# Q3-20 Report

// NOVEMBER 2020

limejump

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Welcome to our latest market report covering Q3-20.
This quarter saw some return to normality for much of the UK, with lockdown restrictions eased. The power sector showed resilience in responding to demand changes with new products implemented by National Grid under challenging circumstances. As ever, the sector delivered some curveballs which we will delve into. We view the developments through the broad categories of Fundamental Analysis, Ancillary Services and Regulations.

## FUNDAMENTAL ANALYSIS

Power prices have had one heck of a ride this year! We saw low prices in H1, due to healthy gas supply levels (LNG flows were strong and storage high), strong renewable output and a Covid-19 related reduction in demand. See our H1 report here for more information.

Since H1 we have seen prices rise, with the Summer-21 contracts increasing in value a whopping 16% over August alone. This is good news for our PPA customers looking to lock in contracts as it will mean they receive more for the same power.

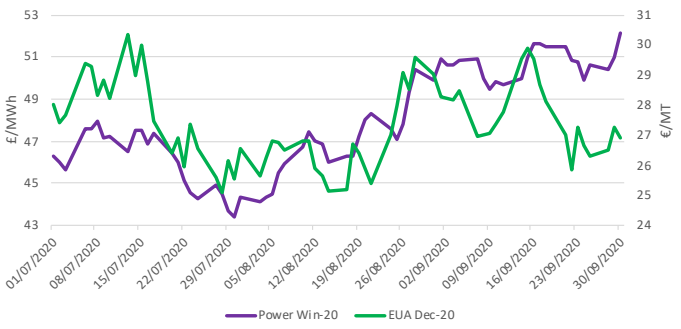
What were the key drivers affecting price action over the quarter?

- The European Union looking to tighten carbon policy
- Low renewable output
- Low nuclear availability

***Carbon***

Carbon has been at the forefront of many power traders' minds over the quarter, with good correlation between the two commodities. Below we chart Winter-20 in power and the December-20 carbon contract.

**Carbon and power prices over time**

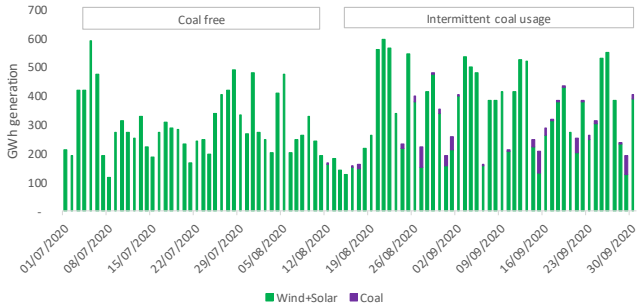



The correlation between the two should perhaps be unsurprising, at least for the UK, given that gas fired generation is the marginal price setter (and these generators must buy European carbon credits to offset their emissions if they are over 20 MWe capacity). So then, what has been driving carbon?

Carbon saw the first few announcements from Europe around a tighter emission reduction target in August. The current target for emissions is a 40% reduction on 1990 levels. The latest proposals are in the range of 55 to 60% reduction of 1990 levels, with a specific figure yet to be written into law (expectation is that before the end of 2020 a new target will be in place). This led to a sharp appreciation in prices.

Renewables output was low over August which led to the coal running in merit order for 5 consecutive days. This is after having a coal free run for the majority of the summer with numerous records being broken in the process.

**Wind, solar and coal generation over time**




***Nuclear Availability***

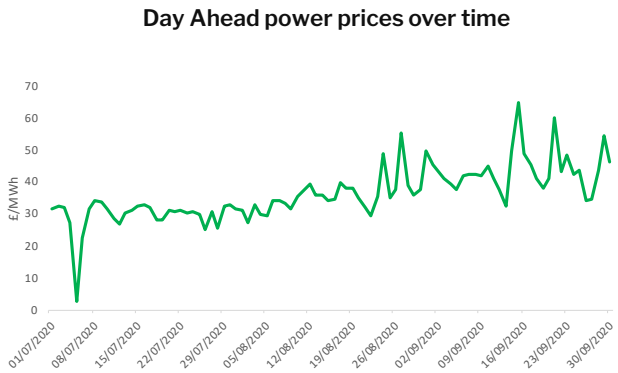
Across the channel, the French nuclear maintenance programme has caused a headache for traders, with Winter-16 still fresh in many minds. In general French nuclear power generates roughly 10-15% of the European Union's total power output and it is crucial for Northwest Europe, with a myriad of interconnections between countries. France's 56 nuclear reactors were built in response to the 1973 oil crisis, and their nuclear generation fleet is between 30 and 45 years old.

In April 2020 EDF reduced its expected annual output by >20% and power prices increased considerably. EDFs ageing nuclear fleet means that often scheduled maintenance is extended and we have seen many instances of that impacting prices throughout the quarter. France is to begin decommissioning 12 reactors in the next 15 years, so we may see a structural shift in European markets, with wind and solar lined up as replacements we expect more volatility.

Closer to home, National Grid extended the deal with EDF to turn off one reactor at Sizewell B, this was in response to a significant reduction in power demand due to the COVID-19 lockdown. This led to a 0.6 GW cut in generation until 24 September. Under normal circumstances, nuclear stations run at their full output (assuming no maintenance or safety concerns). Sizewell B is the only pressurised water reactor in the UK; this is key as the reactor output is more easily varied than the rest of the UK's fleet which are advanced gas cooled reactors.

At the end of August, EDF announced that Hunterston B, a 1.2GW power station will close 2 years early owing to safety concerns (several cracks were found in the reactor core), with a scheduled decommissioning date of January 2022.

In prompt power markets we have witnessed interesting price action. As normal, prices are trending up into winter, with more fuelled assets needing price incentives to run. What is less normal is the several significant spikes that we saw in September. These price spikes allow customers on flexible day ahead PPA contracts to capture more value in a volatile market.




Most notably on 15 September demand and supply were looking very tightly balanced, resulting in National Grid releasing a Capacity Market Notification. See our separate blog post on this event here.

***Calon Energy***
At the end of June, Calon Energy entered administration. Calon, a CCGT owner/operator was created when a Macquarie led consortium purchased three CCGTs in 2012. Lately they have been loss making, in part due to the changing nature of CCGT operations in the UK. They no longer supply baseload power as was common even 10 years ago and now are a marginal power producer and hence required to produce at peak times only.

The press reported that they were looking at finding a buyer back in 2018. What does their bankruptcy mean? We expect Baglan Bay (582 MW) to continue operations, with the other sites (Severn Power Station, 850 MW and Sutton Bridge, 850 MW) being scheduled for closure. The closure of Sutton Bridge is unsurprising as it is the oldest in the portfolio at just over 20 years old. Baglan holds a black start contract (to provide start up services to National Grid in the event of widespread power outages) which may have been a deciding factor in keeping this plant open. With less flexible capacity in the UK, that will mean more volatility in prompt markets and versatile technologies, operated correctly, will capture more value.

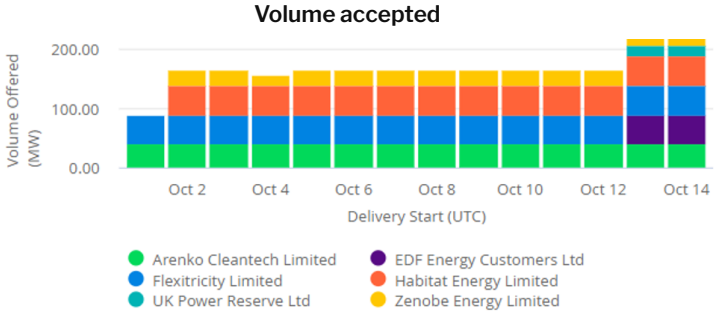
## ANCILLARY SERVICES

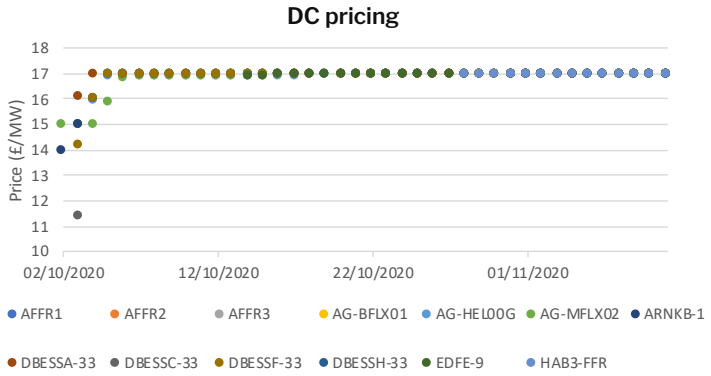
We split the ancillary services by which technology can participate.

***Battery related ancillary services***
National Grid and energy companies alike have had a busy Q3 with new products released and trials taking part. National Grid are working towards their goal of carbon free operation of the grid by 2025, which requires a re-think of existing products. Limejump are excited to see this ambitious target and will do everything possible to support National Grid in this endeavour.

**Key for us were:**
- The much awaited release of Dynamic Containment
- Reserve Storage in the BM trial

***Dynamic Containment***
Dynamic Containment went live on 1 October (but we include in this review) to much fanfare from industry. This is the premium frequency product National Grid tenders for. It is faster acting than dynamic FFR, with a response required at a subsecond level. See our blog post here on dynamic containment. On the following graph we can see there are 6 companies competing and prices have converged around the £17/MW/hr level.



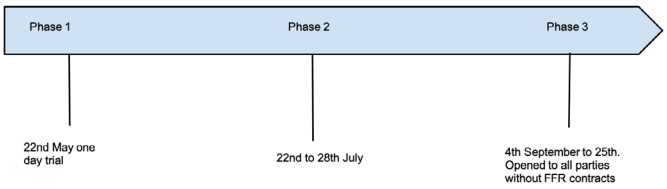

Limejump is working towards our Dynamic Containment product and expects to be able to offer this to customers in the near future.

***Reserve Storage in the BM trial***
National Grid ran phases 2 and 3 of their reserve from storage in the BM trial in Q3 this year. What was the trial?

The trial was enacted by National Grid as part of their emergency measures announced to combat the low levels of demand following Covid-19 lockdown. It aimed to use storage in the BM to meet some of the operational needs of the system by:

- Provision of upward and downward reserve over a sustained period. This included repositioning the battery to ensure sustained provision.
- Delivery of fast-acting bids and offers to arrest changes in frequency i.e. frequency control.
- Ensuring real time, second-by-second balancing of energy resources against demand i.e. energy balancing.

National Grid requires reserve services to match supply and demand on a real time basis. For example, National Grid may use reserve if a plant that was running breaks down, or forecast renewable output was lower than expected. The existing upward/downward reserve provision is through: services tendered ahead of time (STOR, Fast Reserve, Spin Gen etc), BM start up, Super SEL and through the BM.




Phase 2 was a week-long trial restricted to one asset. Phase 3 saw the trial extended for 3 weeks and opened up to all parties. Crucially though, any parties already holding FFR contracts could not renege on the contracts and opt for the trial. Unfortunately this excluded Limejump from participation. We saw the trial as providing good value for battery owners and are supportive of National Grid creating this into a product.

## FFR PRICING

Broadly speaking FFR prices were pushed down over the quarter, carrying on the trend started around April of decreasing prices for the service.

| EFA | Jul-20 | | Aug-20 | | Sep-20 | |
|---|---|---|---|---|---|---|
| | Monthly | Weekly | Monthly | Weekly | Monthly | Weekly |
| 1/2 | £6.05 | £6.60 | £5.83 | £3.60 | £5.35 | £6.90 |
| 3/4 | £6.87 | £4.30 | £6.52 | £5.00 | £6.02 | £5.50 |
| 5/6 | £7.74 | £4.70 | £7.30 | £8.50 | £8.77 | £7.30 |

We see monthly dynamic FFR prices have lost over 10% of value since the start of the quarter. This is because National Grid's procurement target has remained relatively unchanged, whilst over 50 MW of new batteries have come online that are now competing.

The weekly auction has markedly different dynamics owing to the lower procurement target and the fact the auction is pay as clear (with the monthly pay as bid). With this auction, we have seen a few parties willing to bid likely below their marginal cost to secure the volume. The problem with this strategy is if all market participants do that, you end up with a very low clearing price that loses money for the asset. We saw this behaviour this quarter, with prices clearing <£1/MWh over a few EFA blocks.

With the introduction of Dynamic Containment, we expect less downward pressure on the FFR prices as competition levels will decrease.

## GAS RELATED ANCILLARY SERVICES – STOR/FAST RESERVE

National Grid suspended both the STOR and Fast reserve product at the end of last year as neither complied with the Clean Energy Package (CEP) regulation. This quarter National Grid released updated guidance for STOR and fast reserve.

National Grid will seek to make STOR compliant with the CEP. They will begin procuring 100% of the requirement at the day ahead stage and will be looking for 1.7 GW. This move is expected from April 2021. National Grid believes the move to Day Ahead procurement could allow the participation of wind and solar generators. These previously could not compete as renewables do not necessarily know how much volume of energy they will output at a given point in the future. National Grid are also moving the availability payment to pay as clear and they will be moving more services to this auction type following learnings from the phase 2 FFR trial.

In contrast, National Grid will not seek to make Fast Reserve compliant with the CEP and will halt procuring anymore. National Grid will continue to use existing contracts, however, will be reviewing how the product fits in with the future design of fast acting reserve products.

## RENEWABLE ANCILLARY SERVICES – ODFM

Optional Downwards Flexibility Management (ODFM), the National Grid's newly created service for renewable turn down, was called upon once over the quarter. This product is another trick in National Grids tool bag for balancing the system and is used when there is too much power on the system. National Grid used this product on 5 July where high levels of wind, solar and low levels of demand led to National Grid being exceptionally long (generation > demand). This is only the fifth time the product has been used since its inception in May. National Grid instructed just under 3 GW at a cost of £4.9m, with Limejump representing 120MW of that volume. Interestingly, National Grid did not need to call upon the product over the August bank holiday weekend, which was what National Grid were originally planning the product for. Bank Holidays tend to be low points in National Demand, with many factories/businesses closed and typically high levels of solar power (for the summer bank holidays).

What happened this time? The wind out-turned very low over the August bank holiday and hence National Grid was able to balance the system using their usual bag of tricks.

## REGULATION UPDATE

***Brexit Update***

As you know we are due to leave the EU on the 1 January 2021 and it stands this is likely to be without reaching a deal. So, what does this all mean for the power market?

Trading on the interconnectors with Europe is currently 'coupled' which means that transnational electricity trading and the necessary transport capacities are connected via so called implicit auctions. This ensures the most efficient use of interconnectors as energy flows to the country with the highest price. When GB leaves the EU, these markets will become de-coupled so electricity and capacity will be traded separately. This is likely to lead to more volatile market prices and opportunities to sell when prices are high.

On 20 October one of the Power Exchanges, Nord Pool, announced that as part of the de-coupling it was moving its Day Ahead auction to 9:50am rather than the current 11:00am auction. EPEX the second Day Ahead auction that currently runs in conjunction with the Nord Pool auction has announced on the 4 November that their auction will move to gate closure at 9:20am and results published at 9:30. We are working with the Regulators ahead of 2021 to ensure we can accommodate all changes and will keep you informed.

Another impact of leaving the EU without a deal is that we will leave the European carbon scheme, 'EU ETS'. Under this scheme the EU set a cap on greenhouse gas emissions which is reduced over time. Companies both receive carbon allowances and can trade them. In addition to the EU ETS, GB currently has a tax known as the Carbon Price Support. Post Brexit, the GB government has a preference for a UK version of the scheme linked to the EU ETS to keep alignment. It is also considering a stand alone UK ETS, with a price floor of £15/tCO2 or a third solution of no scheme and to convert into a tax.

The uncertainty around carbon means we could see power price volatility until an announcement.

***TERRE***
In our last update, the Trans European Replacement Reserve ('TERRE'), which was designed to allow the GB market to participate in the European balancing market, was delayed until October due to COVID19. On 4 September it was confirmed that the GB participation will depend on what agreement is reached with the EU and on 6 November OFGEM asked National Grid to consider options for January 2021. We will let you know if this market opens up post Brexit.

***Charging***
There are two big reviews of Network charges underway. The first of these is the so-called Targeted Charging Review under which Triad-based charges will be replaced by fixed charges from April 2022. National Grid has now published their first view of these charges in their recently published 5-year view. Charges are on a charge per site per year basis depending on region, connection voltage, banding and import capacity or annual consumption. These changes will take effect from April 2022. This review does not change the Embedded Export Tariffs which were already being scaled back, this is one of the key triad revenue sources for Limejump's embedded generation customers. Therefore embedded generation in certain zones will continue to receive these benefits.

The second Network charging review known as the 'Access and Forward Looking Charge Review' is currently under consideration by OFGEM who has recently shared some of their emerging views which they will finalise next year for implementation from April 2023. The review looks at access agreements for the Transmission and Distribution connections as well as a review of Distribution Use of System Charges.

***BSUoS (Balancing System Use of System)***
Due to actions taken during COVID19 to manage the electricity system, BSUoS costs increased. Since we last wrote OFGEM approved another urgent modification to cap BSUoS at £10/MWh (previously capped at £15/MWh) and extended the period of the cap until 25 October 2020. This means that any increase in BSUoS embedded benefits paid to low voltage connected assets is also restricted to the cap. As a reminder, the embedded BSUoS benefit comes to an end from 1 April 2021. This means you will no longer receive BSUoS payments from this date.

As part of a wider review, OFGEM requested a BSUoS Task force to review the allocation of BSUoS costs. They recommended BSUoS costs are no longer charged to high voltage (Transmission connected) assets and instead are just charged to final demand customers. OFGEM are currently reviewing the proposals. If they accept the proposal it will help high voltage assets compete with Interconnectors, who don't currently pay BSUoS. It would also put downward pressure on market prices as high voltage assets would not need to recover the charge. Implementation not before April 2023.

***COVID19 – key points***
The renewable turn-down product, ODFM, introduced this summer, was a temporary product which finished on 25 October. National Grid and the market are working to set up an enduring solution in advance of next summer. This product represents an additional revenue stream for low voltage connected assets.

In the summer, OFGEM also passed a modification (known as GC0143) which gave temporary powers to National Grid to instruct the local networks to disconnect embedded generation in an emergency. This power is also being set up as an enduring solution with full market consultation and is expected to go live in April 2021.

The Government has embarked on a 'Build Back Greener' campaign where it puts renewable generation and decarbonisation at the heart of helping to stimulate the economy. This was kicked off on 6 October when Boris Johnson announced a commitment to 40GW of offshore and 1 GW of floating wind by 2030, £160m for connection infrastructure and a doubling of capacity in the Contract-for-Difference scheme. We are expecting additional announcements from the Government in the much anticipated (and delayed) Energy White Paper, expected sometime soon.

So what do we expect over the coming winter? National Grid published their 'Winter Outlook' paper in October which provides their view of what to expect over the coming winter.
Even adjusting for a possible reduction in demand and the uncertainty surrounding Brexit, they are still forecasting a comfortable margin. This means they expect to be able to have the necessary products to balance the energy position over the winter.

**If you have any questions or comments about our Report, please get in touch with us at info@limejump.com**