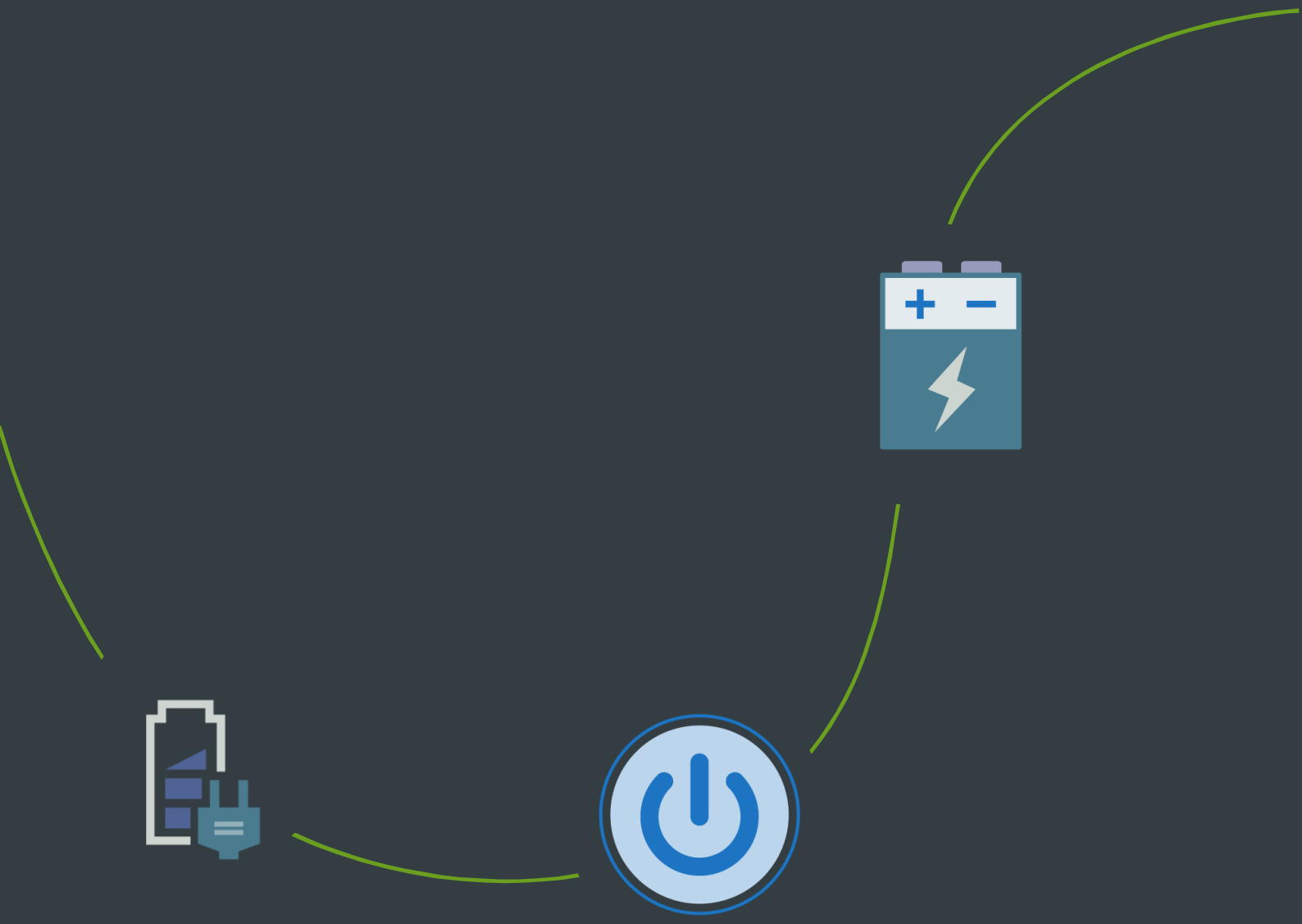
Bird & Bird & Energy Storage

State of the market and key regulatory developments



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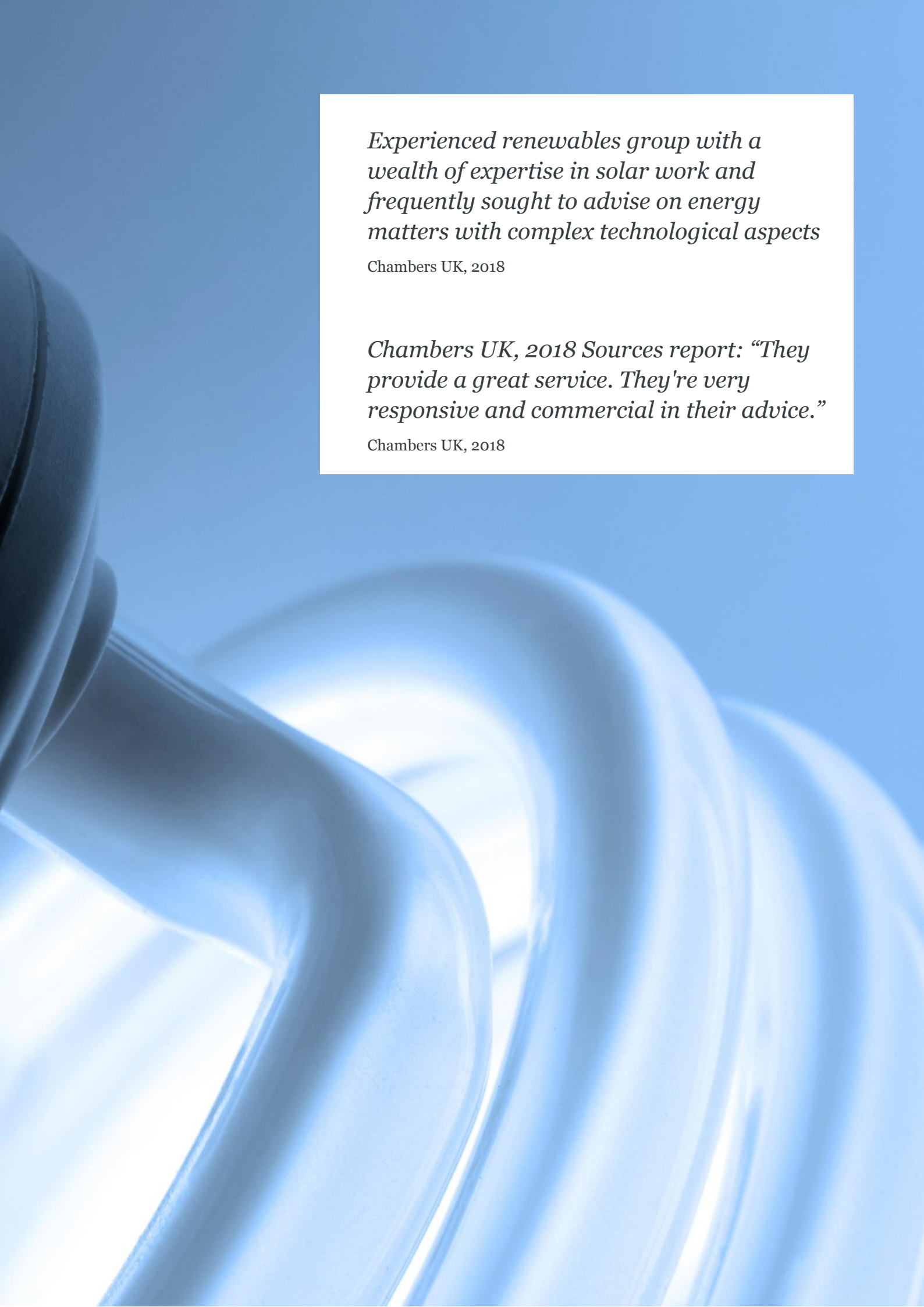


Experienced renewables group with a wealth of expertise in solar work and frequently sought to advise on energy matters with complex technological aspects

Chambers UK, 2018

Chambers UK, 2018 Sources report: "They provide a great service. They're very responsive and commercial in their advice."

Chambers UK, 2018

Energy storage

A brief summary of recent regulatory and market updates on energy storage in the UK

State of the Market

The energy storage market has demonstrated significant growth and promise in recent years with infrastructural and regulatory developments showing both private and public commitment to increasing the role of storage on the UK electricity grid.

As grids get smarter and new technology is introduced across the energy value-chain, much disruption is to be expected. Block chain facilitated trading within digitised community grids, artificial intelligence integration at energy installations and electric vehicle proliferation are all the here and now, and energy storage has an important role to play in the future of the energy market.

Key Market Developments

Battery storage and demand-side response won more than 500MW of contracts in the T-1 Capacity Market auction in February 2018 which cleared at £6/kW per year.

GE has announced that the UK will be the location for its largest grid scale battery energy storage system to date. The 41MW project will be completed in partnership with Arenko and should be operational later this year.

Flexible services provider Battery Energy Storage Solutions (BESS) has raised more than US$100 million in investment with UK project plans totalling 100MW.

In the residential market, Nissan made an announcement in January 2018 that it will be providing a system of solar panels and batteries to UK homes, stating that customers could save up to 66% on energy bills through their service.

Regulatory Developments

Upgrading our Energy System- Smart Systems and Flexibility Plan

In July 2017 Ofgem and the UK Government released their initial response to the November 2016 consultation, 'A smart, flexible energy system: call for evidence'. The response includes the 'Smart Systems and Flexibility Plan' which sets out the proposed approach for integrating flexible and smart technologies into the evolving UK energy system. The response specifically addresses the role of energy storage in the UK electricity market, including Ofgem and Government's proposals to address commercial and regulatory barriers that may prevent the further deployment of energy storage such as:

- grid charges
- viability of revenue stacking
- creating a market definition of 'storage'
- planning constraints
- final consumption levies
- perceived uncertainty in relation to co-location of storage on Renewables Obligation (RO) and Feed-in Tariff (FIT) accredited installations
- grid connections
- ownership of storage by network operators
- technology innovation
- small scale storage deployment
- health and safety and environmental issues

Please click here for more detail on this response on our website.

Ofgem draft guidance for generators on co-location of storage

Ofgem released draft guidance in December 2017 seeking to clarify existing guidance on the requirements that generators must satisfy under the RO and FIT Schemes if storage is co-located with generation accredited under these schemes. The draft proposes no change to the schemes' requirements and support under the schemes will remain solely available for eligible electricity.

The draft clarifies that a generator may claim Renewables Obligation Certificates (ROCs) for electricity supplies to a third party storage facility by private wire if the relevant requirements are met. FIT generation payments are reliant on meeting Ofgem's requirements including that the meter reading reflects only eligible electricity under the FIT scheme.

Find our article here outlining the implications of the draft guidance on RO and FIT installations.

Revenue streams

Battery storage revenue streams may include a mixture of frequency response, capacity market payments, TRIAD revenue and power supply payments. The challenge is to construct installations that can take advantage of multiple revenue streams and can demonstrate returns against capital expenditure to secure funding.

Capacity Market T-1 auction and T-4 pre-qualification results

In December 2017 National Grid confirmed the projects that have prequalified to compete in the Capacity Market auctions scheduled for 2018. The T-1 auction is for limited one year contracts and of the 138 pre-qualified battery storage projects, 16 have received contracts. This includes a number of installations backed by National Grid's Enhanced Frequency Response tender in August 2016. This outcome is lower than anticipated which may be due to the government's decision to lower the de-rating factor by almost 80% for 30 minute duration batteries in Capacity Market auctions.

The T-4 auction contracts are for a 15 year period and over 1,100 assets prequalified, of which more than 227 were battery storage.

Balancing services consultation

National Grid published its System Needs and Product Strategy consultation (SNaPS) on 13 June 2017 which sets out National Grid's strategy for the types of services it will need to procure in future to balance the grid and to maintain secure and affordable electricity supplies.

The proposals in SNaPS aim to:

- rationalise the existing suite of balancing services products by reducing the number currently available and removing any obsolete products;
- simplify the remaining products by standardising contract terms, the procurement process and technical requirements;
- improve the products based on feedback received from industry; and
- improve the information that National Grid shares, to make it easier for participants to access balancing servicing products.

The impact on storage operators should be positive as there is a general emphasis on flexibility and introducing products that require faster reaction times.

See here for our breakdown of the SNaPS consultation and the future of National Grid Balancing Services.

Power Responsive, a stakeholder-led initiative facilitated by National Grid, has set a goal of achieving 30-50% demand side balancing capability by 2020. Their 2017 Annual Report highlights that demand side flexibility participation is steadily increasing and future prospects need to give greater consideration to data management and cyber security. Key customer insights centred on the need for multiple simple and reliable revenue streams to grow investment in demand side flexibility.

In December 2017 National Grid published its 'Product Roadmap for Frequency Response and Reserve' document in response to the SNAPS consultation outlining how firm frequency response tenders will be conducted.

This second stage in the modernisation of the frequency response market aims to increase transparency in order to simplify the current process for providers to tender for capacity.

Instead of a provider tendering for a period of one to twenty four months, more standardised periods (e.g. front month/front quarter of an auction in defined seasons) will be used to allow National Grid to compare results between months.

Bird & Bird & Our Energy & Utilities Group

Bird & Bird is a truly international law firm, with more than 1,200 lawyers and legal practitioners across a worldwide network of 29 offices. Our clients build their businesses on technology and intangible assets, and operate in regulated markets. To better meet their needs we have developed deep industry understanding of key sectors, including the energy & utilities sector. Energy storage is a priority area for us within our energy & utilities sector group, and an area that is growing fast.

More broadly our energy & utilities sector group acts for a large number of funds, financial institutions and governments; we advise the traditional energy sector players as well as new market entrants. Our deep understanding of the new generation mix, the network issues associated with energy generation as well as new technology developments means we can help protect your business and enhance its value.

We can advise you on all aspects of:

- Energy Management
- Energy Networks & Transmission
- Energy Digitisation
- Energy Storage
- Nuclear
- Renewables
- Oil and Gas.

The energy and utilities sector is changing rapidly. As the world moves towards decarbonised economies, there is an increased need for essential utilities and a number of new market entrants are evolving to fulfil this need. Changes in demand combined with the increase in complex new technologies means that energy projects must be structured and delivered differently.

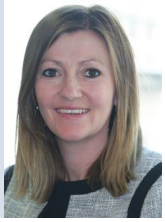
Our goal is to anticipate and guide you through this transformation.

If you'd like to know more about how we can help your business, please contact any of the team members listed here.

Contacts

Elizabeth Reid
Partner

Tel: +44 (0) 20 7905 6226
elizabeth.reid@twobirds.com



Andrew Renton
Partner

Tel: +44 (0)20 7415 6780
andrew.renton@twobirds.com

Matt Bonass
Partner

Tel: +44 (0)20 7415 6731
matt.bonass@twobirds.com

Dr. Hermann Rothfuchs
Partner

Tel: +49 893 581 6000
hermann.rothfuchs@twobirds.com

Joshua Partridge
Associate

Tel: +44 (0)20 7415 6720
joshua.partridge@twobirds.com

EU Winter Package

- Storage is not consistently regulated - it is often uncomfortably squeezed into other frameworks.
- Winter package seeks to apply consistent regulation but still doesn't recognise storage as a different type of asset.
- Allows Member States to permit 5-year derogation from prohibition of DSO/TSOs owning or operating storage subject to strict conditions (no interest from the market, storage necessary to permit TSOs/DSOs to carry out their functions).

Grid connection

Due diligence in respect of the grid connection will need to be carried out, including:

- Is the connection to the transmission or distribution network?
- Is there a separate grid connection or shared grid connection point?
- Does an existing connection agreement need to be amended?
- How to mitigate against the "stranded asset risk" in the case of a shared grid connection?

Funding

- Debt funders are interested in storage, but key considerations for them are around certainty about the regulatory environment and potential revenue streams (see relevant boxes).
- Equity funding is the more common route for the time being.
- Funders will require confirmation that there is no impact on the accreditation of existing projects that are to be co-located with storage.

Revenues

- Capacity Market
- National Grid Services
- Demand Side Services
- Energy Management Services to Host Client
- TRIAD Management

Revenue streams

The potential revenue streams available to the operation of a battery are currently in flux:

- Type and number of National Grid Services contracts are under review and are likely to be consolidated.
- Evolving Capacity Market rules.
- Uncertainty in the TRIAD market for both export (short-term) and import avoidance (medium term).
- Shifting patterns of grid demand as more storage (and other technologies come online).

Funder(s)

National Grid / DNO

Aggregator

Generation & Offtakers

Project Company

Landowner / Host Client

EPC Contract

Battery O&M

Aggregator Agreement

Battery Management Contract

Interactions with other operations

Consideration of the interface of the battery with other forms of co-located or on generation including:

- Interface with battery operation and existing PPAs in place
- Technical interface between the battery and existing installations
- Appropriate metering arrangements
- Interface between EPC and O&M arrangements between battery and existing installations
- Ancillary contracts

Real estate

- An option may be required, conditional on planning or other matters.
- Lease needs to include all rights required for battery operation, including for operators, aggregators, and, in case of shared connection, rights to connect into existing connection points.
- Due diligence - key points to consider include access, cable routes and any pre-existing service media.

Battery storage considerations

- Determining the allocation of risk with respect to the management of the battery and delivery of revenues as between the battery operator, aggregator and project co.
- Battery performance, degradation and warranty protections. This will depend on the type of battery supplied, how it is operated and the revenue streams that are earned from it.
- Will the Aggregator be given any operational control of the battery?

Regulatory environment

The role of storage within the framework of the electricity regulatory system is currently being redefined. This will have broad market implications, including:

- To what extent a licence may be required to operate battery storage considering, in particular, the European Unbundling Regime.
- Ability for DNO/TNOs to own or operate storage.
- The availability of fiscal incentives and other revenue streams (see above).
- Grid charges applicable to battery storage.
- Taxes and final consumption levies that are applicable to energy stored and discharged by batteries.

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