

## Talking point

### Carbon bubble: Real risk or exaggerated fears?

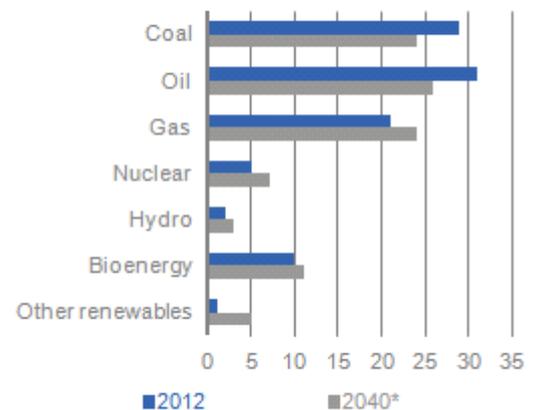
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**What is the story with the carbon bubble? How great is the risk of conventional energy company valuations plummeting on account of ambitious climate protection policy? There may be many reasons for investors to channel less money into "fossil fuel companies" than before or to abandon them altogether and opt for other types of investment instead. However, one should not put too much stock in the reason being an ambitious, reliable and internationally comprehensive climate protection policy or a global decline in demand for fossil fuels. A carbon bubble is an unlikely development in such an environment, especially since the evolutionary nature of climate protection policy and technological changes in the energy sector offer the respective companies opportunities to adapt over time.**

There has been talk for some time about the eventuality of a "carbon bubble" and its potential risk for the financial markets. The idea of the carbon bubble is based on the following argumentation: investors buy into companies whose business model is to produce and sell fossil fuels – with these companies drawing from own sources of raw materials in many cases – and whose profits materially hinge on energy prices (applicable to large energy companies in particular). All other conditions being equal, such investments drive up the market value of these companies. At the same time, the international community is fundamentally committed to embracing ambitious global climate protection targets, with the so-called 2°C target being the most prominent example. If these targets were to be achieved, though, a significant part of the fossil energy reserves could not be used at all, but instead would have to remain in the ground. According to the Carbon Tracker Initiative, as much as 80% of the energy resources on the books of the major energy companies would have to remain unutilised ("unburnable"). It suggests that ambitious climate policy would devalue a major share of energy company assets. Therefore, the supporters of the carbon bubble theory say high market values for such companies are based on the erroneous assumption that the companies could actually make full use of their own resources.

#### Fossil fuels to remain dominant long term

Shares of individual fuels in global total primary energy demand, %



\* According to New Policies Scenario

Source: IEA

It is claimed that this carbon bubble could eventually burst if many investors sold their shares in energy utilities in the space of a short time because of doubts about the viability of the given business model. A pronounced decline in the respective share prices could in turn have negative repercussions for their creditors and the total financial market, not least because the major energy companies have a very heavy weighting in many international share price indices. In fact, some investors (e.g. sovereign wealth funds, banks and insurance companies) have already announced plans to sell their stakes in such companies in full or in part, or have started to do so, or else have ceased to invest in these sectors altogether. The risk of a carbon bubble is likely to have played a role in these decisions, even though there are probably also other material factors (e.g. low prices for fossil fuels).

The objective of this commentary is neither to judge the investment decisions of individual market participants nor the current or future market valuations of the energy companies. Rather, the article questions the fundamental argumentation on which the carbon bubble theory is based. Note, first of all, that a key link in the causal chain outlined above does make sense: if the international community took its ambitious medium-to-long-term climate protection targets seriously, the demand for fossil-based energy resources, and thus their extraction, would in fact soon start to decline (rapidly). However, experience with international climate protection policy to date shows that this conditionality represents a major hurdle. So this is a big "if" indeed.



## Scepticism towards progress in international climate protection policy

A look to the past unearths many ambitious medium-to-long-term climate protection targets. In 1997, for instance, the ratification of the Kyoto Protocol – which, of course, not all countries participated in – was celebrated as an important achievement because major industrial countries had committed for the first time to reduce their greenhouse gas emissions. In actual fact, the growth of global emissions accelerated noticeably in the first decade of the current century. An important driver was the increased integration of China in the global economy (WTO accession in 2001), which went hand in hand with massive industrialisation of the economy, higher energy consumption and a related increase in CO<sub>2</sub> emissions. Most recently, the "resolutions" adopted at the G7 conference on a decarbonisation of the global economy, i.e. complete abandonment of oil, coal and natural gas, in the course of the 21st century were also welcomed. Moreover, global greenhouse gas emissions are to be reduced by 40-70% vis-à-vis the 2010 readings by the year 2050. Now, long-term objectives have an important function as a guideline for the future. However, their long-term nature simultaneously erodes the political substance of such targets because ultimately no politician in office today will be responsible for their implementation. In this respect, it is easier to set ambitious long-term targets than to carry through with unpopular short-term measures.

Great hopes for climate protection are being pinned on the upcoming UN climate conference in Paris at the end of 2015. It is tempting to say "pinned once again", since the UN conference in Copenhagen in 2009 was linked with similar hopes and it largely proved to be a failure. The figures that individual countries have tabled as potential national climate protection targets in the run-up to Paris are notable in comparison with earlier years. Nonetheless, Carbon Action Tracker says the measures do not suffice to achieve the often cited 2°C target; granted, the uncertainties over global temperature measurements and the pace and extent of climate change are sizeable in any event. It remains to be seen exactly which resolutions and targets will actually be drafted and adopted in Paris – not to mention their subsequent implementation in practice.

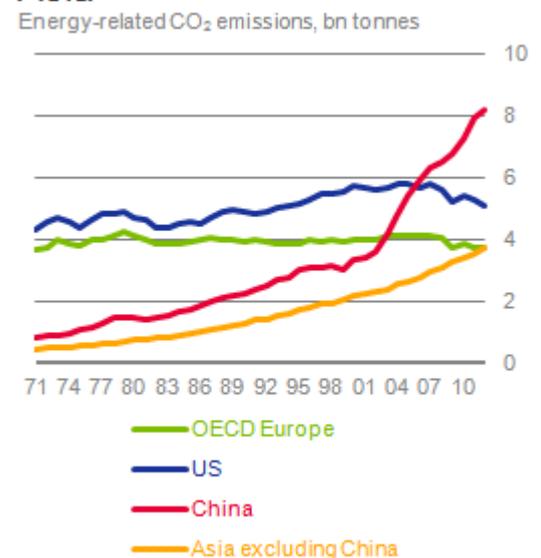
## Global energy thirst continues to grow

A further argument that raises scepticism about the carbon bubble theory is the growing consumption of energy in the world. The reasons for the unabated thirst for energy are common knowledge. Fossil fuels continue to dominate the fuel mix. According to the International Energy Agency (IEA) they constituted more than 80% of global primary energy demand in 2012. In the IEA's baseline scenario, which already includes substantial investment in renewable sources of energy or energy-efficiency measures, the production of oil, coal and natural gas increases (on rising average extraction costs) up to 2040. Subsequently, their share of primary energy demand falls to "only" 74%, with the gap being plugged primarily by renewables. Perhaps the investors, energy companies and countries that will play a dominant role in the fossil fuel segment in the years to come may not be the same ones as today. However, this is unlikely to trigger any change in the rise in global energy consumption or the dominance of fossil fuels.

## Evolutionary development argues against bubble formation

Finally, one last assertion requiring critical scrutiny is why the energy companies should see the formation of a carbon bubble in the first place. Both climate protection policy and the regulatory and technological changes in the energy sector are more evolutionary than revolutionary in nature. It makes no difference that there have been huge technological advances with certain types of renewable energy (e.g. photovoltaics, wind) over the past few years, since these "young" renewables (i.e. excluding bioenergy and hydro) account for a negligible share in global primary energy demand of roughly 1%. When viewed against total system costs (including storage, for instance) and the maximum number of full-load hours possible, many renewables are still unable to compete head to head with existing conventional fossil fuels. The latter benefit from the fact that the externalities of fossil-based forms of energy are not being (adequately) internalised via suitable instruments and thus converted into a price

## CO<sub>2</sub> emissions shifting to Asia



Source: IEA

signal; this brings us back to the issue of the shortcomings of climate protection policy. Moreover, fossil fuels are still heavily subsidised in some countries.

Be that as it may: in such an evolutionary environment it is very reasonable to expect conventional energy companies to adapt to new economic and regulatory circumstances and adjust their own business model accordingly in the medium to long term. The respective companies are not likely to be equally successful in managing such a changeover, and some of them may fail in the process. However, the points discussed argue against a carbon bubble forming in a global sector across the board. Renewables will undoubtedly be more in the focus of investment activity than other energy sources over the next few years. However, since government subsidisation often plays an important role in this context, regulatory risks also cannot be ruled out.

To put it in a nutshell: there may be many good reasons – differing from country to country – for investors to channel less money into "fossil fuel companies" than before or to abandon them altogether and opt for other types of investment with other risk-return profiles instead. However, one should not put too much stock in the reason for such a decision being an ambitious, reliable and internationally comprehensive climate protection policy or a global decline in demand for fossil fuels. A carbon bubble is an unlikely development in such an environment.

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