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Co-location, Co-location, Co-location

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*By: **Ronen "Ro" Lazarovitch**, **Nicholas Neuberger** and **Sam Phillips***

The UK continues to push forward to achieve its net-zero targets. However, due to the increase of renewable energy developers and National Grid network constraints, the electricity generation market is facing significant delays for new grid connections to come online. As a consequence of this and other factors (including inflated electricity prices and the need to balance intermittent generation), sponsors and operators are looking for ways to maximise the value of their existing connections and ensure new project development is future-proofed.

The co-location of a utility scale battery energy storage system (BESS) alongside a renewables project is one solution that is currently receiving much market interest. Below, we take a brief look at the current state of the co-location market and the corporate structuring solutions being adopted, as well as bankability considerations.

BESS Co-location

The UK BESS market is still at a relatively early stage, despite leading the charge in Europe. However, it has recently rapidly grown, and further significant growth is expected in the medium to long term as power produced from hydrocarbons constitutes a smaller proportion of final consumption. The National Grid's Future Energy Scenarios Report released in July 2022 showed UK BESS capacity in 2021 was at approximately 1.6 GW, but that this could increase to as much as 20 GW by 2030 and hit 35 GW by 2050. This forecast reflects what we and others are seeing in the BESS market, as a wider pool of lenders and sponsors accelerate their interest and involvement. Paired with this growing interest in the BESS market is an interest in the methods to maximise the output of renewable assets.

BESS assets can be co-located with any form of generation (solar, wind, gas etc.) but the most common project format we see under consideration, construction or in operation, involves a solar-BESS combination. These projects are driven by a multitude of efficiencies that can be realised by co-locating the assets, as land use is maximised, infrastructure costs shared, generation intermittency balanced and grid connection capacity utilised in full. In respect of the last of these points, it is worth noting that the average UK solar load factor is only marginally greater than 10%, leaving a substantial volume of unutilised export capacity.

In the current economic and regulatory environment in the UK, the focus for new projects involving BESS tends to be BESS-only projects without co-location or other generation elements. This is because it is simpler and faster to obtain planning permission for, and implement BESS-only projects and many sponsors do not consider the added costs of

incorporating generation as sufficiently remunerative in the current UK market. However, owners of existing generating assets, especially solar assets, are actively looking to add co-located BESS assets to share in the existing grid connection and benefit from the efficiencies mentioned above. In the future we may see more new projects being developed with BESS co-location, as indicated by a medium-term pipeline of such projects in the UK.

Project Structuring – single or multiple SPVs?

Single SPV – new, integrated projects

There are a variety of factors that can influence which corporate structure best suits a given co-location project, but the most straightforward approach is to have a single SPV holding both the renewable asset and the BESS, as well as the grid connection rights. If it is a new, entirely integrated project, this will be the simplest project structure, allowing the sponsor to benefit from all the efficiencies of co-location, in particular:

- Revenue streams from both assets are easily and justifiably aggregated, which can increase the attractiveness of the project from the perspective of investors and lenders. There will be a de-risking of the revenue inputs from both assets with a quasi-offset of (i) the intermittency and underutilisation of renewable generation, and (ii) the lower guaranteed revenues that may be available for BESS offtake. There may also be a mechanism in place to allow for price arbitraging using the BESS.

- The capital costs of contracting for ownership and use of land will be reduced as there will be no need to provide for independent land rights (e.g. separate leases and easements) or separate planning consents. Other issues that can arise where two or more corporate entities require shared access to land (discussed below in respect of O&M and EPC matters) will be avoided.

- Grid connection and capacity use can be greatly simplified, with any fees, maintenance costs or other liabilities easily allocable, without the need to apportion responsibility between separate owners.

- While the construction process may be deemed to create 'project-on-project risk', whereby a delay in completing one element (e.g. the solar generation element) of a project would impact full monetisation of the other element (e.g. the BESS element). However, if the co-location project is structured to enable the independent operation of each element, then this risk is reduced and can even be seen as an advantage (in the previous example, the project would at least generate some revenue through the BESS element while the solar generation element is being completed).

Multiple SPVs

Although a single SPV structure is currently the most common and, in the majority of cases, the simplest option, there are plenty of instances in the BESS market of two or more sister companies holding the co-located assets.

A separate SolarCo (to hold the solar asset) and BatteryCo (to hold the BESS) might be an appropriate structure if the developer intends (or wishes to maintain the flexibility) to sell the

assets separately rather than as a package. Similarly, this separation may enable separate financing packages for SolarCo and BatteryCo.

Furthermore, as competition for assets increases and the investor pool diversifies, we expect to see more complex structures adopted to facilitate disaggregated re-sale and avoid stranded assets (for example, tri or bi partite structures where a standalone GridCo offers shared grid connection access to SolarCo and BatteryCo).

Formatting a project in this way is likely to result in greater upfront costs, including in terms of considering and documenting the rights and obligations of SolarCo and BatteryCo in respect of shared assets (including, in particular, the grid connection and access rights) but may provide more flexibility for future actions. Separate legal entities for the relevant renewable asset may also help future-proof against regulatory developments that might differentiate the requirements for battery and solar assets. Such a structure also offers the benefit of ring-fencing the development risk of each individual asset, potentially offering some downside protection to interested parties if there is a serious loss event.

If considering a multiple SPV project structure, there will be a few key points of interaction to manage, most of which relate to the allocation of costs (and all of which should be manageable by entry into a form of grid/land sharing agreement):

- Any potential liabilities under the grid connection arrangements will need to be allocable between the entities, such as maintenance or minimum capacity usage costs.

- For shared access routes, pre-agreement of priority rights between EPC and O&M contractors will help avoid unforeseen impediments to project development and/or operation and rights and obligations in respect of shared assets, such as the grid connection.

- If development of the projects is taking place in close proximity, it may be of value to have in place a mechanism for dispute resolution and apportionment of liability for serious loss events, to the extent the development or operation of one project may result in physical damage to the other. This will be of particular concern where one project is operational and receiving revenue.

Retrofitting an existing project

Where a BESS is to be added to a generation asset which is under construction, in pre-commissioning or already in operation, there will be additional considerations, even when using a single SPV structure. The sponsor will need to carry out a detailed review of the existing arrangements to ensure the BESS installation will not prejudice the generating asset. Although not a complete list, certain key matters that should be considered are as follows:

- A key asset for both the generating and BESS facilities will be the grid connection rights. The project developer will need to get comfortable that the BESS installation and operation will not interfere with the export capacity usage of the generating asset or otherwise jeopardise the grid connection. The technical specifications under the grid connection agreement and any related construction agreement should be closely

reviewed.

- Any existing offtake arrangements for the generating asset (usually a PPA) will need to be preserved in order to ensure that the SPV continues to comply with its offtake obligations and, where relevant, continue to repay any financing. If included, the following terms in particular should be considered:

- planned outages and outage payments: if there are notification or payment obligations that apply in respect of outages, the developer should make appropriate provisions for any interference the BESS connection may cause;

- delay payments: similar to the above, if there are terms that require payment in respect of any delays to commission of the project, these should be borne in mind when planning BESS connection; and

- rights to offtake: PPAs often provide for (i) exclusivity of offtake from a specified metering point, and (ii) a right to offtake ancillary services the project provides. In both cases, BESS co-location will need to be structured either to avoid the consequences of these terms or to acknowledge them (for example, by offering the BESS offtake to the existing PPA counterparty, or by seeking a waiver of such rights).

- The terms of any existing lease agreement or planning permission will need to be considered in order to determine whether the addition of the BESS will require any amendments or supplemental applications in respect of such lease or permission.

- Any activities in connection with the BESS installation will need to be in compliance with any covenant terms of the existing project's financing arrangements.

- Insurance policies covering the existing project should be reviewed to confirm the new development will not automatically void any coverage.

- Both EPC and O&M contractors for the generation asset and the BESS should be engaged with from an early stage to consider the practicalities of working on the site and how that is to be managed. For example, if there is a single accessway, how are access schedules to be managed and will one or other project require priority at certain times.

Licensing

For the development of any co-located assets in the UK (including if pursuant to a retrofitting), it will be necessary to determine at the outset whether a generation licence will be required under the UK Electricity Act 1989. BESS assets are considered generating stations for the purposes of the Act and it may therefore be possible, subject to the applicability of any class or individual exemptions, that either or both of the renewable generating asset and the BESS require a generation licence to operate.

Financing and bankability

As referenced above, there are distinct benefits from a finance perspective to having the asset revenues aggregated. Nonetheless, it should first be established that the two projects are

independently viable or, if the BESS is intended to balance the offtake of the generation asset, that it provides a net revenue benefit. A lender will not wish to invest in a project where the value is impaired by the addition or inclusion of a BESS. This is likely to become less of an issue over time as the concept is proved in the market but remains a point of consideration for the time being as certain BESS offtakers remain less established (for example, some of the start-up optimisation service providers).

Other than establishing that the project will provide returns of a sufficient magnitude, there is little about the project structure that will influence a lender's decision as to whether a co-location asset is 'bankable'. The key will be to demonstrate, regardless of the nature of asset interaction (i.e. whether the BESS is load sharing/arbitraging with the generation or is entirely independent and providing grid services), that the revenue streams and the project characteristics that safeguard them, namely the PPA and grid connection agreement terms, will not be compromised by the BESS, as discussed above. In addition, a lender may consider a co-location project to be more complicated from a construction perspective due to the perceived 'project-on-project risk' of having two separate elements. However, as mentioned above, this risk can be mitigated if both elements can work independently.

The single versus multiple SPV structuring question is largely insignificant when compared with the issue of revenue security. Whilst it can be argued that a single SPV with stacked revenues is simpler from a security and enforcement perspective, a multiple SPV structure will afford each project a degree of insulation from losses that may affect the other. This latter potential benefit may be a determining factor for project structuring where there are to be multiple lenders, simplifying enforcement, payment flows and other matters that would need to be managed by way of intercreditor arrangement.

Conclusion

Whilst the technology remains somewhat unproven on a national scale, we have seen that BESS co-location is an effective method of optimising renewable generation and maximising grid connection value on a project-by-project basis.

BESS has swiftly moved from an emerging technology to a major investment focus for developers and financiers. The growth of co-located BESS is assumedly assured as intermittent generation assets constitute an expanding proportion of the increasingly crowded global energy matrix. However, it remains important for sponsors to look closely at their contracting and permitting arrangements to ensure there is adequate workability for the inclusion of BESS, particularly for retrofitting an existing generating asset with the BESS technology.

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