGD) Ltd	Citigen London Ltd
PowerRelate	Enizade Ltd
Primary Connections Limited	TXU Europe (AHGD) Ltd
R S Energy Limited	PowerRelate
Gas Plus Supply Limited	Primary Connections Limited
npower Yorkshire Supply Ltd	R S Energy Limited
npower Northern Supply Ltd	Gas Plus Supply Limited
SSE Energy Ltd	npower Yorkshire Ltd
South Wales Electricity Ltd	npower Yorkshire Supply Ltd
Shell Gas Direct Ltd	npower Northern Supply Ltd
Telecom Plus PLC	Npower Commercial Gas LTD
TXU UK Ltd (in adminstration)	npower Cogen Trading Ltd
Commercial Electricity Supplies Limited	SSE Energy Ltd
UK Electric Power Limited	South Wales Electricity Ltd
730 Energy Limited	Wilton Energy Limited
Affinity Power Limited	Shell Gas Direct Ltd
Pan-Utility Ltd	Slough Energy Supplies Limited

RO	ROS
SME Energy Limited	Telecom Plus PLC
Utilitease Limited	The Team Group of Companies UK Limited
	TXU UK Ltd (in adminstration)
	Commercial Electricity Supplies Limited
	UK Electric Power Limited
	Utilita Electricity Limited
	730 Energy Limited
	Affinity Power Limited
	Pan-Utility Ltd
	SME Energy Limited
	Utilitease Limited
	Zest4 Electricity Limited

Table A13: A list of supplier groups and their supply licences

Group	Supply licences
British Gas	British Gas Trading Ltd
	Electricity Direct Ltd
	Accord Energy Ltd
EdF	London Energy Plc
	Seeboard Energy Ltd
	SWEB Energy Ltd
Opus Energy	Cherwell Energy Ltd
	Opus Energy Ltd
E.ON UK	Citigen London Ltd
	Economy Power Ltd

Group	Supply licences
E.ON UK	E.ON UK Plc
	Enizade Ltd
	Midlands Gas Ltd
	Powergen Retail Ltd
	Powergen Retail Gas (Eastern) Ltd
	TXU Europe (AHG) Ltd
	TXU Europe (AHGD) Ltd
	TXU Europe (AH Online) Ltd
	TXU Europe (AHST) Ltd
	Western Gas Ltd
RWE Npower	npower Ltd
	Npower Direct Ltd
	Npower Cogen Trading Ltd
	Npower Commercial Gas Ltd
	Npower Northern Ltd
	Npower Northern Supply Ltd
	Npower Yorkshire Ltd
	Npower Yorkshire Supply Ltd
	Electricity Plus Supply Ltd
	Gas Plus Supply Ltd
Scottish & Southern Energy (SSE)	SSE Energy Supply Ltd
	SSE Energy Ltd
	South Wales Electricity Ltd
UK Electric Power (now Cinergy)	Commercial Electricity Supplies Ltd

Group	Supply licences
	UK Electric Power Ltd
Utilitis Consulting	730 Energy Limited
	Affinity Power Limited
	Pan-Utility Ltd
	SME Energy Limited
	Utilitease Limited

Appendix 3 - Renewable Obligation certificates issued - detailed information

Table B1: 2005-06 ROCs issued by generation technology type

Technology type	ROCs	SROCs	NIROCs	Total	Proportion of total
ACT	9,138	31	0	9,169	0.07%
Biomass	842,699	48,855	6,783	898,337	6.53%
Co-firing	3,225,056	210,680	5,905	3,441,641	25.00%
Hydro < 20 MW DNC	176,585	1,750,834	6,368	1,933,787	14.05%
Landfill gas	3,748,931	279,711	0	4,028,642	29.26%
Micro hydro	7,658	43,410	492	51,560	0.37%
Off-shore wind	487,083	0	0	487,083	3.54%
On-shore wind	1,126,249	1,215,129	253,889	2,595,267	18.85%
PV	51	0	2	53	0.00%
Sewage gas	317,378	4,458	0	321,836	2.34%
Total	**9,940,828**	**3,553,108**	**273,439**	**13,767,375**	**100%**

Table B2: 2005-06 ROCs issued by month of generation

Month	ROCs	SROCS	NIROCs	Total
Apr-05	732,366	295,508	23,663	1,051,537
May-05	736,703	263,091	20,420	1,020,214
Jun-05	663,661	215,527	14,143	893,331
Jul-05	695,481	173,878	11,890	881,249
Aug-05	718,159	196,715	17,152	932,026
Sep-05	789,878	301,537	26,587	1,118,002
Oct-05	852,927	369,881	29,983	1,252,791
Nov-05	913,302	387,657	26,462	1,327,421
Dec-05	861,997	350,891	22,964	1,235,852
Jan-06	929,322	362,023	28,267	1,319,612
Feb-06	1,037,318	319,800	26,372	1,383,490
Mar-06	1,009,714	316,600	25,536	1,351,850
Total	**9,940,828**	**3,553,108**	**273,439**	**13,767,375**

Table B3: 2005-06 ROCs issued by generation technology type and month (in England and Wales, Scotland and Northern Ireland)

Month	ACT	Biomass	Co-firing	Hydro < 20 MW DNC	Landfill gas	Micro hydro	Off-shore wind	On-shore wind	PV	Sewage gas	Total
Apr-05	721	67,012	212,054	174,896	325,650	4,680	26,697	213,167	0	26,660	1,051,537
May-05	745	74,291	198,717	160,172	331,511	4,070	32,393	190,336	0	27,979	1,020,214
Jun-05	740	61,836	204,765	142,009	317,120	4,203	19,339	116,829	0	26,490	893,331
Jul-05	738	62,909	232,960	83,786	328,472	2,353	20,192	122,910	0	26,929	881,249
Aug-05	654	61,830	250,799	88,126	327,132	2,485	26,082	148,976	0	25,942	932,026
Sep-05	799	70,162	291,969	140,263	316,974	3,524	33,942	234,921	0	25,448	1,118,002
Oct-05	703	86,436	263,490	207,317	339,991	4,742	49,729	273,289	0	27,094	1,252,791
Nov-05	617	76,721	329,770	237,077	341,820	5,283	53,882	256,526	0	25,725	1,327,421
Dec-05	780	88,602	274,949	192,603	357,267	4,978	49,160	239,003	0	28,510	1,235,852
Jan-06	680	86,790	339,209	207,213	359,892	5,405	48,833	245,279	1	26,310	1,319,612
Feb-06	983	77,431	492,124	148,889	324,730	3,846	55,140	253,956	2	26,389	1,383,490
Mar-06	1,009	84,317	350,835	151,436	358,083	5,991	71,694	300,075	50	28,360	1,351,850
Total	9,169	898,337	3,441,641	1,933,787	4,028,642	51,560	487,083	2,595,267	53	321,836	13,767,375

Table B4: 2005-06 ROCs issued by generation technology type and month (in England and Wales)

Month	ACT	Biomass	Co-firing	Hydro < 20 MW DNC	Landfill gas	Micro hydro	Off-shore wind	On-shore wind	PV	Sewage gas	Total
Apr-05	721	63,669	203,041	14,228	303,213	570	26,697	93,905	0	26,322	732,366
May-05	745	69,056	189,664	10,467	309,373	557	32,393	96,880	0	27,568	736,703
Jun-05	740	56,653	197,598	9,480	295,760	497	19,339	57,491	0	26,103	663,661
Jul-05	738	56,912	224,177	7,829	305,813	578	20,192	52,511	0	26,731	695,481
Aug-05	654	56,722	239,860	7,515	304,172	470	26,082	56,742	0	25,942	718,159
Sep-05	799	64,988	275,670	8,346	295,025	445	33,942	85,864	0	24,799	789,878
Oct-05	703	82,194	253,629	14,480	316,072	189	49,729	109,091	0	26,840	852,927
Nov-05	617	71,712	303,344	29,235	317,626	686	53,882	111,060	0	25,140	913,302
Dec-05	780	84,035	245,179	18,991	331,564	721	49,160	103,416	0	28,151	861,997
Jan-06	680	82,494	315,093	19,750	334,789	685	48,833	101,131	1	25,866	929,322
Feb-06	983	72,380	455,149	13,982	302,050	634	55,140	111,076	2	25,922	1,037,318
Mar-06	978	81,884	322,652	22,282	333,474	1,626	71,694	147,082	48	27,994	1,009,714
Total	9,138	842,699	3,225,056	176,585	3,748,931	7,658	487,083	1,126,249	51	317,378	9,940,828

Table B5: 2005-06 SROCs issued by generation technology type and month (in Scotland)

Month	ACT	Biomass	Co-firing	Hydro < 20 MW DNC	Landfill gas	Micro hydro	Off-shore wind	On-shore wind	PV	Sewage gas	Total
Apr-05	0	3,343	9,013	160,320	22,437	4,064	0	95,993	0	338	295,508
May-05	0	5,235	9,053	149,334	22,138	3,497	0	73,423	0	411	263,091
Jun-05	0	5,031	7,167	132,230	21,360	3,694	0	45,658	0	387	215,527
Jul-05	0	5,800	8,783	75,718	22,659	1,775	0	58,943	0	198	173,878
Aug-05	0	4,211	9,962	80,395	22,960	2,014	0	77,173	0	0	196,715
Sep-05	0	4,352	15,676	131,690	21,949	3,075	0	124,146	0	649	301,537
Oct-05	0	3,335	9,137	192,511	23,919	4,534	0	136,191	0	254	369,881
Nov-05	0	4,409	26,426	207,204	24,194	4,524	0	120,315	0	585	387,657
Dec-05	0	4,121	29,770	172,586	25,703	4,167	0	114,185	0	359	350,891
Jan-06	0	3,708	22,945	186,320	25,103	4,651	0	118,852	0	444	362,023
Feb-06	0	4,126	35,497	134,238	22,680	3,175	0	119,617	0	467	319,800
Mar-06	31	1,184	27,251	128,288	24,609	4,240	0	130,587	0	366	316,600
Total	31	48,855	210,680	1,750,834	279,711	43,410	0	1,215,083	0	4,458	3,553,108

Table B6: 2005-06 NIROCs issued by generation technology type and month (in Northern Ireland)

Month	ACT	Biomass	Co-firing	Hydro < 20 MW DNC	Landfill gas	Micro hydro	Off-shore wind	On-shore wind	PV	Sewage gas	Total
Apr-05	0	0	0	348	0	46	0	23,269	0	0	23,663
May-05	0	0	0	371	0	16	0	20,033	0	0	20,420
Jun-05	0	152	0	299	0	12	0	13,680	0	0	14,143
Jul-05	0	197	0	239	0	0	0	11,454	0	0	11,890
Aug-05	0	897	977	216	0	1	0	15,061	0	0	17,152
Sep-05	0	822	623	227	0	4	0	24,911	0	0	26,587
Oct-05	0	907	724	326	0	19	0	28,007	0	0	29,983
Nov-05	0	600	0	638	0	73	0	25,151	0	0	26,462
Dec-05	0	446	0	1,026	0	90	0	21,402	0	0	22,964
Jan-06	0	588	1,171	1,143	0	69	0	25,296	0	0	28,267
Feb-06	0	925	1,478	669	0	37	0	23,263	0	0	26,372
Mar-06	0	1,249	932	866	0	125	0	22,362	2	0	25,536
Total	0	6,783	5,905	6,368	0	492	0	253,889	2	0	273,439

Table B7: 2005-06 ROCs, SROCs and NIROCs issued by location and month

Month	England	Scotland	Wales	Northern Ireland	Total
Apr-05	640,297	306,992	80,585	23,663	1,051,537
May-05	645,422	270,290	84,082	20,420	1,020,214
Jun-05	601,297	220,555	57,336	14,143	893,331
Jul-05	638,284	178,367	52,708	11,890	881,249
Aug-05	658,735	204,106	52,033	17,152	932,026
Sep-05	712,088	308,777	70,550	26,587	1,118,002
Oct-05	750,462	379,999	92,347	29,983	1,252,791
Nov-05	796,458	394,533	109,968	26,462	1,327,421
Dec-05	755,855	361,797	95,236	22,964	1,235,852
Jan-06	825,237	371,016	95,092	28,267	1,319,612
Feb-06	944,930	313,143	99,045	26,372	1,383,490
Mar-06	880,604	317,827	127,883	25,536	1,351,850
Total	8,849,669	3,627,402	1,016,865	273,439	13,767,375

Table B8: 2005-06 ROCs, SROCs and NIROCs issued by location and generation technology type

Technology type	England	Scotland	Wales	Northern Ireland	Total
ACT	9,138	31	0	0	9,169
Biomass	842,699	48,855	0	6,783	898,337
Co-firing	3,277,853	157,883	0	5,905	3,441,641
Hydro < 20 MW DNC	36,292	1,754,165	136,962	6,368	1,933,787
Landfill gas	3,634,994	279,711	113,937	0	4,028,642
Micro hydro	6,965	43,410	693	492	51,560
Off-shore wind	302,548	0	184,535	0	487,083
On-shore wind	424,750	1,340,223	576,405	253,889	2,595,267
PV	51	0	0	2	53
Sewage gas	314,379	3,124	4,333	0	321,836
Total	8,849,669	3,627,402	1,016,865	273,439	13,767,375

Table B9: 2005-06 ROCs issued by location and month

Month	England	Scotland	Wales	Northern Ireland	Total
Apr-05	637,726	14,055	80,585	0	732,366
May-05	643,466	9,155	84,082	0	736,703
Jun-05	599,232	7,093	57,336	0	663,661
Jul-05	637,582	5,191	52,708	0	695,481
Aug-05	657,968	8,158	52,033	0	718,159
Sep-05	707,447	11,881	70,550	0	789,878
Oct-05	747,110	13,470	92,347	0	852,927
Nov-05	790,744	12,590	109,968	0	913,302
Dec-05	752,730	14,031	95,236	0	861,997
Jan-06	822,444	11,786	95,092	0	929,332
Feb-06	929,612	8,661	99,045	0	1,037,318
Mar-06	869,477	12,354	127,883	0	1,009,714
Total	8,795,538	128,425	1,016,865	0	9,940,828

Table B10: 2005-06 ROCs issued by location and generation technology type

Technology type	England	Scotland	Wales	Northern Ireland	Total
ACT	9,138	0	0	0	9,138
Biomass	842,699	0	0	0	842,699
Co-firing	3,225,056	0	0	0	3,225,056
Hydro < 20 MW DNC	36,292	3,331	136,962	0	176,585
Landfill gas	3,634,994	0	113,937	0	3,748,931
Micro hydro	6,965	0	693	0	7,658
Off-shore wind	302,548	0	184,535	0	487,083
On-shore wind	424,750	125,094	576,405	0	1,126,249
PV	51	0	0	0	51
Sewage gas	313,045	0	4,333	0	317,378
Total	8,795,538	128,425	1,016,865	0	9,940,828

Table B11: 2005-06 SROCs issued by location and month

Month	England	Scotland	Wales	Northern Ireland	Total
Apr-05	2,571	292,937	0	0	295,508
May-05	1,956	261,135	0	0	263,091
Jun-05	2,065	213,462	0	0	215,527
Jul-05	702	173,176	0	0	173,878
Aug-05	767	195,948	0	0	196,715
Sep-05	4,641	296,896	0	0	301,537
Oct-05	3,352	366,529	0	0	369,881
Nov-05	5,714	381,943	0	0	387,657
Dec-05	3,125	347,766	0	0	350,891
Jan-06	2,793	359,230	0	0	362,023
Feb-06	15,318	304,482	0	0	319,800
Mar-06	11,127	305,473	0	0	316,600
Total	**54,131**	**3,498,977**	**0**	**0**	**3,553,108**

Table B12: 2005-06 SROCs issued by location and generation technology type

Technology type	England	Scotland	Wales	Northern Ireland	Total
ACT	0	31	0	0	31
Biomass	0	48,855	0	0	48,855
Co-firing	52,797	157,883	0	0	210,680
Hydro < 20 MW DNC	0	1,750,834	0	0	1,750,834
Landfill gas	0	279,711	0	0	279,711
Micro hydro	0	43,410	0	0	43,410
Off-shore wind	0	0	0	0	0
On-shore wind	0	1,215,129	0	0	1,215,129
Sewage gas	1,334	3,124	0	0	4,458
PV	0	0	0	0	0
Total	**54,131**	**3,498,977**	**0**	**0**	**3,553,108**

Table B13: 2005-06 NIROCs issued by location and month

Month	England	Scotland	Wales	Northern Ireland	Total
Apr-05	0	0	0	23,663	23,663
May-05	0	0	0	20,420	20,420
Jun-05	0	0	0	14,143	14,143
Jul-05	0	0	0	11,890	11,890
Aug-05	0	0	0	17,152	17,152
Sep-05	0	0	0	26,587	26,587
Oct-05	0	0	0	29,983	29,983
Nov-05	0	0	0	26,462	26,462
Dec-05	0	0	0	22,964	22,964
Jan-06	0	0	0	28,267	28,267
Feb-06	0	0	0	26,372	26,372
Mar-06	0	0	0	25,536	25,536
Total	**0**	**0**	**0**	**273,439**	**273,439**

Table B14: 2005-06 NIROCs issued by location and generation technology type

Technology type	England	Scotland	Wales	Northern Ireland	Total
ACT	0	0	0	0	0
Biomass	0	0	0	6,783	6,783
Co-firing	0	0	0	5,905	5,905
Hydro < 20 MW DNC	0	0	0	6,368	6,368
Landfill gas	0	0	0	0	0
Micro hydro	0	0	0	492	492
Off-shore wind	0	0	0	0	0
On-shore wind	0	0	0	253,889	253,889
Sewage gas	0	0	0	0	0
PV	0	0	0	2	2
Total	**0**	**0**	**0**	**273,439**	**273,439**

Table B15: Revoked and replaced ROCs / SROCs / NIROCs

Technology type	Total number of revoked ROCs	Total number of replacement ROCs	Total number of revoked SROCs	Total number of replacement SROCs	Total number of revoked NIROCs	Total number of replacement NIROCs
Co-firing	22,839	1,105	0	0	0	0
Landfill gas	4,186	905	0	0	0	0
On-shore wind	0	0	8	0	0	0
Sewage Gas	54	0	0	0	0	0
Totals	27,079	2,010	8	0	0	0

Appendix 4 - Accredited generating stations: Detailed information

Table C1: Comparison of the number of accredited stations by generation technology type and location (all capacities)

Technology type	England	Scotland	Wales	Northern Ireland	Total
Biomass and waste using ACT	1	1	0	0	2
Waste using ACT	2	0	0	0	2
Biomass	12	3	0	1	16
Co-firing	29	1	1	1	32
Hydro <20 MW DNC	36	94	25	10	165
Landfill Gas	307	22	11	0	340
Micro Hydro	27	35	8	4	74
Off shore wind	5	0	1	0	6
On shore wind	88	55	33	23	199
Photovoltaic	28	2	0	5	35
Sewage Gas	96	1	6	0	103
Wave Power	0	1	0	0	1
Total	**631**	**215**	**85**	**44**	**975**

Table C1a: Comparison of the number of accredited stations with a capacity of over 50kW by generation technology type and location

Technology type	England	Scotland	Wales	Northern Ireland	Total
Biomass and waste using ACT	1	1	0	0	2
Waste using ACT	2	0	0	0	2
Biomass	12	3	0	1	16
Co-firing	29	1	1	1	32
Hydro <20 MW DNC	36	94	25	10	165
Landfill Gas	307	22	11	0	340
Micro Hydro	7	28	1	2	38
Off shore wind	5	0	1	0	6
On shore wind	67	44	29	13	153
Photovoltaic	3	0	0	0	3
Sewage Gas	96	1	6	0	103
Wave Power	0	1	0	0	1
Total	**565**	**195**	**74**	**27**	**861**

Table C1b: Comparison of the number of accredited stations with a capacity of 50kW and under by generation technology type and location

Technology type	England	Scotland	Wales	Northern Ireland	Total
Micro hydro	20	7	7	2	36
On-shore wind	21	11	4	10	46
Photovoltaic	25	2	0	5	32
Totals	**66**	**20**	**11**	**17**	**114**

Table C2: Comparison of the total installed generating capacity of accredited generating stations by technology type and location (all capacities)

Technology Type	England (kW)	Scotland (kW)	Wales (kW)	Northern Ireland (kW)	Total
Biomass and waste using ACT	1,560	340	0	0	1,900
Waste using ACT	1,659	0	0	0	1,659
Biomass	190,125	12,797	0	2,450	205,372
Co-firing*	3,148,375	157,883	0	5,905	3,312,163
Hydro <20 MW DNC	19,618	484,580	76,032	2,485	582,715
Landfill Gas	696,857	50,715	23,161	0	770,733
Micro Hydro	2,067	12,524	204	315	15,110
Off shore wind	243,800	0	60,000	0	303,800
On shore wind	264,837	912,505	298,864	107,300	1,583,506
Photovoltaic	411	23	0	26	460
Sewage Gas	73,296	1,006	1,509	0	75,811
Wave Power	0	750	0	0	750
Total	**4,642,605**	**1,633,123**	**459,770**	**118,481**	**6,853,979**

* Co-firing capacity is an estimate of the renewable capacity and is based on the total number of ROCs issued in 05/06 obligation period

Table C2a: Comparison of the total installed generating capacity of accredited generating stations with a capacity of over 50kW by technology type and location

Technology Type	England (kW)	Scotland (kW)	Wales (kW)	Northern Ireland (kW)	Total
Biomass and waste using ACT	1,560	340	0	0	1,900
Waste using ACT	1,659	0	0	0	1,659
Biomass	190,125	12,797	0	2,450	205,372
Co-firing*	3,148,375	157,883	0	5,905	3,312,163
Hydro <20 MW DNC	19,618	484,580	76,032	2,485	582,715
Landfill Gas	696,857	50,715	23,161	0	770,733
Micro Hydro	1,802	12,368	60	245	14,475
Off shore wind	243,800	0	60,000	0	303,800
On shore wind	264,642	912,321	298,826	107,100	1,582,889
Photovoltaic	215	0	0	0	215
Sewage Gas	73,296	1,006	1,509	0	75,811
Wave Power	0	750	0	0	750
Total	**4,641,949**	**1,632,760**	**459,588**	**118,185**	**6,852,482**

* Co-firing capacity is an estimate of the renewable capacity and is based on the total number of ROCs issued in 05/06 obligation period

Table C2b: Comparison of the total installed generating capacity of accredited generating stations with a capacity of 50kW and under by technology type and location

Technology Type	England (kW)	Scotland (kW)	Wales (kW)	Northern Ireland (kW)	Total
Micro Hydro	265	156	144	70	635
On shore wind	195	184	38	200	617
Photovoltaic	196	23	0	26	245
Total	**656**	**363**	**182**	**296**	**1,497**

Table C3: Comparison of generating stations accredited before 1st April 2005 and on or after 1st April 2005 by technology type

Technology type	No of generators accredited before 1st April 2005	No of generators accredited on 1st April 2005 and after	Capacity of generators accredited before 1st April 2005 (kW)	Capacity of generators accredited on or after 1st April 2005 (kW)
Biomass and waste using ACT	1	1	1,560	340
Waste using ACT	1	1	1,434	225
Biomass	13	3	167,802	37,570
Co-firing*	28	4	2,861,129	451,034
Hydro <20 MW DNC^	138	27	531,531	51,184
Landfill gas	299	41	700,429	70,304
Micro hydro	54	20	14,128	982
Off-shore wind	4	2	123,800	180,000
On-shore wind	136	63	953,558	629,948
Photovoltaic	13	22	244	216
Sewage gas	99	4	73,885	1,926
Wave Power	1	0	750	0
Totals	**787**	**188**	**5,430,250**	**1,423,729**

* Co-firing capacity is an estimate of the renewable capacity and is based on the total number of ROCs issued in 05-06 obligation period

Table C3a: Comparison of generating stations with a capacity of over 50kW accredited before 1st April 2005 and on or after 1st April 2005 by technology type

Technology type	No of generators accredited before 1st April 2005	No of generators accredited after 1st April 2005	Capacity of generators accredited before1st April 2005 (kW)	Capacity of generators accredited on or after 1st April 2005 (kW)
Biomass and waste using ACT	1	1	1,560	340
Waste using ACT	1	1	1,434	225
Biomass	13	3	167,802	37,570
Co-firing*	28	4	2,861,129	451,034
Hydro <20 MW DNC^	138	27	531,531	51,184
Landfill gas	299	41	700,429	70,304
Micro hydro	33	5	13,789	686
Off-shore wind	4	2	123,800	180,000
On-shore wind	122	31	953,282	629,607
Photovoltaic	2	1	114	101
Sewage gas	99	4	73,885	1,926
Wave Power	1	0	750	0
Totals	**741**	**120**	**5,429,505**	**1,422,977**

* Co-firing capacity is an estimate of the renewable capacity and is based on the total number of ROCs issued in 05/06 obligation period

Table C3b: Comparison of generating stations with a capacity of 50kW and under accredited before 1st April 2005 and on or after 1st April 2005 by technology type

Technology type	No of generators accredited before 1st April 2005	No of generators accredited after 1st April 2005	Capacity of generators accredited before 1st April 2005 (kW)	Capacity of generators accredited on or after 1st April 2005 (kW)
Micro hydro	21	15	339	296
On-shore wind	14	32	276	341
Photovoltaic	11	21	130	115
Totals	**46**	**68**	**745**	**752**

Table C4: Comparison of generating stations commissioned before 1st April 2005 and on or after 1st April 2005 by technology type

Technology type	No of generators commissioned before 1st April 2005	No of generators commissioned after 1 April 2005	Capacity of generators commissioned before 1st April 2005 (kW)	Capacity of generators commissioned on or after 1st April 2005 (kW)
Biomass and waste using ACT	1	1	1,560	340
Waste using ACT	2	0	1,659	0
Biomass	14	2	202,802	2,570
Co-firing*	30	2	2,867,159	445,004
Hydro <20 MW DNC	159	6	555,011	27,704
Landfill gas	301	39	702,970	67,763
Micro hydro	66	8	14,687	423
Off-shore wind	4	2	123,800	180,000
On-shore wind	162	37	1,043,972	539,534
Photovoltaic	23	12	325	135
Sewage gas	99	4	74,701	1,110
Wave Power	1	0	750	0
Totals	**862**	**113**	**5,589,396**	**1,264,583**

* Co-firing capacity is an estimate of the renewable capacity and is based on the total number of ROCs issued in 05/06 obligation period

Table C5: Comparison of generating stations accredited before 1st April 2005 and on or after 1st April 2005 by location

Country	No of generators accredited before 1st April 2005	No of generators accredited after 1st April 2005	Capacity of generators accredited before 1st April 2005 (kW)	Capacity of generators accredited on or after 1st April 2005 (kW)
England	539	92	3,835,747	806,858
Scotland	176	39	1,206,371	426,752
Wales	72	13	388,257	71,513
Northern Ireland	0	44	0	118,481
Totals	**787**	**188**	**5,430,375**	**1,423,604**

* Co-firing capacity is an estimate of the renewable capacity and is based on the total number of ROCs issued in 05-06 obligation period

Table C5a: Comparison of generating stations with a capacity over 50kW accredited before 1st April 2005 and on or after 1st April 2005 by location

Country	No of generators accredited before 1st April 2005	No of generators accredited after 1st April 2005	Capacity of generators accredited before 1st April 2005 (kW)	Capacity of generators accredited on or after 1st April 2005 (kW)
England	506	59	3,835,302	806,647
Scotland	167	28	1,206,160	426,600
Wales	68	6	388,168	71,420
Northern Ireland	0	27	0	118,185
Totals	**741**	**120**	**5,429,630**	**1,422,852**

* Co-firing capacity is an estimate of the renewable capacity and is based on the total number of ROCs issued in 05-06 obligation period

Table C5b: Comparison of generating stations with a capacity 50kWand under accredited before 1st April 2005 and on or after 1st April 2005 by location

Country	No of generators accredited before 1st April 2005	No of generators accredited after 1st April 2005	Capacity of generators accredited before 1st April 2005 (kW)	Capacity of generators accredited on or after 1st April 2005 (kW)
England	33	33	445	211
Scotland	9	11	211	152
Wales	4	7	89	93
Northern Ireland	0	17	0	296
Totals	**46**	**68**	**745**	**752**

Table C6: Comparison of generating stations commissioned before 1st April 2005 and on or after 1st April 2005 by location

Country	No of generators commissioned before 1st April 2005	No of generators commissioned after 1st April 2005	Capacity of generators commission before 1st April 2005 (kW)	Capacity of generators commission on or after 1st April 2005 (kW)
England	558	73	3,879,625	762,980
Scotland	191	24	1,222,160	410,963
Wales	75	10	388,523	71,247
Northern Ireland	38	6	99,088	19,393
Totals	**862**	**113**	**5,589.396**	**1,264,583**

* Co-firing capacity is an estimate of the renewable capacity and is based on the total number of ROCs issued in 05-06 obligation period

Table C7: Comparison of NFFO/SRO and non-NFFO/non-SRO generating stations accredited before and on or after 1st April 2005

	No of generators accredited before 1st April 2005	No of generators accredited after 1st April 2005	Capacity of generators accredited before 1st April 2005 (kW)	Capacity of generators accredited on or after 1st April 2005 (kW)
NFFO	231	11	697,605	75,688
NON-NFFO	380	94	3,526,399	802,683
SRO	38	0	211,334	0
NON-SRO	138	39	995,037	426752
NI NFFO	0	17	0	39210
NI non-NFFO	0	27	0	79271
	787	**188**	**5,430,375**	**1,423,604**

Appendix 5 Glossary

A	
Act	Electricity Act 1989
ACT	Advanced Conversion Technology
D	
DETI	Department of Enterprise, Trade and Investment
DNC	Declared net capacity
DTI	Department of Trade and Industry
G	
GB	Great Britain
GB ROCs	ROCs and SROCs
K	
kW	Kilowatt
kWh	Kilowatt/hour
M	
MSO	Marine Supply Obligation
MW	Megawatt
MWh	Megawatt/hour
N	
NI	Northern Ireland
NIAER	Northern Ireland Authority for Energy Regulation
NIRO	Renewables Obligation Order (Northern Ireland) 2005
NIROC	Northern Ireland Renewables Obligation Certificates
NFFO	Non-Fossil Fuel Obligation
NFPA	Non-fossil Fuel Purchasing Agency
O	
Ofgem	Office of Gas and Electricity Markets
P	
PV	Photovoltaics
R	
RO	Renewables Obligation Order 2005
ROC	Renewable Obligation Certificate
ROS	Renewables Obligation (Scotland) Order 2005
RPI	Retail Price Index
S	
SRO	Scottish Renewables Obligation
SROC	Scottish Renewable Obligation Certificate

ofgem Promoting choice and value for all gas and electricity customers

Renewables Obligation: Annual report 2006-2007

Document type: Annual report

Ref: 21/08

Date of publication: 4 March 2008

Target audience: Any parties with an interest in the Renewables Obligation.

Overview:

The Government has introduced a number of schemes to encourage the development of renewable generation in the UK.

In April 2002, the Renewables Obligation and the Renewables Obligation (Scotland) came into effect, with the Northern Ireland Renewables Obligation coming into effect on 1 April 2005. Ofgem administers these schemes on behalf of the Department for Business, Enterprise and Regulatory Reform, the Scottish Executive and Department of Enterprise, Trade and Investment respectively.

This report provides information in respect of the 2006-07 obligation period. It includes information on how licensed electricity suppliers complied with their obligations in this period, the number of ROCs we issued and detail on generators we accredited for the schemes.

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Team: Environmental Programmes

Context

The Government's aim is that renewable energy will make an increasing contribution to energy supplies in the UK, with renewable energy playing a key role in the wider climate change programme.

The Renewables Obligation, the Renewables Obligation (Scotland) and the Northern Ireland Renewables Obligation are designed to incentivise renewable generation into the electricity generation market. These schemes were introduced by the Department of Trade and Industry (now the Department for Business, Enterprise and Regulatory Reform), the Scottish Government and the Department of Enterprise, Trade and Investment respectively and are administered by the Gas and Electricity Markets Authority (the Authority), whose day to day functions are performed by Ofgem. The schemes are provided for in secondary legislation.

The first Renewables Obligation Order came into force in April 2002, as did the first Renewables Obligation Order (Scotland). These Orders were subject to review in 2004, 2005, 2006 and 2007. The first Renewables Obligation Order (Northern Ireland) came into force in April 2005. New Orders came into force on 1 April 2006 and 1 April 2007. The Renewables Obligation Order (Northern Ireland) 2007 was amended on 19 October to allow for its continued effective operation within the new Single Electricity Market arrangements for Ireland with effect from 1 November 2007.

These Orders place an obligation on licensed electricity suppliers in England and Wales, Scotland and Northern Ireland to source an increasing proportion of electricity from renewable sources. In 2006-07 it was 6.7 per cent in England and Wales and Scotland and 2.6 per cent in Northern Ireland. Suppliers meet their obligations by presenting sufficient Renewables Obligation Certificates (ROCs) to cover their obligations. Where suppliers do not have sufficient ROCs to meet their obligation, they must pay an equivalent amount into a fund known as buy-out, the proceeds of which are paid back on a pro-rated basis to those suppliers that have presented ROCs. The Government intends that suppliers will be subject to a renewables obligation until 31 March 2027.

Associated Documents

Readers may be interested in previous annual reports that are published on our website at www.ofgem.gov.uk.

We also publish up to date statistics on a monthly basis including:

- A list of stations accredited for the Renewables Obligations
- A list of stations given preliminary accreditation under the Renewables Obligations
- Details on the number of ROCs issued by technology, country and Order. This includes the total number of ROCs that have been claimed but not yet issued, and
- A list of ROCs that have been revoked by us.

Table of Contents

Summary

Chapter Summary

This summary briefly explains what each chapter of the annual report is about.

Introduction

This section summarises the purpose of this document and sets out Ofgem's responsibilities under the Renewables Obligation. It also includes information about Ofgem's costs.

Compliance by licensed electricity suppliers

This section provides information on how each supplier has complied with its obligation in terms of ROCs presented and buy-out payments made. It also provides information on the amount of the buy-out fund and late payment fund each licensed supplier received.

Renewables Obligation Certificates

This section provides details of the total number of Renewables Obligation Certificates (ROCs), Scottish Renewables Obligation Certificates (SROCs) and Northern Ireland Renewables Obligation Certificates (NIROCs) issued in the 2006-07 period. These figures are also broken down by technology, country of issue and by month.

Generators accredited for the Renewables Obligation

This section provides information on the number and technology of generating stations accredited under the Renewables Obligations.

Implementation issues

This section summarises the issues encountered by Ofgem during the implementation of the Renewables Obligations and compliance.

Changes in legislation

This section provides a summary of legislative changes made in April 2007, it also summarises proposals for changes to be made to the RO in the longer term.

The appendices

The appendices to this document provide additional information about:

- The Authority's power and duties
- Compliance with the RO by licensed suppliers
- ROCs issued by Order, country, technology type, and
- Stations accredited under the Renewables Obligations.

1. Introduction

Status of this document

1.1. This annual report is based on the requirements on the Authority under the Renewables Obligation Order 2006, Renewables Obligation (Scotland) Order 2006 and Renewables Obligation Order (Northern Ireland) 2006 (the Orders), which came into force on 1 April 2006.

1.2. Unless apparent from the context, where "RO" is used it denotes the RO, ROS and NIRO and where "ROC" is used it denotes ROCs, SROCs and NIROCs.

1.3. The use of 'Ofgem', 'us', 'our' and 'we' are used interchangeably when referring to the exercise of the Authority's powers and functions under the Orders.

Ofgem's responsibilities

1.4. The Renewables Obligation Order 2006 (RO) and the Renewables Obligation (Scotland) Order 2006 (ROS) detail Ofgem's powers and functions in respect of the Renewables Obligation in England and Wales and in Scotland, respectively. Those functions include:

- accrediting generating stations as being capable of generating electricity from eligible renewable energy sources
- issuing Renewable Obligation Certificates (ROCs) and Scottish Renewable Obligation Certificates (SROCs)
- establishing and maintaining a register of ROCs and SROCs
- publishing a list of accredited and pre-accredited generating stations
- revoking ROCs and SROCs where necessary
- monitoring compliance with the requirements of the Orders
- calculating annually the buy-out price and mutualisation ceiling resulting from the adjustments made to reflect changes in the RPI
- receiving buy-out payments and redistributing the buy-out fund, and
- receiving late payments and redistributing the late payment fund.

1.5. We administer the Northern Ireland Renewables Obligation (NIRO) on behalf of the Northern Ireland Authority for Utility Regulation (NIAUR) under an Agency Services Agreement. Under this agreement Ofgem is required to carry out the functions listed above in respect of Northern Ireland Renewables Obligation Certificates (NIROCs). However the NIAUR continues to retain legislative responsibility for the NIRO.

1.6. Ofgem's costs of exercising its functions under the Orders were around £900,000 in 2006-07. These costs included:

- staffing costs
- It system support costs
- technical, legal and IT support
- undertaking audits of generating stations
- undertaking audits of suppliers, and
- the maintenance of bank accounts.

2. Compliance by licensed electricity suppliers

Chapter Summary

This chapter, when read with appendix 2, provides information on:

- ➔ How each licensed electricity supplier (supplier) complied with its obligation in terms of ROCs presented, the buy-out and/or late payment made, or a combination of these
- ➔ The total number of ROCs correctly presented against each supplier's obligation
- ➔ The money each supplier received from the redistribution of the buy-out and/or late payment funds, and
- ➔ The total number of ROCs that remain on the ROC Register for use in the next obligation period (2007-08).

We are required to publish this information under the Orders.

Total Renewables Obligation for England & Wales, Scotland and Northern Ireland

2.1. The RO and ROS require each supplier to source a proportion of the electricity that it has supplied in Great Britain from eligible renewable sources[1]. The NIRO requires each supplier to source a proportion of the electricity that it has supplied in Northern Ireland from eligible renewable sources[2]. The proportion for the 2006-07 obligation period was 6.7 per cent in England & Wales and Scotland and 2.6 per cent in Northern Ireland. This proportion increases each year as set out in the Orders.

2.2. Suppliers can meet their obligation by presenting ROCs, making buy-out payments to cover any shortfall in the presentation of sufficient ROCs or by a combination of both.

Headline figures

2.3. The key headline figures about compliance by suppliers in 2006-07 in England & Wales, Scotland and Northern Ireland are set out in Tables 1, 2 and 3 respectively. Further detail can be found in Appendix 2.

2.4. In summary, 32 suppliers had an obligation under the RO, 22 had an obligation under the ROS, and seven had an obligation under the NIRO.

[1] See Article 2(1) of the RO and ROS for the definition of eligible renewable sources.
[2] See Article 2(1) of the NIRO for the definition of eligible renewable sources.

2.5. 51 suppliers did not have an obligation under the RO, 60 did not have an obligation under the ROS, and six did not have an obligation under the NIRO. This was because they either had no sales to customers or all their sales were to transmission connected customers where exceptions apply[3].

2.6. For the 2006-07 obligation period, the total Renewables Obligation for electricity supplied to customers was 19,390,016 MWh in England and Wales, 2,022,791 MWh in Scotland and 216,869 MWh in Northern Ireland.

2.7. The buy-out price for the 2006-07 obligation period was £33.24.

2.8. The amount of buy-out paid per ROC presented for the 2006-07 obligation period was £16.04. The buy-out paid per ROC was equal across all three obligations due to the single recycling mechanism.[4]

2.9. The percentage of suppliers' obligations met by presenting ROCs decreased during the 2006-07 obligation period. This has resulted in an increase in the total buy-out funds redistributed to suppliers.

2.10. One reason the percentage of ROCs presented by suppliers fell was due to the reduction in the maximum percentage of co-fired ROCs that a supplier may present against its obligation. This number of ROCs was reduced from 25 per cent of a supplier's total obligation in 2005-06 to 10 per cent in 2006-07. In 2005-06 suppliers presented 3,381,650 co-fired ROCs while only 1,746,069 co-fired ROCs were presented in 2006-07.

2.11. A total of 500,291 ROCs issued during the 2006-07 obligation period were not presented back to us for compliance purposes. This number consisted of 190,782 ROCs, 257,969 SROCs and 51,540 NIROCs. These ROCs remain on the ROC Register for use in the 2007-08 obligation period.

2.12. Tables 1, 2 and 3 summarise the headline figures and make comparisons to earlier obligation periods.[5] Detailed information can be found in appendix 2.

[3] Article 3(2) of the Energy Act 2004 (Commencement No 6) Order 2005 (SI 2965) refers.
[4] Further information about the single recycling mechanism can be found in our Guidance for licensed electricity suppliers.
[5] For 2002-03 please see previous Renewables Obligation: Annual reports

Table 1: How suppliers complied with their obligations in England & Wales (2006-07)

	2003-04	**2004-05**	**2005-06**	**2006-07**
Total obligation (MWh)	12,387,720	14,315,784	16,175,906	**19,390,016**
Total number of ROCs presented	6,914,524	9,971,851	12,232,153	**12,868,408**
Number of GB ROCs presented (included in total above)	6,914,524	9,971,851	11,986,983	**12,581,262**
Total number of NIROCs presented (included in total above)	n/a	n/a	245,170	**287,146**
Percentage obligation met by ROCs	56%	70%	76%	**66%**
Total Buy-out paid	£157,960,978	£135,657,001	£126,704,565	**£216,778,249**
Total late payments paid[6]	n/a	n/a	£32.36	**£0**
Shortfall in buy-out fund	£9,026,232	£699,055	£796,935	**£0**
Total buy-out redistributed	£158,466,502	£136,169,914	£127,167,900	**£217,888,311**
Total late payments redistributed	n/a	n/a	£34	**£2**
Buy-out paid per ROC produced[7]	£22.92	£13.66	£10.21	**£16.04**
What a ROC was "worth" to a supplier[8]	£53.43	£45.05	£42.54	**£49.28**

[6] If a supplier does not meet its obligation in full before 1 September, it can make a late payment up until 31 October. Late payments are subject to an interest charge in addition to the amount owed. Interest is charged at 5 percentage points above the Bank of England base rate as at the first day of the late payment period, ie 1 September.
[7] Buy out paid per ROC produced includes sums redistributed from the buy-out and late payment funds.
[8] When combined with the buy-out price that suppliers effectively avoid paying by presenting ROCs, a ROC produced against the RO was "worth" £49.28 to suppliers in 2006-07.

Table 2: How suppliers complied with their obligations in Scotland (2006-07)

	2003-04	2004-05	2005-06	2006-07
Total obligation (MWh)	1,239,692	1,445,283	1,648,679	**2,022,791**
Total number of ROCs presented	695,620	883,997	1,425,869	**1,725,781**
Number of GB ROCs presented (included in total above)	695,620	883,997	1,418,183	**1,721,685**
Total number of NIROCs presented (included in total above)	n/a	n/a	7,686	**4,096**
Percentage obligation met by ROCs	56%	61%	86%	**85%**
Total Buy-out paid	£16,436,835	£17,602,787	£7,086,897	**£9,613,938**
Total late payments paid	n/a	n/a	£114,766.78	**£258,978.42**
Shortfall in buy-out fund	£162,801	£15,067.20	£1,972	**£0**
Total Buy-out redistributed	£16,488,755	£17,668,392	£7,112,617	**£9,662,865**
Total late payments redistributed	n/a	n/a	£115,070	**£259,815**
Buy-out paid per ROC produced[9]	£23.70	£19.99	£10.21	**£16.04**
What a ROC was "worth" to a supplier	£54.21	£51.38	£42.54	**£49.28**

Table 3: How suppliers complied with their obligations in Northern Ireland (2006-07)[10]

	2005-06	2006-07
Total obligation (MWh)	208,319	**216,869**
Total number of ROCs presented	41,295	**18,465**
Number of GB ROCs presented (included in total above)	20,868	**12,039**
Total number of NIROCs presented (included in total above)	20,427	**6,426**
Percentage obligation met by ROCs	20%	**9%**
Total Buy-out paid	£5,354,332.86	**£6,594,948**

[9] Buy out paid per ROC produced includes sums redistributed from the buy-out and late payment funds.
[10] The Northern Ireland Renewables Obligation came into effect on 1 April 2005.

	2005-06	2006-07
Total late payments paid	£45,613.90	**£0**
Shortfall in buy-out fund	£0	**£0**
Total Buy-out redistributed	£5,373,877	**£6,628,093**
Total late payments redistributed	£45,697	**£5**
Buy-out paid per ROC produced[11]	£10.21	**£16.04**
What a ROC was "worth" to a supplier	£42.54	**£49.28**

Detail about ROCs presented

2.13. EDF Energy Customers (part of EDF group) had the largest obligation in England and Wales (2,883,887 MWh) followed by SSE Energy Supply Limited and nPower Limited (part of RWE nPower Group) with obligations of 2,869,894 MWh and 2,690,671 MWh respectively.

2.14. Scottish Power Energy Retail Limited had the largest obligation in Scotland (715,958 MWh) followed by SSE Energy Supply Limited and British Gas Trading Limited with obligations of 543,960 MWh and 239,053 MWh respectively.

2.15. Northern Ireland Electricity plc had the largest obligation in Northern Ireland (122,906 MWh) followed by Viridian Energy Supply Limited (Energia) and ESB Independent Energy with obligations of 44,116 MWh and 43,344 MWh respectively.

2.16. Figures 1, 2 and 3 show the breakdown of the total obligation by supplier group.

[11] Buy out paid per ROC produced includes sums redistributed from the buy-out and late payment funds.

Figure 1: Proportion of the total size of the RO by supplier group[12]

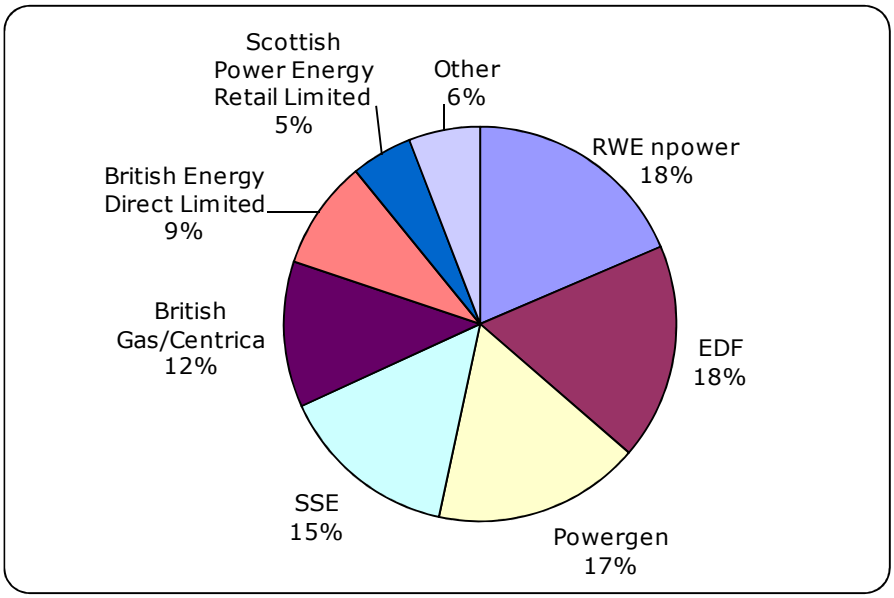
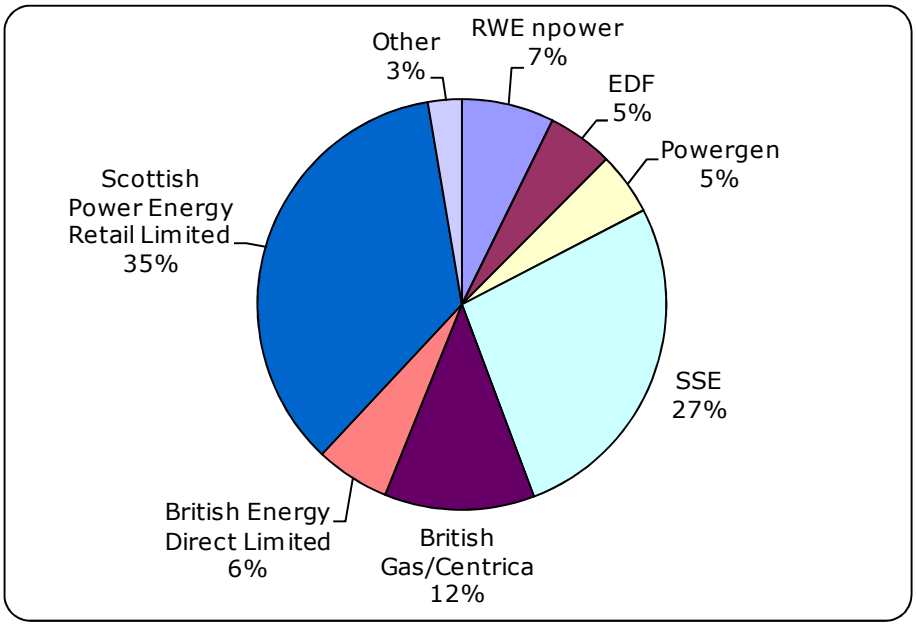
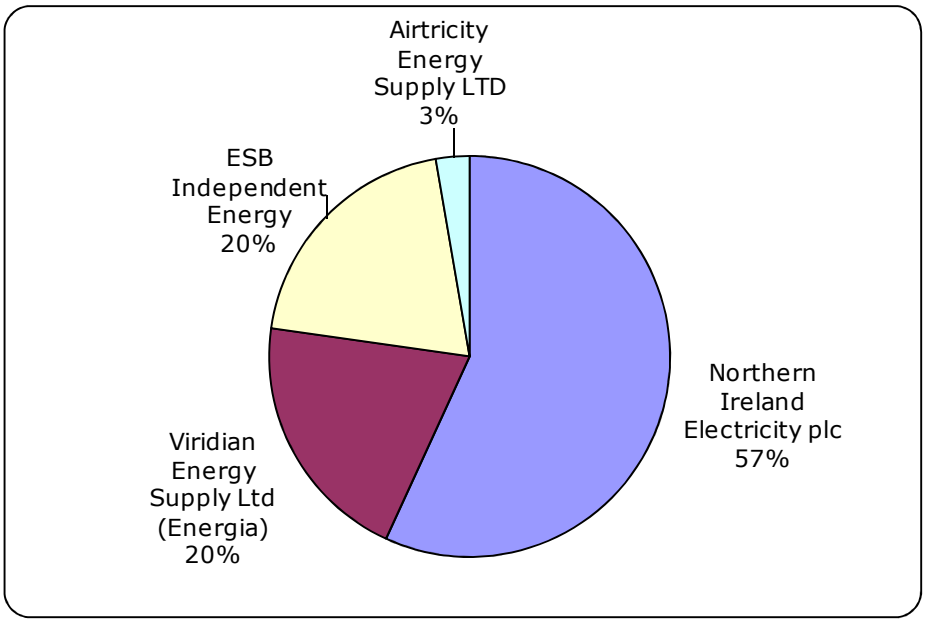


Figure 2: Proportion of the total size of the ROS by supplier group [13]



[12] A list of supplier groups and their individual supply licences can be found in table A13 in Appendix 2.
[13] A list of supplier groups and their individual supply licences can be found in table A13 in Appendix 2.

Figure 3: Proportion of the total size of the NIRO by licensee [14]



2.17. Six suppliers fulfilled their obligations under the RO entirely by presenting ROCs. These were:

- Good Energy Ltd
- The Renewable Energy Company
- Scottish Power Energy Retail
- Slough Energy Supplies
- Smartest Energy, and
- Tradelink Solutions Ltd.

2.18. Seven suppliers fulfilled their obligations under the ROS entirely by presenting ROCs. These were:

- British Energy Direct Ltd
- Good Energy Ltd
- Opus Energy Ltd
- The Renewable Energy Company Ltd
- Scottish Power Energy Retail

[14] Due to small number of suppliers in Northern Ireland figure 3 is shown by licensee rather than supplier group. No 'other' category is shown as this represents less than half a percent of the NIRO.

- Smartest Energy, and
- Tradelink Solutions Ltd.

2.19. Two suppliers fulfilled their obligations under the NIRO entirely by presenting ROCs. These were:

- Airtricity Energy Supply Ltd, and
- Tradelink Solutions Ltd.

2.20. In terms of the volume of ROCs presented, EDF Energy Customers PLC presented the most ROCs under the RO (2,823,568), which made up 97.9 per cent of its obligation.

2.21. Scottish Power Energy Retail Limited presented the most ROCs under the ROS (715,958). This made up 100 per cent of its obligation.

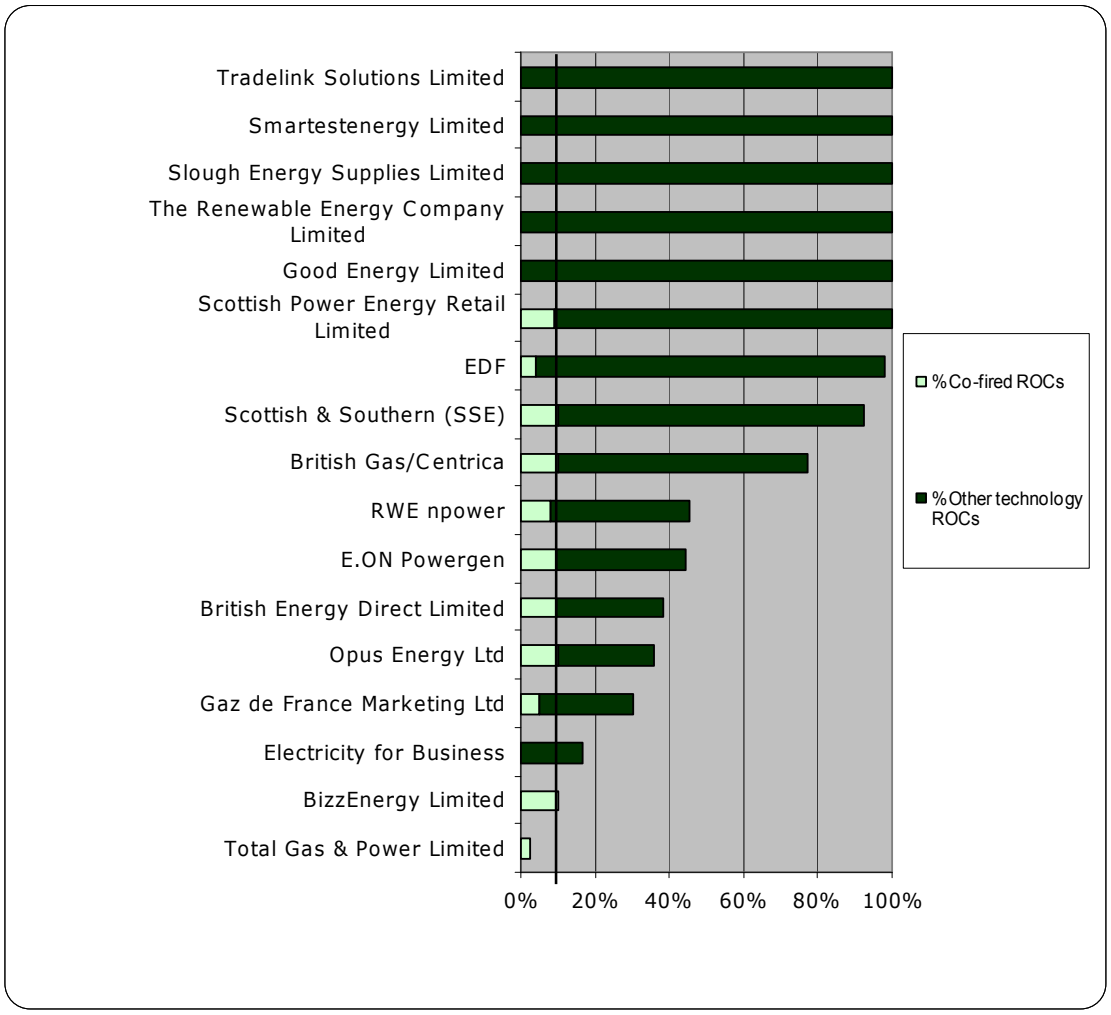
2.22. ESB Independent Energy presented the most ROCs under the NIRO (12,488). This made up 28.8 per cent of its obligation.

Co-fired ROCs

2.23. Under the Orders, each supplier is allowed to meet 10 per cent of its obligation by presenting ROCs that have been issued to co-firing generating stations, ie those fuelled partly by fossil fuels and partly by biomass.

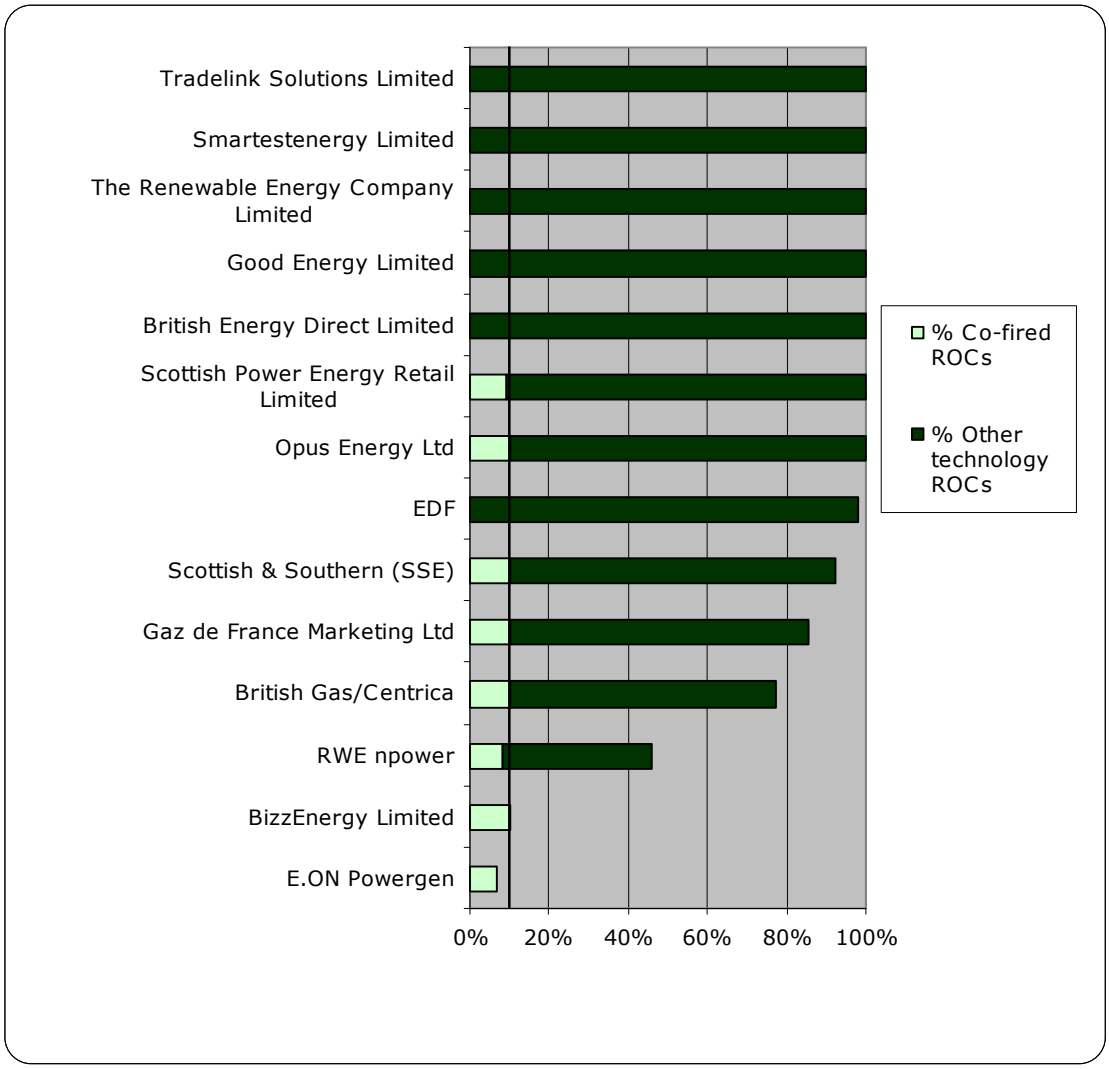
2.24. Figures 4, 5 and 6 compare the proportion of ROCs and co-fired ROCs presented by suppliers in meeting their obligations in England and Wales, Scotland and Northern Ireland respectively in 2006-07. Further detail can be found in Appendix 2.

Figure 4: Proportion of RO that was satisfied by co-fired ROCs[15]



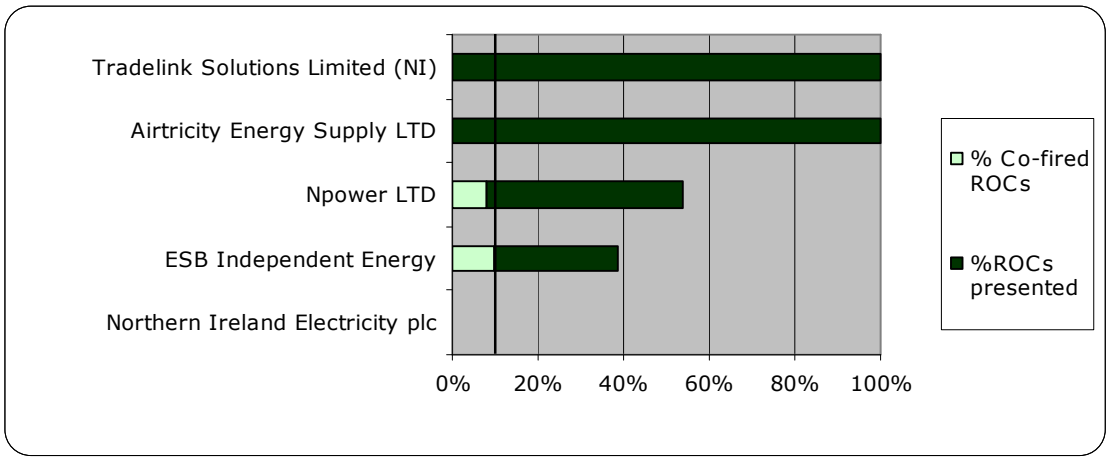
[15] A list of supplier groups and their individual supply licences can be found in table A13 in Appendix 2.

Figure 5: Proportion of ROS that was satisfied by co-fired ROCs[16]



[16] A list of supplier groups and their individual supply licences can be found in table A13 in Appendix 2.

Figure 6: Proportion of NIRO that was satisfied by co-fired ROCs



The buy-out and late payment funds and their redistribution

2.25. One supplier tried to meet 40 per cent of its Scottish obligation using co-fired ROCs (exceeding the 10 per cent co-fired cap) and had to pay a late payment of £258,978.42 (including interest) to meet its obligation. Suppliers had until 31 October to make a late payment.

2.26. The buy-out funds and late payment funds, including any interest accrued, are recycled through the single recycling mechanism. The funds are redistributed to suppliers in proportion to the total number of ROCs that each has presented across the three obligations. For example, a supplier that presented ROCs representing 3 per cent of the total number of ROCs presented across all three obligations would get back 3 per cent of the total sum of the three buy-out funds and any late payment funds. That would still be the case if that supplier had only presented ROCs in respect of just one of the obligations.

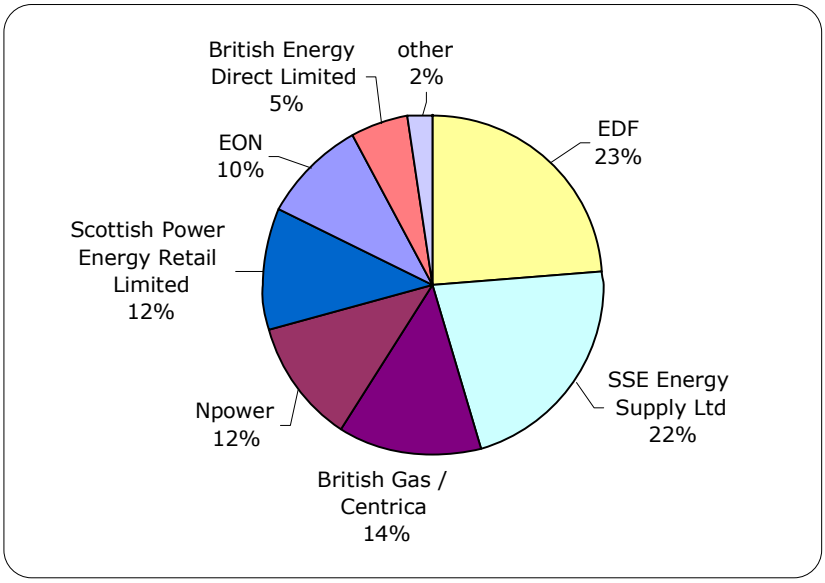
2.27. Table 4 shows the proportion of the buy-out and late payment funds received by each supplier. Both funds were redistributed on 1 October 2007.

Table 4: Proportion of total ROCs presented by each licensee across the three obligations[17]

Supplier	Proportion (%)
SSE Energy Supply Ltd	21.57
EDF Energy Customers PLC	19.99
British Gas Trading Limited	13.57
Scottish Power Energy Retail Limited	11.58
Powergen Retail Ltd	9.34
Npower Ltd	8.88
British Energy Direct Limited	5.39
Seeboard Energy Ltd	3.81
Gaz de France Marketing Ltd	1.52
Npower Northern Ltd	1.18
Npower Direct Ltd	0.80
E.ON UK Plc	0.73
Npower Yorkshire Ltd	0.67
Smartestenergy Limited	0.17
Opus Energy Ltd	0.14
Electricity Plus Ltd	0.12
BizzEnergy Limited	0.09
ESB Independent Energy	0.08
The Renewable Energy Company Limited	0.06
Slough Energy Supplies Limited	0.06
Good Energy Limited	0.04
Airtricity Energy Supply LTD	0.03
Total Gas & Power Limited	0.03
Electricity for Business	0.01
Tradelink Solutions Limited	0.01
Northern Ireland Electricity plc	0.0007
Npower Ltd	0.0002
Tradelink Solutions Limited (NI)	0.00002
Total	100%

[17] Rounded to two decimal places

Figure 7: Redistribution of buy-out and late payment funds (by supplier group)



2.28. Twenty-eight supplier licences received a share of each of the buy-out funds and late payment funds. Of these, SSE Energy Supply Limited received the largest payments.

2.29. Table 5 shows the residual balances of the RO bank accounts after all funds were redistributed on 1 October 2007. The small amounts arise from rounding down the buy-out payments to the nearest pound and interest earned on the small surpluses carried over.

Table 5: Residual balances

RO buy-out fund	£13.86
ROS buy-out fund	£14.94
NIRO buy-out fund	£15.37
RO late payment fund	£3.61
ROS late payment fund	£12.34
NIRO late payment fund	£4.53

Non-compliance by suppliers

2.30. The Orders place a number of obligations on suppliers including a requirement to:

- Provide information to BERR/DETI by 1 June 2007
- Provide us with a copy of the information provided to BERR/DETI by 1 June 2007
- Provide us with the amount of electricity that they have supplied during the obligation period and the level of their obligation by 1 July 2007
- Present ROCs, make a buy-out payment, or a combination of both to meet their total obligations before 1 September 2007, and
- Make a late payment, where required, to meet any outstanding obligation by 31 October 2007.

2.31. The Authority has the powers to take enforcement action against any supplier who fails to meet the requirements of the Orders.

2.32. Four suppliers did not send us the relevant supply information by 1 July 2007. In all cases, this information has now been provided. Each supplier has confirmed that they did not supply any customers in the relevant obligation period. As such, none of the suppliers had an obligation in this period.

2.33. In one case, this was the first time that the supplier had not submitted sales information on time. However, Primary Connections, Telecom Plus and Ineos Chloer have not provided Ofgem with a copy of sales information in previous years. In all cases, the issues were resolved quickly and the late provision of this information did not affect our ability to confirm suppliers' obligations ahead of the compliance date of 1 September 2007.

2.34. Given that compliance with the RO is a relevant requirement of the Electricity Supply Licence, the Authority may use its enforcement powers in the same way that it can in respect of breaches of other licence conditions. We make decisions on whether or not to take enforcement action on a case-by-case basis. In 2007 we did not take any enforcement action because the relevant dates in the compliance timetable had altered, issues were resolved quickly and the breaches did not have a material impact. We may take a different view in future years, particularly if breaches are repeated and/or have a material impact.

2.35. All suppliers met their obligations for the 2006-07 obligation period.

Mutualisation

2.36. In the event of a supplier being unable to meet its RO and/or ROS, for example if the supplier has gone into administration during the obligation period, there may be a shortfall in the buy-out fund. This means that the buy-out fund

would be less than the total amount which would have been paid in if all suppliers had properly discharged their RO and/or ROS.

2.37. Where the shortfall reaches a certain level, known as the 'relevant shortfall' a mutualisation process applies where all suppliers who have met their obligations will be required to make additional payments to make up the relevant shortfall. In 2006-07 the relevant shortfall was £6,700,000 in England and Wales and £670,000 in Scotland.

2.38. These additional payments, known as the mutualisation fund are redistributed to suppliers in the same way as the buy-out and late payment funds. Additional payments were capped at £205,683,333 in England and Wales and £20,568,333 in Scotland for the 2006-07 obligation period. This cap is adjusted each year by RPI.

2.39. Mutualisation provisions did not apply in the 2006-07 obligation period as there was no shortfall. No notices were published under Article 24[18].

2.40. Mutualisation does not apply in Northern Ireland; however suppliers in Northern Ireland will receive a share of any mutualisation funds.

[18] Artilce 24 of trhe Renewables Obligation Order 2006 and the Renewables Obligation (Scotland) Order 2006 refers.

3. Renewables Obligation Certificates

Chapter summary

This chapter, together with Appendix 3, provides information on the number of Renewable Obligation Certificates (ROCs), Scottish Renewable Obligation Certificates (SROCs) and Northern Ireland Renewable Certificates (NIROCs) issued in the 2006-07 obligation period (April 2006 to March 2007). It details information on:

- ➔ The total number of ROCs issued by Ofgem, and
- ➔ This total broken down by technology type.

We are required to publish this information under the Orders.

Information on the number of ROCs that have been issued since April 2007 can be found on the Renewable Statistics page of our website www.ofgem.gov.uk

Renewable Obligation Certificates (ROCs)

3.1. The Orders require us to issue ROCs to accredited generating stations that have generated electricity from eligible renewable sources[19]. One ROC is issued for each MWh of electricity generated.

Headline figures

3.2. We issued 14,964,170 ROCs in total between 1 April 2006 and 31 March 2007. This total was made up of 9,434,330 ROCs, 5,181,992 SROCs and 347,848 NIROCs.

3.3. There have been year-on-year increases in the total number of ROCs we have issued since the RO began, illustrated in Figures 8 and 9.

[19] See Article 2(1) of the Orders for the definition of eligible renewable sources.

Figure 8: Total number of ROCs issued since 2003[20]

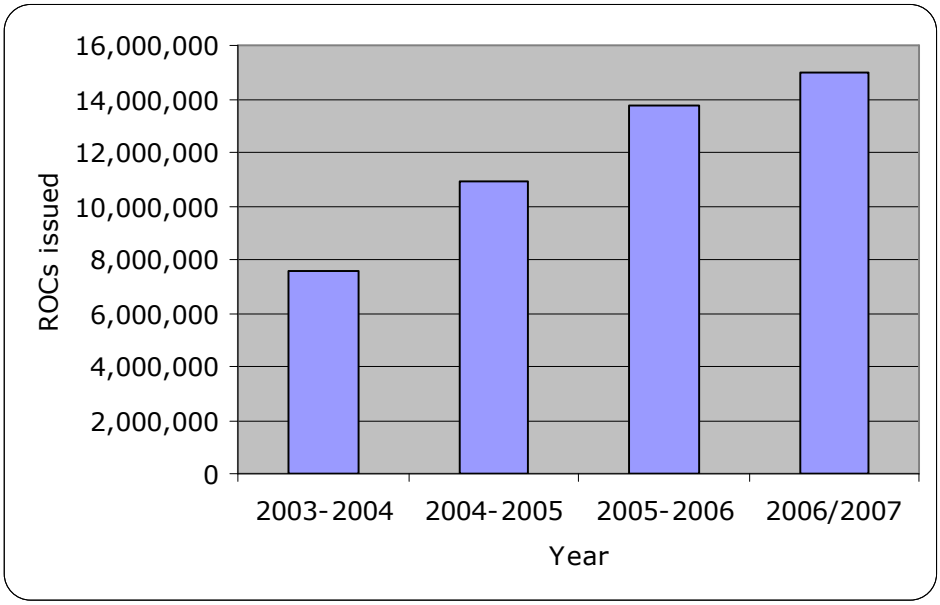
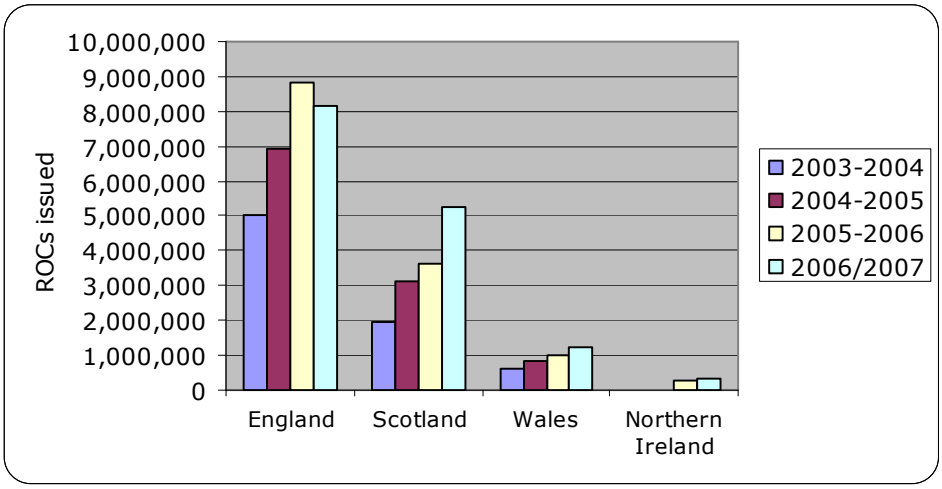


Figure 9: Total number of ROCs issued since 2003 by country[21]

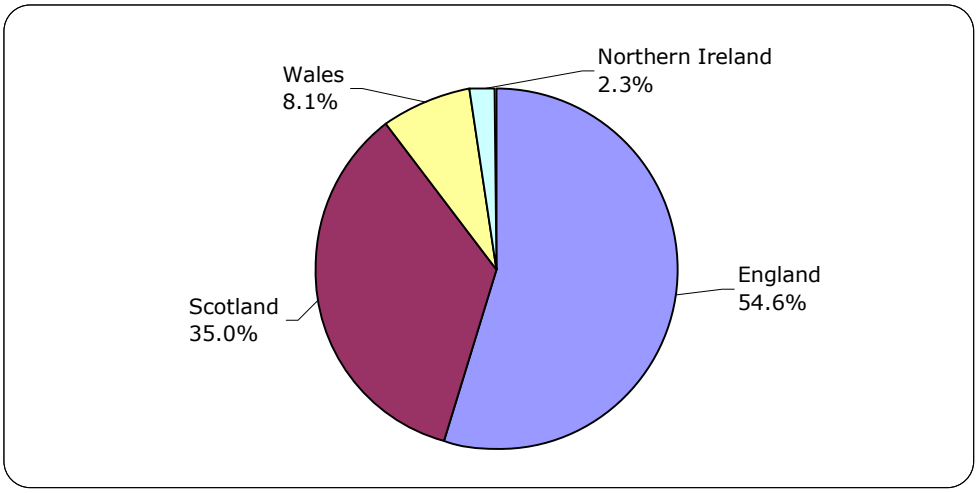


[20] For ROCs issued in 2002-03 please see previous Renewables Obligation: Annual reports.
[21] For ROCs issued in 2002-03 please see previous Renewables Obligation: Annual reports.

3.4. Renewable generating stations located in England received just over half of all ROCs issued in 2006-07. This compares to 35 percent to generating stations located in Scotland and just 9 per cent to generating stations located in Wales. Generating stations located in Northern Ireland received 2 per cent of the total number of ROCs issued in this period. This is illustrated in figure 10.

3.5. In 2006-07 the number of ROCs issued in England fell for the first time. As England's renewable generation relies heavily on the co-firing of biomass with fossil fuel this may be attributed to the reduction in the maximum percentage of co-fired ROCs that a supplier may present against its obligation. There was a decrease of just over 45 percent in the number of co-fired ROCs issued in England in 2006-07. This will have contributed to the overall 7.6 per cent fall in ROCs issued to generating stations located in England, from 8,843,289 in 2005-06 to 8,169,840 in 2006-07.

Figure 10: Comparison of the number of ROCs issued in each country in the 2006-07 obligation period

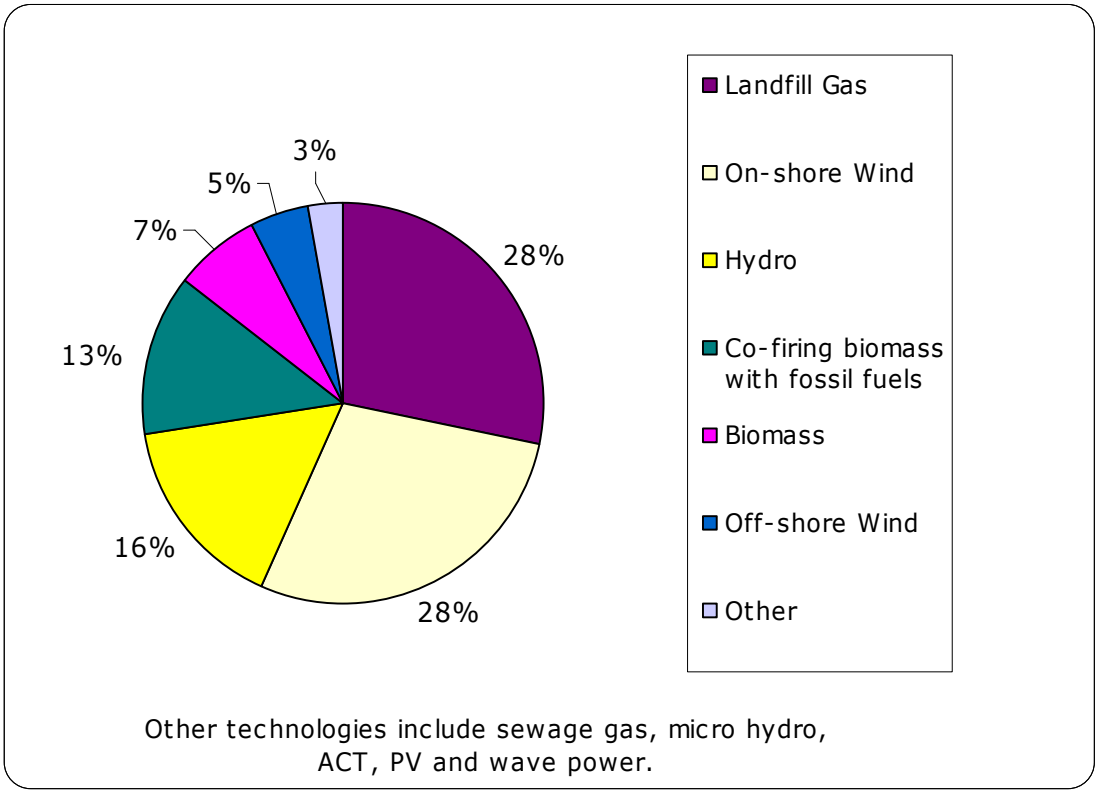


ROCs issued by technology type and country

3.6. Landfill gas sites received the largest number of ROCs in the 2006-07 obligation period (4,260,358). In 2005-06, this technology type received 4,028,642 ROCs and in 2004-05 it received 3,335,570 ROCs. In terms of total ROCs issued the next biggest beneficiary was on-shore wind, which received 4,208,975 ROCs. Hydro generating stations with a declared net capacity (DNC) less than 20 MW were issued a total of 2,384,008 ROCs in the period. Further detail on the spread of ROCs issued can be found in table B1 in Appendix 3.

3.7. Figure 11 shows the percentage breakdown of the total ROCs issued by technology type.

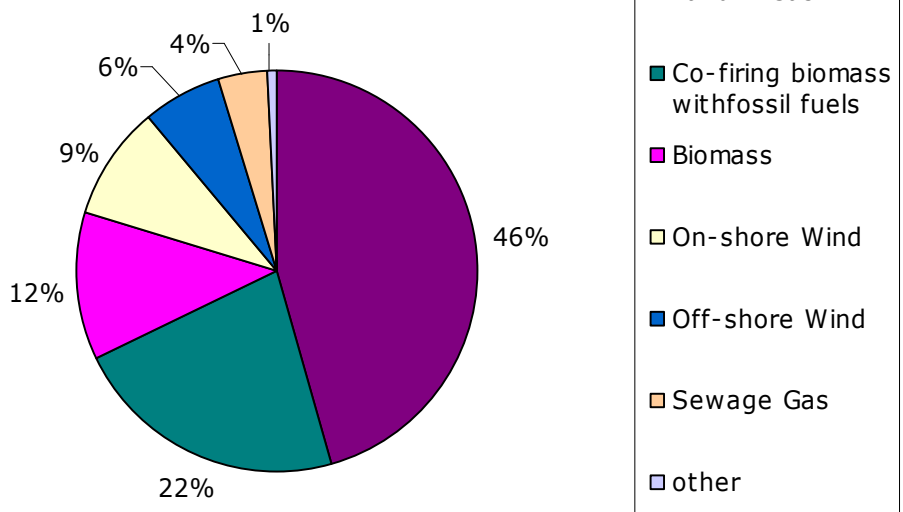
Figure 11: Breakdown of ROCs issued by technology type



Other technologies include sewage gas, micro hydro, ACT, PV and wave power.

3.8. As can be seen from Figure 11, landfill gas generation attracted 28 per cent of the total ROCs issued in 2006-07, which is comparable to the share it received in 2005-06 (29%). On-shore wind also received 28 per cent of total ROCs with hydro stations with a DNC of less than 20 MW receiving 16 per cent. Figures 12, 13, 14 and 15 disaggregate this information by country.

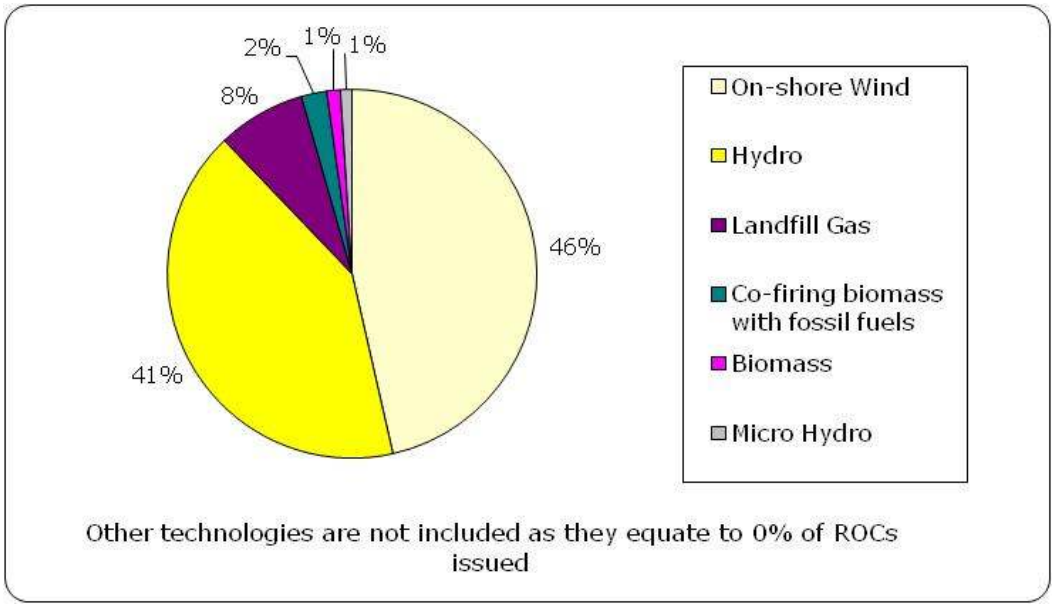
Figure 12: Breakdown of ROCs issued by technology type in England



Other technologies include hydro, ACT, micro hydro, PV and wave power.

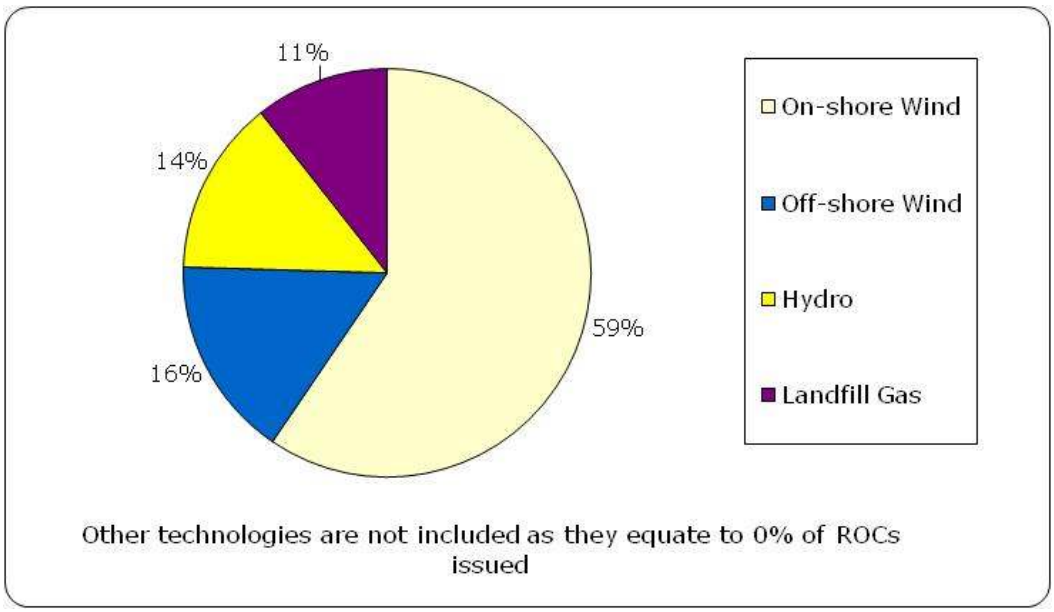
3.9. The majority of ROCs issued in England went to landfill gas and generating stations co-firing biomass with fossil fuel. Biomass stations were also issued a significant number of ROCs.

Figure 13: Breakdown of ROCs issued by technology type in Scotland



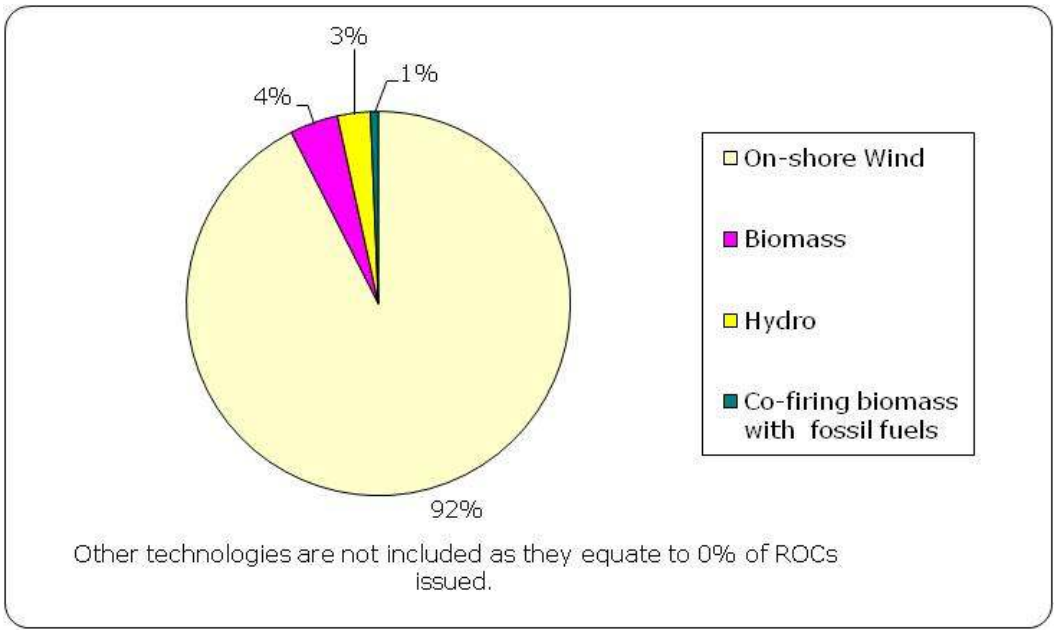
3.10. The majority of ROCs issued in Scotland went to on-shore wind generating stations and hydro stations with a declared net capacity (DNC) of less than 20 MW.

Figure 14: Breakdown of ROCs issued by technology type in Wales



3.11. The majority of ROCs issued in Wales went to on-shore wind generating stations. Off-shore wind, hydro stations with a DNC of less than 20 MW and landfill gas generating stations received the bulk of the remaining ROCs issued in Wales.

Figure 15: Breakdown of ROCs issued by technology type in Northern Ireland



3.12. The vast majority of ROCs issued in Northern Ireland went to on-shore wind generating stations.

ROCs issued per month

3.13. Ordinarily, we issue ROCs to generating stations on a monthly basis. However, small generators, ie those with a DNC of 50kW and under, can opt to receive ROCs annually. Typically, domestic-scale generators choose this option to minimise the administrative burden they face when claiming ROCs.

3.14. ROCs issued on a monthly basis are done so two and a half months after the month of generation. ROCs issued on an annual basis are issued two and a half months after the end of the obligation year. This lag reflects the legislative

timeframe for the provision of data to us, ie the two-month[22] window, and also our data processing time.

3.15. Figure 16 demonstrates the trend in ROC issue each year since 2002-03. Figure 17 compares the ROCs issued by technology type per month in the obligation periods.

3.16. There is a clear trend across the periods of more ROCs being issued in winter months. This could be a result of a number of factors, including favourable weather conditions for some technology types.

[22] Generating stations have two months from the month of generation to provide us with their metered monthly output. We then have a further one month in which to issue ROCs. (Article 18(3)(a) of the Orders).

Figure 16: ROCs issued per month

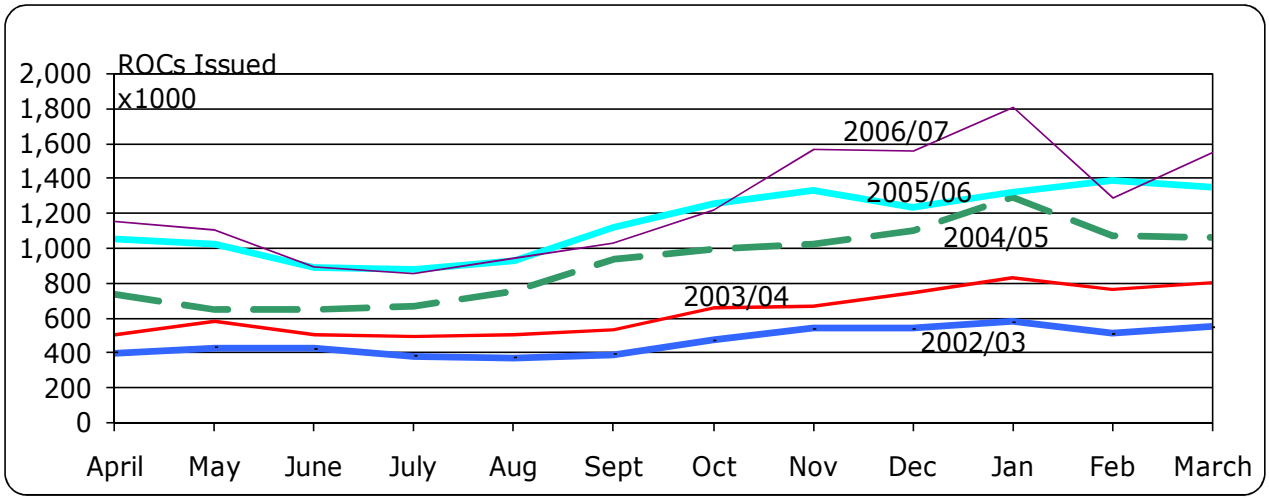
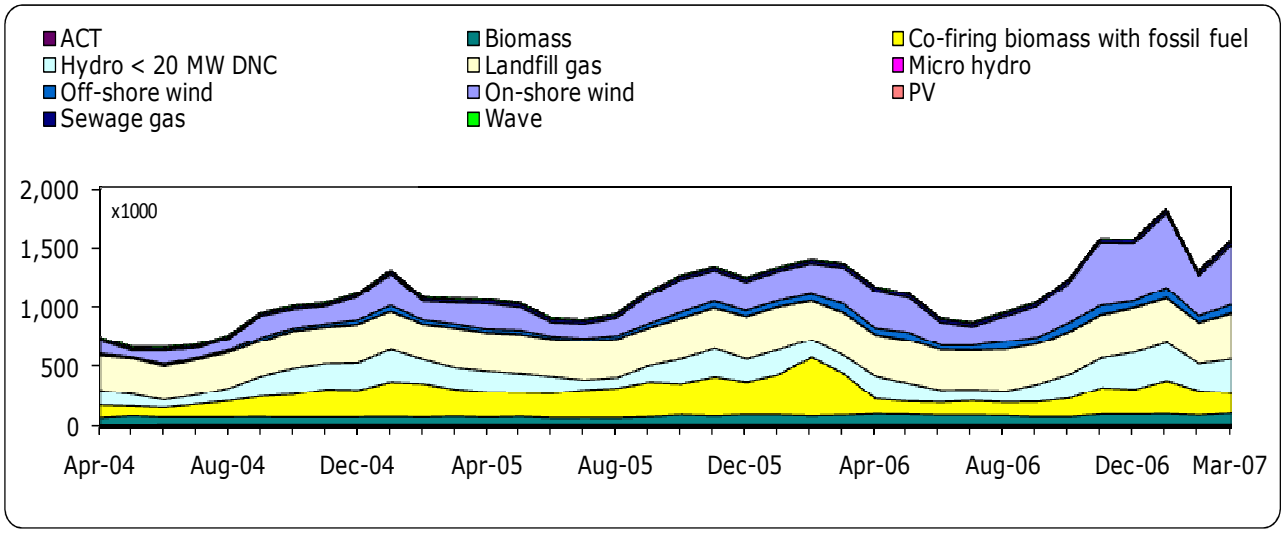


Figure 17: ROCs issued by technology type per month[23]



[23] For ROCs issued in 2002-03 please see previous Renewables Obligation: Annual Reports

ROC revocation and replacement

3.17. We revoked 73,669 ROCs, SROCs and NIROCs in the 2006-07 obligation period. Our IT systems were updated before 1 April 2006 to allow us to revoke part ROC ranges. As such, no ROCs were revoked and then replaced in this period. Further detail on ROC revocation by technology can be found in tables B17 and B18 of Appendix 3. This information is also published regularly on the "Renewable Statistics" section of our website www.ofgem.gov.uk.

4. Generators accredited for the Renewables Obligation

Chapter summary

This chapter, together with Appendix 4, provides information on the number and type of generating stations accredited under the Renewables Obligations.

We are required to publish this information under the Orders.

A detailed list of all stations accredited under the Orders can be found on the Renewable Statistics page of our website www.ofgem.gov.uk

Accreditation of generating stations

4.1. The Orders require us to accredit eligible renewable generating stations for the RO. We have put in place appropriate application forms and guidance to assist us to carry out this function.

Headline figures

4.2. We accredited 380 generating stations during the 2006-07 obligation period and 243 of accredited stations were commissioned during this period. There were a total of 1,360 generating stations accredited for the RO as of 31 March 2007.

4.3. Figures 18 and 19 illustrate the stations accredited in the 2006-07 obligation period.

4.4. At the end of the 2002-03 obligation period, we had accredited 505 generating stations, with that number increasing to 616 at the end of the 2003-04 obligation period, to 787 at the end of the 2004-05 obligation period and to 980 at the end of the 2005-06 obligation period.[24]

4.5. Five generating stations decommissioned or ceased generating from renewable sources during the 2006-07 obligation period.

[24] This figure differs by a small amount to that shown in the last annual report as generators are accredited from the date we receive their application form. It is possible that we received generators applications in the 2005-06 period but did not confirm their accreditation until after the last annual report was published.

Figure 18: Comparison of the number of generating stations accredited under the RO, ROS and NIRO by location in 2006-07 obligation period

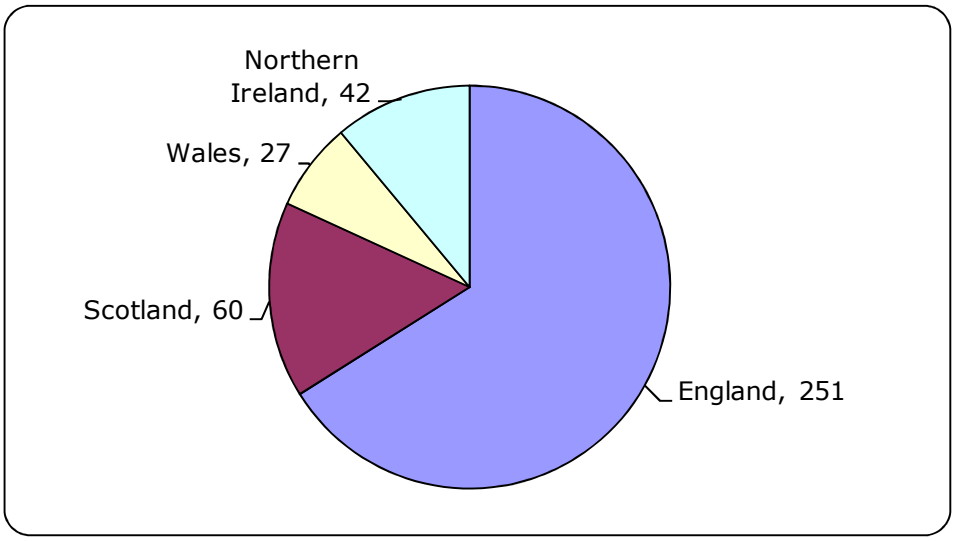
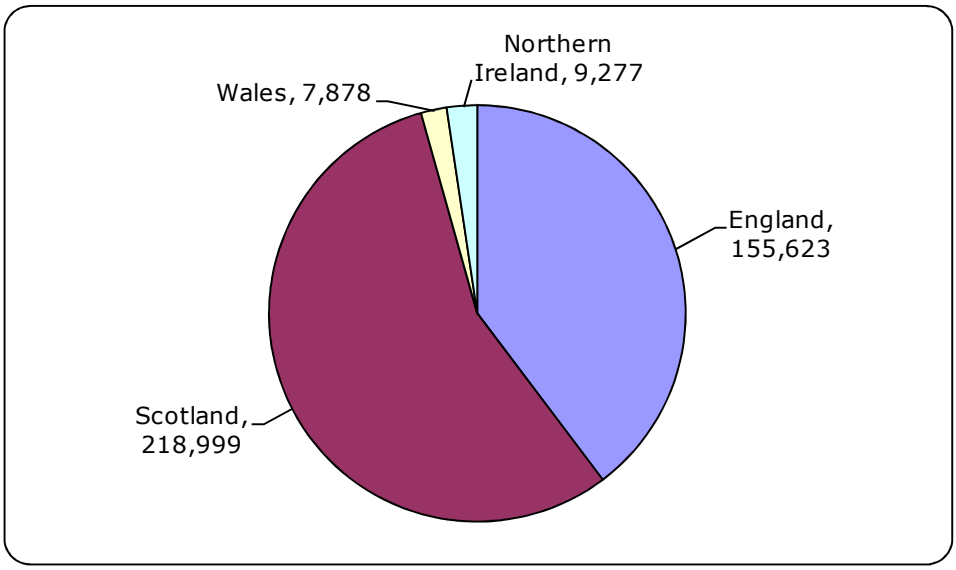


Figure 19: Comparison of capacity (kW) of generating stations accredited under the RO, ROS and NIRO by location in 2006-07 obligation period



Accreditations by country

4.6. England accounts for around 65 per cent of the total number of stations accredited for the RO in the United Kingdom, which equates to just over 50 per cent of the total eligible generating capacity. This compares with Scotland, which has 20 per cent of the total number of stations and just over 37 per cent of the total generating capacity, and Wales, which has just over 8 per cent of the number of generators and around 10 per cent of the total generating capacity.

4.7. Generating stations located in Northern Ireland account for just over 6 per cent of the total number of eligible generators accredited for the RO in the United Kingdom, accounting for just under 3 per cent of total generating capacity.

4.8. Further detail can be found in tables C1 and C2 of Appendix 4.

NFFO and SRO generating stations

4.9. Under the Electricity Act 1989, Orders were introduced in England and Wales, Scotland and Northern Ireland requiring the Regional Electricity Companies to contract for certain amounts of electricity generating capacity from renewable sources. These Orders are known as Non-Fossil Fuel Obligations (NFFO and NI NFFO) and the Scottish Renewables Obligation (SRO)[25].

4.10. Article 6 of the Orders sets out specific eligibility requirements in respect of generating stations situated at locations where a NFFO, SRO or NI NFFO contract (known as "qualifying arrangements" in the legislation) exists.

4.11. Two generating stations that receive support under NFFO and 7 generating stations that receive support under SRO were accredited for the RO in the 2006-07 obligation period. We did not accredit any generating stations that receive support under the NI NFFO in 2006-07.

4.12. NFFO generating stations made up around 28 per cent of the accredited RO capacity in England and Wales. NI NFFO generating stations made up 32 per cent of the accredited RO capacity in Northern Ireland. SRO generating stations made up 11 per cent of the accredited RO capacity in Scotland.

4.13. Further detailed information can be found in table C7 of Appendix 4.

[25] See the Electricity (Non-Fossil Fuel Sources) (England & Wales) Order 1994, the Electricity (Non-Fossil Fuel Sources) (Northern Ireland) Order 1996 and the Electricity (Non-Fossil Fuel Sources) (Scotland) Order 1994.

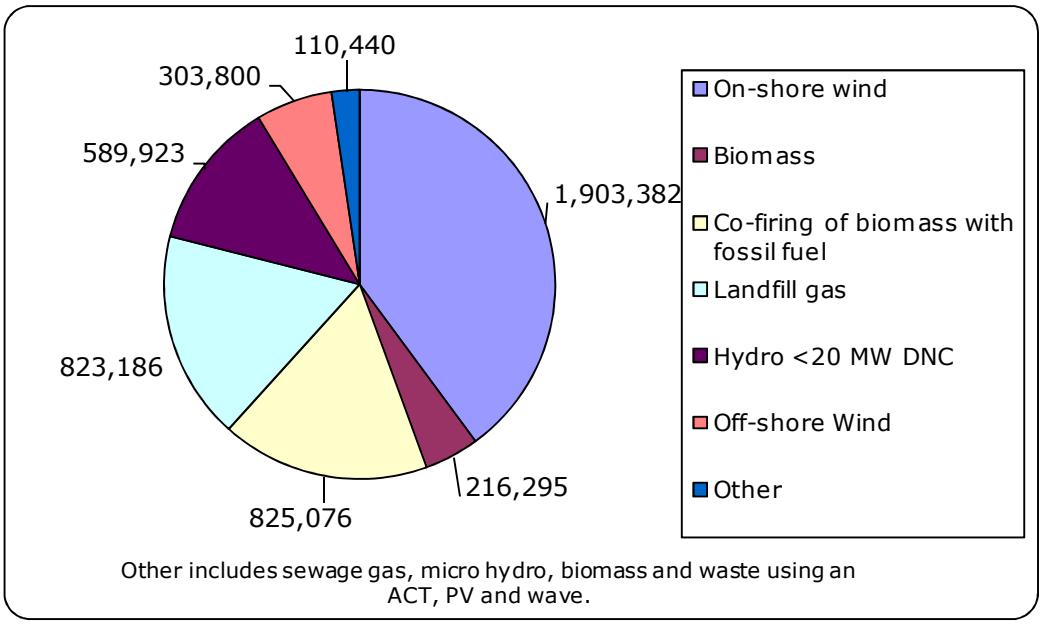
Types of generating station we accredited

4.14. When the RO was first introduced, the most prevalent technology type (in terms of the number of accredited generating stations) was landfill gas with 202 stations accredited at 1 April 2002. In 2006-07 we accredited 31 landfill gas generating stations.

4.15. The most prevalent technology in the 2006-07 obligation period in terms of the number of stations becoming accredited was photovoltaic with 175 stations being accredited. The most prevalent technology in terms of capacity becoming accredited in this period was on-shore wind with 304,885 kW becoming accredited.

4.16. On-shore wind stations made up just under 78 per cent of the total renewable capacity installed and accredited under the RO in the 2006-07 obligation period. The total installed capacity for each technology is shown in Figure 20. Further detail can be found in Appendix 4.

Figure 20: Total capacity (kW) accredited for the RO, ROS and NIRO by technology



Other includes sewage gas, micro hydro, biomass and waste using an ACT, PV and wave.

Our audit process

4.17. We expect the operators of generating stations applying for accreditation to give us complete and accurate information. They should also tell us about any subsequent changes that might affect their accredited status. This helps us to ensure that accreditation remains valid, and to make certain that we issue the

correct number of ROCs. A programme of audits gives us assurance of compliance with the Orders.

4.18. During the 2006-07 obligation period, we carried out 18 technical audits and 16 fuel measurement and sampling audits of accredited generating stations across England and Wales, Scotland and Northern Ireland. Similar issues were identified in all three countries. Most of the findings were satisfactory, but some revealed irregularities that called into question the number of ROCs that the operator received, departures from agreed procedures for fuel measurement and sampling or failures to report modifications at the generating station. The following tables summarise the audit results.

Table 6: Summary of technical audit results

Generating technology	No. of stations audited	Types of irregularity detected
Biomass	1	Fuel measurement data discrepancies. Station modifications not reported.
Co-firing	4	Output metering not compliant with Schedule 7 of the Electricity Act 1989 (Schedule 7). No formal fuel measurement and sampling (FMS) procedures in place. Issues with the measurement and reporting of 'input electricity.' Fuel measurement data discrepancies. Meter calibration certificates unavailable.
Hydro	3	Metering not Schedule 7 compliant. Issues with the measurement and reporting of 'input electricity'.
Landfill gas	2	Issues with the measurement and reporting of 'input electricity'. Station modifications not reported. Meter calibration certificates unavailable.
On-shore wind	5	Station modifications not reported. Meter calibration certificates unavailable.
Sewage gas	3	No issues identified.

Table 7: Summary of fuel measurement and sampling (FMS) audit results

Generating technology	No. of stations audited	Types of irregularity detected
Co-fired	11	Issues with the measurement and sampling of carried over fuel. Fuel not correctly accounted for. Methodology required for accurately determining contamination levels. Inconsistencies between FMS practices at site and agreed

		FMS procedures submitted. Formal FMS procedures not in place for every fuel burned at the site. Backup diesel generator's output not reported. Methodology to calculate the mixture of HFO to tall oil used at the generating site not formally agreed with Ofgem. FMS procedures not formally agreed in relation to the methodology for calculating the % of methane used. Biogas flow meter out of commission. Gas meter not installed in accordance with the manufacturers' recommendation. Biogas and Gas oil flow meters not calibrated. Issue with the measurement of input electricity. Inadequate metering. Schematic diagram out of date. Station modifications not reported.
Biomass	4	Eligibility of fuel used questioned Station modifications not reported. Measurement and sampling frequency not sufficient to provide data representative of biomass burned. Location of flow meter does not facilitate fully accurate measurement of bio-liquid. Methodology to account for liquid biomass not agreed. Leakage of liquid biomass material from pipe-work. Fossil fuel use exceeded (in one month) the 10% energy content provision of Article 8(3).
Biomass/co-fired	1	Inconsistencies between FMS practices at site and agreed FMS procedures submitted.

4.19. The audit findings did not identify any issues that threatened accreditation. However, one issue identified has called into question how we consider bio-diesel in general, under the RO. This issue relates to how molecules of fossil fuel origin, found in bio-diesel, are accounted for. We have been working with our technical consultants to address this issue.

4.20. The most common findings were in relation to the accuracy of the information submitted for ROC claims because of issues with metering equipment, the measurement and sampling of fuel used for biomass/co-fired stations or the incorrect reporting of data. We notified each operator of the issues identified by the audit and requested that the operator provide assurances that the issues would be rectified. We are also carrying out a follow-up exercise to ensure that the issues have been addressed.

4.21. In relation to metering equipment, there were some cases where the electrical meter was not of an approved type or the fuel meter was not correctly installed to accurately measure fossil/biomass fuel used. In these cases operators were required to rectify the situation by installing approved meters or reinstalling fuel meters. In a number of other cases, station operators were not correctly

metering or reporting data taking account of electricity or fuel used as an input to the generation process. We took appropriate remedial action in these instances.

5. Implementation Issues

Chapter summary

This chapter sets out the issues that arose in the 2006-07 obligation period.

It also looks at the issues that have come up in 2007-08 obligation period that are ongoing at the time this report was published.

Our 2005-06 annual report sets out some of the issues that came up prior to April 2006.

2006-07 Obligation period

Current IT system

5.1. The IT systems that we use to administer the RO are at their operational limit. Generators, suppliers and Ofgem staff have experienced a number of problems with the IT systems. These problems have impacted on the ROC transfer process, and on the supplier compliance process.

5.2. Examples of some of the problems experienced with the ROC register are set out below:

- The system "timed out" when suppliers tried to present a large number of ROCs during compliance.
- Some ROCs presented by suppliers did not immediately change their status to redeemed in the ROC register.
- Users upgrading to Internet Explorer version 7 were not able to access the ROC register for a time as certain default settings in this browser are not compatible with the ROC register.

5.3. These issues were all ultimately resolved. However, the IT problems resulted in extra work for all parties. Suppliers worked with us to resolve these issues and fortunately it was not necessary to implement contingency plans. We are grateful to them for their co-operation.

New IT system

5.4. Following a review of the IT systems that we use to administer the RO (together with those used to administer the Climate Change Levy and Renewable Energy Guarantees of Origin) we took a decision to build a new IT system.

5.5. We identified the requirements of this system towards the end of 2006 and started to build it in spring 2007. We have involved an expert industry group in the development and testing of this new system to ensure that it is fit for purpose.

5.6. The new system is due to 'go-live' in April 2008 and will benefit both Ofgem and users. The aims from the outset were to build a system that would increase automation, increase flexibility, and maximise synergies. The new system will do this, for example, by allowing generators to apply for accreditation online. The new system will also automate many of the processes that are currently conducted outside of the existing IT systems, for example supplier compliance.

5.7. The new system is being developed to be flexible enough to cope with future changes in legislation. For example, the likely introduction of banding under the RO in 2009[26].

Fuel measurement and sampling of waste

5.8. We continue to find it problematic to administer the RO in relation to waste.

5.9. The legislation places the same requirements for fuel measurement and sampling on waste generators as it does for biomass generators and this creates difficulties as waste is particularly heterogeneous and therefore very difficult to measure. We have not been able to find a workable solution to date. However, the likely introduction of deeming for energy from waste in 2009 will go some way towards resolving this issue.

5.10. We have recently agreed that we can consider a Solid Recovered Fuel derived from Waste as a new fuel, where the generator can provide evidence that this fuel has undergone a process of production.

5.11. As detailed in our guidance notes we need to agree a Fuel Measurement and Sampling regime for any new fuels that are intended to be used to generate electricity. We would recommend that the methodology is submitted, by generating stations, as soon as possible to ensure that agreement is reached before the fuel is burnt. A trial burn that produces electricity will affect the fuel mix. Without an agreed Fuel Measurement and Sampling Procedure this change in fuel mix could prevent us from issuing ROCs for the month that any trial occurs in.

2007-08 Obligation period

Small Generators and Agents : Volume of Applications

5.12. From April 2007, agents have been able to represent small generators and amalgamate their output for the purposes of claiming ROCs. As a result, we have seen a significant increase in the number of small generators applying for accreditation. In April 2007, we had accredited around 360 small generators.

[26] See chapter 6 for information relating to the introduction of banding.

This had increased to over 1,240 at the time of publication of this report. This has had implications for our workload.

5.13. We are investigating several proposals to reduce the administrative burden for both Ofgem and small generators. We expect to complete these investigations later this year.

6. Changes in legislation

Changes to the Renewables Obligation introduced from 1 April 2007.

UK wide changes

6.1. The Renewables Obligation Order 2006 (Amendment) Order 2007, the Renewables Obligation (Scotland) Order 2007 and the Renewables Obligation Order (Northern Ireland) 2007 came into force on 1 April 2007. This legislation introduced a number of changes to the Orders including:

- allowing agents to act fully on behalf of small generators and to receive ROCs
- allowing agents to amalgamate output for the purposes of ROC claims where they are representing two or more small generators
- allowing ROCs to be issued for electricity consumed by the generator without the need for "sell-and-buy-back" contracts[27]
- the removal of the notice period small generators were required to give before claiming ROCs on an annual basis
- the introduction of Article 16(9A) that requires all meters, on which ROCs are to be claimed, to meet the requirements of paragraph 2 of Schedule 7 to the Act
- a minor amendment to the definition of biomass to include fuel treated as biomass, and
- a minor amendment to the definition of energy crops to include short rotation coppice poplar, short rotation coppice willow and miscanthus giganteus.

6.2. Our annual report due to be published in spring 2009 will take account of these changes to the Renewables Obligation.

Marine Supply Obligation - Scotland only

6.3. The Marine Supply Obligation (MSO) was introduced under the Renewables Obligation (Scotland) Order 2007 (ROS) with effect from 1 April 2007. It is a mechanism which requires suppliers with an obligation under the ROS to meet a proportion of that obligation by producing as evidence ROCs awarded to eligible wave or tidal generation in Scottish waters, or by paying a higher buy-out price.

6.4. For the obligation period 1 April 2007 to 31 March 2008, both the wave and tidal requirements have been set to zero. At the time of publication the Scottish

[27] Under these contracts, generators sell their electricity to a licensed supply and then purchase it back for their own consumption.

Government has proposed that the wave and tidal requirements for the period 1 April 2008 to 31 March 2009 should also be set to zero. Suppliers will be required to comply with the MSO only when the level goes above zero.

Future changes

6.5. In May 2007 BERR issued a consultation on a number of proposed changes to the Renewables Obligation. We have responded to this consultation and this response can be found online at www.ofgem.gov.uk.

6.6. BERR has since issued a government response to the consultation feedback, which outlines the governments decisions with regards to these changes.

6.7. The changes include:

- banding the RO so that different levels of support are provided to different technologies.
- extending obligation levels up to 20 per cent on a "guaranteed headroom" basis
- recovering Ofgem's costs of administering the RO from the buy-out fund
- a change to the treatment of generators supplying through private wire networks
- publishing annual sustainability reporting for Biomass, and
- deeming energy from waste at 50 per cent renewable content and allowing a higher percentage where adequate sampling procedures are in place.

6.8. These changes are intended to be implemented from 1 April 2009. They require new primary legislation to be obtained through the Energy Bill which is currently before parliament. There will be further consultation on the accompanying secondary legislation, which is expected to occur in the second half of 2008.

Size of late payment fund

6.9. We are required to redistribute the late payment fund(s) before 1 January following the obligation period. Where possible, we redistribute the late payment fund at the same time as the buy-out fund. Payments redistributed from the late payment funds are often very small amounts[28]. Some suppliers commented that their costs of processing these transactions exceeded the value of the payments. They asked us to explore the possibility of carrying forward small amounts to the following obligation year rather than redistributing them. It has been proposed

[28] Details of the amounts redistributed can be found in Appendix 2 in Tables A9, A10 and A11.

that the Orders are amended to allow this, carrying forward the late payment fund requires new primary legislation which is contained in the Energy Bill.

Appendices

Index

Appendix 1 – The Authority's Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ("the Authority"), the regulator of the gas and electricity industries in Great Britain. This Appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.[29]

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly[30].

1.4. The Authority's principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of consumers, present and future, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions have regard to:

- The need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- The need to secure that all reasonable demands for electricity are met;
- The need to secure that licence holders are able to finance the activities which are the subject of obligations on them[31]; and
- The interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[32]

[29] entitled "Gas Supply" and "Electricity Supply" respectively.
[30] However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.
[31] under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Act in the case of Electricity Act functions.
[32] The Authority may have regard to other descriptions of consumers.

1.6. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

- Promote efficiency and economy on the part of those licensed[33] under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- Protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity;
- Contribute to the achievement of sustainable development; and
- Secure a diverse and viable long-term energy supply.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- The effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- The principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- Certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation34 and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

[33] or persons authorised by exemptions to carry on any activity.
[34] Council Regulation (EC) 1/2003

Appendix 2 – Compliance by licensed electricity suppliers

Table A1: 2006-07 supplier compliance with the RO

Licence name	RO (MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)
BizzEnergy Limited	140,474	14,047	0	14,047	£4,202,433.48
BP Power Trading Limited	486	0	0	0	£16,154.64
British Energy Direct Limited	1,738,043	670,444	0	670,444	£35,486,990.76
British Gas Trading Limited	2,329,450	1,693,207	105,871	1,799,078	£17,629,565.28
Cinergy Global Trading Ltd	7	0	0	0	£232.68
EDF Energy Customers PLC	2,883,887	2,823,568	0	2,823,568	£2,005,003.56
Seeboard Energy Ltd	564,903	553,087	0	553,087	£392,763.84
Electricity for Business	13,153	0	2,210	2,210	£363,745.32
Energy Data Company	20	0	0	0	£664.80
First Utility Limited	19	0	0	0	£631.56
Gaz de France Marketing Ltd	671,707	201,814	1,970	203,784	£15,553,760.52
Good Energy Limited	6,592	6,592	0	6,592	£0.00
Haven Power Limited	2	0	0	0	£66.48
Immingham	15,838	0	0	0	£526,455.12
Opus Energy Ltd	44,001	15,469	324	15,793	£937,633.92
Economy Power	219	0	0	0	£7,279.56
E.ON UK Plc	1,153,720	106,906	0	106,906	£34,796,097.36
Powergen Retail Ltd	2,140,479	1,357,701	1,606	1,359,307	£25,966,157.28
The Renewable Energy Company Limited	9,128	9,128	0	9,128	£0.00
Electricity Plus Ltd	38,229	17,604	0	17,604	£685,575.00

Licence name	RO (MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)
Npower Cogen Trading Ltd	42,465	0	0	0	£1,411,536.60
Npower Direct Ltd	240,072	110,549	0	110,549	£4,305,344.52
Npower Ltd	2,690,671	1,239,009	0	1,239,009	£48,253,244.88
Npower Northern Ltd	375,118	172,736	0	172,736	£6,727,177.68
Npower Yorkshire Ltd	213,234	98,191	0	98,191	£3,824,029.32
SSE Energy Supply Ltd	2,869,894	2,596,812	53,474	2,650,286	£7,299,769.92
Scottish Power Energy Retail Limited	976,747	855,078	121,669	976,747	£0.00
Wilton Energy Limited	1,205	0	0	0	£40,054.20
Slough Energy Supplies Limited	8,830	8,830	0	8,830	£0.00
Smartestenergy Limited	25,398	25,398	0	25,398	£0.00
Total Gas & Power Limited	195,911	5,000	0	5,000	£6,345,881.64
Tradelink Solutions Limited	114	92	22	114	£0.00

Table A2: 2006-07 supplier compliance with the ROS

Licence name	ROS (MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)	Money Paid into late payment fund (£)
BizzEnergy Limited	4,802	480	0	480	£143,663.28	£0.00
British Energy Direct Limited	118,404	118,404	0	118404	£0.00	£0.00
British Gas Trading Limited	239,053	180,861	3,764	184625	£1,809,186.72	£0.00
EDF Energy Customers PLC	100,093	98,000	0	98000	£69,571.32	£0.00
Seeboard Energy Ltd	4,477	4,384	0	4,384	£3,091.32	£0.00
Electricity for Business	805	0	0	0	£26,758.20	£0.00
Gaz de France Marketing Ltd	26,372	18,590	0	18590	£0.00	£258,978.42
Good Energy Limited	387	387	0	387	£0.00	£0.00
Opus Energy Ltd	5,435	5,435	0	5435	£0.00	£0.00

Licence name	ROS (MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)	Money Paid into late payment fund (£)
Economy Power	44	0	0	0	£1,462.56	£0.00
E.ON UK Plc	37,036	1,013	0	1013	£1,197,404.52	£0.00
Powergen Retail Ltd	62,612	5,752	0	5752	£1,890,026.40	£0.00
The Renewable Energy Company Limited	663	663	0	663	£0.00	£0.00
Electricity Plus Ltd	2,694	1,241	0	1241	£48,297.72	£0.00
Npower Direct Ltd	14,220	6,548	0	6548	£255,017.28	£0.00
Npower Ltd	128,097	58,987	0	58987	£2,297,216.40	£0.00
Npower Northern Ltd	2,388	1,100	0	1100	£42,813.12	£0.00
SSE Energy Supply Ltd	543,960	502,336	0	502336	£1,383,581.76	£0.00
Scottish Power Energy Retail Limited	715,958	715,958	0	715958	£0.00	£0.00
Smartestenergy Limited	1	1	0	1	£0.00	£0.00
Total Gas & Power Limited	13,413	0	0	0	£445,848.12	£0.00
Tradelink Solutions Limited	1,877	1,545	332	1877	£0.00	£0.00

Table A3: 2006-07 supplier compliance with the NIRO

Licence name	NIRO(MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)
Airtricity Energy Supply LTD	5,832	0	5832	5,832	£0.00
Bord Gais Eireann	591	0	0	0	£19,644.84
ESB Independent Energy	43,344	12,000	488	12,488	£1,025,653.44
Viridian Energy Supply Ltd (Energia)	44,116	0	0	0	£1,466,415.84

Licence name	NIRO(MWh)	Total GB ROCs presented	Total NIROCs presented	Total number of ROCs presented	Money paid into buy-out fund (£)
Northern Ireland Electricity plc	122,906	0	106	106	£4,081,872.00
Npower LTD	76	35	0	35	£1,362.84
Tradelink Solutions Limited (NI)	4	4	0	4	£0.00

Table A4: ROCs presented in England and Wales

Licensed electricity supplier	RO (MWh)	Eligible Co-fired ROCs presented	Eligible 2005-06 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% RO met by co-fired ROCs	% RO met by 2005-06 ROCs	% RO met by other ROCs
BizzEnergy Limited	140,474	14,047	0	0	10.00%	0.00%	0.00%
BP Power Trading Limited	486	0	0	0	0.00%	0.00%	0.00%
British Energy Direct Limited	1,738,043	166,208	0	504,236	9.56%	0.00%	29.01%
British Gas Trading Limited	2,329,450	232,945	23,748	1,542,385	10.00%	1.02%	66.21%
Cinergy Global Trading Ltd	7	0	0	0	0.00%	0.00%	0.00%
EDF Energy Customers PLC	2,883,887	110,511	20,112	2,692,945	3.83%	0.70%	93.38%
Seeboard Energy Ltd	564,903	22,459	1,176	5,29,452	3.98%	0.21%	93.72%
Electricity for Business	13,153	0	0	2,210	0.00%	0.00%	16.80%
Energy Data Company	20	0	0	0	0.00%	0.00%	0.00%
First Utility Limited	19	0	0	0	0.00%	0.00%	0.00%
Gaz de France Marketing Ltd	671,707	33,112	0	170,672	4.93%	0.00%	25.41%
Good Energy Limited	6,592	0	139	6,453	0.00%	2.11%	97.89%
Haven Power Limited	2	0	0	0	0.00%	0.00%	0.00%

Licensed electricity supplier	RO (MWh)	Eligible Co-fired ROCs presented	Eligible 2005-06 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% RO met by co-fired ROCs	% RO met by 2005-06 ROCs	% RO met by other ROCs
Immingham	15,838	0	0	0	0.00%	0.00%	0.00%
Opus Energy Ltd	44,001	4,399	0	11,394	10.00%	0.00%	25.89%
Economy Power	219	0	0	0	0.00%	0.00%	0.00%
E.ON UK Plc	1,153,720	100000	0	6,906	8.67%	0.00%	0.60%
Powergen Retail Ltd	2,140,479	213624	105	1,145,578	9.98%	0.00%	53.52%
The Renewable Energy Company Limited	9,128	0	0	9,128	0.00%	0.00%	100.00%
Electricity Plus Ltd	38,229	3179	0	14,425	8.32%	0.00%	37.73%
Npower Cogen Trading Ltd	42,465	0	0	0	0.00%	0.00%	0.00%
Npower Direct Ltd	240,072	19962	0	90,587	8.32%	0.00%	37.73%
Npower Ltd	2,690,671	223734	7177	1,008,098	8.32%	0.27%	37.47%
Npower Northern Ltd	375,118	31192	0	141,544	8.32%	0.00%	37.73%
Npower Yorkshire Ltd	213,234	17731	0	80,460	8.32%	0.00%	37.73%
SSE Energy Supply Ltd	2,869,894	286989	1011	2,362,286	10.00%	0.04%	82.31%
Scottish Power Energy Retail Limited	976,747	90977	0	8,85,770	9.31%	0.00%	90.69%
Wilton Energy Limited	1,205	0	0	0	0.00%	0.00%	0.00%
Slough Energy Supplies Limited	8,830	0	0	8,830	0.00%	0.00%	100.00%
Smartestenergy Limited	25,398	0	0	25,398	0.00%	0.00%	100.00%
Total Gas & Power Limited	195,911	5000	0	0	2.55%	0.00%	0.00%
Tradelink Solutions Limited	114	0	0	114	0.00%	0.00%	100.00%

Table A5: ROCs presented in Scotland

Licensed electricity supplier	ROS (MWh)	Eligible Co-fired ROCs presented	Eligible 2005-06 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% ROS met by co-fired ROCs	% ROS met by 2005-06 ROCs	% ROS met by other ROCs
BizzEnergy Limited	4,802	480	0	0	10.00%	0.00%	0.00%
British Energy Direct Limited	118,404	0	0	118,404	0.00%	0.00%	100.00%
British Gas Trading Limited	239,053	23,905	0	160,720	10.00%	0.00%	67.23%
EDF Energy Customers PLC	100,093	0	0	98,000	0.00%	0.00%	97.91%
Seeboard Energy Ltd	4,477	0	0	4,384	0.00%	0.00%	97.92%
Electricity for Business	805	0	0	0	0.00%	0.00%	0.00%
Gaz de France Marketing Ltd	26,372	2,637	2	15,951	10.00%	0.01%	30.98%
Good Energy Limited	387	0	0	387	0.00%	0.00%	100.00%
Opus Energy Ltd	5,435	543	0	4,892	9.99%	0.00%	90.01%
Economy Power	44	0	0	0	0.00%	0.00%	0.00%
E.ON UK Plc	37,036	1,013	0	0	2.74%	0.00%	0.00%
Powergen Retail Ltd	62,612	5,752	0	0	9.19%	0.00%	0.00%
The Renewable Energy Company Limited	663	0	0	663	0.00%	0.00%	100.00%
Electricity Plus Ltd	2,694	224	0	1,017	8.31%	0.00%	37.75%
Npower Direct Ltd	14,220	1,182	0	5,366	8.31%	0.00%	37.74%
Npower Ltd	128,097	10,652	0	48,335	8.32%	0.00%	37.73%
Npower Northern Ltd	2,388	199	0	901	8.33%	0.00%	37.73%
SSE Energy Supply Ltd	543,960	54,396	100,551	347,389	10.00%	18.48%	63.86%
Scottish Power Energy Retail Limited	715,958	64,684	1,329	649,945	9.03%	0.19%	90.78%
Smartestenergy Limited	1	0	0	1	0.00%	0.00%	100.00%
Total Gas & Power Limited	13,413	0	0	0	0.00%	0.00%	0.00%

Licensed electricity supplier	ROS (MWh)	Eligible Co-fired ROCs presented	Eligible 2005-06 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% ROS met by co-fired ROCs	% ROS met by 2005-06 ROCs	% ROS met by other ROCs
Tradelink Solutions Limited	1,877	0	0	1,877	0.00%	0.00%	100.00%

Table A6: ROCs presented in Northern Ireland

Licensed electricity supplier	NIRO (MWh)	Eligible Co-fired ROCs presented	Eligible 2005-06 ROCs presented	Other ROCs presented (not including co-fired or banked ROCs)	% NIRO met by co-fired ROCs	% NIRO met by 2005-06 ROCs	% NIRO met by other ROCs
Airtricity Energy Supply LTD	5,832	0	0	5,832	0.00%	0.00%	100.00%
Bord Gais Eireann	591	0	0	0	0.00%	0.00%	0.00%
ESB Independent Energy	43,344	4,327	0	8,161	9.98%	0.00%	18.83%
Viridian Energy Supply Ltd (Energia)	44,116	0	0	0	0.00%	0.00%	0.00%
Northern Ireland Electricity plc	122,906	0	7	99	0.00%	0.01%	0.08%
Npower LTD	76	6	0	29	7.89%	0.00%	38.16%
Tradelink Solutions Limited (NI)	4	0	0	4	0.00%	0.00%	100.00%

Table A7: Total number of GB ROCs and NIROCs presented under each obligation

Obligation	GB ROCs	NIROCs	Total
Renewables Obligation	12,581,262	287,146	12,868,408
Renewables Obligation (Scotland)	1,721,685	4,096	1,725,781
Northern Ireland Renewables Obligation	12,039	6,426	18,465

Table A8: Late payments and interest

Licensed electricity supplier	Obligation	Outstanding Payment	Number of days until payment was received (inc 1st Oct and date of payment)	Interest Due	Total late payment due	Total paid per obligation
Gaz de France	ROS	£258,673.68	4	£304.74	£258,978.42	£258,978.42

Table A9: Distribution of England and Wales buyout and late payment funds to suppliers[35]

Licensed electricity supplier	Payment due for ROCs presented	Late payment due for ROCs presented	Total redistributed
BizzEnergy Limited	£216,611	£0	£216,611
British Energy Direct Limited	£11,762,460	£0	£11,762,460
British Gas Trading Limited	£29,578,865	£0	£29,578,865
EDF Energy Customers PLC	£43,563,308	£1	£43,563,309
Seeboard Energy Ltd	£8,312,413	£0	£8,312,413
Electricity for Business	£32,953	£0	£32,953
Gaz de France Marketing Ltd	£3,315,804	£0	£3,315,804
Good Energy Limited	£104,063	£0	£104,063
Opus Energy Ltd	£316,529	£0	£316,529
E.ON UK Plc	£1,609,173	£0	£1,609,173
Powergen Retail Ltd	£20,354,305	£0	£20,354,305
The Renewable Energy Company Limited	£145,992	£0	£145,992
Electricity Plus Ltd	£280,996	£0	£280,996
Npower Direct Ltd	£1,746,025	£0	£1,746,025
Npower Ltd	£19,354,333	£0	£19,354,333
Npower Northern Ltd	£2,592,057	£0	£2,592,057
Npower Yorkshire Ltd	£1,464,119	£0	£1,464,119
Scottish Power Energy Retail Limited	£1,692,705	£0	£1,692,705

[35] The buy-out and late payment funds were redistributed on 1 October 2007. No payments were made into the late payment fund after this date.

Licensed electricity supplier	Payment due for ROCs presented	Late payment due for ROCs presented	Total redistributed
SSE Energy Supply Ltd	£47,008,539	£1	£47,008,540
Slough Energy Supplies Limited	£131,663	£0	£131,663
Smartestenergy Limited	£378,722	£0	£378,722
Total Gas & Power Limited	£74,554	£0	£74,554
Tradelink Solutions Limited	£29,687	£0	£29,687
Airtricity Energy Supply LTD	£86,960	£0	£86,960
ESB Independent Energy	£186,207	£0	£186,207
Npower Ltd	£521	£0	£521
Northern Ireland Electricity plc	£1,580	£0	£1,580
Tradelink Solutions Limited (NI)	£59	£0	£59

Table A10: Distribution of Scotland buyout and late payment funds paid to suppliers

Supplier	Payment due for ROCs presented	Late payment due for ROCs presented	Total redistributed
BizzEnergy Limited	£9,606	£258	£9,864
British Energy Direct Limited	£521,639	£14,026	£535,665
British Gas Trading Limited	£1,311,759	£35,272	£1,347,031
EDF Energy Customers PLC	£1,931,939	£51,948	£1,983,887
Seeboard Energy Ltd	£368,637	£9,912	£378,549
Electricity for Business	£1,461	£39	£1,500
Gaz de France Marketing Ltd	£147,048	£3,954	£151,002
Good Energy Limited	£4,614	£124	£4,738
Opus Energy Ltd	£14,037	£377	£14,414
E.ON UK Plc	£71,363	£1,918	£73,281
Powergen Retail Ltd	£902,669	£24,272	£926,941
The Renewable Energy Company	6,474	£174	£6,648
Electricity Plus Ltd	£12,461	£335	£12,796
Npower Direct Ltd	£77,432	£2,082	£79,514
Npower Ltd	£858,323	£23,079	£881,402
Npower Northern Ltd	£114,952	£3,090	£118,042
Npower Yorkshire Ltd	£64,930	£1,745	£66,675
SSE Energy Supply Ltd	£2,084,727	£56,056	£2,140,783
Scottish Power Energy Retail Limited	£1,119,331	£30,097	£1,149,428
Slough Energy Supplies Limited	£5,838	£157	£5,995
Smartestenergy Limited	£16,795	£451	£17,246
Total Gas & Power Limited	£3,306	£88	£3,394
Tradelink Solutions Limited	£1,316	£35	£1,351
Airtricity Energy Supply LTD	£3,856	£103	£3,959
ESB Independent Energy	£8,257	£222	£8,479

Supplier	Payment due for ROCs presented	Late payment due for ROCs presented	Total redistributed
Npower Ltd	£23	£0	£23
Northern Ireland Electricity plc	£70	£1	£71
Tradelink Solutions Limited (NI)	£2	£0	£2

Table A11: Distribution of Northern Ireland buyout and late payment funds paid to suppliers

Supplier	Payment due for ROCs presented	Late payment due for ROCs presented	Total redistributed
BizzEnergy Limited	£6,589	£0	£6,589
British Energy Direct Limited	£357,811	£0	£357,811
British Gas Trading Limited	£899,781	£1	£899,782
EDF Energy Customers PLC	£1,325,184	£1	£1,325,185
Seeboard Energy Ltd	£252,861	£0	£252,861
Electricity for Business	£1,002	£0	£1,002
Gaz de France Marketing Ltd	£100,865	£0	£100,865
Good Energy Limited	£3,165	£0	£3,165
Opus Energy Ltd	£9,628	£0	£9,628
E.ON UK Plc	£48,950	£0	£48,950
Powergen Retail Ltd	£619,172	£0	£619,172
The Renewable Energy Company Limited	£4,441	£0	£4,441
Electricity Plus Ltd	£8,547	£0	£8,547
Npower Direct Ltd	£53,113	£0	£53,113
Npower Ltd	£588,753	£0	£588,753
Npower Northern Ltd	£78.849	£0	£78,849
Npower Yorkshire Ltd	£44,538	£0	£44,538
SSE Energy Supply Ltd	£1,429,988	£2	£1,429,990
Scottish Power Energy Retail Limited	£767,788	£1	£767,789
Slough Energy Supplies Limited	£4,005	£0	£4,005
Smartestenergy Limited	£11,520	£0	£11,520
Total Gas & Power Limited	£2,267	£0	£2,267
Tradelink Solutions Limited	£903	£0	£903

Supplier	Payment due for ROCs presented	Late payment due for ROCs presented	Total redistributed
Airtricity Energy Supply LTD	£2,645	£0	£2,645
ESB Independent Energy	£5,664	£0	£5,664
Npower Ltd	£15	£0	£15
Northern Ireland Electricity plc	£48	£0	£48
Tradelink Solutions Limited (NI)	£1	£0	£1

Table A12: Suppliers with no obligation

No RO	No ROS	No NIRO
730 Energy Limited	730 Energy Limited	E.ON UK Plc
AEP Energy Services Limited	AEP Energy Services Limited	Lowland Health and Energy
Allied Domecq (Holdings) Plc	Allied Domecq (Holdings) Plc	Nigen Supply Ltd
Accord Energy Limited	Accord Energy Limited	Premier Power Ltd
Affinity Power Limited	Affinity Power Limited	Scottish Power Energy Retail Ltd
AES Energy Limited	AES Energy Limited	SSE Energy Supply LTD
BizzEnergy@home Limited	BizzEnergy@home Limited	
Caboodle Energy Ltd	BP Power Trading Limited	
Cherwell Energy Limited	Caboodle Energy Ltd	
Citigen London Ltd	Cherwell Energy Limited	
Corona Energy Retail 4 Limited	Cinergy Global Trading Ltd	
Crowthorne Electricity Supply Limited	Citigen London Ltd	
EDF Trading Limited	Corona Energy Retail 4 Limited	
Electricity Direct Limited	Crowthorne Electricity Supply Limited	
Energy Co2 Limited	EDF Trading Limited	
Enizade Ltd	Electricity Direct Limited	
Enron Direct Limited	Energy Co2 Limited	
Enron Gas & petrochemincals Ltd	Energy Data Company	
Essential Power Limited	Enizade Ltd	
Fellside Heat & Power Ltd	Enron Direct Limited	
Fortum Direct Ltd	Enron Gas & petrochemincals Ltd	
Gas Plus Supply Ltd	Essential Power Limited	
Ineos Chlor Energy Limited	Fellside Heat & Power Ltd	
International Power Plc	First Utility Limited	
Magnox Electric Plc	Fortum Direct Ltd	
Midlands Gas Ltd	Gas Plus Supply Ltd	
Morgan Stanley Capital Group Inc	Haven Power Limited	
Npower Commercial Gas Ltd	Immingham CHP	
Npower Northern Supply Ltd	Ineos Chlor Energy Limited	

No RO	No ROS
Npower Yorkshire Supply Ltd	International Power Plc
Pan-Utility Ltd	Magnox Electric Plc
Powergen Retail Gas (Eastern) Ltd	Midlands Gas Ltd
Powerrelate	Morgan Stanley Capital Group Inc
Primary Connections Ltd	Npower Cogen Trading Ltd
R S Energy Limited	Npower Commercial Gas Ltd
Sempra Energy Europe Limited	Npower Northern Supply Ltd
Shell Gas Direct Ltd	Npower Yorkshire Ltd
SME Energy Limited	Npower Yorkshire Supply Ltd
South Wales Electricity Ltd	Pan-Utility Ltd
SSE Energy Ltd	Powergen Retail Gas (Eastern) Ltd
Star Energy Oil and Gas Limited	Powerrelate
SWEB Energy Ltd	Primary Connections Limited
Team GE Limited	R S Energy Limited
Telecom Plus PLC	Sempra Energy Europe Limited
TXU Europe (AH Online) Ltd	Shell Gas Direct Ltd
TXU Europe (AHG) Ltd	Slough Energy Supplies Limited
TXU Europe (AHGD) Ltd	SME Energy Limited
TXU Europe (AHST) Ltd	South Wales Electricity Ltd
Utilita Electricity Limited	SSE Energy Ltd
Utilitease Limited	Star Energy Oil and Gas Limited
Western Gas Ltd	SWEB Energy Ltd
	Team GE Limited
	Telecom Plus PLC
	TXU Europe (AH Online) Ltd
	TXU Europe (AHG) Ltd
	TXU Europe (AHGD) Ltd
	TXU Europe (AHST) Ltd
	Utilita Electricity Limited
	Utilitease Limited
	Western Gas Ltd

Table A13: A list of supplier groups and their supply licences

Group	Supply licences
British Gas	British Gas Trading Limited
	Electricity Direct Limited
	Accord Energy Limited
EDF	London Energy Plc
	Seeboard Energy Limited
	SWEB Energy Limited
Opus Energy	Abingdon Energy Limited
	Banbury Energy Limited
	Cherwell Energy Limited
	Opus Energy Limited
E.ON UK	Citigen London Limited
	Economy Power Limited
	E.ON UK Plc
	Enizade Limited
	Midlands Gas Limited
	Powergen Retail Limited
	Powergen Retail Gas (Eastern) Limited
	TXU Europe (AHG) Limited
	TXU Europe (AHGD) Limited
	TXU Europe (AH Online) Limited
	TXU Europe (AHST) Limited
	Western Gas Limited
RWE Npower	Npower Limited
	Npower Direct Limited
	Npower Cogen Trading Limited
	Npower Commercial Gas Limited
	Npower Northern Limited
	Npower Northern Supply Limited
	Npower Yorkshire Limited
	Npower Yorkshire Supply Limited

Group	Supply licences
Scottish & Southern Energy (SSE)	SSE Energy Supply Ltd
	SSE Energy Ltd
	South Wales Electricity Ltd

Appendix 3 - Renewables Obligation certificates: Detailed information

Table B1: 2006-07 ROCs, SROCs and NIROCs issued by generation technology type

Technology type	ROCs	SROCs	NIROCs	Total	Proportion of total
Biomass and waste using ACT	13,886	1,679		15,565	0%
Biomass	968,100	62,487	14,128	1,044,715	7%
Co-firing of biomass with fossil fuel	1,770,875	155,418	2,297	1,928,590	13%
Hydro < 20 MW DNC	219,386	2,155,045	9,577	2,384,008	16%
Landfill Gas	3,856,678	403,680		4,260,358	28%
Micro Hydro	8,796	52,886	1,114	62,796	0%
Off-shore wind	720,824			720,824	5%
On-shore wind	1,547,042	2,341,227	320,706	4,208,975	28%
PV	368	16	26	410	0%
Sewage Gas	328,375	9,545		337,920	2%
Wave		9		9	0%
Total	9,434,330	5,181,992	347,848	14,964,170	100%

Table B2: 2006-07 ROCs, SROCs and NIROCs issued by month of generation

Month	ROCs	SROCS	NIROCs	Total
Apr-06	724,591	404,571	28,702	1,157,864
May-06	721,037	351,769	30,754	1,103,560
Jun-06	604,135	270,935	18,396	893,466
Jul-06	609,936	231,250	16,498	857,684
Aug-06	674,042	249,440	19,195	942,677
Sep-06	671,157	330,812	25,876	1,027,845
Oct-06	781,219	412,177	28,087	1,221,483
Nov-06	938,849	588,893	36,659	1,564,401
Dec-06	929,217	593,042	36,107	1,558,366
Jan-07	1,082,296	680,457	43,140	1,805,893
Feb-07	810,924	446,265	28,049	1,285,238
Mar-07	886,927	622,381	36,385	1,545,693
Totals	9,434,330	5,181,992	347,848	14,964,170

Table B3: 2006-07 ROCs, SROCs and NIROCs issued by generation technology type and month

Month	Biomass and waste using ACT	Biomass	Co-firing of biomass with fossil fuel	Hydro <20 MW DNC	Landfill gas	Micro Hydro	Off-shore wind	On-shore wind	PV	Sewage Gas	Wave	Total
Apr-06	786	96,700	123,196	192,426	347,376	5,589	52,288	311,169	7	28,327	0	1,157,864
May-06	963	92,388	106,693	152,801	362,528	4,486	63,618	290,177	17	29,889	0	1,103,560
Jun-06	980	83,661	108,496	101,396	339,708	3,252	33,891	193,650	34	28,397	1	893,466
Jul-06	959	84,227	120,294	92,510	332,064	2,909	38,293	158,750	32	27,646	0	857,684
Aug-06	1,150	80,199	111,365	94,825	351,319	2,771	65,084	208,154	21	27,789	0	942,677
Sep-06	1,451	69,330	126,071	147,893	338,597	4,723	53,534	259,006	22	27,215	3	1,027,845
Oct-06	1,649	70,314	154,711	202,233	358,723	6,017	73,975	326,372	17	27,471	1	1,221,483
Nov-06	1,682	92,596	221,953	250,836	359,464	6,356	75,464	527,198	9	28,839	4	1,564,401
Dec-06	1,628	92,560	208,365	312,288	372,673	6,447	54,005	481,973	3	28,424	0	1,558,366
Jan-07	1,592	96,660	276,969	318,688	371,999	6,739	86,031	619,682	9	27,524	0	1,805,893
Feb-07	1,206	83,839	204,468	229,762	342,899	5,561	54,487	336,438	10	26,568	0	1,285,238
Mar-07	1,519	102,241	166,009	288,350	383,008	7,946	70,154	496,406	229	29,831	0	1,545,693
Total	15,565	1,044,715	1,928,590	2,384,008	4,260,358	62,796	720,824	4,208,975	410	337,920	9	14,964,170

Table B4: 2006-07 ROCs issued by generation technology type and month (in England and Wales)

Month	Biomass and waste using ACT	Biomass	Co-firing of biomass with fossil fuel	Hydro <20 MW DNC	Landfill gas	Micro Hydro	Off-shore wind	On-shore wind	PV	Sewage Gas	Total
Apr-06	727	91,000	107,511	20,529	316,920	748	52,288	93,113	7	27,901	710,744
May-06	827	86,069	94,794	13,466	329,831	688	63,618	92,473	17	29,401	711,184
Jun-06	852	76,447	95,501	8,621	308,793	627	33,891	45,078	34	27,831	597,675
Jul-06	835	78,064	102,763	8,159	301,131	537	38,293	48,125	32	27,123	605,062
Aug-06	1,012	73,853	99,929	6,467	317,966	589	65,084	74,755	21	27,097	666,773
Sep-06	1,308	63,922	112,046	9,543	305,669	506	53,534	90,869	22	25,745	663,164
Oct-06	1,476	64,425	138,589	13,780	325,110	452	73,975	127,009	17	26,227	771,060
Nov-06	1,503	86,991	208,839	20,943	325,581	660	75,464	171,317	9	27,677	918,984
Dec-06	1,429	86,295	198,110	33,337	337,504	738	54,005	174,964	3	27,768	914,153
Jan-07	1,422	88,763	262,802	34,954	336,880	801	86,031	223,296	9	27,008	1,061,966
Feb-07	1,040	78,040	200,584	18,069	307,868	787	54,487	111,395	10	25,801	798,081
Mar-07	1,455	94,231	149,407	22,927	343,425	1,663	70,154	158,998	187	28,796	871,243
Total	13,886	968,100	1,770,875	210,795	3,856,678	8,796	720,824	1,411,392	368	328,375	9,290,089

Table B5: 2006-07 ROCs issued by generation technology type and month (in Scotland)

Month	Hydro <20 MW DNC	On-shore wind	Total
Apr-06	714	13,133	13,847
May-06	702	9,151	9,853
Jun-06	239	6,221	6,460
Jul-06	229	4,645	4,874
Aug-06	375	6,894	7,269
Sep-06	623	7,370	7,993
Oct-06	681	9,478	10,159
Nov-06	1,016	18,849	19,865
Dec-06	1,103	13,961	15,064
Jan-07	1,230	19,100	20,330
Feb-07	721	12,122	12,843
Mar-07	958	14,726	15,684
Total	8,591	135,650	144,241

Table B6: 2006-2007 SROCs issued by generation technology type and month (in Scotland)

Month	Biomass and waste using ACT	Biomass	Co-firing of biomass with fossil fuel	Hydro <20 MW DNC	Landfill gas	Micro Hydro	On-shore wind	PV	Sewage Gas	Wave	Total
Apr-06	59	4,203	12,127	170,167	30,456	4,775	179,601	0	426	0	401,814
May-06	136	5,313	10,435	138,028	32,697	3,737	157,571	0	488	0	348,405
Jun-06	128	5,850	9,680	92,230	30,915	2,612	121,932	0	566	1	263,914
Jul-06	124	4,565	16,642	83,901	30,933	2,371	88,900	0	523	0	227,959
Aug-06	138	5,108	10,807	87,751	33,353	2,164	106,355	0	692	0	246,368
Sep-06	143	3,835	10,461	137,249	32,928	4,175	134,038	0	1,470	3	324,302
Oct-06	173	4,861	11,845	186,767	33,613	5,493	160,030	0	1,244	1	404,027
Nov-06	179	5,605	8,980	227,840	33,883	5,616	294,677	0	1,162	4	577,946
Dec-06	199	5,805	7,795	276,624	35,169	5,594	253,184	0	656	0	585,026
Jan-07	170	6,424	9,397	281,315	35,119	5,818	328,906	0	516	0	667,665
Feb-07	166	4,367	0	209,979	35,031	4,687	183,069	0	767	0	438,066
Mar-07	64	6,551	8,835	263,194	39,583	5,844	283,065	16	1,035	0	608,187
Total	1,679	62,487	117,004	2,155,045	403,680	52,886	2,291,328	16	9,545	9	5,093,679

Table B7: 2006-07 SROCs issued by generation technology type and month (England and Wales)

Month	Co-firing of biomass with fossil fuel	On-shore Wind	Total
Apr-06	2,757	0	2,757
May-06	295	3,069	3,364
Jun-06	3,315	3,706	7,021
Jul-06	562	2,729	3,291
Aug-06	629	2,443	3,072
Sep-06	3,564	2,946	6,510
Oct-06	4,277	3,873	8,150
Nov-06	4,134	6,813	10,947
Dec-06	2,460	5,556	8,016
Jan-07	4,770	8,022	12,792
Feb-07	3,884	4,315	8,199
Mar-07	7,767	6,427	14,194
Total	38,414	49,899	88,313

Table B8: 2006-2007 NIROCs issued by generation technology type and month (in Northern Ireland)

Month	Biomass	Co-firing of biomass with fossil fuel	Hydro < 20 MW DNC	Micro hydro	On-shore Wind	PV	Total
Apr-06	1,497	801	1,016	66	25,322	0	28,702
May-06	1,006	1,169	605	61	27,913	0	30,754
Jun-06	1,364	0	306	13	16,713	0	18,396
Jul-06	1,598	327	221	1	14,351	0	16,498
Aug-06	1,238	0	232	18	17,707	0	19,195
Sep-06	1,573	0	478	42	23,783	0	25,876
Oct-06	1,028	0	1,005	72	25,982	0	28,087
Nov-06	0	0	1,037	80	35,542	0	36,659
Dec-06	460	0	1,224	115	34,308	0	36,107
Jan-07	1,473	0	1,189	120	40,358	0	43,140
Feb-07	1,432	0	993	87	25,537	0	28,049
Mar-07	1,459	0	1,271	439	33,190	26	36,385
Total	14,128	2,297	9,577	1,114	320,706	26	347,848

Table B9: 2006-07 ROCs, SROCs and NIROCs issued by location and month

Month	England	Wales	Scotland	Northern Ireland	Total
Apr-06	620,872	92,629	415,661	28,702	1,157,864
May-06	630,932	83,616	358,258	30,754	1,103,560
Jun-06	558,564	46,132	270,374	18,396	893,466
Jul-06	559,763	48,590	232,833	16,498	857,684
Aug-06	602,545	67,300	253,637	19,195	942,677
Sep-06	588,959	80,715	332,295	25,876	1,027,845
Oct-06	666,747	112,463	414,186	28,087	1,221,483
Nov-06	792,861	137,070	597,811	36,659	1,564,401
Dec-06	769,782	152,387	600,090	36,107	1,558,366
Jan-07	895,910	178,848	687,995	43,140	1,805,893
Feb-07	716,167	90,113	450,909	28,049	1,285,238
Mar-07	766,738	118,699	623,871	36,385	1,545,693
Total	8,169,840	1,208,562	5,237,920	347,848	14,964,170

Table B10: 2006-07 ROCs, SROCs and NIROCs issued by location and generation technology type

Technology type	England	Wales	Scotland	Northern Ireland	Total
Biomass and waste using ACT	13,886	0	1,679	0	15,565
Biomass	968,100	0	62,487	14,128	1,044,715
Co-firing biomass	1,808,684	605	117,004	2,297	1,928,590
Hydro	43,604	167,191	2,163,636	9,577	2,384,008
Landfill Gas	3,728,721	127,957	403,680	0	4,260,358
Micro Hydro	7,728	1,068	52,886	1,114	62,796
Off-shore Wind	529,123	191,701	0	0	720,824
On-shore Wind	745,415	715,876	2,426,978	320,706	4,208,975
PV	366	2	16	26	410
Sewage Gas	324,213	4,162	9,545	0	337,920
Wave	0	0	9	0	9
Total	8,169,840	1,208,562	5,237,920	347,848	14,964,170

Table B11: 2006-07 ROCs issued by location and month

Month	England	Wales	Scotland	Northern Ireland	Total
Apr-06	618,115	92,629	13,847	0	724,591
May-06	627,568	83,616	9,853	0	721,037
Jun-06	551,543	46,132	6,460	0	604,135
Jul-06	556,472	48,590	4,874	0	609,936
Aug-06	599,473	67,300	7,269	0	674,042
Sep-06	582,449	80,715	7,993	0	671,157
Oct-06	658,597	112,463	10,159	0	781,219
Nov-06	781,914	137,070	19,865	0	938,849
Dec-06	761,766	152,387	15,064	0	929,217
Jan-07	883,118	178,848	20,330	0	1,082,296
Feb-07	707,968	90,113	12,843	0	810,924
Mar-07	752,544	118,699	15,684	0	886,927
Total	8,081,527	1,208,562	144,241	0	9,434,330

Table B12: 2006-07 ROCs issued by location and generation technology type

Technology	England	Wales	Scotland	Northern Ireland	Total
Biomass and waste using ACT	13,886	0	0	0	13,886
Biomass	968,100	0	0	0	968,100
Co-firing of biomass with fossil fuel	1,770,270	605	0	0	1,770,875
Hydro <20 MW DNC	43,604	167,191	8,591	0	219,386
Landfill gas	3,728,721	127,957	0	0	3,856,678
Micro Hydro	7,728	1,068	0	0	8,796
On-shore wind	695,516	715,876	135,650	0	1,547,042
Off-shore Wind	529,123	191,701	0	0	720,824
PV	366	2	0	0	368
Sewage Gas	324,213	4,162	0	0	328,375
Total	8,081,527	1,208,562	144,241	0	9,434,330

Table B13: 2006-07 SROCs issued by location and month

Month	England	Wales	Scotland	Northern Ireland	Total
Apr-06	2,757	0	401,814	0	404,571
May-06	3,364	0	348,405	0	351,769
Jun-06	7,021	0	263,914	0	270,935
Jul-06	3,291	0	227,959	0	231,250
Aug-06	3,072	0	246,368	0	249,440
Sep-06	6,510	0	324,302	0	330,812
Oct-06	8,150	0	404,027	0	412,177
Nov-06	10,947	0	577,946	0	588,893
Dec-06	8,016	0	585,026	0	593,042
Jan-07	12,792	0	667,665	0	680,457
Feb-07	8,199	0	438,066	0	446,265
Mar-07	14,194	0	608,187	0	622,381
Total	88,313	0	5,093,679	0	5,181,992

Table B14: 2006-07 SROCs issued by location and generating technology type

Technology	England	Wales	Scotland	Northern Ireland	Total
Biomass	0	0	62,487	0	62,487
Co-firing of biomass	38,414	0	117,004	0	155,418
Hydro <20 MW DNC	0	0	2,155,045	0	2,155,045
Landfill gas	0	0	403,680	0	403,680
Micro Hydro	0	0	52,886	0	52,886
On-shore wind	49,899	0	2,291,328	0	2,341,227
ACT	0	0	1,679	0	1,679
Sewage Gas	0	0	9,545	0	9,545
Wave	0	0	9	0	9
PV	0	0	16	0	16
Total	88,313	0	5,093,679	0	5,181,992

Table B15: 2006-07 NIROCs issued by location and month

Month	England	Wales	Scotland	Northern Ireland	Total
Apr-06	0	0	0	28,702	28,702
May-06	0	0	0	30,754	30,754
Jun-06	0	0	0	18,396	18,396
Jul-06	0	0	0	16,498	16,498
Aug-06	0	0	0	19,195	19,195
Sep-06	0	0	0	25,876	25,876
Oct-06	0	0	0	28,087	28,087
Nov-06	0	0	0	36,659	36,659
Dec-06	0	0	0	36,107	36,107
Jan-07	0	0	0	43,140	43,140
Feb-07	0	0	0	28,049	28,049
Mar-07	0	0	0	36,385	36,385
Total	0	0	0	347,848	347,848

Table B16: 2006-07 NIROCs issued by location and generation technology type

Technology	England	Wales	Scotland	Northern Ireland	Total
Biomass	0	0	0	14,128	14,128
Co-firing	0	0	0	2,297	2,297
Micro Hydro	0	0	0	1,114	1,114
Hydro <20 MW DNC	0	0	0	9,577	9,577
PV	0	0	0	26	26
On-shore wind	0	0	0	320,706	320,706
Total	0	0	0	347,848	347,848

Table B17: Revoked 2006-07 ROCs by technology and Order

Technology Type	Total number of revoked ROCs	Total number of revoked SROCs	Total number of revoked NIROCs
On-shore Wind	25,751	13,082	5
Biomass	10,074	0	0
Co-firing of biomass with fossil fuel	19,349	0	0
Hydro DNC of 20Mw or less	55	562	0
Landfill gas	5,124	661	0
Sewage Gas	2,770	101	0
Micro Hydro	14	114	0
Total	63,137	14,520	5

Appendix 4 - Accredited generating stations - Detailed information

Table C1: Comparison of the number of accredited stations by generation technology type and location (all capacities)

Technology Type	England	Scotland	Wales	Northern Ireland	Total
Biomass and waste using ACT	8	1	0	0	9
Biomass	17	3	0	1	21
Co-firing of biomass with fossil fuel	27	2	1	1	31
Hydro <20 MW DNC	37	98	25	10	170
Landfill gas	323	32	14	0	369
Micro Hydro	33	46	12	6	97
On-shore wind	151	81	40	50	322
Off-shore Wind	5	0	1	0	6
PV	180	7	12	18	217
Sewage Gas	106	3	7	0	116
Wave	0	2	0	0	2
Total	887	275	112	86	1,360

Table c1a: Comparison of the number of accredited stations with a capacity of over 50kW by generation technology type and location.

Technology Type	England	Scotland	Wales	Northern Ireland	Total
Biomass and waste using ACT	8	1	0	0	9
Biomass	16	3	0	1	20
Co-firing of biomass with fossil fuel	27	2	1	1	31
Hydro <20 MW DNC	37	98	25	10	170
Landfill gas	323	32	14	0	369

Technology Type	England	Scotland	Wales	Northern Ireland	Total
Micro Hydro	9	30	2	3	44
On-shore wind	80	54	30	18	182
Off-shore Wind	5	0	1	0	6
PV	7	0	0	0	7
Sewage Gas	106	3	7	0	116
Wave	0	2	0	0	2
Total	618	225	80	33	956

Table C1b: Comparison of the number of accredited stations with a capacity of 50kW and under by generation technology type and location.

Technology Type	England	Scotland	Wales	Northern Ireland	Total
Biomass	1	0	0	0	1
Hydro	24	16	10	3	53
PV	173	7	12	18	210
On-shore wind	71	27	10	32	140
Total	269	50	32	53	404

Table C2: Comparison of the total installed generating capacity (in kW) of accredited generating stations by technology type and location (all capacities)

Technology Type	England	Scotland	Wales	Northern Ireland	Total
Biomass and waste using ACT	6526	340	0	0	6,866
Biomass	201,048	12,797	0	2,450	216,295
Co-firing of biomass with fossil fuel	742,156	76,200	6,720	0	825,076
Hydro <20 MW DNC	19,818	491363	76,257	2,485	589,923
Landfill gas	714,765	78,218	30,203	0	823,186
Micro Hydro	2,464	13,041	498	450	16,453

Technology Type	England	Scotland	Wales	Northern Ireland	Total
On-shore wind	385,786	1,102,010	299,179	116,407	1,903,382
Off-shore Wind	243,800	0	60,000	0	303,800
PV	1,287	55	37	61	1,440
Sewage Gas	78,750	3,692	1,989	0	84,431
Wave	0	1,250	0	0	1,250
Total	2,396,400	1,778,966	474,883	121,853	4,772,102

Table C2a: Comparison of the total installed generating capacity (in kW) of accredited generating stations with a capacity of over 50kW by technology type and location.

Technology Type	England	Scotland	Wales	Northern Ireland	Total
Biomass and waste using ACT	6,526	340	0	0	6,866
Biomass	201,040	12,797	0	2,450	216,287
Co-firing of biomass with fossil fuel	742,156	76,200	6,720	0	825,076
Hydro <20 MW DNC	19,818	491,363	76,257	2,485	589,923
Landfill gas	714,765	78,218	30,203	0	823,186
Micro Hydro	2,172	12,698	300	355	15,525
On-shore wind	385,183	1,101,770	299,106	115,950	1,902,009
Off-shore Wind	243,800	0	60,000	0	303,800
PV	486	0	0	0	486
Sewage Gas	78,750	3,692	1,989	0	84,431
Wave	0	1,250	0	0	1,250
Total	2,394,696	1,778,328	474,575	121,240	4,768,839

Table C2b: Comparison of the total installed generating capacity (in kW) of accredited generating stations with a capacity of 50kW and under by technology type and location.

Technology Type	England	Scotland	Wales	Northern Ireland	Total
Biomass	8	0	0	0	8
Hydro	292	343	198	95	928
PV	801	55	37	61	954
On-shore wind	603	240	73	457	1,373
Total	1,704	638	308	613	3,263

Table C3: Comparison of generating stations accredited before 1st April 2006 and between 1st April 2006 and 1st April 2007 by technology type.

Technology type	No of generators accredited before 1st April 2006	No of generators accredited between 1 April 2006 and 1 April 2007	Capacity of generators accredited before 1st April 2006 (kW)	Capacity of generators accredited between 1 April 2006 and 1 April 2007
Biomass and waste using ACT	5	4	4895	1,971
Biomass	15	6	194,752	21,543
Co-firing of biomass with fossil fuel	31	0	825,076	0
Hydro <20 MW DNC	165	5	587,141	2,782
Landfill gas	338	31	768,988	54,198
Micro Hydro	74	23	15,230	1,223
On-shore wind	199	123	1,598,517	304,865
Off-shore Wind	6	0	303,800	0
PV	42	175	776	664
Sewage Gas	104	12	80,400	4,031
Wave	1	1	750	500
Total	980	380	4,380,325	391,777

Table C3a: Comparison of generating stations with a capacity of over 50kW accredited before 1st April 2006 and between 1st April 2006 and 1st April 2007 by technology type.

Technology type	No of generators accredited before 1st April 2006	No of generators accredited between 1 April 2006 and 1 April 2007	Capacity of generators accredited before 1st April 2006 (kW)	Capacity of generators accredited between 1 April 2006 and 1 April 2007
Biomass and waste using ACT	5	4	4,895	1,971
Biomass	15	5	194,752	21,535
Co-firing of biomass with fossil fuel	31	0	825,076	0
Hydro <20 MW DNC	165	5	587,141	2,782
Landfill gas	338	31	768,988	54,198
Micro Hydro	38	6	14,595	930
On-shore wind	154	28	1,597,950	304,059
Off-shore Wind	6	0	303,800	0
PV	6	1	413	73
Sewage Gas	104	12	80,400	4,031
Wave	1	1	750	500
Total	863	93	4,378,760	390,079

Table C3b: Comparison of generating stations with a capacity of 50kW and under accredited before 1st April 2006 and between 1st April 2006 and 1st April 2007 by technology type.

Technology Type	No of generators accredited before 1st April 2006	No of generators accredited between 1 April 2006 and 1 April 2007	Capacity of generators accredited before 1st April 2006 (kW)	Capacity of generators accredited between 1 April 2006 and 1 April 2007
Biomass	0	1	0	8
Hydro	36	17	635	293
PV	36	174	363	591
On-shore wind	45	95	567	806
Total	117	287	1,565	1,698

Table C4: Comparison of generating stations commissioned before 1st April 2006 and between 1st April 2006 and 1st April 2007 by technology type.

Technology type	No of generators commissioned before 1st April 2006	No of generators commissioned between 1 April 2006 and 1 April 2007	Capacity of generators commissioned before 1st April 2006	Capacity of generators commissioned between 1 April 2006 and 1 April 2007
Biomass and waste using ACT	5	4	4,780	2,086
Biomass	16	5	194,760	21,535
Co-firing of biomass with fossil fuel	31	0	825,076	0
Hydro <20 MW DNC	169	1	588,973	950
Landfill gas	341	28	777,762	45,424
Micro Hydro	88	9	15,666	787
On-shore wind	231	91	1,600,988	302,394

Technology type	No of generators commissioned before 1st April 2006	No of generators commissioned between 1 April 2006 and 1 April 2007	Capacity of generators commissioned before 1st April 2006	Capacity of generators commissioned between 1 April 2006 and 1 April 2007
Off-shore Wind	6	0	303,800	0
PV	122	95	1,120	320
Sewage Gas	106	10	83,086	1,345
Wave	2	0	1,250	0
Total	1,117	243	4,397,261	374,841

Table C5: Comparison of generating stations accredited before 1st April 2006 and between 1st April 2006 and 1st April 2007 by location.

Country	No of generators accredited before 1st April 2006	No of generators accredited between 1 April 2006 and 1 April 2007	Capacity of generators accredited before 1st April 2006	Capacity of generators accredited between 1 April 2006 and 1 April 2007
England	636	251	2,240,777	155,623
Scotland	215	60	1,559,967	218,999
Wales	85	27	467,005	7,878
Northern Ireland	44	42	112,576	9,277
Total	980	380	4,380,325	391,777

Table C5a: Comparison of generating stations over 50kW accredited before 1st April 2006 and between 1st April 2006 and 1st April 2007 by location.

Country	No of generators accredited before 1st April 2006	No of generators accredited between 1 April 2006 and 1 April 2007	Capacity of generators accredited before 1st April 2006	Capacity of generators accredited between 1 April 2006 and 1 April 2007
England	566	52	2,240,003	154,693
Scotland	196	29	1,559,654	218,674
Wales	74	6	466,823	7,752
Northern Ireland	27	6	112,280	8,960
Total	863	93	4,378,760	390,079

Table C5b: Comparison of generating stations 50kW or under accredited before 1st April 2006 and between 1st April 2006 and 1st April 2007 by location.

Country	No of generators accredited before 1st April 2006	No of generators accredited between 1 April 2006 and 1 April 2007	Capacity of generators accredited before 1st April 2006	Capacity of generators accredited between 1 April 2006 and 1 April 2007
England	70	199	774	930
Scotland	19	31	313	325
Wales	11	21	182	126
Northern Ireland	17	36	296	317
Total	117	287	1,565	1,698

Table C6: Comparison of generating stations commissioned before 1st April 2006 and between 1st April 2006 and 1st April 2007 by location.

Country	No of generators commissioned before 1st April 2006	No of generators commissioned between 1 April 2006 and 1 April 2007	Capacity of generators commissioned before 1st April 2006	Capacity of generators commissioned between 1 April 2006 and 1 April 2007
England	722	165	2,236,858	159,542
Wales	91	21	467,022	7,861
Scotland	242	33	1,579,759	199,207
Northern Ireland	62	24	113,622	8,231
Total	1,117	243	4,397,261	374,841

Table C7: Comparison of NFFO/SRO and non-NFFO/non-SRO generating stations accredited before and on or after 1st April 2006.

	No of generators accredited before 1st April 2006	No of generators accredited between 1st April 2006 and 1st April 2007	Capacity of generators accredited before 1st of April 2006 (kW)	Capacity of generators accredited on or after 1st April 2006 (kW)
NFFO	237	2	798,006	1,788
NON-NFFO	484	276	1,909,776	161,713
SRO	35	7	180,094	16,010
NON-SRO	180	53	1,379,873	202,989
NI NFFO	17	0	39,210	0
NI non-NFFO	27	42	73,366	9,277
Total	980	380	4,380,325	391,777

Appendix 5 - Glossary

A	
Act	Electricity Act 1989
ACT	Advanced Conversion Technology
B	
BERR	Department of Business, Enterprise and Regulatory Reform
D	
DETI	Department of Enterprise, Trade and Investment
DNC	Declared net capacity
F	
FMS	Fuel Measurement and Sampling
G	
GB	Great Britain
GB ROCs	ROCs and SROCs
K	
kW	Kilowatt
kWh	Kilowatthour
M	
MSO	Marine Supply Obligation
MW	Megawatt
MWh	Megawatthour
N	
NI	Northern Ireland
NIAUR	Northern Ireland Authority for Utility Regulation
NIRO	Renewables Obligation Order (Northern Ireland) 2006
NIROC	Northern Ireland Renewables Obligation Certificates
NFFO	Non-Fossil Fuel Obligation
NFPA	Non-fossil Fuel Purchasing Agency
O	
Ofgem	Office of Gas and Electricity Markets
P	
PV	Photovoltaics
R	
RO	Renewables Obligation Order 2006
ROC	Renewable Obligation Certificate
ROS	Renewables Obligation (Scotland) Order 2006
RPI	Retail Price Index

S

SRO	Scottish Renewables Obligation
SROC	Scottish Renewable Obligation Certificate

Appendix 6 - Feedback form: Renewables Obligation Annual report 2006-2007

We would welcome your feedback on this report, including the length of the document and the content. Please address your feedback to Yvonne.naughton@ofgem.gov.uk or Rebecca.langford@ofgem.gov.uk. You may wish to respond to the following questions in giving your feedback.

Overall

Is the report too long, or too short?
Is the report easy to read and understand? If not, can you please tell us what you would like to change?
Is the report structured in a way that you can easily find what you are looking for. If not, what can we do to improve this?

Main document

What part of this report do you find most helpful?
What part of this report do you find least helpful?
Do you think the charts convey information clearly, or not? If not, what do you dislike about the charts? What can we do to improve our charts?

Appendices

We publish a number of tables in the appendices to this document. Do you think the appendices contain too much information, or too little?
If too much, which tables are least helpful?
If too little, what other information would you like to see contained in the appendices?

How we will deal with your feedback

This Annual Report is published under the requirements set out in the RO legislation. It contains information that we are required to publish. It also contains information that we believe stakeholders will find useful.

We will endeavour to incorporate all comments into the report. However, we must ensure the content of the report meets the requirements of the RO legislation. As such, we may not be able to incorporate all comments.

Freedom of Information Act 2000

As a public authority, Ofgem is subject to the provisions of the Freedom of Information Act 2000. Accordingly, any information submitted to a public authority may need to be disclosed under the Act. If you consider that any of the information you provide is commercially sensitive, please mark it as such and explain what harm may result from its disclosure. Please be aware that Ofgem may be obliged under the Act to release information marked as commercially sensitive.

Non-Graphical version

SCOTTISH EXECUTIVE

Back

Press Release

SARAH BOYACK REOPENS SLOY HYDRO POWER STATION

“It is crucial to maintain and increase the contribution of renewables to the electricity supply in Scotland” said Environment Minister Sarah Boyack today when she re-opened Sloy Hydro Power Station on Loch Lomond.

Speaking at Scottish and Southern Energy’s (SSE) refurbished hydro-electric power station at Sloy, Sarah Boyack said:

“The Executive is committed to the promotion of renewable energy and it is crucial to maintain and increase the contribution of renewable sources to the electricity supply in Scotland.

“Scotland is extremely well served by existing hydro generation. Post-war hydro developments have given Scotland a head start in clean electricity generation. SSE’s multi-million programme of investment and refurbishment is an excellent reinforcement of hydro provision, a fine example of which can be seen here at Sloy.

“This refurbishment brings with it valuable increases in output as a result of greater plant efficiency.

“Recently published Scottish Executive research on climate change predicted increases in storms and flooding. It is essential that every step possible is taken to address the implications of these changes. Increased investment in renewables is vital as they will have a major role to play in tackling the impacts of climate change.

“Scotland is extremely well-placed in terms of potential sources of renewable energy. Our intention is to use every tool at our disposal to encourage that development.”

BACKGROUND

1. Sloy Power Station was commissioned in 1950 primarily to supply electricity to Clydeside and Central Scotland at times of peak demand. It makes use of the waters of Loch Sloy some 285 metres above sea level and has an operating head of 277 metres.

2. A system of aquaducts and tunnels diverts water from the surrounding catchment area into Loch Sloy. The water is carried from the loch over 3 kilometres by a tunnel through Ben Vorlich, which towers some 940 metres above Ben Lomond.

3. When brought into service at times of peak demand the power station can be operating at full load within 5 minutes from a standing start. It has an installed capacity of 160 megawatts, the largest capacity of Scottish and Southern's conventional hydro stations. At full load, nearly 1 million gallons of water pass through every minute.

4. The refurbishment of Sloy Power Station cost a total of £113 million and will ensure the continued operation of the power station for a further 30 to 40 years. As well as extending the life of the station the plant capacity has been increased through the installation of modern turbine and generator technologies.

5. The refurbishment involved 20 UK firms as contractors, and at peak 25 SSE staff were involved in the project. It involved renewing the turbines and generators, new cabling and pipework, and internal decoration.

News Release: SE1584/1999
6 Dec 1999

operational review

- Our English supply business is 25% more efficient than the average in Britain
- 11.8% increase in hydro output
- Scottish and Southern Energy is the largest renewable generator in the UK
- Peterhead commissioning underway

'RSPB Energy' was added to our already successful partnerships with Argos Premier Points and AIR MILES. These are now available to all of our customers in England & Wales. To date over 100,000 customers have joined the Group through these three partnerships.

Efficient purchasing of gas and electricity by our energy trading team has lowered our cost to supply customers. This has been a significant achievement in a volatile market.

Ofgem, completed its price review of our supply business in December and concluded that Southern Electric was the most efficient of all Britain's electricity companies and over 25% more efficient than the average. The additional cost reductions we will achieve with the introduction of our new Customer Service system and efficient purchasing of electricity by our energy trading teams will maintain this position. As a result, we are able to run one of the most profitable supply businesses in Great Britain and are exceptionally well positioned to compete successfully in the rapidly evolving energy markets.

Generation in Scotland
In Scotland our hydro, thermal and diesel generation assets have all performed well once again. Overall availability was reduced marginally from 87% to 83%, as a result of the planned commissioning work associated with the repowering of Peterhead Power Station. Our hydro assets, in particular, had an excellent year with an 11.8% increase in output as a result of very high rainfall levels. The volume traded over the interconnector also increased.

Scottish and Southern Energy is the largest generator of renewable energy in the UK. The Group accounts for just under 50% of the UK's natural renewable generation capacity. During 1999/2000 we completed the £10.2M refurbishment of Rannoch Power Station which will now produce 7% more electricity from the same water. Work continued on the £8.6M refurbishment of Errochty and began on the £8.7M refurbishment of Pitlochry Power Station and the £4.5M refurbishment of Clachan.

These, together with the previously refurbished Fasnakyle and Glenmoriston power stations, will increase the amount of electricity produced from our hydro stations by 47GWh, which is equivalent to building 30 new 700kW wind turbines or supplying 12,000 homes.

The Scottish Environment Minister, Sarah Boyack MSP, formally re-opened the station at Sloy which had recently completed a £15M refurbishment and, as a result of improved design, increased output by 5% while still operating within its transmission constraint.

This year also saw our first proposed investment for 30 years in a new hydro power station at Cuileig, near Ullapool on the North West coast. The £5.6M investment will build a 3MW 'run of river' hydro scheme.

The £220M repowering of our power station at Peterhead, North of Aberdeen, which accounts for around 20% of the Scottish electricity market, is now nearing completion and as the financial year came to an end, the first trials of the new turbines were underway.

As a result of the repowering, the thermal efficiency of the new plant will rise to 56%, an increase of almost 50%.

SCOTTISH EXECUTIVE

Press Releases

SE1732/2001 **20 Jul 2001**

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BRANKIN SECURES FUTURE FOR SCOTTISH HYDRO GENERATORS - AND 200 JOBS

Rhona Brankin today secured Scotland's future as a major producer of energy from renewable sources.

The Deputy Minister for Environment announced plans to extend support for established hydro plants under the forthcoming Renewables Obligation (Scotland) to include larger power stations. This will result in the refurbishment of an additional 30 hydro-electric power stations, investment worth £250 million and secure 200 jobs in rural areas.

Rhona Brankin said:

"This is a major boost for Scotland's renewable energy sector and will secure the refurbishment of an additional 150 megawatts of capacity –equivalent to 70 large wind turbines.

"We will be publishing very soon our final statutory consultation on the Renewables Obligation (Scotland). Responses to the initial consultation raised concern over the future of Scotland's existing large hydro stations.

"Scottish Ministers agreed support was needed and have successfully argued that case. Support has now been extended to both new and existing hydro stations from 10 to 20 megawatts.

"This additional support will secure continuation of the refurbishment of Scotland's existing hydro stations and represents good news for the engineering jobs dependent on the refurbishment programme."

The Minister also welcomed news from the Department of Trade and Industry of increased UK funding for an extension of research and development into hydro power.

BACKGROUND

1. The Renewables Obligation (Scotland) will, in parallel with similar measures in England and Wales, be an obligation on all licensed electricity suppliers to provide an increasing percentage of their supply in Scotland from qualifying renewable sources. Following an earlier consultation late last year, a final statutory consultation will be published shortly prior to Parliamentary process.

2. Initial proposals included support for large hydro schemes up to a limit of 10MW. Subsequent consultation with the industry has demonstrated that extra support would be required to safeguard the future of Scotland's established large hydro stations.

3. Scottish Ministers agree with the case for extra support made by the industry, and have argued the case for extra support to Ministerial colleagues in Whitehall. As a result, changes to the Scottish and English schemes have been agreed and will form part of the forthcoming consultations.

4. Further to this, it has also been decided to extend eligibility for support for new large hydro schemes of any size, subject to the necessary consents being obtained in each case from Scottish Ministers.

5. The Department of Trade and Industry has also announced plans to increase the levels of funding available for research and development into hydro generation. These funds will be available across the UK.

6. Brian Wilson, Minister for energy, welcomed the new measures during a visit to Scottish and Southern Energy in Perthshire.

News Release: SE1732/2001
20 Jul 2001

Scottish and Southern Energy plc

close window print page

EXCELLENT NEWS FOR THE ENVIRONMENT AND HYDRO GENERATION''S FUTURE

Scottish and Southern Energy today welcomed the Government's support under its Renewables Order for the maintenance and establishment of the output from our UK hydro stations. The UK's hydro assets are a well established form of renewable energy and account for just under 50% of the country's renewable output.

We are delighted that output from refurbished hydro stations of 20MW capacity and below, will receive Renewable Obligation Certificates (ROC's). This means that it is now attractive to refurbish our small to medium sized hydro stations securing the long term future of this renewable resource for the UK. This will result in a refurbishment programme of up to £250M over the next 10 years for these stations. We are delighted to announce that the first schemes to benefit from this new programme will be the stations at Invergarry, Gaur and Orrin.

This will help secure over 200 jobs in remote rural communities across the north of Scotland, and as Scotland is one of the world leaders in the development of hydro turbine technology we expect that this will also result in support for manufacturing jobs. This will position Scotland's hydro engineering skills base well, to capitalise on any international refurbishment programmes which follow this.
We have already completed £45M of investment in our larger hydro plants increasing their efficiency output by 6%. This additional refurbishment of up to £250M will not only secure the output from this valuable UK resource to 2030 and beyond, but deliver around another 200GWh of new renewable generation, the equivalent of 70 wind turbines. This will make a considerable contribution to the UK's target to achieve 10% of its output from renewable sources by 2010.

We are also delighted to see support in the Renewable Order for all new hydro of any size. This will encourage the development of new hydro schemes in Scotland and we will now review a number of attractive potential sites.

NOTES FOR EDITORS
1. Scottish and Southern Energy is the largest generator from renewable resources in the UK with close to 50% of the country's renewable generation capacity.

2. Invergarry is a 20MW power station built as part of the Garry/Moriston scheme in the Great Glen north of Fort William. The scheme was built between 1949-1962 and has a total installed capacity of 113MW.

3. Gaur is a 6.4MW station built as part of the Tummel Valley scheme to the west of Pitlochry. This scheme was built between 1946-1951 and has a total installed capacity of 244.8MW, making it the largest hydro development in Scotland.

4. Orrin is an 18MW power station built between 1946-1961. It is part of the Conon Valley scheme north west of Inverness which has a total installed capacity of 118MW.

5. Scottish and Southern Energy is one of the largest energy companies in the UK serving over 4 million electricity and 1 million gas customers. It also manages the UK's largest electricity distribution network and accounts for 10% of the country's generation assets.

Author: n/a
Published: 23/07/2001

For after hours press enquiries call
0870 9000 410 to find out the name of the duty Press Officer

Thursday 26 September 2002 00:00
Department of Trade and Industry (National)

WILSON WELCOMES INVESTMENT IN RENEWABLE ENERGY

P/2002/591

26 September 2002

WILSON WELCOMES INVESTMENT IN RENEWABLE ENERGY

Energy Minister Brian Wilson today welcomed the announcement by Scottish and Southern Energy (SSE) that it is to carry out an environmental impact study of the possible upgrading of the electricity transmission network from Beauly in the north of Scotland to Denny in the central belt.

An upgrade would enable northern Scotland"s huge renewable energy potential to be released to the population centres elsewhere in the UK. It would be designed to meet the demand for renewable energy projects which have been developed following the introduction of the Renewables Obligation and the Renewables Obligation Scotland earlier this year.

Mr Wilson also emphasised that the Renewables Obligation is at the heart of the government"s energy and environment policy and called for everyone with an interest in the industry to work proactively to encourage investment and overcome barriers to the development of clean sources of energy.

Mr Wilson was speaking at St Fillans hydro-electric power station, near Crieff in Perthshire, where Scottish and Southern Energy has completed a £1 million programme of refurbishment. This investment has extended the life of the 17MW power station by over 30 years and will increase its efficiency so it can generate up to 6% more electricity from the same amount of water.

Scottish and Southern Energy has plans to invest #450 million in renewable energy generation over the next 10 years and St Fillans is the first of SSE"s power stations to complete a programme of refurbishment. An upgrade of the main electricity artery between Beauly and the central belt would raise the capacity of the line from 132kv to 275kv. It would require planning permission from Highland and Stirling Councils, and consent from the DTI, prior to construction, and would cost around £200 million.

Mr Wilson said:

"It is clear that the UK will have to make large carbon emission reductions in the years ahead. Renewable energy should make an immense contribution to achieving these reductions. We developed the Renewables Obligation to give real impetus to the development of clean sources of energy and the response of the energy industry has been excellent. I am delighted that so many companies have announced plans to invest in renewable energy projects in the UK.

"The announcement today by SSE that it proposes to carry out this environmental impact study of the possible upgrade of the north of Scotland transmission network is, therefore, very timely and very welcome.

"But this only represents the start. The momentum that is behind all of these plans to invest in renewable energy will only be maintained if three key stakeholders play their full part.

"First, the Government needs to ensure that there is the right climate for long-term investment in renewable energy. The commitment behind the Renewables Obligation is the clearest example of our determination to ensure that investors in clean energy schemes can have real confidence about the future. In line with this, I am delighted that applications for around 1800 MW of green energy capacity have been received by the DTI and the Scottish Executive in recent months. Around half of this is for new large scale wind farm developments in Scotland."

"Second, Ofgem, as the energy regulator, needs to play its part in making sure that the UK achieves its ambitious targets for the growth of renewable energy. Ofgem"s principal objective is to protect the interests of consumers. Their interests clearly lie in reducing carbon emissions and any costs involved in upgrading the electricity infrastructure to allow renewable energy to be transmitted and distributed around the country are likely to be marginal, especially when set against the wider benefits.

"Third, the planning system - north and south of the border - will have a major impact on the development of green energy. Obtaining planning permission for renewable investments is not always straightforward. Planning authorities need to be encouraged to reflect the overall importance of renewable energy and to put fewer barriers in the way of development."

Public Enquiries: 020-7215 5000 Textphone (for people with hearing impairments): 020-7215 6740 http://www.dti.gov.uk

Scottish and Southern Energy plc

close window print page

SSE TO REFURBISH FIVE HYDRO-ELECTRIC POWER STATIONS

Scottish and Southern Energy has announced today that five more hydro-electric power stations are to be refurbished at a cost of £4 million. The power stations involved are at Quoich, west of Invergarry, Mossford and Grudie Bridge, west of Garve, Shin, south of Lairg and Finlarig near Killin on Loch Tay. The refurbishments will extend the lives of the power stations for over 30 years and increase their working efficiency.

The contracts for Mossford and Grudie Bridge have been won by Weirs/VA Tech and for Shin, Quoich and Finlarig by GE Hydro.

The power stations are all rated at under 20 megawatts and when the refurbishments are complete the output will qualify for Renewable Obligation Certificates (ROCs). The refurbishments involve new runners and guide vanes in the turbines.

Commenting on the refurbishments, David Sigsworth, SSE's Generation Director, said:
"The five refurbishments, involving seven turbines, are the next stage in the progressive £250 million programme to refurbish our hydro assets in the Highlands of Scotland. The refurbishments will extend the lives of the power stations and contribute significantly to the Government's targets for renewable energy between now and 2010 and beyond.

"The electricity generated from these power stations will qualify for ROCs and the first electricity from a hydro station, refurbished since the Government introduced its Obligation in April 2002, was generated at St Fillans, in Perthshire, in September.

"Based on average rainfall we expect output from refurbished hydro qualifying for ROCs to increase five fold between 2003 and 2004."

NOTE TO NEWS EDITORS

SSE announced a £250 million programme to refurbish its hydro assets in this decade in 2001. It has also embarked on a £200 million investment programme in new renewable generation with its first windfarm at Tangy due to produce its first electricity later this month.

NOTE TO PICTURE EDITORS

Photographs of the refurbished stations in the Highlands are available from the Press Office

- ENDS -

Author: Bob Major
Published: 07/11/2002

For after hours press enquiries call
0870 9000 410 to find out the name of the duty Press Officer

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Note (Use CTRL-P if the page does not print when you click the print button)

Press Release

> **Press Center**
> 2004 Press Releases
• 2003 Press Releases
> Article Reprints

GE Hydro Wins Contract to Upgrade Three Hydro Plants in Scotland

OSLO, NORWAY (February 18, 2003) — GE Hydro, a unit of GE Power Systems, has been awarded a US$3 million contract by Scottish and Southern Energy (SSE) Generation Limited of the UK to refurbish three hydroelectric power stations in Scotland. The project is part of SSE's progressive program to upgrade its hydro assets to extend their usable life and meet the government's renewable energy targets.

GE Hydro will upgrade the hydro turbines at the Shin Power Station near Lairg, Sutherland and the Quoich Power Station near Invergarry, Inverness-shire, both in the north of Scotland; and the Finlarig Power Station near Bridge of Balgie, Tayside, in the central region of the country. The work scope includes the supply of new runners for each station, as well as new guide vanes for the Shin and Quoich stations, and new spears and nozzles at the Finlarig station. The power stations are all rated below 20 megawatts.

The upgrade will increase the plants' efficiency as well as qualify them for Renewable Obligation Certificates (ROC), part of a government program to encourage the building of new renewable energy plants in the UK. The program, established in April of 2002, requires electricity suppliers to ensure that a proportion of the electricity they sell comes from "green" sources.

"The upgrades at these power stations are part of SSE's US$397 million program to refurbish our hydro assets in the Highlands of Scotland. The refurbishments will not only extend the lives of the power stations but will contribute significantly to the government's objective of increased renewable energy resources by 2010 and beyond," said David Sigsworth, SSE's generation director.

Equipment for the project will be manufactured at GE Hydro's Norway facility. The completion dates for the projects are June 2003 for the Quoich station, July 2003 for the Shin station, and November 2003 for the Finlarig station.

Scottish and Southern Energy plc is one of the largest vertically integrated energy groups in Britain, serving some five million electricity and gas customers through Southern Electric, Scottish Hydro-Electric and South Wales Electricity Company. The group manages Britain's largest electricity distribution networks.

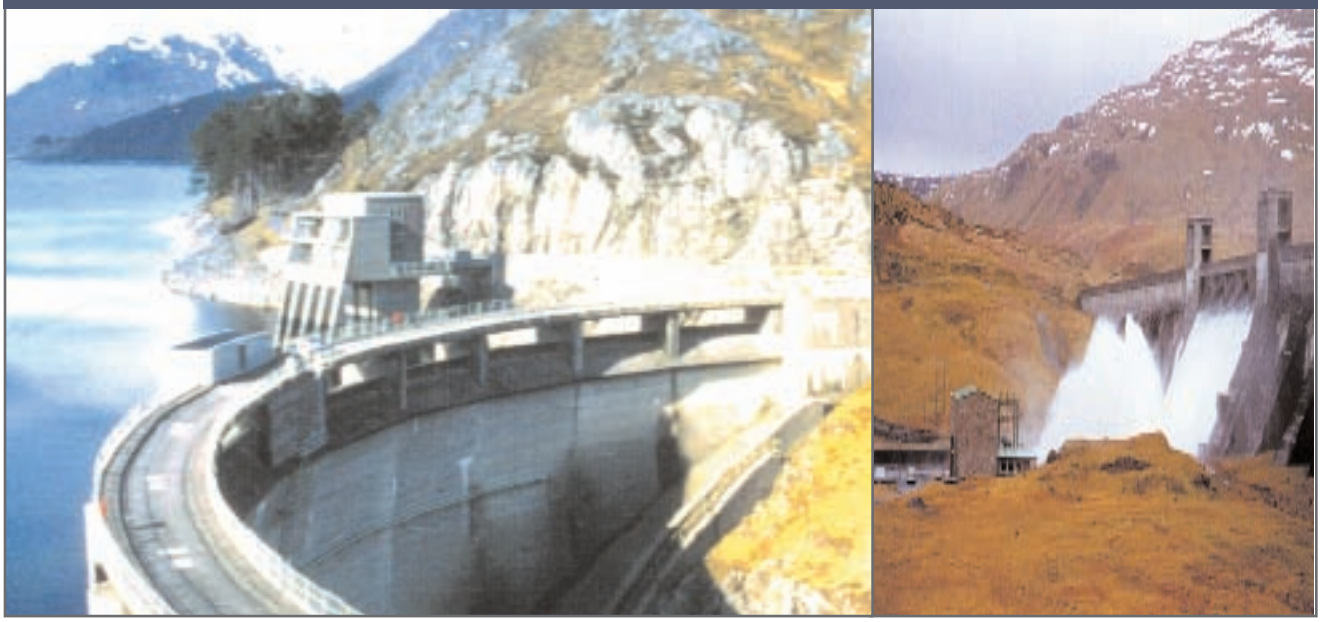
GE Hydro is a world leader in the supply of hydro turbines, generators, and related electro technical equipment for the hydropower production industry. Capabilities include complete water-to-wire solutions for new hydroelectric plants and refurbishment and service for existing plants.

About GE Power Systems

GE Power Systems (www.gepower.com) is one of the world's leading suppliers of power generation technology, energy services and management systems with 2002 revenues of nearly $23 billion. Based in Atlanta, Georgia, GE Power Systems provides equipment, services and management solutions across the power generation, oil and gas, distributed power and energy rental industries.

> Press Contacts

> More 2003 Press Releases



Pictures courtesy of Scottish & Southern Energy Group

United Kingdom

Hydro is big news in the UK again

Scottish and Southern Energy (SSE) is seeking permission to develop and construct Scotland's first large-scale hydroelectric scheme for 40 years.

The power station itself, which is likely to be built under ground, will be located close to the southeast corner of Loch Ness and will be rated at 50-100MW, making it one of the largest of SSE's 54 hydro-electric stations. A new reservoir over 600m above Loch Ness would have the biggest head of any hydro station in the UK, making it highly efficient. The new reservoir would be situated at the head of Glen Tarff and would be impounded by SSE's longest dam – around 1,000m long and up to 35mm high, shaped to suit the topography and geology of the area.

Construction is likely to take around three years, followed by one year to fully commission the power station. On this basis, the new scheme is likely to be generating electricity from 2008.

The company has already won permission to construct a 3.5MW station on the Abhainn na Coinnich, Kingairloch, Ardgour, Inverness-shire. It will be financed and operated by SSE but will be maintained by Foster Yeoman, owners of Kingairloch Estate and the Glensanda Quarry.

The project will involve rebuilding an existing dam on Loch Uisge and installing an underground pipeline to a small power station about three kilometres downstream. Amalgamated Construction will construct the scheme, which should be completed by April 2004.

This is the second new small hydro project that SSE has identified in recent times. A 3MW station at Cuileig near Ullapool is already in operation.

Meanwhile, a £250 million long-term project to refurbish and upgrade SSE's existing stations has been extended. Five more stations, at Quoich, west of Invergarry, Mossford and Grudie Bridge, west of Garve, Shin, south of Lairg and Finlarig near Killin on Loch Tay, are to be refurbished at a cost of £4 million. The refurbishments will extend the lives of the power stations for over 30 years and increase their working efficiency. The contracts for Mossford and Grudie Bridge have been won by Weirs/VA Tech and for Shin, Quoich and Finlarig by GE Hydro.

Building on this working relationship SSE and the Services Division of Glasgow-based Weir Group PLC have agreed to form a joint venture which will invest in the development of renewable power generation and control systems.

The purpose of the joint venture is to stimulate new technologies for wave and tidal energy and other related technologies, through the provision of a dedicated fund.

Projects may range from research studies to the development of operational trials for new equipment. The joint venture will invest in new technologies and will provide funding for, and investment in, prototype and other renewable projects, and may become involved in the manufacture and maintenance of renewable systems.

Weir Group will be looking for the opportunity to increase its customer offering in terms of new products and services. Each company is committing an equal amount of money, time and resource to the joint venture which, in the first instance, will run for three years.

> Construction is likely to take around three years, followed by one year to fully commission the power station

Mark Selway, Chief Executive of The Weir Group, said: "The emerging renewable energy market provides Weir Group with many opportunities. Our specialisation is the creation of engineering solutions and we have the intellectual capability to make a significant contribution towards the targets set by Governments worldwide in reducing greenhouse gases.

"Our continued involvement with SSE provides a strong foundation for the future of renewable projects as their expertise in power services, and Weir's in engineering technology, provides the perfect partnership for such an exceptional opportunity." ✻

Janet Wood

Scottish Executive

News

News Release

New Lanark hydro celebrates 75 years

10/11/2003

The 75 th anniversary of the New Lanark hydro stations, which officially opened in 1928, was celebrated today.

Deputy Enterprise Minister Lewis Macdonald said that hydro power at New Lanark was a powerful reminder ofScotland's proud history of promoting renewable energy.

John Day, whose father William was the first man to start up the turbo generators at Bonnington Hydro Station, joined the Minister at the event.

Mr Macdonald later visited Bonnington Hydro Station, which has recently completed major overhaul work along with Stonebyres Hydro Station, at a cost of £1.43 million. The work will allow each station to achieve accreditation under the Renewables Obligation (Scotland).

Mr Macdonald said:

"Hydro schemes, such as the Scottish Power-run Lanark hydros, make an important contribution to the promotion of clean technology energy developments acrossScotland.

"It is particularly fitting that we are joined today by the son of the first man to start up the machines at the Bonnington Station all those years ago. This reminds us of the important role that workers have played at these stations over the years.

"Today's event highlights the factScotlandhas a proud history of promoting renewable energy developments. The Executive is of course committed to increasing the use of renewable energy inScotland, and has set a target of 40 per cent generation by 2020.

"We have recently established the Forum for Renewable Energy Development inScotland, and this will play a major part in helping us achieve this target."

Charles Berry, ScottishPower's Executive Director UK said:

"We are deeply proud that hydro-electric power for the public started here, in the Clyde Valley, where three-quarters of a century later, the Lanark Hydros continue to generate clean, green power for the people of Scotland.

"Like our predecessor, the Clyde Valley Electrical Power Company, ScottishPower is a pioneer of renewable energy with more windfarms in the planning process than any other UK developer. We are committed to developing wind power and other renewable technologies to help achieve the Scottish Executive's target of meeting 40 per cent of the nation's energy needs from renewable sources by 2020.

"But more importantly, we are committed to responsible development, working with local communities, wildlife and heritage groups, to plan and build windfarms that will benefit Scotland's environment and economy in the long term - just as the Lanark Hydro-Electric Scheme has done."

The New Lanark Hydro Scheme was devised by several prominent engineers, one of whom, Sir Edward McColl, later became world-renowned for his brilliant engineering in the development of hydro-electric power in the north ofScotland.

ALSTOM awarded hydro refurbishement order from Scottish Power, UK

Oct. 31, 2003 -- ALSTOM has been awarded an order for approximately 5 million euros by Scottish Power, to refurbish two hydro power stations, Carsfad and Earlstoun, located in South West Scotland. ALSTOM's Rugby based Hydro Power Unit is responsible for the management of this refurbishment project.

Both Carsfad and Earlstoun are part of the Galloway Scheme that involved the construction of five hydro power stations between 1930 and 1936, all powered by water from the same catchment area in Galloway. The Carsfad and Earlstoun power stations, both built in 1936, have a current capacity 12 MW and 13 MW respectively.

The scope of supply includes new runners and guide vanes, regulating gear, spiral casings, draft tubes, stop logs and station cranes. The new runner will be designed, and manufactured in ALSTOM's facility in Grenoble, France.

In addition to renewing the runners and guide vanes to extend the life of the stations, the objective of the refurbishment is to qualify the refurbished stations for Renewable Obligation Certificates (ROC's).

Paul Lane, Managing Director of ALSTOM's Hydro Unit in the UK comments: "The Hydro Systems business in Rugby has now successfully refurbished several hydro stations in the UK, which arose as a result of the UK Government's renewable energy initiative. This latest contract with Scottish Power is a continuation of that incentive to generate electric power from 'green' energy".

ALSTOM is a global provider in energy and transport infrastructure. The company serves the energy market through its activities in the fields of power generation and power transmission and distribution, and the transport market through its activities in rail and marine. In fiscal year 2002/03, ALSTOM had annual sales in excess of ?20 billion and employed around 100,000 people in over 70 countries worldwide.

www.power.alstom.com