

# The Fossil Fuel Dilemma

Fossil fuels exist, and they provide a valuable service. It's not so much that we use fossil fuels for energy that is problematic, but it's the side effects of using them that causes all of the problems. Burning fossil fuels creates carbon dioxide, the number one greenhouse gas contributing to global warming. Combustion of these fossil fuels is considered to be the largest contributing factor to the release of greenhouse gases into the atmosphere. In the 20th century, the average temperature of Earth rose 1 degree Fahrenheit (1°F). This period saw the most prolific population growth and industrial development — which was and remains totally dependent on the use of energy — in Earth's history.

The impact of global warming on the environment is extensive and affects many areas. In the Arctic and Antarctica, warmer temperatures are causing the ice to melt which will increase sea level and change the composition of the surrounding sea water. Rising sea levels alone can impede processes ranging from settlement, agriculture and fishing both commercially and recreationally. Air pollution is also a direct result of the use of fossil fuels, resulting in smog and the degradation of human health and plant growth.

But there are also the great dangers posed to natural ecosystems that result from collecting fossil fuels, particularly coal and oil. Oil spills have devastated ecosystems and coal mining has stripped lands of their vitality. These among others are the primary reasons to discontinue the pursuit to tap the vast oil reserves in the Arctic National Wildlife Refuge (ANWR).

The oil, coal and natural gas companies know these are serious problems. But until our renewable energy sources become more viable as major energy providers, the only alternative for our global population is for these companies to continue tapping into the fossil fuel reserves to meet our energy needs. And you can pretty much count on these companies being there providing energy from renewable sources when the fossil fuels are depleted. Many oil companies, for example, are involved in the development of more reliable renewable energy technologies. For example, British Petroleum Company, today known as BP, has become one of the world's leading providers of solar energy through its BP Solar division, a business that they are planning on eclipsing their oil production business in the near future.

## **Energiewende: energy transition in Germany**

Contrary to what some critics may have said, Germany's Energiewende policy wasn't a sudden or haphazard reaction to the horrendous events in Fukushima in March 2011. Germany had actually decided to phase out nuclear power back in 2002. The Japanese nuclear accident just made the plans more urgent for the German government and people.

The Energiewende is the product of a broad social discourse rooted in the environmental and anti-nuclear movements of the 1970s, and is supported by the majority of Germans – recent opinion polls suggest 70% back the transition plans. Maintaining such a high level of support will be a key challenge when it comes to implementing changes.

The Energiewende is a huge opportunity to pave the way for a highly industrialised, sustainable green economy. Ambitions are high:

- Full phase-out of nuclear energy by 2022
- 80-95% reduction in greenhouse gases by 2050
- Minimum of 80% renewables in the power sector
- 50% increase in energy efficiency by 2050

It proposes, in fact, to reform the entire energy structure in Germany, the world's fourth largest economy. Essentially it means a shift away from the current heavy reliance on fossil fuels and nuclear power towards an electricity system dominated by renewable energy – embedded in an emission-free economy.

Time is short if we're to make sure global warming doesn't exceed 1.5C. Germany's pressing challenge is to pursue a credible energy policy at both national and EU level. It's essential to structurally reform the EU Emissions Trading Scheme (ETS) – as well as phasing out coal within the next two decades, using gas-fired power plants as a bridging technology.

Increasing renewables also creates significant economic growth. In 2013 there were almost 380,000 jobs in the renewables sector in Germany alone – some estimates for 2020 are 600,000 jobs, including 250,000 solely related to energy efficiency.

Investments in renewables will drive innovation in technology and engineering too. The energy transition has already triggered solutions that would have been inconceivable a few years ago. On a global level, lowering the costs for PV-solar has made the technology usable on larger scales, and is helping economic development in off grid regions such as sub-Saharan Africa.

The German experience proves clear policies and political consensus have delivered strong support for the Energiewende, and crucially given investors the confidence to back the transition to clean, renewable energy. That's exactly the core message of WWF's Seize Your Power campaign which calls for urgent and significant investments in renewable energy worldwide, setting a good example for other countries to follow.