


# Detailed insight

**Alistair Welch** discusses the publication of two major reports addressing cost reduction in the offshore wind industry



The figure of £100/MWh is widely touted as the holy grail of the offshore wind industry: reach this levelised cost by 2020 and the goal of cost competitiveness beckons. But how can the sector hope to reach this point? Where can cost reduction be achieved? Who is responsible for driving it? And is such a target feasible within the timescale?

Although estimates vary, the current cost of energy from offshore wind is thought to be around £150/MWh. As it stands, the UK has 1.86GW installed offshore wind capacity. However, the government wants 18GW operational by 2020. This huge increase in capacity, to be fulfilled predominantly by the large Round 3 zones currently in very early stages of development, will only be

feasible if cost reduction is taken seriously across the industry.

Two major reports - The Crown Estate's *Offshore Wind Cost Reduction Pathways Study* (Pathways) and the *Offshore Wind Cost Reduction Task Force Report* (Task Force) - both published in June, have assessed the route forward for offshore wind and identified key areas where there is potential for cost reduction. The reports agree that a levelised cost (being a project's lifetime capital and operational expenditure divided by energy production) of £100/MWh is achievable given certain conditions and improvements to practice in a number of aspects of the offshore wind industry.

The *Pathways* report outlines four cost reduction 'stories' (namely slow progression, technology acceleration, supply chain efficiency, and rapid growth) with each modelling a potential way in which the sector might develop over the coming eight years. The study suggests that the target of £100/MWh is achievable in all pathways with the exception of the 'slow progression' model.

Building on interaction with over 300 individuals and some 119 companies, the report comprises three workstreams: finance, handled by PWC; technology, BVG Associates; and supply chain, EC Harris. The study examines the potential for cost reduction within the offshore wind industry in unprecedentedly rigorous detail.

Speaking to *Energy Engineering*, Adrian Fox, the Crown Estate's programme director for offshore technology and supply chain, explains that the report represents an "enormous" piece of work and that its level of

detail is indicative of a "mature" industry. "It is an evidence-based study that really drills into the detail of where costs can be cut," he says.

The report's four different scenarios reflect the uncertainty in the offshore industry as to exactly how the sector will develop. "We did not want to produce a single view of how costs could come down," explains Fox. "We wanted to elaborate on different routes so that the whole of the industry could play a part in whichever way it thinks is best able to help bring cost down."

The study argues that technology development and the supply chain have a crucial role to play in driving cost reduction. With a number of significant manufacturers developing next generation turbines, new technology, such as larger blades and direct drive mechanisms, will help reduce the cost of energy. Furthermore, increased competition and efficiency within the supply chain may also support cost reduction.

"Getting the supply chain involved earlier and communicating is so important," says Fox. "Optimising the design of a turbine is the goal - driving down cost in your area of the supply is pointless if it is at the expense of increased cost in another area.

"What we are talking about is not cracking the whip over the supply chain and demanding that they do 'more for less'. This is about offshore generation at the best value for money, and to achieve that, you have got to involve the supply chain."

It is impossible to do justice to the scope and detail of the *Pathways* study within the constraints of this article - anyone with an interest in



the offshore sector ought to seek out and consume the report in its entirety. Suffice to say, the study's general findings regarding the potential for cost reduction are supported by well-researched evidence and opinion from leading stakeholders in the industry.

"This is an enormous report and the individual workstream studies are incredibly detailed. If you want to know what impact a direct drive will make, you can find that information in this report," states Fox.

The findings of the *Pathways* study were corroborated by the *Task Force* report. This report, the product of the Offshore Wind Cost Reduction Task Force (a panel of experienced



industry experts convened, with government support, to address the issue of cost), agrees that £100/MWh by 2020 is achievable and sets out key recommendations for the sector to follow in pursuit of this target.

Led by Andrew Jamieson, chairman of RenewableUK and also director of renewables policy at ScottishPower Renewables, the Task Force identified several significant areas that have a part to play in cost reduction in the sector. These include: supply chain, contracting strategy, planning and consenting, and the financial framework.

Launching the report in June, Jamieson argued that developing an

efficient supply chain was one of the most important opportunities for cost reduction. "A strong supply chain is essential and the possibility of industrialising the supply chain as we move into Round 3 offers good potential for bearing down on costs," he said.

The report recommends that a strategic risk register be set up by autumn 2012 to map key supply chain bottlenecks. Furthermore, the government should urgently increase its engagement with companies that could enter the offshore wind supply chain - such engagement, it is hoped, would also help prevent potential bottlenecks. Developers should seek to build a strategy for communicat-

ing opportunities to the lower tiers of the supply chain based on best practice in other sectors. Finally, the government should seek to secure the investment of as many turbine manufacturers as possible in order to meet challenging Round 3 timelines.

Overall, with regards to the supply chain, the report calls for greater visibility and increased competition in a supply chain that is still relatively immature.

In the area of contracting, the report recommends an 'alliancing' approach - a model that aligns the goals of the project developer with those of the contractors, vendors and suppliers to minimise cost, increase profitability and better manage risk. This approach has been successful in other industries with similar characteristics to offshore wind. Additionally, a 'Common Knowledge Forum' should be established to promote the sharing of best practice in contracting and to help standardise the contracting process across the industry.

The report goes on to argue that planning and consenting is important for the entire industry and fundamental for cost reduction. The report recommends a range of measures that the government and devolved administrations ought to implement in order to ensure that planning and consenting systems across the UK deliver a smooth pipeline of projects in a timely and efficient fashion.

Finally, the report offers a number of financial recommendations intended to help reduce cost in what is a capital-intensive industry whilst acknowledging that the Electricity Market Reform is "probably the single most important issue for offshore wind at the moment" as "getting it right is

of fundamental importance across a whole range of issues.”

The report recommends that the industry should work to develop simpler innovative deal structures to deliver reliable long-term income streams. Furthermore, the government should deploy the Green Investment Bank in the offshore wind sector as early as possible in order to facilitate and leverage the entry of new capital.

“To ensure that the UK’s world-leading offshore wind sector expands rapidly over this decade and fulfills its massive potential within the UK’s energy mix, it is vital that costs are reduced,” said Task Force chairman Jamieson. “In doing this not only will we reduce risk and drive investment

into the sector, we will further protect consumers from increasing energy costs, reduce the industry’s requirement for financial support and deliver jobs and energy security.

“The considerable expertise of the Task Force has presented some challenging recommendations to both industry and government but it is crucial that we all begin work immediately. In doing so I am confident that we can achieve our cost-saving goal and create huge economic opportunities for the UK in both the domestic and international energy markets,” he concluded.

His sentiments were echoed by Energy Minister Charles Hendry, who hinted that the government would

continue to support the offshore wind sector: “Offshore wind will be a vital part of a diverse and secure low carbon energy mix in the decades ahead. But we are clear that costs must come down. I am encouraged that this report shows that substantial cost savings can be achieved if action is taken and I welcome this valuable work. I look forward to working closely with industry to take this forward and deliver these ambitious targets.”

The *Offshore Wind Cost Reduction Pathways Study* is available from [www.thecrownstate.co.uk](http://www.thecrownstate.co.uk).

The *Offshore Wind Cost Reduction Task Force Report* is available from [www.decc.gov.uk](http://www.decc.gov.uk). ■

