

*In Brief: Stranded assets, or those fossil fuel reserves that must be "left in the ground" in order to meet global climate change mitigation pathways, have recently become the focus of attention for actors in the energy, environmental, and financial sectors, many of whom have competing goals and interests.*

*The financial sector is concerned about the risks posed by climate change to the environment and, ultimately, the economy, and many fear the potential for transition effects from the wholesale and sudden reevaluation of assets. Although divestment campaigns will not necessarily result in complete decapitalization, neutral investors in traditional fossil fuel assets – coal companies in particular – may have to take into account the devaluation effects of the stigmatization resulting from such campaigns.*

*The massive abundance of coal reserves – orders of magnitude greater than for oil and gas – is both coal's greatest strength and its greatest weakness. It is simply inconceivable that all coal reserves will ever be used, so how to judge which are stranded and which are of value? This question should be troubling investors and coal companies alike.*

A new concept has entered the global energy lexicon - **stranded assets**, or those fossil fuel reserves on the books of resource companies and power producers that must be "left in the ground" in order to avoid a calamitous two-plus degrees of global warming by the end of the century.

*Stranded assets: marshaling focus for many interests*

The concept is a fascinating one in part because it serves as a lens through which so many competing and varied interests can focus their attention.

Those working to mitigate anthropogenic climate change, for instance, see the issue as a call to immediate and sharp regulatory action on a large scale, or as a prompting for institutional divestment efforts mirroring those that have been used to punish undesirable political activity.

Some actors within the energy field itself, on the other hand, see the issue as a springboard for discussion and debate on the "triaging" of un-stranded hydrocarbon resources: which fuels and energy production modes can still be used, and who will benefit or lose in the process depending on what they do and when they act?

Meanwhile, those in the technology and policy spaces see various opportunities for the encouraging of research-and-development and the growth of new markets. While renewables constituents can point, for instance, to the reduction of marginal cost and increasing market penetration of solar power, others attempt to mitigate the premise underlying the concept of stranded assets by encouraging the development of large-scale carbon capture and storage.

Focus is particularly centered on financial markets. The banking system is becoming concerned about the risks climate change poses to markets, and by extension, the economy. Mark Carney, governor of the Bank of England, warned of the risks of climate change: physical risks of assets exposed to climate changes, liability risks of parties suffering losses, and financial transaction risks resulting from climate change-induced adjustments of the economy. Stranded assets are a transition risk, regardless of the political, market, or

technical cause, and Carney made clear that “a wholesale reassessment of prospects, especially if it were to occur suddenly, could potentially destabilise markets.”<sup>1</sup>

## *Stranded assets: not just a concept, but a market mover*

Yet for better or worse, the idea of stranded assets is more than just a concept. Energy markets are responding, and some view the risks of holding stranded assets to be of economy-wide importance. A study by Oxford University finds that divestment campaigns do have indirect impacts on asset valuation: although neutral investors will fill investment voids induced by such campaigns, because these campaigns stigmatize fossil fuel assets, even neutral investors or creditors will lower their perception of net cash flows.

Coal companies are particularly vulnerable, not just because coal is at the top of the carbon intensity scale, but also because of their relatively low liquidity and because they represent a small percentage of all fossil fuel market capitalization. These indirect “stigmatization” impacts further expose coal: the Oxford study argues that the stranded asset campaign has now triggered this phenomenon, and that “investors seeking to reduce fossil fuel exposure are likely to begin by liquidating coal stocks.” In fact, the study provides evidence this is already happening.<sup>2</sup>

As the Oxford work demonstrates, stigmatization lowers asset value; this in turn reduces working capital for new investments in fossil fuels. But as global energy demand continues to mount, where does capital go for new energy investments? Carbon capture could reduce the stigmatization of fossil fuel assets, but is generally an added cost. Some renewable energy, especially wind, is seen as approaching price parity with fossil energy, and, in the case of on-shore wind, has become the lowest cost (\$80 – 85/Mwh), versus an average of over \$100/Mwh for fossil sources in UK and Germany.<sup>3</sup> In effect, assets could be stranded more because of price competition than any divestment movement. But if, and when, remains open as installed capacity of renewables is generally well below fossil capacity.

## *Coal: the canary in the climate mine*

Coal companies, however, which tend to have low liquidity and represent a small percentage of all fossil fuel market capitalization, are vulnerable. As noted above, those with exposure (positive or negative) to coal assets are particularly sensitive to the stranded assets issue. For some players, especially those with predominately coal holdings, or coal fired power holdings, the issue is of existential import. For others, traders, investors, and service providers, being able to adapt to developments in the stranded assets world of divestment can even gain competitive advantage by making the correct calls on what happens, when.

Defenders of coal’s place in the energy mix point to pragmatism in the face of the idealism espoused by divestment activists. Major energy agencies (e.g. IEA) predict a substantial share of coal generation remaining for decades to come, with BP seeing roughly equal primary energy market shares for oil, coal and gas into the 2030’s. Alleviation of poverty and widespread electrification will continue to be coal-based in many countries, relying on coal’s massive abundance and low cost compared to other resources. Ironically, it is this massive abundance of reserves – orders of magnitude greater than for oil and gas - which makes the debate over

---

<sup>1</sup> Carney, M., “Breaking the Tragedy of the Horizon – climate change and financial stability,” Speech given by Mark Carney, Governor of the Bank of England and Chairman of the Financial Stability Board at Lloyd’s of London, 29 September 2015.

<sup>2</sup> Ansar, A., Caldecott, B. and Tilbury, J., Stranded assets and the fossil fuel divestment campaign: what does divestment mean for the valuation of fossil fuel assets?, October 2013, Smith School of Enterprise and the Environment, Stranded Assets Programme, University of Oxford.

<sup>3</sup> Mooney, C., “Wind and solar keep getting cheaper and cheaper,” Washington Post, 6 October 2015.

# ENERGY EDGE

stranded assets so important for coal. It is simply inconceivable that all coal reserves will ever be used, so how to judge which are stranded and which are of value? This question should be troubling investors and coal companies alike.

Energy companies, both smaller companies with a presence in one nation, and especially multi-national companies, need to understand that the future of climate policies impacting their competitive position will continue to follow an uneven - and hardly easy to predict - trajectory towards lower carbon economies and increased attention towards controlling emissions and preparing for the climate changes that are likely. In particular, those companies interfacing with coal assets have “skin in the game.” *Energy Edge* is there to help navigate the climate policy landscape and interpret how policies offer opportunities for energy companies of all types.

**Karl Schultz** (<mailto:karl.schultz@energyedge.net>) has been in the environmental protection field for his entire career and is a recognized thought leader in the field of climate policies and markets. Having worked at the US EPA for 10 years Karl now advises an array of industry leaders across a broad range of environmental and energy related issues.

**Nigel Yaxley** ([nigel.yaxley@energyedge.net](mailto:nigel.yaxley@energyedge.net)) is a leading figure in the European coal industry with experience spanning all key industry milestones of the past thirty five years. Nigel joined the coal industry in 1977 after graduating in Physics from Cambridge University. He moved to UK Coal in 1995 on privatisation of the industry and was Marketing Director until end-2005. Since 2006 he has developed his consultancy business in the coal and energy field, and is founder and Managing Director of CoalImp, the Association of UK Coal Importers.

*Nigel and Karl are both Partners at Energy Edge - a UK based consulting firm that focuses on the strategic and tactical implications arising from the changing energy sector.*