

## Energy [R]evolution: the green answer to the financial crisis

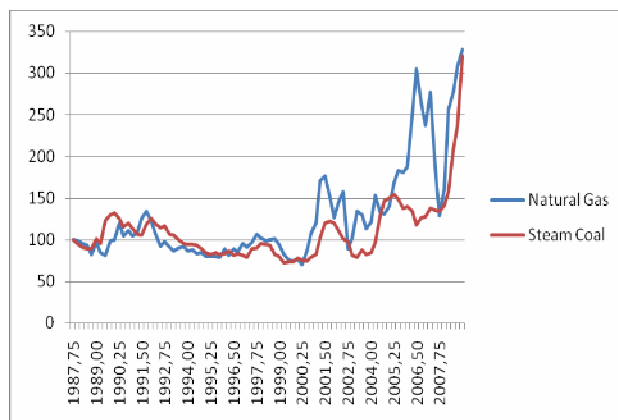
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In these times of financial crisis, the need to support a strong EU climate and energy package takes on an increased impetus. The report 'Energy [R]evolution: A Sustainable World Energy Outlook' shows how tackling climate change by investing in renewable energy systems and energy efficiency will not only reduce emissions but also help stabilise the global and European economies.

The global fuel cost savings for the power sector calculated in the report would reach USD 18.7 trillion by 2030, or USD 750 billion annually. On top of that, cost savings made by reducing energy demand through energy efficiency measures amount to trillions of dollars in the transport and heating sectors.

### The situation today: a destabilised fossil-fuel economy

Governments and citizens are suffering from ever-increasing energy prices, which fluctuate according to the vagaries of the global markets. For instance, Brent crude oil price was at USD 55 per barrel when we launched the first Energy [R]evolution report. By mid-2008 it had reached a peak of over USD 140 per barrel and has subsequently dropped to around USD 70. Other fuel prices have also become unpredictable. In 2007 the European coal price rose from 70 to 110 USD per short ton. In early 2008, extreme weather events and transport problems caused a further price increase to 140 USD. Oil, coal, gas and uranium have been following the same trends. This not only affects industry and transport costs, but also domestic electricity and heating bills.



*Historic gas and coal prices (1987 = 100)*

By contrast, with the exception of biomass, renewable energy sources don't need fuel once installed. They deliver energy independently from the global energy markets and at stable prices.

For example, under a business as usual scenario, the additional costs for coal power generation from today until 2030 could be as high as USD 15.9 trillion. This would

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cover the entire investment needed in renewable and cogeneration capacity to implement the Energy [R]evolution Scenario.

**The opportunity: a stable clean energy economy**

To halt further financial-economic instability, governments recognised the need to restructure global financial institutions and regulations. To create new, healthy and stable economic development, we must recognise the need to re-think the foundations of the global economy. And energy supply is at the core of the EU economy.

Industrialised countries are at a crossroads when it comes to securing their future energy supply systems, as hundreds of power plants need to be replaced. The overall global level of investment required in new power plants up to 2030 is around USD 11 to 14 trillion. The main driver for investment in new generation capacity will be the decommissioning of ageing power plants. In Europe in particular, utilities will make their technology choices within the next five to ten years based on the EU climate and energy package, which is currently being finalised. At a time when governments are searching for stable investment opportunities, financing renewable technologies such as wind and solar are among the most intelligent options.

Investing in renewable technologies also provides extra employment opportunities. Wind and solar generation are more labour-intensive than coal and nuclear plants, and therefore can provide much-needed jobs. For example, in Germany alone, over 235,000 people are employed by the renewables industry. The solar industry provides more jobs than the entire nuclear industry in Germany. The wind industry in Germany employs over 85,000 people – more than twice the number of mining workers in the country.

The Global Wind Energy Council estimates that 2.1 million jobs can be created by 2030 in wind energy industries, and the European Photovoltaic Industry Association estimates that 2 million people will be working in their industry globally by 2020. An Energy [R]evolution can help spur growth – a key factor for a world on the brink of recession.

The investment required for power generation in the Energy [R]evolution scenario is USD 14.7 trillion, whereas business as usual is approximately USD 11 trillion. Therefore, an extra USD 3 trillion needs to be invested in the next two decades. Put into context, the average annual investment required to implement this is USD 139 billion. This would lower fuel costs by 25% - saving an annual amount in the range of USD 750 billion.

According to the scenario, the average annual investment in the power sector between 2005 and 2030 will be about USD 590 billion. This is equal to the current amount of global subsidies for fossil fuels in just under two years. Subsidies used for fossil fuels should instead be redirected to renewable energy and energy efficiency measures.

**Clean air and health**

Ambitious emission reductions and investment in clean energy solutions in the EU have a number of other significant benefits. Clean energy will not only create millions of jobs, make our buildings more conformable, it will also reduce air and water pollution. A recent report commissioned by Climate Action Network Europe (CAN-E) and other groups considered the health benefits that would be brought if the European Union increased its emission reduction targets for 2020 from 20% to 30%. The findings show that raising the target to 30%, which is more in line with the

recommendations of the Intergovernmental Panel on Climate Change (IPCC), would produce savings valued at between EUR 6.5 and 25 billion per year.

### **Short-sighted answers**

Within Europe, the EU emissions trading scheme may have a major impact on whether the majority of investment goes into fossil fuel power plants or renewable energy and co-generation. Greenpeace is concerned that some governments in the EU propose to continue to give CO<sub>2</sub> pollution permits to certain industry sectors and electricity producers for free. This so-called 'grandfathering' of pollution permits will generate windfall profits for wasteful industries and fossil-fuel power plants. The financial crisis is opportunistically used by governments as an excuse to continue business as usual.

Free pollution permits may bring short-term gains to coal plants and wasteful industries, but economic analysis shows free permits increase the costs of CO<sub>2</sub> reduction for the economy as a whole, and especially for firms willing to invest in clean production. The European Commission estimates that when compared to auctioning, free allocation would reduce EU-wide GDP from 0.41% to 0.54% and increase unemployment from 0.04% to 0.35%<sup>i</sup>.

Greenpeace is concerned about the lack of independent economic evidence accompanying the claims by certain governments and industry sectors that loss of competitiveness will occur because of a more stringent and ambitious emissions trading scheme with auctioning of pollution permits. Independent economists and government researchers have shown that, without an international climate agreement, loss of competitiveness would only concern very specific sub-sectors<sup>ii</sup>. Adequate economic modelling and further analysis is required to identify these sub-sectors.

Free pollution permits trigger economically inefficient behaviour and carbon intensive investments. They delay structural efficiency improvements in the economy and are therefore the wrong choice at a time when the EU should scale up its long-term competitiveness. This approach in the EU could potentially undermine the ambition and the effectiveness of a global climate agreement.

### **Time for change: a strong EU climate package**

In the context of today's economic instability, investing in clean energy technologies and energy efficiency is a 'win-win-win' scenario: a win for energy security, a win for the economy and a win for the climate.

To secure this the EU needs to:

- Reduce its domestic greenhouse gas emissions by at least 30% by 2020. By setting a clear and ambitious target, the European industry and power sector would be encouraged to choose a cleaner trajectory, which also offers first-movers advantages and increased competitiveness.
- Auction all pollution permits under the EU emissions trading scheme. Auctioning is the simplest, most transparent and most cost-efficient allocation method. Auctioning creates a level playing field for clean energy solutions and gives a clear price signal to polluters.
- Set an immediate emission performance standard for new fossil fuel plants of 350 grams of CO<sub>2</sub> per kilowatt-hour. This would help guard against making our economies excessively dependent on fossil-fuels.

- Commit to ambitious national targets, backed by effective and stable support policies for renewable energy that will set the EU on track to achieving its 20% objective for the share of renewable energy by 2020.

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<sup>i</sup> European Commission (2008), *Impact assessment, document accompanying the package of implementation measures for the EU's objectives on climate change and renewable energy for 2020*. Page 11.

<sup>ii</sup> See for example: Bruyn, et. al. *Impacts on Competitiveness from EU ETS – An analysis of the Dutch industry*. CE Delft; and: Hourcade et. al., *Differentiation and Dynamics of EU ETS industrial competitiveness impacts*. Climate Strategies/Cambridge University.