



## A Summary of Recent Trends and the Year Ahead Onshore Renewables

This 2023 Thought Leadership series will take stock of recent energy sector events in what has been, and still is, an unprecedented and tumultuous period. Over the coming weeks we will look at the opportunities and challenges we foresee in the sectors we work in, how we can help you progress and be successful in your sustainability journey and shine a spotlight on some key expertise areas where our trusted advisors are leading the way. This article takes a look at the Onshore Renewables sector.

### The Review of Electricity Market Arrangements (REMA)

This is driven by the UK commitment to full decarbonisation of the electricity sector by 2035 to achieve net zero by at least 2050. The Department for Business, Energy & Industrial Strategy (BEIS) identifies five key challenges which need to be addressed to achieve the 2035 goal:

- increasing investment in low carbon generation capacity in order to meet decarbonisation targets;
- increasing system flexibility to support the balancing of supply and demand and the stability of the system as variable renewable generation increases;
- maintaining system operability as variable renewable generation increases;
- managing price volatility as variable renewable generation increases; and
- providing efficient locational signals to minimise system costs;

This will become even more important as we move to greater electrification of heat, transport and industry over the coming decade. Specifically, legacy cost recovery models for centralised thermal generation and the undue influence of gas price on electricity price are being re-examined along with alternative proposals such as a two-pool firm “on demand” and variable “as available” wholesale power market effectively splitting the current wholesale market into two; and nodal or locational marginal pricing (LMP) intending to make more efficient use of the network and deployment of generation (US, New Zealand, Singapore).

There is also the potential to remove the pegging of wholesale electricity price to gas price which would be a material change. We see [REMA](#) as one of the largest ever market arrangement changes on the horizon and we will continue to watch this space for developments and provide analysis on the winners, losers and impact on legacy and future development pipelines.

## Onshore Development Pipeline

The pipeline is seeing substantial acceleration across onshore wind, solar PV and battery storage especially in the past year as we track towards net zero as a nation. According to BEIS, the UK development pipelines now comprise over **15.4GW of onshore wind, 16.6GW of solar PV** and there is c **20.0GW of battery storage** which is a significant portion of UK installed capacity if a material proportion of this is deployed. Over a third of proposed battery projects are now co-located with a renewable generator as predicted by our hybrid renewables thought leadership articles in 2021. Rising storage in the grid is likely to attenuate and cannibalise Balancing Mechanism and Ancillary Services revenues streams by the mid-2020s, a shallow market, and require more reliance on wholesale power market arbitrage, a deeper market, in order to payback invested capital.

## Battery Storage

Battery storage schemes are really coming into their own - as a potential proportion of installed UK capacity, with both standalone and co-located plays beside both renewables and fossil fuel generation. Larger projects are being developed to address the future intermittency of Scotwind and to enable the replanting of incumbent Combined Cycle Gas Turbine (CCGT) sites. Grid connection continues to be a challenge both in terms of timing and the firmness of connection as well as potential for cannibalisation at certain penetration levels in the grid.

## Growing grid connection congestion

This is evidenced by the growing time to connect and moving from “firm” to “non-firm” connection types as grid connection queues continue to grow in line with the rapidly increasing development pipelines across all clean energy technologies. We have developed our own in-house tools to better understand National Grid and DNO data with respect to available capacity searches for developers.

## Contracts for Difference (CfD) Allocation Round 4 (AR4)

In July 2022 the AR4 results were announced. A total of 93 new renewable electricity projects have won CfDs, which include offshore wind, onshore wind, solar PV, floating offshore wind, tidal stream and remote island wind. The auction has delivered nearly 11GW of new clean energy to be added to the grid by 2029 which is enough to power around 12 million homes. Around 7GW of this is in offshore renewables, a significant step towards meeting the government’s 50GW of offshore wind ambition by 2030. Onshore wind secured almost 0.9GW of new capacity, with solar PV securing more than 2.2GW. We welcome the return of onshore renewables to this scheme for the first time since round 1.

## Contracts for Difference (CfD) Allocation Round 4 (AR5)

AR5 will start in March 2023 and represents the move from biennial to annual auctions for the first time. The technology pots published in December 2022 will be:

**Pot 1:** Energy from Waste with CHP, Hydro (>5MW and < 50MW), Landfill Gas, Offshore Wind, Onshore Wind (>5MW), Remote Island Wind (>5MW), Sewage Gas, and Solar Photovoltaic (PV) (>5MW); and

**Pot 2:** Advanced Conversion Technologies (ACT), Anaerobic Digestion (AD) (>5MW), Dedicated Biomass with CHP, Floating Offshore Wind, Geothermal, Tidal Stream, and Wave.

## Hydrogen business model investor signals

BEIS has become more specific, but with more work to go in 2023 particularly around The Hydrogen Investment Package and Net Zero Hydrogen Fund. In April 2022, BEIS announced both The Hydrogen Investment Package and the opening of the £240 million Net Zero Hydrogen Fund, along with a potential ring fencing of £100 million of taxpayer funding committed by government through the Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) scheme that was announced in the Net Zero Strategy. The Hydrogen Business Model (HBM) will provide revenue support to facilitate investment in new low carbon hydrogen production for projects operational before March 2025

## Offshore developments tag-along effects for onshore renewables

Through ScotWind and Celtic Sea, these may strengthen infrastructure for onshore grid, giving rise to new onshore renewables opportunities/acceleration of development pipeline.

## Option value in M&A transactions

We see a movement from base case valuations that now include some sign posting to future value from life-time extension and repowering. This can be value enhancing at a portfolio level for both sellers and buyers.

## Successful navigation of the onshore renewables sector in 2023

Given the levels of competition and ever tightening time frames to complete due diligence for transactions and/or to identify the best projects to take forward for greenfield development, we see three keys for successfully navigating onshore renewables in 2023.

**The first key is the need to be able to tap into a comprehensive network to maximise the project opportunities pipeline** which ITP Energised can bring through its extensive client relationships.

**The second key is the acceleration and value we have seen first-hand that our clients enjoy when directly or indirectly using our digital tools in our [Net Zero Accelerator](#)® platform to screen these opportunities.**

Our tools provide much faster screening and valuation with the ability to focus investment teams on the key parameters that are primary to driving deal value and shareholder returns. One example is our use of digital tools for

- a. predicting solar PV irradiation levels;
- b. calculating useable terrain for solar PV through GIS; and finally
- c. using our feasibility stage rapid solar PV financial model tool.

Here we can fully assess the composite techno-economic challenges of a new solar PV project. We believe this digital modelling, complemented with our traditional consulting expertise, will be paramount in unlocking accelerated renewables success in 2023.

**The third key is the ability to navigate an increasingly constrained GB grid.** ITP Energised has developed several tools over the past few years that enable our clients to become more accurately informed of when and where grid capacity is likely to be available to successfully develop new projects. We have structured our own robust tools and reputable third-party software to carry out feasibility studies, wide area network (WAN) searches and power system studies. We have a [digital twin of the GB network](#) which we use to predict transmission network use of system (TNUoS) charges extending to 2050. We also keep abreast of the key regulatory changes that impact the grid and maintain strong relationships with National Grid and the DNOs.

For more information or a chat about any of the above, please reach out to :

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