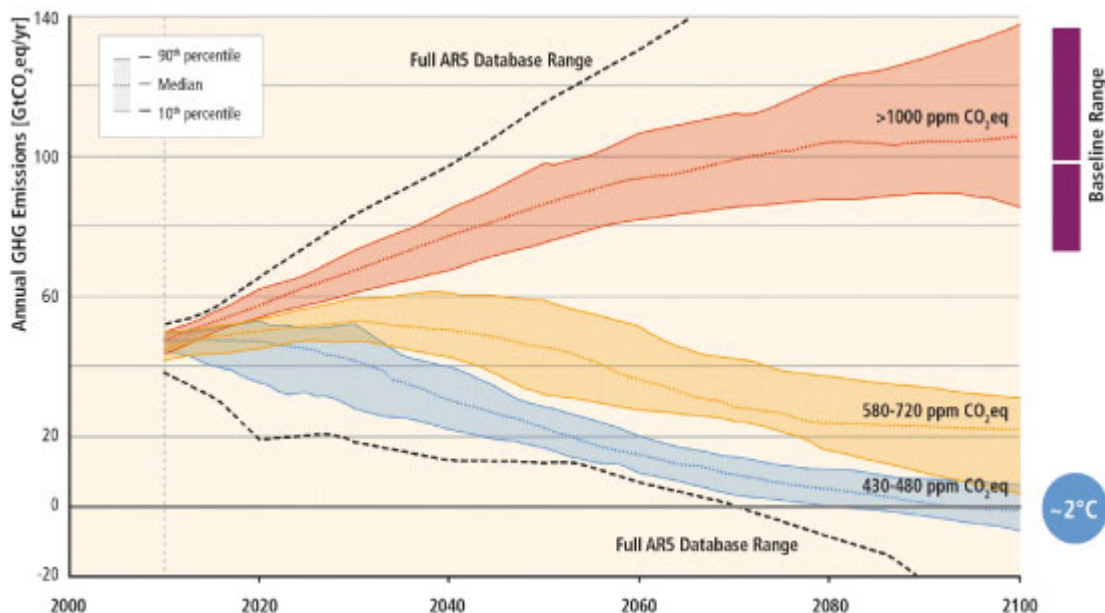


The end of oil and coal

By [Xavier Timbeau](#)

The idea that we must put an end to the use of oil and coal is not new. It has been pushed for a long time by NGOs like [350.org](#) and its [gofossilfree](#) campaign. What is more striking is that the Democratic primary candidate Senator Bernie Sanders has put [the proposal](#) at the heart of the US presidential election debate. Institutional investors and large fund holders have also announced their intention to limit or terminate their investments in coal (for example, Allianz and ING) and oil (the Dutch pension fund ABP). The urban development policies of some large cities are also leaning in that direction. Asked about this option, the head of the US Environmental Protection Agency (EPA), Gina McCarthy, noted (cautiously) that this [option](#) was not irrational.

Figure: Scenarios of CO₂ emissions



Source: Figure SMP 11, AR5, IPCC, p. 21.

That said, [Figure SPM 11 of the 5th IPCC report](#) says much the same thing. If global warming is to be kept to 2 degrees, our

carbon budget since 1870 amounts to 2900 ± 250 GtCO₂e; we have consumed around 1900 GtCO₂e up to now. So staying below the 2°C level (relative to pre-industrial times) with a probability of 66% leaves about 1000 GtCO₂e. Given an annual flow of emissions of about 50 GtCO₂e, a simple rule of three give us 40 years of linearly decreasing emissions. The inclusion of carbon sinks, climate inertia and negative [radiative forcings](#) on the climate extends the time horizon to 2090 ± 10 years, but it would be prudent to get down to zero emissions earlier. For the record, there are still about 5000 ± 1400 GtCO₂ of recoverable reserves in coal alone, enough to greatly exceed our current carbon budget. Note that stopping the use of fossil fuels does not solve everything. A portion of current greenhouse gas emissions (of CO₂, but also of methane and other gases) is not linked to fossil fuels but to farming, deforestation and industrial processes. In the case of a nearly 100% system of renewable energy, the gas would be necessary during consumption peaks. These non-fossil emissions can be cut down, but not eliminated. It is possible to have negative emissions, but the only “technology” available today is reforestation, which can help lower emissions by only 2 GtCO₂ annually. Carbon capture and storage is also a way to conserve the use of fossil fuels provided that it works and that it has enough storage capacity (once the storage capacity is depleted, the problem remains).

The principle of “common but differentiated responsibility” would lead the developed countries to apply constraints more quickly (by say around 2050). Some see this prospect as the explanation for the fall in oil prices. Since not all fossil fuel reserves will be burned, the only ones worth anything are those that will be exploited before 2050, meaning that this price is lower than what would result from rising demand. Saudi Arabia therefore has an interest in increasing production rather than keeping worthless reserves. Mark Carney, Governor of the Bank of England and Chairman of the Financial Stability Board, has [evoked “stranded reserves”](#) in

the same way that a coal plant is a “stranded asset”, i.e. a blocked asset that has to be depreciated prematurely.

The end of oil and coal is no longer just a fad of a handful of green activists. This is also seen in the [persistent and nearly convergent calls of many economists about a carbon price](#). A high and rising price of carbon would force economic agents to disinvest in the capital that emits carbon or even to prematurely depreciate existing facilities. When a high carbon price is demanded (say between 50 and 100 € / tCO₂, with the price of carbon steadily increasing over time as the carbon budget runs out), the point is that this sends a strong price signal to economic agents, with the consequence of this price being that emissions are reduced in an amount consistent with warming of less than 2°C compared to pre-industrial times. So, from this viewpoint, saying that “the price of carbon should be 50 € / tCO₂ or more” is equivalent to saying “everything must be done so that we stop using coal and oil within the next half century”. The price of carbon thus gives us valuable information about the cost of the transition. It will be on the order of (a few) 1000 billion euros per year (on the scale of the global economy). Proposing a price means proposing the “polluter pays” principle (carbon emitters must pay), even though it is not clear exactly whom the polluters must pay. Hence the debate on the Green Fund and climate justice that is at the centre of COP21.

It would be a shame to focus on the carbon price and make it the central issue of COP21. A zero-carbon economy is our future, and we will have no excuses if we continue to burn fossil fuels. As Oscar Wilde remarked: “Nowadays people know the price of everything and the value of nothing.”

Let's negotiate a global carbon price signal – quickly!

By Stéphane Dion [\[1\]](#) and [Éloi Laurent](#)

Two decades after the Rio Conference, and just as a new climate conference is opening in Bonn on Monday 14 May 2012, we must admit to collective failure in combating human-induced climate change. We cannot escape serious climate disruption if we continue down this same path. We must change direction, and we must do it quickly.

The International Energy Agency forecasts warming of over 3.5°C by the end of the 21st century if all countries respect their commitments, and by more than 6°C if they content themselves with their present policies. At that level of warming, climate science warns us that our planet will become much less hospitable for humans and all other forms of life.

At the Durban Conference in December 2011, the countries expressed their grave concern about the gap between their commitments and achieving the objective of a 2°C limit on increased global warming (relative to the pre-industrial era). They promised to re-double their efforts to bridge this gap. But they failed to make any commitment to achieve more stringent targets. We are thus facing an increasingly untenable gap between the urgent need for action and the inertia of international negotiations.

The developed countries are refusing to strengthen their climate policies so long as the other major emitters don't do the same. But the emerging economies, particularly China and

India, with annual GDP growth rates of 8 to 10%, will not accept in the foreseeable future targets for the reduction of the volume of their greenhouse gas (GHG) emissions. On the other hand, these countries might be more open to the idea of setting a price per ton of CO₂ that was standardized at the global level, from which they would derive revenue, and which their economic competitors would also be required to levy.

We believe that the best instrument for the international coordination needed to combat climate change is a global carbon price signal. This is why we are proposing that the forthcoming negotiations focus on this crucial goal.

Here is what we are proposing (for more detail, see, in French, <http://www.ofce.sciences-po.fr/pdf/dtravail/WP2012-15.pdf> and, in English): every country would make a commitment to introduce, in their respective jurisdictions, a carbon price aligned with a scientifically validated international standard, in order for the world to achieve or at least come as close as possible to the objective of keeping global warming below 2°C. Each country would decide whether to extract this levy through taxation or through a system of ceilings and trading in emissions permits (a “carbon market”).

Governments would be free to invest, as they see fit, revenues from the carbon emission levy and from the corresponding elimination of fossil fuel subsidies. They could, for example, invest in research and development in clean energy and public transportation, etc. They could also choose to address social inequalities with respect to access to energy.

Developed countries would be required to set aside part of their revenues to help developing countries introduce policies to mitigate emissions, to adapt facilities and to create carbon sinks (by means of reforestation, for example). The contributions of each country would be based on what their respective GHG emissions represent relative to the total

emissions of all the developed countries.

Under this international agreement, countries would have the right to levy border taxes on products from countries that have not established a carbon price in accordance with the international standard. The message would be clear to all large emitters: if you do not levy a carbon tax on your products before you export them, the other countries will do so in your place, and it is they who will collect the revenues. Each country will understand that it is in its own commercial interests to comply with the international agreement, to tax its own emissions and to use the corresponding revenues as it sees fit.

In this way, the world would have available an instrument that is vital to its sustainable development. At last, carbon emitters would be required to pay the environmental price for their actions. Consumers and manufacturers would have an incentive to choose lower-carbon-content goods and services and to invest in new emission-reducing forms of technology.

We need to negotiate a global carbon price signal, and quickly. What better place to do this than at Rio, where the problem of climate change was first recognized by the international community 20 years ago?

[\[1\]](#) Stéphane Dion is a Member of the House of Commons of Canada; as Canada's then Minister of the Environment, he chaired the 11th Conference of the Parties to the United Nations Framework Convention on Climate Change, held in Montréal in 2005 (COP 11).