

RENEWABLES

Diversifying for the future

Should oil and gas companies be looking to diversify into the renewables sector; what are the potential risks and rewards?

BP has been investing in alternative energies for some time, and we have built two renewables businesses at scale – in renewable fuels and renewable power.

Our wind energy business in the US has a generating capacity of 2.3 GW – which is enough to power all the homes in a city the size of Munich or Philadelphia – and our biofuels operation in Brazil is not only producing over 730mn l/y of bioethanol but is also generating its own low carbon energy and exporting 70% of it to the local grid via our bio-power business.

We have built considerable expertise and are strongly positioned for growth within our existing businesses as well as developing emerging platforms in renewables.

While renewables are the fastest growing fuel, at 7.1%/y, the scale of energy demand means that all fuels will be required for decades to come, not least with global energy demand continuing to grow significantly. Over the next two decades, the world is likely to be consuming about 30% more energy than it does today, as emerging economies develop and prosper. But the fuel mix must transition towards lower carbon, and at a quickening pace. That means there will be rewards for innovative businesses that are agile and able to move quickly to commercialise low carbon breakthroughs. Our strategy in BP is to align our investments in technologies and businesses where we can deploy our distinctive capabilities.

What challenges will need to be overcome?

I see three key challenges. The first is the sheer scale of renewable deployment required. At the moment, renewables only make up 4% of the energy mix. To get close to deployment levels required to meet the Paris Agreement targets would need somewhere in the region of 17% to 23% of renewables in the fuel mix. This would be a rate of growth unparalleled in the history of energy.

Second is the management of

Dev Sanyal, Chief Executive, Alternative Energy and Executive Vice President, Regions, BP, will be speaking about renewable energy and climate change at IP Week on 20–22 February 2018.



Photo: BP

intermittency. At higher levels of renewable penetration, sophisticated energy management and storage will be required. We expect that intermittency will become more costly and challenging to manage within established grids as wind and solar penetration exceed 40%. This will require a partnership between gas and renewables, and over time, large-scale deployment of storage solutions in energy systems. Efficiencies in demand-side management are important at present and will continue to be into the future.

Finally, the investment required in developing renewables will likely have to grow three-fold from current levels of about \$300bn/y to roughly \$1tn to enable this level of penetration. This will require further financial mobilisation on a large scale.

How do you see renewables integrating into the electricity mix in the future?

Renewables are successfully integrating into the energy mix, particularly where capacity margins are large and can accommodate intermittency. In the UK, we are now seeing renewables accounting for more than half of power demand at certain times of certain days – there was even a coal-free day for the first time since the nineteenth century.

Similarly, in Germany, with its 'Energiewende', renewable energy's share in power has risen to 29% in 2016 from about 4% in 1990. Although greenhouse gas emissions from the power sector have stopped falling with the reliance on coal for baseload power in place of nuclear energy.

Support for integration has come from better weather forecasting, the falling cost of storage and increasing inter-connectivity of grids, such as the Norwegian hydro/Danish wind system. But there is much more to

do in areas such as capacity payments and storage technologies.

What we can be certain of is that flexible capacity – whether in the form of generation, storage, or demand management – will be increasingly important in the power systems of the future, and that digital technologies will help unlock more competitive renewable integration. It is, therefore, imperative that the right market signals are deployed to encourage the right level of investments for new assets or remuneration for existing capacity to remain online.

Could you provide some examples of how BP is looking to transition to a low-carbon future?

The energy transition is unquestionable. Our strategy reflects that. In the upstream, our portfolio is shifting towards more natural gas, given its advantages as an abundant, affordable, and lower carbon fuel. In the downstream, we are developing new fuels, lubricants and petrochemicals that provide our customers with the opportunity to lower their own carbon footprint. This might be from gains in efficiency or by increasing the sustainable bio content. For example, we are involved in producing lower carbon jet fuel from household waste, in a partnership with Fulcrum BioEnergy. We have just become the number one supplier of renewable natural gas to the US market. In alternative energy, we already have businesses in wind energy, biofuels and bio-power, and are investing in new technologies either directly or through our venturing arm.

We are also actively engaging through partnerships such as the Oil and Gas Climate Initiative (OGCI), of which we are a founder member. The 10 members of OGCI represent more than 20% of global oil and gas production. Two priorities of OGCI include the acceleration of carbon capture use and storage (CCUS) technology and more effective management and reduction of methane emissions, and members have committed \$1bn towards creating tangible solutions. ●

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