

Climate Science, Awareness and Solutions

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The Rt Hon Boris Johnson MP, Prime Minister
10 Downing Street
London SW1A 2AA, United Kingdom [also by email]

February 3, 2021

Dear Prime Minister Johnson,

I write nine months prior to COP26, with much at stake for the young people of the United Kingdom and every community suffering the ravages of the climate and ecological emergency. Increase in disease, drought, fire and flood stemming from recent climate-induced events and trends foretell much worse to come. Unless bold political leaders set a new course for our home planet.

Prime Minister Johnson, young people are fed up – and for good reason. They demand that political leaders follow the science and take the actions needed to preserve and restore a healthy climate. If this COP is like the prior ones – with soothing words and worthless ambitions – they will be justifiably outraged.

In leading the UK, as host to the COP, you have a chance to change the course of our climate trajectory, earning the UK and yourself historic accolades – or you can stick with business-almost-as-usual and be vilified in the streets of Glasgow, London, and around the world.

It would be easy to achieve this latter ignominy and humiliation. Just continue with the plan to open a new coal mine in Cumbria and continue to invest funds of the British public in fossil fuel projects overseas, in contemptuous disregard of the future of young people and nature.

The contrary path is not so easy, but, with your leadership, it is realistic. And by providing the acumen and gumption required to change our course, you will earn a special place in history and the gratitude of young people.

The science that must be followed is clear, not forbidding, and not in dispute among the experts. It is feasible to explain to the public what must be done and to persuade your Parliament. The great obstacle you must overcome – where others have failed – is that posed by the special financial interests that have bribed our governments and trashed our planet.

Some background information clarifies the science. Recently,¹ in reviewing UK progress in reducing fossil fuel emissions, I noted that your national emissions declined by 30 percent between 1997 (year of the Kyoto Protocol) and 2019, which compares with a reduction of 7 percent in the United States (see Fig. 1). The UK deserves congratulations.²

Your progress reflects well on your parliamentary democracy. My wife and I were fortunate to witness the efforts of UK citizens and political leaders during the past two decades as that progress was achieved.³ It is our fervent hope that the UK will continue to provide leadership and affect the entire planet.

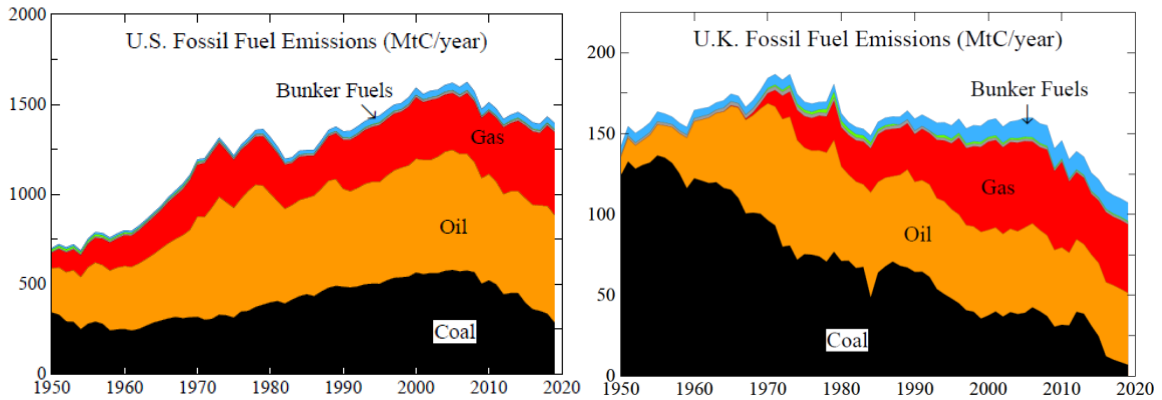


Fig. 1. US and UK fossil fuel carbon emissions (Megatons of carbon per year).⁴

The UK is a special place, but it is not an island unto itself. British citizens will feel all the momentous changes to our planet’s atmosphere and suffer the blows from changing climate, should we fail to alter our course.

Our future will be determined by the changes to the global atmosphere. The most relevant change is the increasing amount of atmospheric carbon dioxide (CO₂), which is driven by growing global energy consumption (Fig. 2a) and resulting fossil fuel CO₂ emissions (Fig. 2b).

Global energy use and emissions – still being tabulated – declined in the past year, but high emissions will continue unless decisive action informed by science is undertaken. Specifically, the science reveals that to stem the climate tide we need to phase out fossil fuel emissions by mid-century at the latest and obtain our energy from carbon-free sources such as renewable energy and nuclear power.

This may seem to be a tall order, but in fact it is doable. The required actions make sense for many reasons – our economic well-being, human health, and the future of young people and all life on the planet. The required actions are not painful – they will be beneficial, and they will increase social justice.

You may ask: what is the role of the UK in this? We are a small nation with negligible emissions on a global scale. We have little to do with the matter.

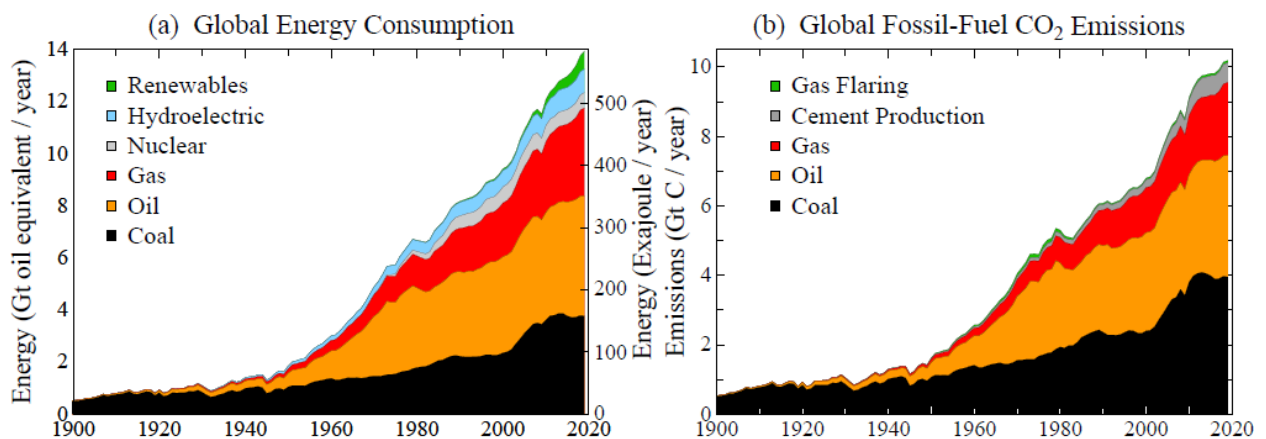


Fig. 2. Global energy consumption and fossil fuel CO₂ emissions.

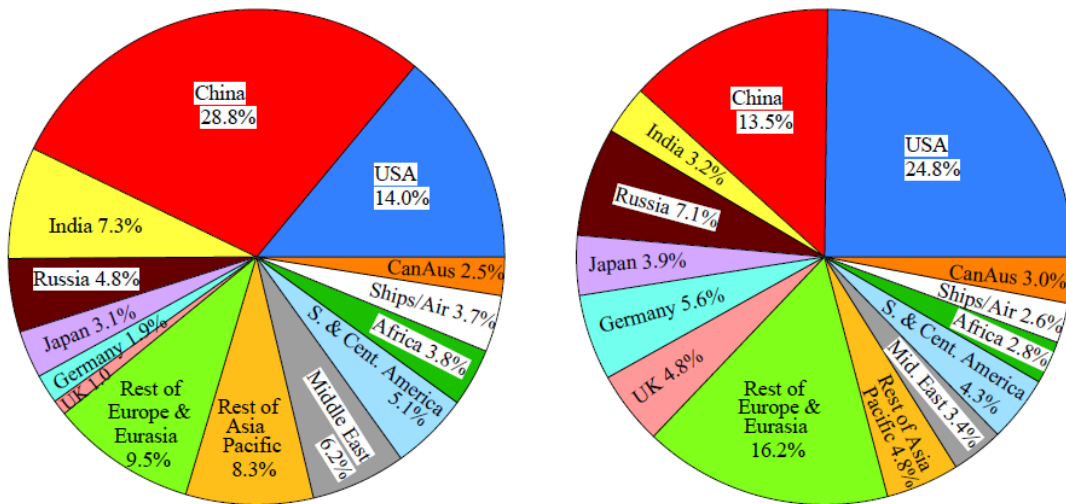


Fig. 3. Fossil fuel emissions in 2018. Cumulative 1751-2018 emissions.

In fact, the UK has much to do with the situation that we find ourselves in. And the UK has the potential to play a major role in rectifying the situation and leading the world to a brighter future.

Current and historical emissions are compared in Fig. 3. The UK accounts for about 1 percent of global emissions today, but global warming is proportional to cumulative emissions.⁵ The UK is responsible for about 5 percent of total emissions (right side of Fig. 2). UK and US cumulative emissions are each a factor of five larger than our respective portions of global population

Our large energy use served a good purpose: it raised our standards of living. But in recent decades the climate situation has emerged with clarity. We must find a new energy path in the mature economies and cooperate with emerging economies, so they can raise living standards with clean carbon-free energies.

Fig. 4 summarizes the global situation. Despite subsidies of renewable energy, global emissions increased. Despite the current health pandemic, high energy demand continues and energy growth will reemerge. However, an effective response to climate change requires that global emissions decline rapidly in the next few decades.

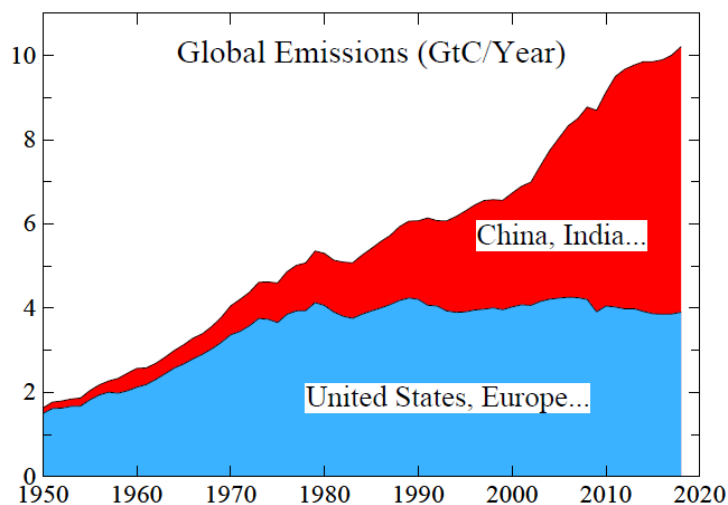


Fig. 4. Fossil fuel emissions of mature (blue) and emerging (red) economies.⁶

Young people are becoming increasingly sophisticated in their understanding. In the US, student government presidents at more than 350 colleges agreed to [a bipartisan statement](#)⁷ that they want our government to follow the science – climate, energy, and economics – and adopt a carbon fee & dividend policy.

That policy is dictated by science. Students were informed by their professors, who pointed to a [joint resolution](#)¹ of 3500 economists. In support of the young people, my colleague Daniel Miller and I wrote an [op-ed](#)⁸ explaining why fee & dividend is the socially and environmentally just way to fight climate change.

The economic fact is that an economy is most efficient if prices are honest. As long as the price of fossil fuels does not include the costs to society, people suffer for the sake of fossil fuel industry profits. The way to rectify this is a rising carbon fee collected at the domestic mine or port of entry, with 100 percent of the funds distributed uniformly to legal residents.

Economic studies show that fee & dividend is the fastest way to drive down fossil fuel use while spurring innovation, clean energies and energy efficiency. And it is cost-free. In fact, it increases prosperity and government revenues.

It is socially just, anti-regressive. Seventy percent of the public comes out ahead. Most wealthy people – with larger carbon footprints from more travel, larger dwellings, and so on – will lose money, but they can afford it.

Economists agree that a carbon fee or tax is the easiest climate policy to make global. Once a major economic power has adopted it, it can be made near-global via border duties on products from countries without a carbon tax, thus encouraging widespread adoption of a carbon fee.

Why has such a policy not been adopted in the United States? Many congress people in the US are well-oiled, coal-fired and full of gas. Fee-and-dividend scares the bejesus out of the fossil fuel industry. But it need not be their kryptonite, because far-thinking companies can retool and invest in both carbon-free energy and negative emissions technologies.

Thus, one leader with the courage to take on the special interests could change the world's energy course and alter the future for young people and other life on the planet. Where may we find such a leader?

I note that there is a Citizens Climate Lobby (CCL-UK) group in the UK that advocates this policy. I am sure that the leader, James Collis (james.collis@citizensclimateeurope.org) would be glad to work with your team on the fee & dividend approach (which they term “climate income”).

There are also UK citizen climate leaders that are demanding an honest accounting of the climate impacts of government decision-making, including investments in energy projects. Towards this end, I am certain that Tim Crosland, director of Plan B.Earth (tim@planb.earth) would be willing to work with your team.

Prime Minister Johnson, your actions and decisions now will either establish or undermine your claim to climate leadership. The upcoming UN climate conference will be an excellent venue for you to display your commitment.

¹ See <https://www.historyismade.org/>.

I will attend that conference with my legal advisor Daniel M. Galpern, whose contact details⁹ are below. If we can be of any assistance to your climate team in these matters, we would be pleased to help.

Thank you for your consideration.

Yours sincerely,



Dr. James E. Hansen

Cc

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Honorable John Kerry
U.S. Special Presidential Envoy for Climate

¹ Hansen, J., Equal Protection of the Laws, Chapter 46 of Sophie's Planet.

² Note that some of the apparent progress in the UK and the US is illusory; emissions from production in China are counted as China's emissions, though the products are consumed in our countries.

³ Our first several visits occurred while I was Director of the NASA Goddard Institute for Space Studies. We especially appreciated the hospitality of Prince Philip when I was honored with the Duke of Edinburgh Conservation Medal. Since 2013 I have been Director of the Climate Science, Awareness and Solutions Program in the Columbia University Earth Institute.

⁴ Bunker fuels are those used by ships and aircraft. The barely visible green and grey areas are the CO₂ emissions from flaring at oil wells and from cement manufacture, respectively.

⁵ Hansen, J. and 46 others, [Dangerous human-made interference with climate: A GISS modelE study](#). *Atmos. Chem. Phys.*, **7**, 2287-2312, 2007; Matthews, H.D., N.P. Gillett, P.A. Stott and K. Zickfeld, The proportionality of global warming to cumulative carbon emissions, *Nature*, 459, 829-832, 2009.

⁶ Hansen, J., M. Sato, P. Kharecha, K. von Schuckmann, D.J. Beerling, J. Cao, S. Marcott, V. Masson-Delmotte, M.J. Prather, E.J. Rohling, J. Shakun, P. Smith, A. Lacis, G. Russell, and R. Ruedy: [Young people's burden: requirement of negative CO₂ emissions](#). *Earth Syst. Dynam.*, **8**, 577-616, 2017.

⁷ Hansen, J., Student Leadership in Climate solutions,

http://www.columbia.edu/~jeh1/mailings/2020/20200731_StudentLeadership.pdf

⁸ Hansen, J and D. Miller, Social and Environmental Justice, 10 September 2020.

http://www.columbia.edu/~jeh1/mailings/2020/20200910_SocialJustice.pdf

⁹ Dan Galpern's coordinates are Law Office of Daniel Galpern, 2495 Hilyard St., Suite A, Eugene, Oregon 97403, United States. 541.968.7164. GalpernLaw@gmail.com.