

d·i·e

Deutsches Institut für  
Entwicklungspolitik



German Development  
Institute

# Can the 2 °Celsius target still be achieved? It all depends on the energy industry

By Matthias Ruchser,  
*German Development Institute /  
Deutsches Institut für Entwicklungspolitik (DIE)*

# The Current Column

*of 1 July 2013*

## Can the 2 °Celsius target still be achieved? It all depends on the energy industry

Bonn, 1 July 2013. In recent weeks devastating natural disasters have caused considerable human suffering and billions of dollars' worth of damage: in India almost a thousand people have lost their lives to heavy monsoon rains, in Canada incessant rain has forced more than 100,000 people to leave their homes, and Germany is experiencing the "worst flooding of the century" for the second time in eleven years. Given this terrible news, it is surprising that no one is talking about the climate protection target of limiting the rise in temperature to 2 °Celsius. Perhaps US President Obama will now succeed with his speech on climate protection on 25 June in putting the subject back on the international agenda.

There is, after all, sufficient cause for concern: in 2012 both global energy consumption and greenhouse gas emissions rose. The growth of demand is being driven by the emerging economies, led by China and India. The increase in global greenhouse gas emissions is alarming, since even the two climate protection trail-blazers, Germany and the United Kingdom, recorded a rise in their carbon dioxide emissions in 2012. The United States, on the other hand, can congratulate itself on a decline in its emissions. The reasons in all three countries are the same: there has been a change in the consumption of fossil energy sources. In the USA the change from coal to cheaper natural gas had a positive effect on the emissions balance; in Europe the change from natural gas to cheaper coal had the opposite effect.

The publication of the International Energy Agency's special report *Redrawing the Energy-Climate Map* therefore comes at the right time: the International Energy Agency (IEA) is convinced that the 2 °C target is still technically feasible without causing any additional social costs. As fossil fuels account for over 80 percent of global energy consumption, the energy sector is the key to international climate protection. This has also been recognised by President Obama, one of the most important aspects of his current climate action plan being that it provides for tighter environmental standards for fossil-fuel power plants.

The most important step proposed by the IEA is the introduction of specific energy efficiency

measures, with which emissions savings of almost 50 percent could be achieved by 2020. They include energy performance standards in buildings; in the motor systems industry; and in road transport.

The second measure proposed by the IEA is limiting the construction and use of the least-efficient coal-fired power plants that are not state-of-the-art. While efficiency factors of 47 percent for newly built coal-fired power plants and 45 percent for lignite-fired plants are state-of-the-art today, a third of the coal-fired power plants under construction in China, for example, have a technically obsolete efficiency factor of less than 40 percent. This is one of the reasons why the renaissance of coal continues unabated. If the construction of new, inefficient coal-fired power plants was halted and existing ones were prematurely decommissioned, the IEA reckons emissions could be reduced by nearly 21 percent by 2020.

The third measure concerns minimising methane emissions from upstream oil and gas production, which the IEA believes would lead to a further reduction in emissions by 18 percent. The aim here is to reduce the emissions occurring when oil and gas fields are degasified and the gas is flared off. The World Bank has been supporting these efforts with the *Global Gas Flaring Reduction Partnership* since 2002.

Finally, the IEA sees potential for reducing emissions by 12 percent through accelerating the phase-out of subsidies on fossil-fuel consumption. Despite the decision taken by the G20 in 2009 to phase out inefficient fossil-fuel subsidies, they have risen sharply in recent years to reach an estimated record level of USD 523 billion – six times as much as is spent on supporting renewable energy sources.

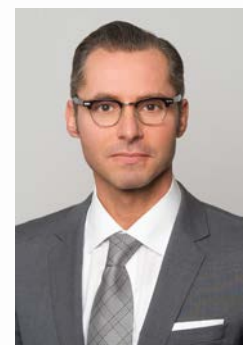
After propagating a pro-fossil fuel and pro-nuclear course for many years, the International Energy Agency is now on the right track with its "4-for-2 °C Scenario". It is right to place the emphasis on energy efficiency, since many measures can be taken cheaply and soon pay for themselves. Yet energy conservation does not form part of the daily routine everywhere in the world. It is there-

fore worth taking a look at successful programmes that other countries might emulate: Japan's Top Runner programme and Germany's Market Incentive Programme (*Marktanreizprogramm*) of measures to promote the use of renewable energy sources in the heat market, to name but two. Under the Top Runner programme the most efficient electrical appliances in each category are declared to be state-of-the-art. Manufacturers who do not meet the efficiency standard must either pay a fine or stop marketing the product concerned. As the Market Incentive Programme provides for investment grants and low-interest loans, which generate many times more in private investment, it is virtually self-financing through the tax revenue it generates and the positive effects it has on employment. The programme must, however, be designed for the long term and not, as in the current parliamentary term, face a budget freeze. That will deter potential investors, and the renewable heat market will collapse.

Revealing a lack of ambition, on the other hand, is the IEA's prediction of no more than a 12 percent reduction in emissions as a result of the lowering of fossil-fuel subsidies, since high subsidies on fossil fuels usually means cheap energy for the consumer, making it difficult for renewable energy sources to compete in the market. It is, moreover, equally true of industrialised and developing countries and emerging economies that supposedly cheap fossil fuels lead to energy being wasted and so conflict directly with the introduction of specific energy efficiency measures.

The news brought by the current *Renewable 2013 Global Status Report* therefore is positive: with 8.5 percent growth in installed capacity, the global increase in the use of renewable energy sources continued in 2012. Furthermore, it was the third consecutive year in which global investment in renewable energy sources (RES) exceeded that in fossil fuels. Worth noting are the regional shifts in RES investment: while the industrialised countries held a considerable lead in the past, the developing countries and emerging economies are steadily catching up, investing USD 112 billion in 2012 compared to the industrialised countries' USD 132 billion. Owing to its unbridled expansion of fossil-fuel power plants, China is, then, both part of the climate problem and part of the solution: it now accounts for the largest proportion of installed renewable energy capacities, and it is the largest RES investor.

The dynamic expansion of renewable energy sources will continue, especially in the rapidly growing developing countries and emerging economies. And if fossil-fuel subsidies are phased out, that dynamism will accelerate further. With its "4-for-2 °C Scenario", the IEA has shown how climate change can be limited to a 2 degree rise in temperature. It is now for governments to create the appropriate environment for the energy industry. President Obama has made a verbal start. Who will follow him?



Matthias Ruchser  
*Deutsches Institut für Entwicklungspolitik (DIE)*