EUROPEAN ENERGY SECTOR – SPEARHEADING *the transition*

The transformation to a low-carbon economy is gathering pace.

Adam Coxhead

The energy sector in many countries globally is going through transformational change as the transition to a low carbon economy gains momentum – from the perspective of NAB's London-based European Energy business, 2017 was clearly a year in which this transformation gathered pace and some of the emerging trends became clearer.

The energy system in Great Britain is a leading example of the trend towards decarbonisation, decentralisation and digitalisation. The effect of these trends is pronounced in the Great Britain market due to there being a strong focus on decarbonisation and limited interconnection with other markets. In April this year the UK experienced its first day where electricity demand was satisfied without any coal fired power since the industrial revolution and then for the month of July just 2% of the UK's electricity needs came from coal generation, the lowest level in 135 years and sharply down from over 50% as recently as 2012, whilst contribution from renewables hit c.30% in Q2 2017.

Steep cost declines drive a one-way trend

Ongoing subsidy auctions in the UK, Germany, the Netherlands, France and Spain have delivered outcomes indicating renewables are close to or at grid parity in many countries. The German auction for offshore wind in April saw the astonishing result of zero subsidy offshore wind being bid for delivery in 2025, with bids reliant on significant increase in the size of turbines being deployed (up to 15MW from 8MW today). In the UK, the September CfD auction result saw the clearing price for offshore wind fall by 50% from the prior auction 2.5 years earlier.

We have also seen clear signs of investment activity in development of subsidy free renewables, with Anesco commissioning the UK's first subsidy-free solar and storage (Li-ion battery) site, NextEnergy's listed solar yieldco investing in a 62MW portfolio of development sites, a significant pipeline of onshore wind still under development in Scotland (and some hoping for re-introduction of CfD eligibility) and the largest solar park in the UK (a gigantic 350MW) being proposed on a subsidy free basis. These projects will need to contract their offtake either through Corporate PPAs, which are starting to re-emerge but for which supply is nowhere near meeting demand, or through long term utility PPAs, where lender-friendly fixed price periods tend to be relatively short (3-7 years) and floor price arrangements are not what they once were. Challenges remain but some developers and investors are confident that subsidy free projects are deliverable within 12-24 months.

The rise of flexibility

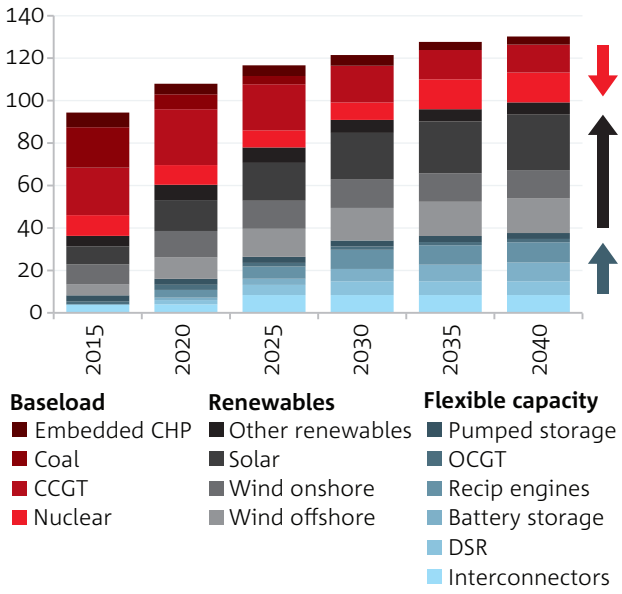
The drive to decarbonise the power sector is resulting in lower levels of baseload generation, increasing intermittent generation and increasing need for flexible generation (peaking capacity and storage). Delivery is being underpinned by the design of capacity, ancillary services and balancing markets to ensure there is a sufficient capacity margin to avoid blackouts.

In the Great Britain market, three key technologies are expected by market experts to capture growth in demand for flexibility: peaking plants (primarily gas reciprocating engines, which are becoming established as the main flexible technology because they are efficient and have relatively low emissions); storage, which given there's limited opportunity to develop new pumped storage capacity is leading to development of more utility scale lithium ion batteries; and demand side response, which is still in relative infancy.

With business cases under-pinned by capacity market contracts, ancillary service contracts with the grid operator and embedded benefits in various forms (some of the disappearing variety), there have been a number of platform companies that have successfully built substantial portfolios of flexible capacity assets in a relatively short period of time. 2017 has seen a number of M&A transactions in this space, with a few of these larger businesses currently in play (at time of writing).

Whilst there is a degree of long term contracting through the capacity market (if new build), this is a relatively minor portion of the overall revenue profile and investors are looking to take a view on the increasing importance of flexible assets to the evolving power system and investors' ability to monetise that value through renewal of shorter dated ancillary service contracts as well as the more merchant energy optimisation/price arbitrage revenue streams available. This comes back to fundamental analysis of the inherent value of flexible generation in a market place with increasing levels of intermittent generation and higher price volatility resulting from that. As a result, there are a range of investors interested in this flexible generation asset class: from earlier stage PE style investors, we are starting to see increasing interest from more traditional infrastructure investors who see this asset class as part of an evolving energy mix to balance out their energy investment portfolio.

Great Britain Capacity (GW)



Source: Aurora Energy Research

Capital inflows continue apace

Renewable energy is now clearly a mainstream infrastructure investment, with most managers targeting a meaningful allocation to renewables in their portfolios. This continues to drive a high level of M&A activity in a number of European countries, notably in the UK, as developers and early stage investors seek to recycle capital or realise value in their developments at a point when valuations are very attractive. The listed yieldcos in the UK, now with a total market capitalisation of £4.1 billion, are finding competition intense as consolidation of the market continues and they compete with other major investors managing private pools of capital or strategic offshore investors. Some are sticking to their original strategy of UK focus but others are choosing to widen their mandates and seek opportunities offshore in Europe and Australia.

In debt markets, an increasing volume of institutional capital in renewable energy is seeing very competitive financing terms on offer and more innovation in financing structures with many examples of different bank/institutional hybrid financings being implemented. NAB sees its role evolving from providing traditional project finance loans, which we still see demand for, to also assisting borrowers to access different pools of institutional debt capital depending on their specific requirements and providing facilities that complement those provided by institutional lenders.