

2007

# Eesti energeetika arvudes

Estonian Energy  
in Figures

Majandus- ja  
Kommunikatsiooni-  
ministeerium

Ministry of  
Economic Affairs  
and Communications



MINISTRY OF  
ECONOMIC AFFAIRS AND  
COMMUNICATIONS

2007

Eesti  
energeetika  
arvudes

Estonian Energy  
in Figures



Teatmik annab ülevaate Eesti energeetikas toimunud arengutest viimase nelja aasta jooksul võrrelduna aastaga 2000.

Teatmiku koostamisel on kasutatud Statistikaameti ja Eurostat'i andmeid.

*The booklet gives a review about development of Estonian energy sector during last four years comparing with year 2000.*

*In compilation of the booklet data from the Statistical Office and Eurostat were used.*

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**SISUKORD / TABLE OF CONTENTS**

<b>ÜLDANDMED EESTI KOHTA / GENERAL DATA ABOUT ESTONIA .....</b>	<b>4</b>
<b>EESTI ENERGEETIKA LÜHISELOOMUSTUS / SHORT DESCRIPTION OF ESTONIAN ENERGY SYSTEM.....</b>	<b>7</b>
<b>ERINEVATE RIIKIDE VÕRDLUS / COMPARISON OF DIFFERENT COUNTRIES .....</b>	<b>9</b>
<b>ENERGIABILANSS JA KÜTUSTE TARBIMINE EESTIS / ENERGY BALANCE AND CONSUMPTION OF FUELS IN ESTONIA.....</b>	<b>12</b>
<b>ELEKTRIBILANSS / ELECTRICITY BALANCE .....</b>	<b>17</b>
<b>SOOJUSBILANSS / HEAT BALANCE .....</b>	<b>18</b>
<b>ENERGIARESSURSSIDE KASUTAMINE ELEKTRI TOOTMISEKS / USE OF ENERGY RESOURCES FOR ELECTRICITY PRODUCTION.....</b>	<b>19</b>
<b>ENERGIARESSURSSIDE KASUTAMINE SOOJUSE TOOTMISEKS / USE OF ENERGY RESOURCES FOR HEAT PRODUCTION .....</b>	<b>22</b>
<b>HINNAD / PRICES .....</b>	<b>23</b>
<b>ÕHUHEITMED / ATMOSPHERIC EMISSIONS.....</b>	<b>25</b>
<b>ENERGIAMAJANDUS JA OLULISED SÜNDMUSED / ENERGY ECONOMY AND IMPORTANT ACTIVITIES.....</b>	<b>27</b>
<b>CO<sub>2</sub> KAUBANDUSE ÜLEVAADE / REVIEW OF CO<sub>2</sub> TRADING .....</b>	<b>43</b>

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## ÜLDANDMED EESTI KOHTA / GENERAL DATA ABOUT ESTONIA

Riigi ametlik nimi <i>Official name of the state</i>	Eesti Vabariik <i>Republic of Estonia</i>
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Iseseisvuspäev <i>Independence Day</i>	24. veebruar (1918) <i>24 February (1918)</i>
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Riigikeel <i>Official language</i>	Eesti keel <i>Estonian</i>
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Riigikord <i>Polity</i>	Parlamentaarne vabariik <i>Parliamentary republic</i>
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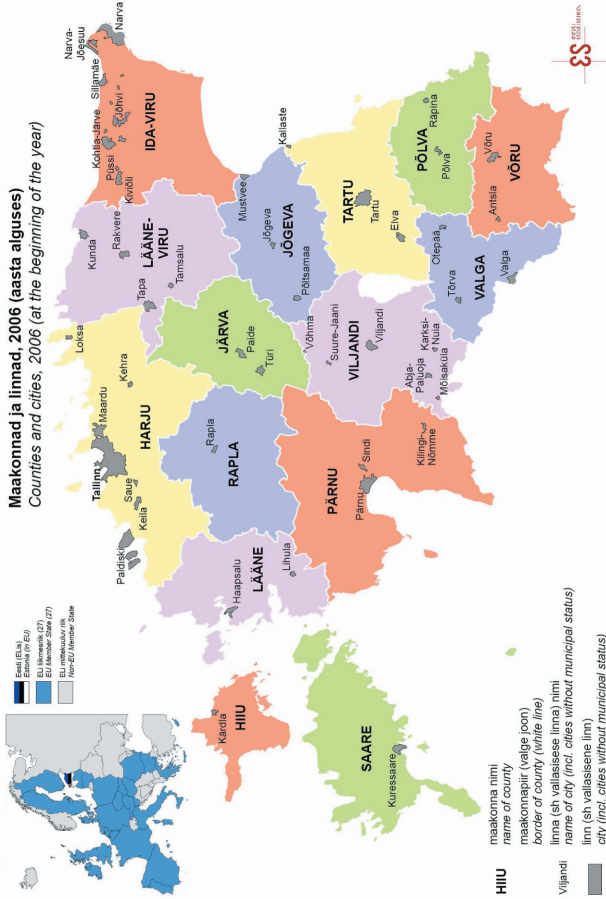
Pealinn <i>Capital city</i>	Tallinn
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Haldusjaotus  <i>Administrative division</i>	15 maakonda, 227 omavalitsusega haldusüksust, sh linnu 33, valdu 194. Vallasiseseid linnu on 14. <i>15 counties, 227 administra- tive units with local governments, of which 33 cities, 194 rural municipali- ties, 14 cities without mu- nicipal status</i>
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Pindala / <i>Total area</i>	45 227 km <sup>2</sup>
Rannajoon / <i>Coastline</i>	3 793 km
Saarte arv / <i>Number of islands</i>	1 521
SKP turuhindades <i>GDP at market prices</i>	205 mld kr 13,1 bn EUR
Rahvaarv / <i>Population</i> 01.01.2007	1 342 409
Keskmine õhutemperatuur / <i>Average daily temperature</i>	
Aasta keskmine / <i>Annual mean</i>	+6.7 °C
Jaauaris / <i>in January</i>	-4.6 °C
Juulis / <i>in July</i>	+18.9 °C

## Maakonnad ja linnad, 2006 (aasta alguses) Counties and cities, 2006 (at the beginning of the year)





## **EESTI ENERGEETIKA LÜHISELOOMUSTUS / SHORT DESCRIPTION OF ESTONIAN ENERGY SYSTEM**

Eesti olulisemad kohalikud energiaallikad on põlevkivi, turvas ja puit. Kohalikke kütuseid kasutatakse energiavajaduse rahuldamiseks rohkem kui importkütuseid. Peamised imporditavad energiaallikad on mootorkütused ja gaas. Eesti ettevõtted ekspordivad põlevkiviõli, turbabriketti, puidupelletteid ning elektrienergiat. Kuigi kohalikud fossiilsed energiavarud on piisavad katmaks kodumaiseid vajadusi veel aastakümneteks, on viimaste aastate jooksul pööratud suurt tähelepanu alternatiivsete, sh taastuvate energiaressursside kasutuselevõtuks.

Eestis on maailmas unikaalsed pikaajalised kogemused põlevkivi töötlemisel ja rakendamisel energeetikas. Kaks suurimat põlevkivi baasil töötavat elektrijaama

*The most essential domestic energy resources are oil shale, peat and wood. The domestic fuels are dominant to meet the need for energy. The main imported fuels are engine fuels and gas. Estonian enterprises export shale oil, peat briquettes, wood pellets and electricity. Although the domestic resources of fossil fuel are large enough covering the domestic energy needs for the next decades more attention is paid to utilization of alternative incl. renewable energy resources in recent years.*

*There are unique and long-term experiences in oil shale processing and utilization for energy purposes in Estonia. The two largest oil shale fired power plants produce the major part of electricity in*

toodavad suurima osa Eestis vajatavast elektrist. Suurim elektriturul tegutsev ettevõtte Eesti Energia AS on riigi omandis.

Hoonete soojusvarustuses rakendatakse valdavalt kaugkütet. Kaugkütte korraldamine kuulub kohaliku omavalitsuse pädevusse.

Riikliku energiapoliitika elluviimise ja arendamisega tegeleb Majandus- ja Kommunikatsiooniministeerium ning energiaturu järelevalvet teeb Energiaturu Inspeksioon.

Olulisemad dokumendid energiamajanduse arengu suunamisel on kütuse- ja energiamajanduse pikaajaline riiklik arengukava, elektrimajanduse arengukava ja energiasäästu sihtprogramm.

Põhjalikuma ülevaate saamiseks palume külastada Majandus- ja Kommunikatsiooniministeeriumi ([www.mkm.ee](http://www.mkm.ee)) kodulehe jaotist „Energeetika” ja Energiaturu Inspeksiooni kodulehte ([www.eti.gov.ee](http://www.eti.gov.ee)).

*Estonia. The largest enterprise active on energy market is state owned company Eesti Energia AS.*

*District heating systems are dominant to heat the buildings. The district heating is organized by municipalities.*

*The development and implementation of energy policy is organized by the Ministry of Economic Affairs and Communications and the energy market is supervised by Energy Market Inspectorate.*

*The major documents governing the market development are Long Term Public Fuel and Energy Sector Development Plan and National Energy efficiency Programme.*

*More detail information is available on the website of the Ministry of Economic Affairs and Communications ([www.mkm.ee](http://www.mkm.ee)) and the subsection “Energy” of the site, and also the website of Energy Market Inspectorate ([www.eti.gov.ee](http://www.eti.gov.ee)).*

**PRIMAARENERGIAGA VARUSTATUS  
ERINEVATES RIIKIDES/  
PRIMARY ENERGY SUPPLY IN *DIFFERENT*  
COUNTRIES**

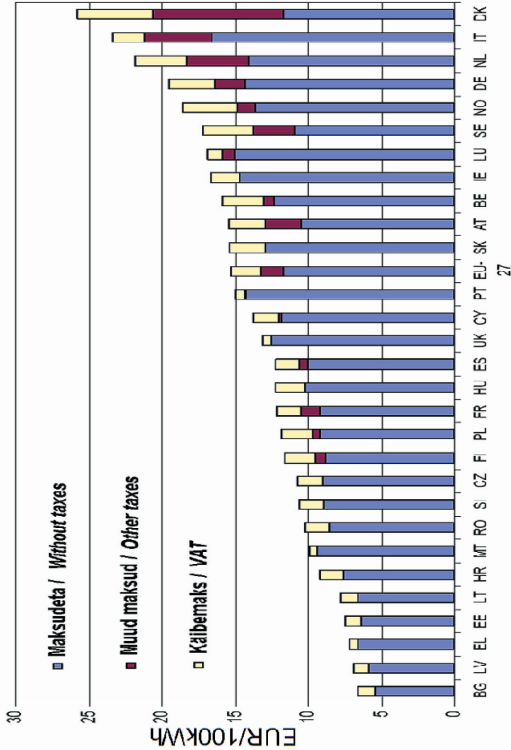
*GJ inimese kohta/  
GJ per capita*

<i>Riik / Country</i>	<b>2000</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<i>Eesti / Estonia</i>	141,4	170,0	176,9	172,8
<i>Läti / Latvia</i>	69,4	79,6	82,7	85,6
<i>Leedu / Lithuania</i>	84,3	108,6	111,1	105,0
<i>Poola / Poland</i>	98,3	100,6	101,4	103,0
<i>Soome / Finland</i>	263,0	298,7	299,6	276,0
<i>Rootsi / Sweden</i>	226,1	236,2	245,5	239,5
<i>Taani / Denmark</i>	154,4	160,9	156,1	151,2
<i>Saksamaa / Germany</i>	173,3	176,0	176,5	175,3
<i>Norra / Norway</i>	243,7	250,2	258,4	292,6
<i>Prantsusmaa / France</i>	179,2	183,5	184,9	184,5
<i>Suurbritannia / United Kingdom</i>	164,8	162,1	162,6	161,9
<i>Iirimaa / Ireland</i>	158,7	158,3	164,4	154,1
<i>Ungari / Hungary</i>	102,4	110,4	108,8	115,8

Allikas: Eurostat / Source: Eurostat

Kodutarbija elektri  
hind 1. jaanuar 2007  
seisuga

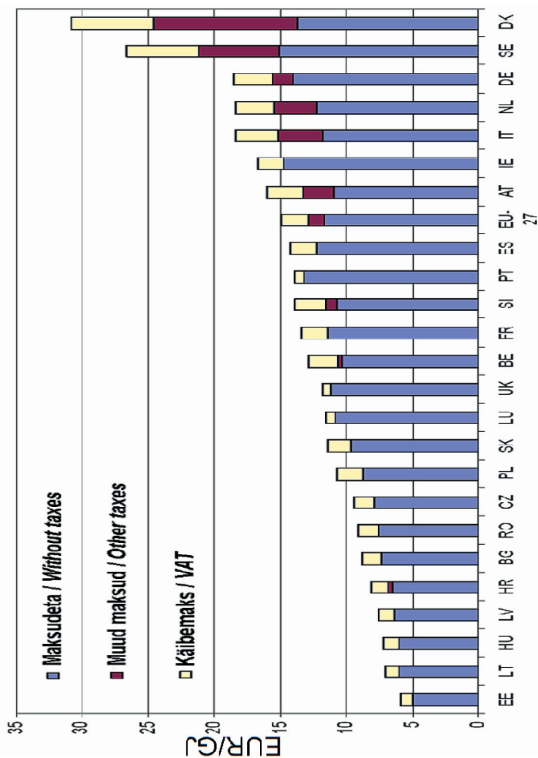
Electricity prices for  
household consumers  
on 1 January 2007



Allikas: Eurostat / Source: Eurostat

Kodutarbija gaasi hind  
1. jaanuar 2007  
seisuga

Gas price for house-  
holds consumers on  
1 January 2007



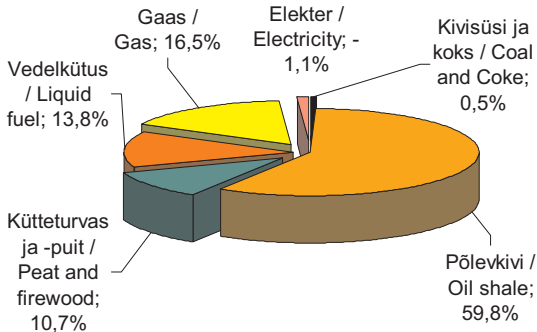
Allikas: Eurostat / Source: Eurostat

**ENERGIABILANSS JA KÜTUSTE TARBIMINE  
EESTIS /  
ENERGY BALANCE AND CONSUMPTION OF  
FUELS IN ESTONIA**

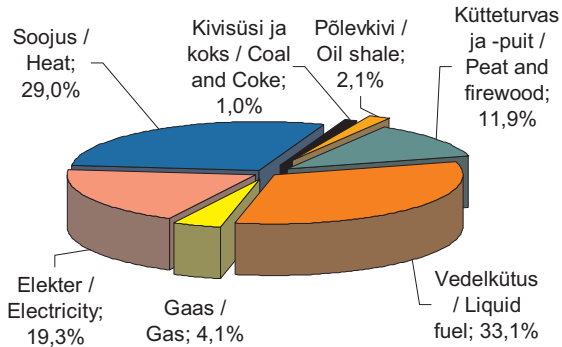
**Energiabilanss, tuh toe      *Energy balance, th toe***

	<b>2000</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Varu aasta alguses / <i>In stocks at the beginning of the year</i>	495	373	461	360	364
Primaarenergia tootmine / <i>Production of primary energy</i>	3 162	3 879	3 680	3 823	3 687
Import / <i>Imports</i>	1 771	1 889	2 114	1 937	2 084
Eksport / <i>Exports</i>	285	475	516	511	484
Merelaevade punkerdamine / <i>Marine bunkering</i>	105	113	149	120	211
Varu aasta lõpus / <i>In stocks at the end of the year</i>	479	461	360	364	467
Primaarenergiaga varustatus / <i>Supply of primary energy</i>	4 559	5 093	5 229	5 125	4 973
Lõpptarbimine / <i>Final consumption</i>	2 131	2 576	2 650	2 687	2 739

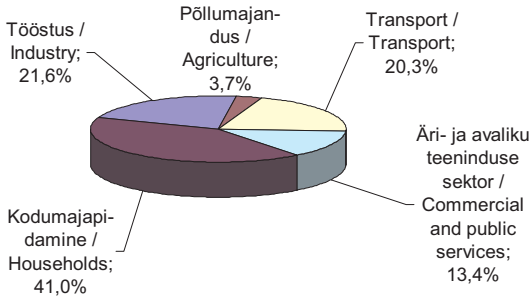
Primaarenergiaga varustus energiakandjate kaupa /  
*Supply of primary energy by energy carriers (2006)*



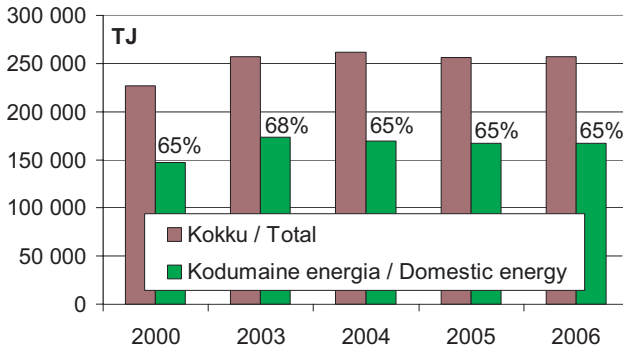
Energia lõpptarbimine energiakandjate kaupa /  
*Final energy consumption by energy carriers (2006)*



**Energia lõpptarbimine majandusharuti /  
Final energy consumption by sector categories (2006)**



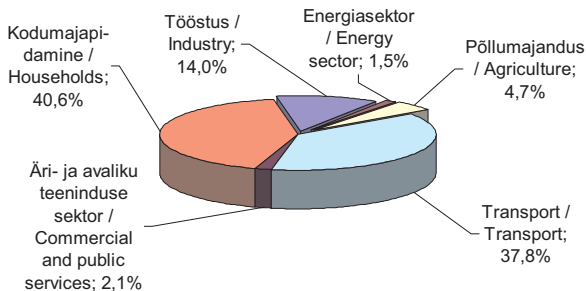
**Primaarenergia ressursid /  
Primary energy resources**



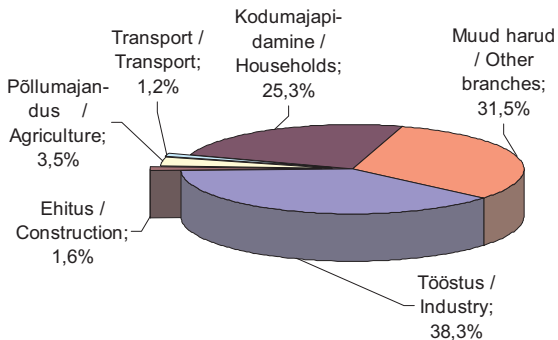


	2000	2003	2004	2005	2006
	tuhat toe / thousand toe				
<b>Kütuste sisemaine tarbimine / Gross inland consumption of fuels</b>	<b>5 179</b>	<b>5 764</b>	<b>5 885</b>	<b>5 795</b>	<b>5 610</b>
	Energiakandjate kaupa / By energy carriers				
Kivisüsi ja koks / Coal and Coke	1,1%	0,5%	0,6%	0,6%	0,8%
Põlevkivi / Oil shale	55,6%	56,5%	55,4%	54,1%	53,0%
Turvas / Peat	1,5%	1,8%	1,2%	1,2%	1,5%
Puit / Wood	9,7%	9,5%	9,6%	9,4%	8,6%
Gaas / Gas	13,0%	11,5%	13,3%	14,0%	14,6%
Raske kütteõli / Heavy fuel oil	1,7%	0,5%	0,3%	0,2%	0,1%
Põlevkiviõli / Shale oil	2,0%	2,0%	2,1%	1,9%	1,7%
Kerge kütteõli ja diislikütus / Light fuel oil and diesel	7,2%	9,6%	9,7%	10,2%	10,6%
Autobensiin / Motor gasoline	5,6%	5,4%	5,0%	5,1%	5,8%
Lennukikütus / Aviation gasoline	0,4%	0,3%	0,5%	0,8%	0,6%
Muu kütus / Other fuel	2,1%	2,5%	2,3%	2,5%	2,9%

**Kütuste lõpptarbimine majandusharuti /**  
**Final consumption of fuels by sector categories (2006)**



**Elektri tarbimine majandusharuti /**  
**Electricity consumption by sector categories (2006)**



**ELEKTRIBILANSS /  
ELECTRICITY BALANCE**

	2000	2003	2004	2005	2006
	GWh				
Brutootmine / <i>Gross production</i>	8 513	10 159	10 304	10 205	9 731
Netootmine / <i>Net production</i>	7 591	9 101	9 232	9 114	8 728
Import / <i>Imports</i>	374	93	347	345	251
	GWh				
Lõpptarbimine / <i>Final Consumption</i>	5 422	6 013	6 326	6 403	6 901
Elektrijaamade omatarve / <i>Own use by power plants</i>	922	1 058	1 072	1 091	1 003
Kadu / <i>Losses</i>	1 240	1 192	1 112	1 103	1 077
Ekspord / <i>Exports</i>	1 303	1 989	2 141	1 953	1 001
	Riigiti / <i>By countries</i>				
Venemaale / <i>to Russia</i>	28,7%	33,5%	33,3%	8,8%	0,0%
Lätisse / <i>to Latvia</i>	71,3%	66,5%	66,7%	80,1%	79,6%
Leedusse / <i>to Lithuania</i>	0,0%	0,0%	0,0%	11,1%	20,4%

## SOOJUSBILANSS / HEAT BALANCE

	2000	2003	2004	2005	2006
GWh					
Tootmine / Production	9 826	10 256	10 617	10 514	10 335
Tootmisviis / Art of production					
Elektrijaamades / In power plants	38,5%	38,5%	35,9%	35,7%	37,1%
Katlamajades / In heating plants	61,5%	61,5%	64,1%	64,3%	62,9%
GWh					
Kaugküte* / District heating*	7 383	7 112	7 491	7 638	7 497
Lõpptarbimine / Final consumption	8 527	8 982	9 283	9 351	9 233
Majandusharuti / By Sector Categories					
Tööstus / Industry	30,9%	32,8%	32,5%	32,2%	31,4%
Ehitus / Construction	0,7%	0,5%	0,5%	0,5%	0,7%
Põllumajandus / Agriculture	1,4%	1,5%	1,4%	1,4%	1,4%
Kodumajapidamine / Households	51,3%	48,3%	46,5%	46,9%	47,1%
Muud harud / Other branches	15,7%	16,9%	19,1%	19,0%	19,7%
Kadu** / Losses**	1 299	1 274	1 335	1 163	1 102

\*Tarbijatele müüdud soojus / Heat sold to consumers

\*\*Kadu soojusvõrgus / Losses in distribution networks

**ENERGIARESSURSSIDE KASUTAMINE ELEKTRI  
TOOTMISEKS /  
USE OF ENERGY RESOURCES FOR  
ELECTRICITY PRODUCTION**

**Elektri brutotoodang ja jaotus  
kütuste järgi**

**Gross production of electric-  
ity and distribution by fuels**

	2000	2003	2004	2005	2006
	GWh				
<b>Elektri brutotoodang / Electricity gross production</b>	<b>8 513</b>	<b>10 159</b>	<b>10 304</b>	<b>10 205</b>	<b>9 731</b>
<b>Koostootmise osakaal / The share of com- bined production</b>	-	-	<b>9,9%</b>	<b>10,2%</b>	<b>10,7%</b>
	Energiakandjate kaupa / By energy carriers				
Põlevkivi / Oil shale	90,71%	92,15%	92,32%	91,06%	90,18%
Turvas / Peat	0,22%	0,20%	0,15%	0,14%	0,16%
Raske kütteõli / Heavy fuel oil	0,02%	0,00%	0,00%	0,00%	0,00%
Põlevkiviõli / Shale oil	0,38%	0,32%	0,33%	0,27%	0,29%
Maagaas / Natural gas	6,58%	4,97%	4,72%	5,34%	5,56%
Taastuvad allikad / Renewable			0,29%	0,32%	0,39%
Põlevkivigaas / Shale oil gas	2,02%*	2,18%*	1,90%	2,13%	2,50%
Hüdroenergia / Hydro energy		0,13%	0,22%	0,21%	0,14%
Tuuleenergia / Wind energy	0,07%	0,06%	0,07%	0,53%	0,78%

\* Muu kütus / other fuels

Elektri tootmiseks tarbitud kütus	Consumption of fuels for power production				
	2000	2003	2004	2005	2006
	TJ				
<b>Kokku / Total</b>	<b>88 881</b>	<b>102 637</b>	<b>101 283</b>	<b>97 682</b>	<b>91 106</b>
	Kogus / In natural units				
Põlevkivi, 1000t / Oil shale, 1000t	9 832	11 691	11 886	10 892	10 096
Turvas, 1000t / Peat, 1000t	20	25	19	10	12
Puidujäätmed, 1000tm / Wood waste, 1000m <sup>3</sup>	0	0	3	16	13
Raske kütteõli, 1000t / Heavy fuel oil, 1000t	0,2	0	0	0	0
Põlevkiviõli, 1000t / Shale oil, 1000t	9	10	11	8	8
Diislikütus, 1000t / Diesel, 1000t	0,2	0,2	0,1	0,1	0
Maagaas, mln m <sup>3</sup> / Natural gas, million m <sup>3</sup>	88	77	70	74	70
Taastuvad allikad, 1000 tce / Renewable, 1000 tce	-	0	7	8	10
Põlevkivigaas, 1000 tce / Shale oil gas, 1000 tce	-	0	68	72	85
Muu kütus, 1000 tce / Other fuels, 1000 tce	60	76	0	0	0

## Tuule- ja hüdroenergia

## Wind and hydro energy

	2000	2003	2004	2005	2006
<b>Hüdrojaamad / Hydro plants</b>					
<i>Võimsus / Capacity (MW)</i>					
<i>Paigaldatud / Installed</i>	-	3,8	4,4	5,2	5,2
<i>Kasutatav / Available</i>	-	3,6	4,1	5,0	5,0
<i>Elektritoodang, GWh / Power production, GWh</i>	-	12,8	22,4	21,5	13,5
<b>Tuulejaamad / Wind plants</b>					
<i>Paigaldatud / Installed</i>	-	2,4	22,8	31	31
<i>Kasutatav / Available</i>	-	2,4	6,7	31	31
<i>Elektritoodang, GWh / Power production, GWh</i>	-	6,1	7,6	53,9	76,3
<b>Võimsus kokku / Total capacity (MW)</b>					
<i>Paigaldatud / Installed</i>	1,8	6,2	27,2	36,2	36,2
<i>Kasutatav / Available</i>	1,5	6,0	10,8	36,0	36,0
<i>Kogu elektritoodang, GWh / Total power production, GWh</i>	6,0	18,9	30	75,4	89,8

**ENERGIARESSURSSIDE KASUTAMINE SOOJUSE  
TOOTMISEKS / USE OF ENERGY RESOURCES  
FOR HEAT PRODUCTION**

**Soojuse toodang ja jaotus  
kütuste järgi**

**Production and distribution of  
heat by fuels**

	2000	2003	2004	2005	2006
<b>Soojuse bruto- toodang, GWh / Heat gross production, GWh</b>	<b>9 826</b>	<b>10 256</b>	<b>10 617</b>	<b>10 514</b>	<b>10 335</b>
<b>Koostootmise osakaal / The share of co- production</b>	-	-	<b>31,0%</b>	<b>30,3%</b>	<b>31,1%</b>
	<b>Energiakandjate kaupa / By energy carriers</b>				
Kivisüsi / Coal	0,9%	0,8%	0,6%	0,6%	0,4%
Põlevkivi / Oil shale	18,0%	15,9%	14,1%	12,6%	13,2%
Turvas / Peat	2,6%	3,8%	3,0%	2,8%	3,9%
Puit / Wood	14,5%	16,5%	17,5%	18,3%	16,2%
RKÕ / HFO	7,6%	2,2%	1,0%	0,7%	0,5%
Põlevkiviõli / Shale oil	8,6%	8,7%	8,3%	8,0%	7,4%
KKÕ / LFO	3,2%	3,1%	3,2%	3,4%	2,8%
Gaaskütus / Gaseous fuel	38,7%	42,4%	44,6%	45,9%	48,0%
Taastuvad allikad / Renewable	0,0%	0,0%	2,5%	3,1%	2,7%
Põlevkivigaas / Shale oil gas	0,0%	0,0%	4,2%	3,8%	2,7%
Muu / Other fuels	5,9%	6,6%	1,0%	0,9%	0,4%



	Soojuse tootmiseks tarbitud kütus		Consumption of fuels for heat production		
	2000	2003	2004	2005	2006
	PJ				
<b>Kokku / Total</b>	<b>41,2</b>	<b>44,2</b>	<b>46,5</b>	<b>46,5</b>	<b>43,6</b>
	Tootmisviis / Art of production				
Elektrijaamad / Power plants	36,4%	39,6%	36,1%	35,9%	28%
Katlamajad / Boiler houses	63,6%	60,4%	63,9%	64,1%	62,0%

### HINNAD / PRICES

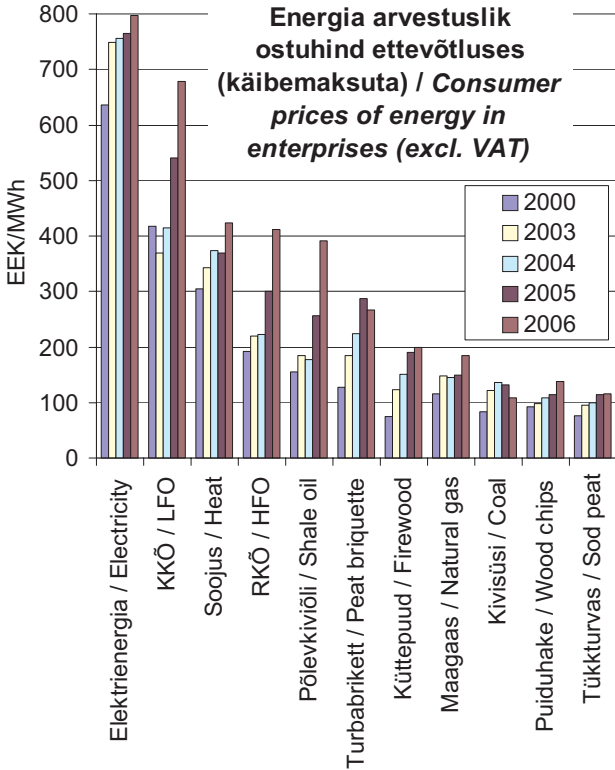
Maagaasi hind väiketarbijatele koos käibemaksuga (EEK/m<sup>3</sup>)

Price of natural gas for non-eligible users incl. VAT (EEK/m<sup>3</sup>)

Aastane tarbimiskogus / Annual consumption	2000	2003	2004	2005	01.01. 2006	01.10. 2006
< 200 m <sup>3</sup>	3,9 <sup>1</sup>	4,7	4,70	4,70	4,70	8,25
201 – 750 m <sup>3</sup>		3,50	3,50	3,50	4,00	5,40
751 – 3000 m <sup>3</sup>	2,6 <sup>2</sup>	2,70	2,70	2,70		
3001 – 10 000 m <sup>3</sup>		2,60	2,60	2,60	3,00	4,45
10 0001 – 200 000 m <sup>3</sup>	2,25 <sup>3</sup>	2,50	2,50	2,50		

<sup>1</sup> - ainult pliidiga / gas for cooking only; <sup>2</sup> - pliit ja veesoojendus / cooking and tap water heating; <sup>3</sup> - lokaalküte / local heating.

Allikas: AS Eesti Gaas / Source: AS Eesti Gaas



**ÕHUHEITMED / ATMOSPHERIC EMISSIONS**

Vääveldioksiidi  
emission (tuh t)

*Emissions of sulphur  
dioxide (th t)*

	2000	2003	2004	2005	2006
Paiksed saasteallikad / <i>Stationary sources</i>	91,5	98,1	85,4	74,0	68,2
sh kütuste põletamine ja muundamine / <i>incl. burning and conversion of fuels</i>	86,4	93,0	80,6	61,4	56,5

Lämmastikdioksiidi  
emission (tuh t)

*Emissions of nitrogen  
oxides (th t)*

	2000	2003	2004	2005	2006
Paiksed saasteallikad / <i>Stationary sources</i>	15,3	18,0	16,1	14,1	13,1
sh kütuste põletamine ja muundamine / <i>incl. burning and conversion of fuels</i>	12,1	15,3	13,3	11,6	10,3

Tahkete osakeste  
emission (tuh t)

*Emissions of solid  
particles (th t)*

	2000	2003	2004	2005	2006
Paiksed saasteallikad / <i>Stationary sources</i>	59,5	31,3	25,8	18,2	12,4
sh kütuste põletamine ja muundamine / <i>incl. burning and conversion of fuels</i>	52,7	26,4	20,7	13,3	8,1

Kasvuhoonegaaside  
emissioon kütuste  
põletamisest (tuh t CO<sub>2</sub>  
ekv)

*Emissions of greenhouse  
gases from fuel combustion  
(th t CO<sub>2</sub> eqv)*

	2000	2003	2004	2005	2006
Energia tootmine / <i>Energy production</i>	13 440	15 273	15 234	14 607	14 064
Transport / <i>Transport</i>	1 654	2 105	2 162	2 229	2 428
Tööstus / <i>Industry</i>	476	474	476	546	542
Muud / <i>Others</i>	460	529	510	495	433
<b>KOKKU / TOTAL</b>	<b>16 030</b>	<b>18 381</b>	<b>18 382</b>	<b>17 876</b>	<b>17 467</b>

Allikas: Keskkonnaministeerium /  
*Source: Ministry of the Environment*

## **ENERGIAMAJANDUS JA OLULISED SÜNDMUSED / ENERGY ECONOMY AND IMPORTANT ACTIVITIES**

Käesolev peatükk kajastab Eesti energiamajandust ja annab ülevaate olulisematest sündmustest 2006-2007 a.

### **Elektriturg**

Suurimaks elektri tootjaks ja edastajaks Eestis on riigile kuuluv ettevõte Eesti Energia. Elektri tootmisega tegelevad nt AS Eesti Energia tütarettevõtted AS Narva Elektriijaamad, OÜ Iru Elektriijaam ja äriüksus Taastuvenergia Ettevõte. Elektri ülekande ja jaotamisega tegelevad samuti tütarettevõtted, vastavalt OÜ Põhivõrk ja OÜ Jaotusvõrk.

2006. a augustis omandas Eesti Energia Skandinaavia energiavaldkonna maakerfirma Solidus.

Märtsis 2006 a. allkirjastati kolmepoolne ühiste kavatsuste memorandum Eesti Energia, Latvenergo ja Lietuvos Energija vahel, uurimaks võimalusi uue

*This chapter describes the Estonian energy economy and gives a review about important activities since 2006.*

### **Electricity market**

*The largest power producer and distributor is state owned company AS Eesti Energia. AS Narva Elektriijaamad, OÜ Iru Elektriijaam as subsidiaries and Renewable Energy Business Unit for instance are engaged in power production. Subsidiaries like OÜ Põhivõrk and OÜ Jaotusvõrk are engaged in power transmission and distribution respectively.*

*In August 2006, Eesti Energia acquired the Scandinavian energy trading company Solidus.*

*In March 2006, the memorandum of understanding between the three companies Eesti Energia, Latvenergo and Lietuvos Energija was signed to investi-*

tuumaelektrijaama rajamiseks Leetu. Praegu teostatakse keskkonnamõjude hindamist.

Lätis asutati AS Eesti Energia tütarettevõtte E Energy, mis sai septembris 2006 Läti regulaatorilt loa elektri müügiks. Leedus on asutatud ja kantud äriregistrisse tütarettevõtte Lumen Balticum, mis hakkab tegutsema Leedu avatud energiaturul.

Merekaabel Estlink alustas tööd 4. jaanuaril 2007, millega avanes võimalus eksportida ning importida elektrit Põhjamaade elektribörsilt Nord Pool. Kokku eksporditi 2007. aasta esimese kvartalis elektrit Põhjamaadesse 401 GWh.

Eestis on juriidiliselt eraldatud elektri tootmine, jaotamine ja ülekanne. Euroopa Liidu liitumislepingus on kokku lepitud elektrituru

gate the possibilities for construction of new nuclear power plant in Lithuania. The environmental impact assessment report is under completion.

AS Eesti Energia founded a subsidiary E Energy in Latvia which obtained permission from the Latvian regulatory body in September 2006 to sell electricity. The Eesti Energia subsidiary Lumen Balticum has been founded and entered in the business register in Lithuania, and will operate on the Lithuanian open energy market.

Energising of the Estlink undersea cable was on January 4, 2007, allowing the export and import of electricity from the Nordic energy exchange Nord Pool. Total exports of electricity to Nordic countries were 401 GWh.

In Estonia power production, transmission and distribution are separate legal entities. Opening of the electricity market is agreed in accession agreement: from

avanemine: alates 1. jaanuarist 2009 avatakse 35% turust ning 1. jaanuarist 2013 on kogu turg avatud. Vabatarbijate turu osakaal moodustas 2006. aastal 875 GWh, mis teeb turu avatuse määraks 12,7%.

### **Elektrijaamad**

#### AS Narva Elektrijaamad

AS Narva Elektrijaamad omab kaht maailma suurimat põlevkivil töötavat elektrijaama – Balti Elektrijaam (765 MW<sub>el</sub>, 400 MWs) ja Eesti Elektrijaam (1615 MW<sub>el</sub>, 84 MWs). AS Narva Elektrijaamad genereerib 95% Eestis toodetavast elektrist ja varustab soojusega Narva linna.

2006-2007 aasta olulisemad tegevused:

- tehti algust detailplaneeringu protsessiga 2x300 MW<sub>el</sub> elektrijaama ehitamiseks ning olemasoleva vedelkütuse tehase laiendamiseks Eesti Elektrijaama territooriumil. Samuti on alustatud

*January 1, 2009 35% of the market will be opened and whole market will be open from January 1, 2013. The share of eligible market in 2006 was 875 GWh. According to that electricity market is opened by 12.7%.*

### **Power Plants**

#### AS Narva Elektrijaamad

AS Narva Elektrijaamad owns two world largest oil shale fired power plants – Balti Elektrijaam (765 MW<sub>el</sub>, 400MWs) and Eesti Elektrijaam (1615 MW<sub>el</sub>, 84 MW<sub>th</sub>). AS Narva Elektrijaamad generates 95% of total power production and supplies the town Narva with heat.

*The important activities in 2005-2006:*

- *Start of detailed planning for a 2x300 MW<sub>el</sub> power plant and for the augmentation of the liquid fuel factory at Eesti Power Plant. Environmental impact assessment was also started to measure the plants' environmental impact on the surrounding*

keskkonnamõjude hindamisega, saamaks ülevaadet võimalikest mõjudest ümbruskonnale ning nende minimeerimisest.

- Balti Elektriijaama tuhavälja nr 2 sulgemistöde käigus võeti kasutusele tuhavee neutraliseerimisõlm. Tuhavälja sulgemistööd jätkuvad tiikide kuivendamise, maastikutööde ning uue tööstusjäätmete prügila rajamisega.
- Alustati projektiga, mille tulemusena hakatakse Balti Elektriijaama 11 plokis kasutama 10% ulatuses biokütuseid.

#### OÜ Iru Elektriijaam

Iru Elektriijaam on maagaasil töötav elektri ja soojuste koostootmisjaam (190 MW<sub>el</sub>, 648 MW<sub>t</sub>, millest koostootmisrežiimis 398 MW<sub>t</sub>). Iru Elektriijaam on suurim soojuste ja kolmas elektri tootja Eestis.

- 2006. aastal alustati energiablokkide Low-NOx põletite paigaldamist.

*areas in order to minimise it.*

- *The neutralisation system for ash slurry was brought into use as ash field nr 2 of Balti Power Plant was closed down, a process that also involved draining ponds, landscaping, and building a new dump for industrial waste.*
- *The project was launched to utilize bio fuels in range of 10% in energy block number 11 of Balti Elektriijaam.*

#### OÜ Iru Elektriijaam

*Iru Power Plant is natural gas fuelled combined heat and power plant (190 MW<sub>el</sub>, 648 MW<sub>t</sub>, incl. 398 MW<sub>t</sub> in CHP mode). Iru Power Plant is the largest heat producer and the third power producer in Estonia.*

- *In 2006, the installation of the new Low-NOx burners for two energy blocks was started.*



- 
- 2006 alustati ettevalmistavate uuringutega olmejäätmete (220 000 t/a) soojuse ja elektri koostootmisploki rajamiseks.
  - *In 2006, the preparation studies have initiated for the combined heat and power production unit burning 220 000 t of municipal solid wastes annually.*

### **Soojuse ja elektri koostootmise rajatised**

Elektri ja soojuse koostootmisjaamades toodetud elekter moodustab kogu elektritoodangust 11% ja soojus moodustab kogu toodetud soojusest 30%. Suuremad koostootmisjaamad on Iru Elektri jaam, Balti Elektri jaam ja Ahtme soojuselektri jaam.

Ahtme SEJ. Olemasoleva põlevkivi põhineva jaama asemele plaanitakse ehitada uus turba ja biokütusel põhinev soojuse ja elektri koostootmisjaam – 20 MW<sub>el</sub> ja 50 MW<sub>s</sub> ning lisaks gaaskütust kasutatav reserv- ja tipukatel 100 MWs. 2006. a. teisel poolel alustati ehituse pakkumise kutse dokumentide koostamisega.

Väo SEJ. 18. oktoobril 2007. a. sai nurgakivi Tallinna lähedale rajatav soojuse- ja elektri koostootmisjaam, kus hakatakse kasutama puiduhaket ja turvast. Jaama võimsused on vastavalt 25 MW<sub>el</sub> ja

### **Combined heat and power installations**

*The share of electricity produced in combined heat and power stations is 11% and share of heat is 30%. The biggest combined heat and power stations are Iru Power Station, Balti Power Station and Ahtme Power Station.*

Ahtme CHP. *Instead of existent oil shale fuel plant is planned to construct the new bio fuel and peat fired combined heat and power plant – 20 MW<sub>el</sub> and 50 MW<sub>th</sub>, additionally 100 MW<sub>th</sub> natural gas fired reserve and peak boiler. In the second half of 2006 the composing of procurement documents for construction was started.*

Väo CHP. *Construction of new green-field bio fuel and peat fired combined heat and power plant nearby Tallinn started at 18 October 2007. The capacities of the plant are as follows: 25 MW<sub>el</sub> ja 50 MW<sub>th</sub>. Plant will start the operation in the end of*

50 MW<sub>th</sub>. Jaam valmib 2008. aasta lõpuks. Planeeritud elektritoodang on kuni 190 GWh ja soojustoodang 500 GWh aastas.

AS Anne Soojuse SEK. Käimas on ehitustööd uue biokütusel ja turbal põhineva soojuse ja elektri koostootmisjaama ehitamiseks Tartu lähedale Luunja valda – 25 MW<sub>el</sub> ja 54 MW<sub>th</sub> ning aastase toodanguga 140 GWh<sub>el</sub> ja 325 MWh<sub>th</sub>.

#### **Põhivõrk**

Eestis tegutseb põhivõrgu (ülekandeliinide) haldamisega OÜ Põhivõrk. Olulised tegevused 2006-2007:

- Balti-Kiisa 330 kV õhuliini valmimine
- Tartu AJ 330 kV autotrafode paigaldamine
- Tartus Emajõe AJ valmimine
- Harku 330 kV alajaama laiendamine

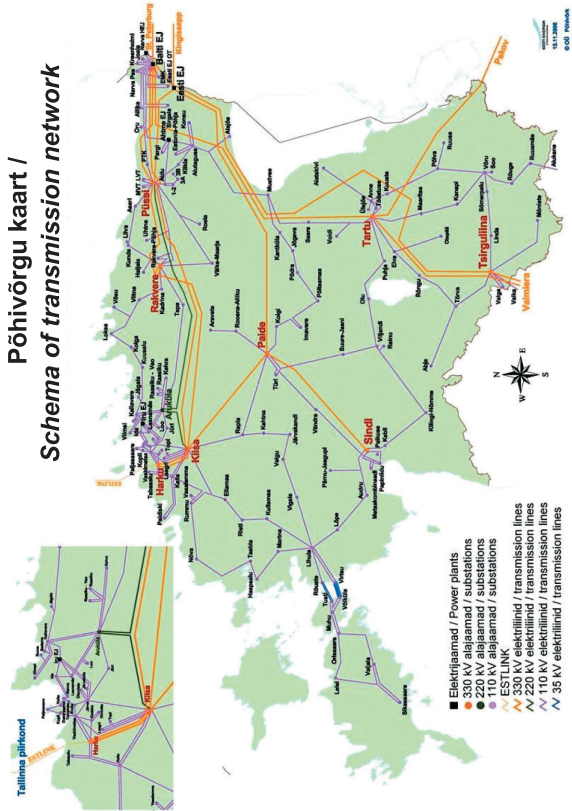
*2008. Planned production of electricity is 190 GWh and heat 500 GWh per year.*

AS Anne Soojus CHP. *The construction of new green-field bio fuel and peat fired combined heat and power plant nearby Tartu in Luunja municipality are running – 25 MW<sub>el</sub> and 54 MW<sub>th</sub> and with annual production 140 GWh<sub>el</sub> ja 325 MWh<sub>th</sub>.*

#### **Transmission network**

*OÜ Põhivõrk is engaged in managing of transmission network in Estonia. Important activities in 2006-2007:*

- *Completion of the Balti-Kiisa 330 kV overhead transmission line*
- *Installation of the Tartu substation 330 kV auto-transformers*
- *Completion of the Emajõe substation in Tartu*
- *Extension of the Harku 330 kV substation*



Allikas: OÜ Põhivõrk / Source: OÜ Põhivõrk

### **Jaotusvõrk**

Suurim jaotusvõrguettevõtte on OÜ Jaotusvõrk. Lisaks tegutsevad 40 ettevõtet, milledest suurimad on Fortum Elekter AS ja OÜ VKG Elektrivõrgud.

### **Kütuste tootmine ja müük**

#### **Maagaas**

Eesti maagaasiturk on alates 01.07.2007 täielikult avatud. Maagaasi impordivad Eestisse AS Eesti Gaas ning keemiatööstusettevõtte AS Nitrofert, seejuures ei tegele AS Nitrofert maagaasi müügiga ning impordib seda vaid omatarbeks.

Maagaasi tarnekindluse osas sõltub Eesti täielikult Venemaa gaasitarnetest. Kokku on Eestil kolm ühendust: Narvas ja Värskas Venemaaga ning Karksis Lätiga koguvõimsusega 11 000 tuh m<sup>3</sup> ööpäevas. Reeglina on avatud vaid Värska ja Karksi ühendused. Narva ühendus on suletud Venemaa poolse

### **Distribution network**

*The largest distribution network company is OÜ Jaotusvõrk. Additionally 40 companies are engaged in electricity distribution, the largest ones among them are Fortum Elekter AS and OÜ VKG Elektrivõrgud.*

### ***Production and sale of fuels***

#### **Natural gas**

*Estonian natural gas market is fully opened since 1.07.2007. All the gas sold in the wholesale market is imported by AS Eesti Gaas as there is no other wholesalers. In addition the chemical industry AS Nitrofert also imports gas, but exclusively for its own technological needs.*

*The security of provision of natural gas of Estonia is fully dependent on Russia. Altogether there are three connections: in Narva and Värska with Russia and in Karksi with Latvia with the total capacity of 11 000 thousand m<sup>3</sup> daily. As a rule, only the Värska and Karksi connections are operational. The Narva connection is*

ülekanadesüsteemi piirangu tõttu. Erinevate ühenduste läbilaskevõimsused on alljärgnevad:

- Karksi ühendus Lätiga 7 000 tuh. m<sup>3</sup> ööpäevas;
- Väraska ühendus Venemaaga 4 000 tuh. m<sup>3</sup> ööpäevas;
- Narva ühendus Venemaaga, mille teoreetiline läbilaskevõime on 4 000 tuh m<sup>3</sup> ööpäevas, kuid tegelik ülekandevõime on mitte üle 500 tuh m<sup>3</sup> ööpäevas.

1. jaanuaril 2006. aastal alustas majandustegevust AS EG Võrguteenus, mis asutati Euroopa Liidu normdokumentide ja Eesti Vabariigi seadusandluse nõuetest tulenevalt sõltumatu võrguteenuse osutamiseks kõikidele maagaasituru osalistele Eesti Vabariigi territooriumil. Eestis tegutseb kokku 29 maagaasi jaotusega tegelevat ettevõtet.

*typically closed because of limitations of network in the Russian side. The pass-through capacities of particular connections are as follows:*

- *Karksi connection with Latvia 7 000 thousand m<sup>3</sup> daily;*
- *Väraska connection with Russia 4 000 thousand m<sup>3</sup> daily;*
- *Narva connection with Russia, with a theoretical pass-through capacity of 4 000 thousand m<sup>3</sup> daily, the actual pass-through capacity is not more than 500 thousand m<sup>3</sup> daily.*

*As a result of the requirements of the Estonian Republic legislation and the European Union directives, AS EG Võrguteenus was established in order to provide independent network services to all the participants of the natural gas market on the territory of the Estonian Republic. The enterprise started its economic activity on January 1, 2006. Overall there are 29 enterprises engaged in distribution of natural gas.*

**Maagaasi ülekandevõrk / Transmission network of natural gas**

Allikas: AS Eesti Gaas / Source: AS Eesti Gaas

2006. a. lõpetati maagaasitorustiku ehitamine Pärnu ja Sindi linna. Samuti jõudis maagaas maakonnakeskuse Rapla ning Püssi linna klientideni.

#### Põlevkivi

Suurim põlevkivi kaevandaja on AS Eesti Energia tütarettevõtte AS Eesti Põlevkivi. Lisaks tegutsevad veel OÜ Merko Kaevandused ja Kiviõli Keemiatööstuse OÜ.

Novembris 2006 omandas Eesti Energia 76% Oil Shale Energy of Jordan (OSEJ) aktsiatest ning OSEJ ja Jordaania kuningriigi valitsus sõlmisid ühiste kavatsuste kokkuleppe, millega Eesti Energia sai eksklusiivse õiguse uurida ühe kolmandiku (300 miljonit tonni) El Lajuni põlevkivimaardla varudest. Eesti Energia plaanib Jordaania loodud tütarettevõtte OSEJ abil viia läbi uuringuid, mille lõppeesmärgiks on riiki põlevkiviõlitehase rajamine.

*The construction of the natural gas pipeline to the towns of Pärnu and Sindi was completed in 2006. The natural gas pipelines also reached the customers in the County town of Rapla and the town of Püssi.*

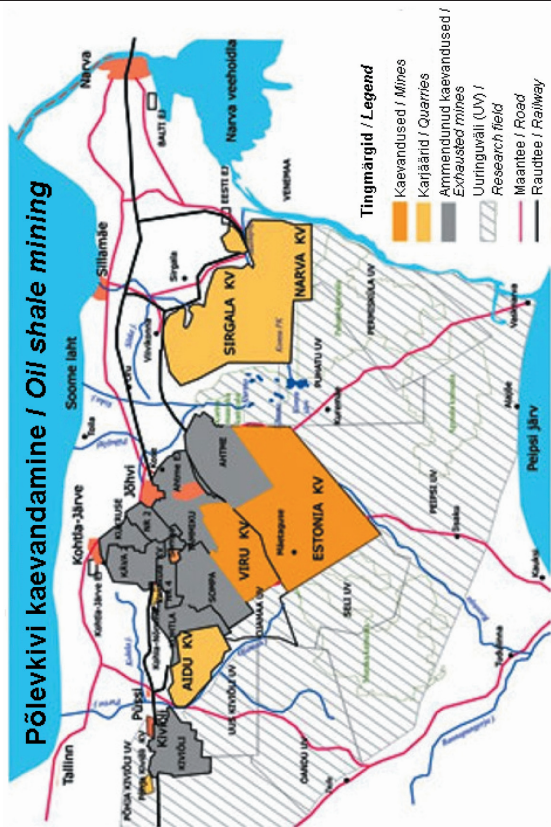
#### Oil shale

*The larger oil shale extractor is AS Eesti Põlevkivi, subsidiary of AS Eesti Energia. There are also two other companies OÜ Merko Kaevandused and Kiviõli Keemiatööstuse OÜ.*

*In November 2006, Eesti Energia acquired 76% of the shares of Jordan's company Oil Shale Energy of Jordan (OSEJ) and OSEJ and the Government of the Kingdom of Jordan signed a memorandum of understandings by which Eesti Energia received an exclusive right to explore 1/3 (300 mln tonnes) of Jordan's El Lajun's oil shale reserves.*

*With help of the OSEJ Eesti Energia plans to carry out a feasibility study with the goals to build a shale oil factory.*





Allikas: AS Eesti Põlevkivi / Source: AS Eesti Põlevkivi

Põlevkiviõli

Põlevkiviõli toodavad AS Narva Elektriijaamad Õlitehas, AS Viru Keemia Grupp ja Kiviõli Keemiatööstuse OÜ.

Turvas

Eesti suurimad energeetilise turba kaevandajad AS Tootsi Turvas, AS Sangla Turvas ja OÜ Lauka Turvas.

Puidugraanulid

Puidugraanulite tootmisega tegeleb Eestis viis ettevõtet: AS Tootsi Graanul, AS Hansa Graanul, OÜ Delcotek, AS Flex Heat, AS Granul Invest.

**Kaugküte**

Suurimad kaugküttevõrgud Eestis asuvad Tallinnas, Tartus ja Narvas. Koostootmisprotsessis toodetud soojust edastamine kaugküttevõrku toimub lisaks Tallinnale ja Narvale ka Kohtla-Järvel ja Ahtmes ning veel mõnes oluliselt väiksema võimsusega jaamas. Momendil ehitatakse uusi biokütusel ja turbal põhinevaid koostootmise jaamasid Tallinna ja Tartu

Shale oil

*The shale oil producers are AS Narva Elektriijaamad Õlitehas, AS Viru Keemia Grupp and Kiviõli Keemiatööstuse OÜ.*

Peat

*The largest extractors for energetic purposes are AS Tootsi Turvas, AS Sangla Turvas and OÜ Lauka Turvas.*

Pellets

*There are five companies engaged in pellet production - AS Tootsi Graanul, AS Hansa Graanul, OÜ Delcotek, AS Flex Heat, AS Granul Invest*

**District Heating**

*The largest district heating networks are situated in Tallinn, Tartu and Narva. Additionally to Tallinn and Narva the heat produced with combined production is used for district heating in Kohtla-Järve and Ahtme and also in some plants with remarkable lower capacity. At the moment the new bio fuel and peat fired combined heat and power plants for Tallinn and Tartu district heating are under construc-*

soojusvõrgu juurde. Olemasolev Ahtme SEJ plaanitakse ümber ehitada põlevkivi põletamiselt turvast ja biokütust põletavaks SEK jaamaks.

Suurimateks kaugkütteettevõteteks (tootjad ja edastajad) Eestis on OÜ Iru Elektriyaam, AS Narva Elektriyaamad, AS Eraküte (suurematest linnadest Tartu, Haapsalu, Valga, Jõgeva, Põlva), AS Tallinna Küte, AS Narva Soojusvõrk, AS Kohtla-Järve Soojus, AS Fortum Tartu, AS Fortum Termest (Tallinn ja piirkonnad selle lähiümbruses ning Rakvere linn).

#### **Tuule- ja hüdroenergia**

Olemasolevad suuremad tuulepargid on Pakri (18,4 MW), Virtsu (1,8 MW) Esivere (8 MW) ja Viru-Nigula (24 MW).

2006-2007 olulisemad tegevused:

- Viru-Nigula tuulepargi ehitamine (24 MW).
- Rõuste tuulepargi (12 MW) ehitamise alustamine.
- Virtsu tuulepargi laiendus

*tion. Ahtme CHP plant will be reconstructed from oil shale firing to bio fuel and peat firing.*

*The larger district heating companies (producers and distributors) in Estonia are OÜ Iru Elektriyaam, AS Narva Elektriyaamad, AS Eraküte (towns like Tartu, Haapsalu, Valga, Jõgeva, Põlva), AS Tallinna Küte, AS Narva Soojusvõrk, AS Kohtla-Järve Soojus, AS Fortum Tartu, AS Fortum Termest (Tallinn and in the vicinity of Tallinn and also Rakvere town.*

#### **Wind and hydro energy**

*The existing larger wind parks are Pakri (18,4 MW), Virtsu (1.8 MW), Esivere (8 MW) and Viru-Nigula (24 MW).*

*2006-2007 important activities:*

- *Construction of Viru-Nigula wind park (24 MW).*
- *Construction of Rõuste wind park (12MW) started.*

- Ruhnu saarele tuulepargi ja diisलगeneraatori koostöölahenduse rajamine.

Eesti hüdroenergia varud ei ole märkimisväärsed. Momendil on kaks suuremat töötavat hüdroelektrijaama Linnamäe HEJ (1,1 MW) ja Keila-Joa HEJ (0,365 MW).

Suurimad tuule- ja vee-energiaga tegelevad ettevõtted on Eesti Energia Taastuvenergia Ettevõte, OÜ Roheline Ring, OÜ Pakri Tuulepark, OÜ Viru-Nigula Tuulepark.

- *Expansion of Virtsu wind park.*
- *Construction of the wind and diesel engine combined solution to Ruhnu Island.*

*The hydro energy resources in Estonia are not remarkable. There are two bigger hydro power plants in Estonia at the moment – Linnamäe HPP (1.1 MW) and Keila-Joa HPP (0.365 MW).*

*The larger companies engaged in wind and hydro energy are Eesti Energia Renewable Energy Business Unit, OÜ Roheline Ring, OÜ Pakri Tuulepark, OÜ Viru-Nigula Tuulepark.*

## CO<sub>2</sub> KAUBANDUSE ÜLEVAADE / REVIEW OF CO<sub>2</sub> TRADING

Eesti ratifitseeris Kyoto protokollil 14. oktoobril 2002. aastal. Protokollil kohaselt kohustus Eesti ajavahe- mikus 2008-2012 kasvu- hoonegaaside heitkoguseid vähendada 8% võrreldes 1990. aastaga. 1990 oli kasvuhoonegaaside heitko- guseid kokku 43 594 tuhat tonni ja 2005. aastal 20 658 tuhat tonni CO<sub>2</sub> ekvivalenti. Vähenemine on olnud summaarselt 52,6%, mis on oluliselt suurem kui EL poolt 2007. aasta kevadel Nõu- kogu järeldustega eesmär- giks seatud heitkoguste vähendamine 20%. Vähenemise põhjuseks on Nõukogude Liidu lagune- mise järel vähenenud nõudlus energi ajärele.

Viimastel aastatel on kasvuhoonegaaside heit- kogused Eestis vaatamata majanduskasvule olnud suhteliselt stabiilsed.

Perioodil 2005-2007 määrati 43-le Eesti ettevõttele kokku 56 219 413 tonni CO<sub>2</sub> heitmeid. Sellest energia

*Estonia ratified the Kyoto protocol on 14 October 2002. According to the protocol Estonia committed to reduce in the period of 2008-2012 greenhouse gas emissions 8% compared to emissions in year 1990. In 1990 total number of the emissions were 43 594 thousand tonnes and 20 658 thousand tonnes of CO<sub>2</sub> equivalent in 2005. Reduction was 52.6%, which is more than 20% target set by the EU Council of Ministers conclusions in spring 2007. The decrease is influenced by the decreased demand for energy after the dissolution of Soviet Union.*

*Emissions of greenhouse gases in Estonia have been stable during last years even taking into account the rapid economic growth.*

*For the period of 2005-2007 the 56 219 413 tonnes of CO<sub>2</sub> were allocated for 43 enterprises, of which*

tootmiseks 52 744 332 tonni, mineraalsete materjalide tootmiseks 3 232 422 tonni ja teistele tegevustele (paberitööstus) 313 600 tonni.

Uus jaotuskava eelnõu aastateks 2008-2012 näeb ette lubatud CO<sub>2</sub> heitmeid mahus 12 717 058 tonni aastas. Jaotuskava hõlmab kauplemissperioodil kokku 47 kätist, millest 2 kätist kuuluvad nn muude tegevusalade alla, täpsemalt paberi- ja tselluloositööstuse, 6 kätist mineraalitööstuse ja ülejäänud 39 – energiatootmise sektori alla.

52 744 332 tonnes for energy production, 3 232 422 tonnes for production of mineral materials and 313 600 tonnes for other activities (paper industry).

The new draft allocation plan for years 2008-2012 foresees allowed CO<sub>2</sub> emissions in amount of 12 717 058 tonnes per year. Allocation plan includes 47 enterprises, 2 enterprises from paper industry, 6 enterprises from mineral products industry and rest of 39 from energy production.

the 1990s, the number of people with a mental health problem has increased in the UK (Mental Health Act 1983, 1990).

There is a growing awareness of the need to improve the lives of people with mental health problems. The Department of Health (1999) has set out a vision of a new mental health system, which will be based on the following principles:

- People with mental health problems should be treated as individuals, with their own needs and wishes.
- People with mental health problems should be given the opportunity to participate in decisions about their care and treatment.
- People with mental health problems should be given the opportunity to live as fully as possible in their own homes and communities.

These principles are reflected in the new Mental Health Act 2003, which came into force in 2005.

The new Act is based on the following principles:

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