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Storage and Renewables: The next frontier

A guide to co-locating energy storage with renewables

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Introduction

Storage has been the “hot” topic in the electricity industry in recent years. There is huge potential for co-locating storage with renewables, with more than 30GW of wind and solar capacity in the UK that could benefit. However, the vast majority of storage projects that have been commissioned to date have been grid-scale standalone projects.

There are a number of issues to consider when evaluating the investment decision to co-locate and, to date, there has been a lack of clarity in respect of the specific issues faced by co-locating storage with renewables.

This guide aims to further the debate by analysing the key legal issues for co-location.

Why co-locate?

There are a range of potential benefits in co-locating storage with renewables, which include:

- maximising generation output and existing revenue streams and managing intermittency;
- enabling projects to avoid grid constraints issues;
- access to additional revenue streams, for example, the provision of frequency response;
- savings in cost associated with sharing infrastructure; and
- access to price arbitrage.

This optimisation can be maximised when co-locating storage across an entire portfolio of renewable projects.



Types of co-location

The term “co-location” covers a wide range of renewables-storage project configurations. Co-located projects range from:

- truly integrated solutions which are conceived, constructed and commissioned together, for example, subsidy free solar plus storage projects; to
- the retrospective addition of a storage device to an operational renewable projects; to
- standalone generation and storage projects, utilising shared land and/or grid infrastructure.

Within these types there are a range of options in terms of technical configuration, such as metering, and whether the storage device is considered to be part of the generation station, is separately metered or is “network side” within the connection point. The configuration of the generating station and the storage device directly influences the relevant issues to consider. Further, the relevant legal issues are shaped by who owns and operates the storage device and whether this is the same entity as owns and operates the renewable project.

CMS has advised on a range of co-located project types. This guide focuses on the key issues to consider when co-locating storage with existing large-scale renewable projects in the UK. However, the issues raised are incredibly relevant in many countries as storage becomes an integral part of renewables’ strategies. Each project will of course also have its specific considerations.

To discuss any of the issues raised in this guide further, or more general inquiries, please feel free to contact the CMS lawyers.

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Consenting

Written by Robert Garden, Associate, Consenting

There are a variety of different options for obtaining planning consent for the co-location of energy storage with renewables:

1. Apply for a new standalone planning permission under the Town and Country Planning Act 1990 (TCPA 1990). In practice, this is how many storage installations have been consented to date.

2. Vary the existing planning permission granted under the TCPA 1990. In relation to smaller scale storage installations, this could be done via a minor material amendment to the renewable project's permission pursuant to section 73 of the TCPA 1990 or, with an accommodating local planning authority (LPA), via a non-material amendment pursuant to section 96A of the TCPA 1990.

3. Vary the existing section 36 consent. For projects with the existing benefit of a section 36 consent, for example onshore windfarms, that consent could potentially be varied pursuant to section 36C of the Electricity Act 1989 to accommodate storage installation. This option has been pursued to accommodate co-location.

4. Utilise permitted development rights available to DNOs. DNOs benefit from permitted development rights (which are subject to a number of conditions) that could apply to storage installations. A further option could be to work with the DNO to facilitate co-location.

5. Obtain a Development Consent Order (DCO). Large scale co-location projects may be capable of being consented by a DCO.

For option 2 to be considered, the existing planning permission would require a broad description of development and contain drawings capable of being amended appropriately. If this option is pursued, care must be taken to ensure that the existing consent for the renewable development is not jeopardised, including the loss of any mitigation (such as landscaping or ecological mitigation) that may have been secured on land earmarked for the storage installation, and that the existing consent, including the various planning conditions, is appropriate for the storage installation.

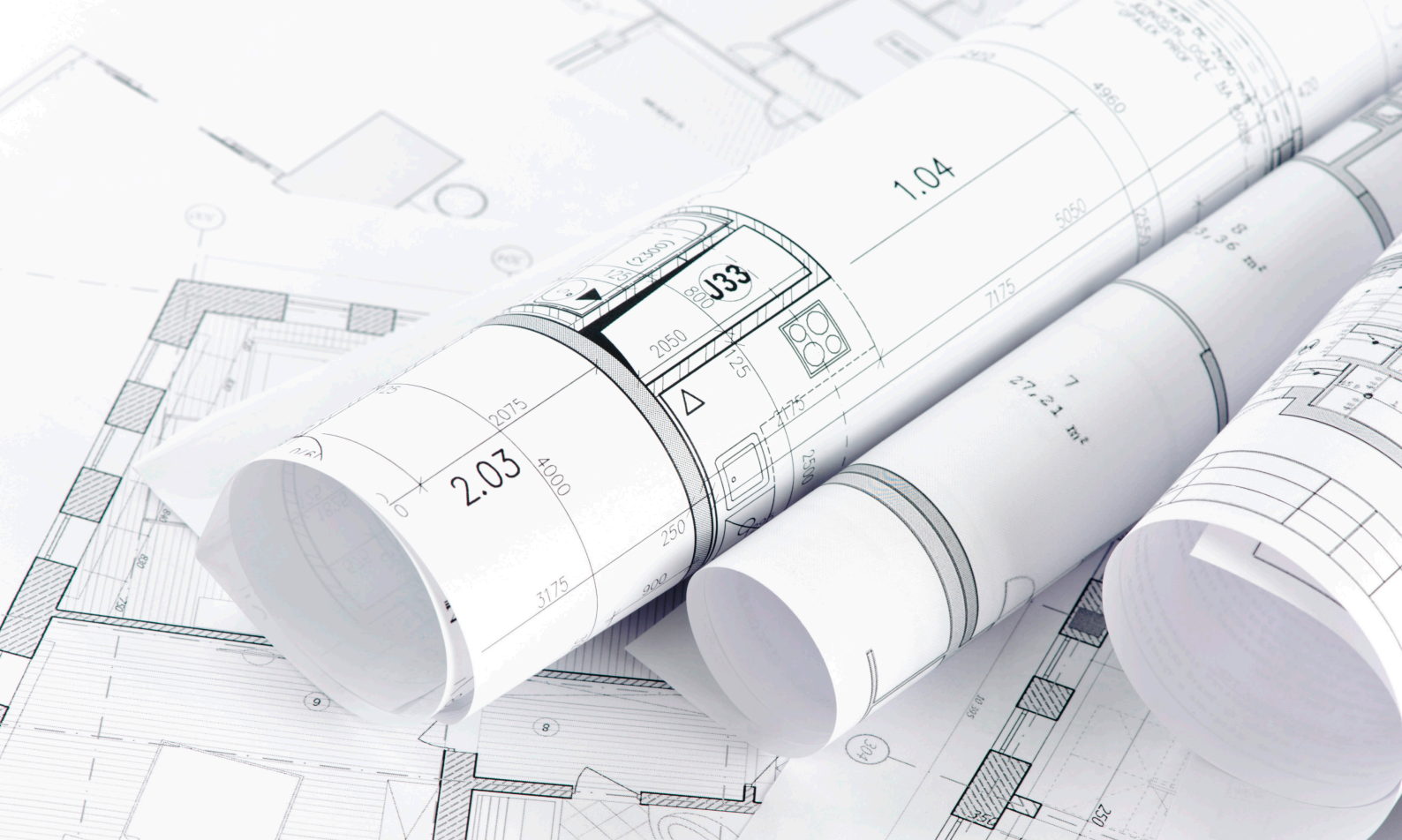
An alternative consenting regime?

The scale of the project, particularly a storage and/or solar project, is a determinative factor in how to approach planning. A different consenting regime under the Planning Act 2008 (PA 2008) may apply if a solar generating station is extended (potentially including through co-location) so that its capacity is more than 50MW, and a DCO may be required.

Current interpretation of the PA 2008

Although there is some technical ambiguity as to whether a storage facility is "generating" energy when it exports electricity, for the time being, BEIS considers a storage project to be a generating station. Its advice is that development consent is required for a storage project above 50MW, although it is worth noting that this broad interpretation of the definition of generating station has not been tested in the Courts. Equally, the position on co-location is not wholly clear.

As the industry continues to develop, and larger scale projects with greater capacity come forward, BEIS may clarify its position on the definition of generating station. BEIS is currently working closely with the Government to provide greater clarity on the planning process. The first application for a solar DCO is expected to be made in 2018, and this is likely to include battery storage. Similarly, other large scale generating stations are expected to seek to include battery storage within their DCOs. As technology advances and larger scale projects come forward, this may become more common.



Impact of designation under the PA 2008

Securing development consent under the PA 2008 is a more procedurally burdensome and time consuming process than securing planning permission, or a variation to a planning permission, under the TCPA 1990.

There is also a stricter enforcement regime that applies under the PA 2008 than under the TCPA 1990.

Environmental Impact Assessments (EIA)

Solar and storage projects are not identified as schedule 2 EIA development, although in practice sometimes the EIA regime is opted into.

Wind farms comprising more than two turbines or turbines with a hub height exceeding 15 metres are characterised as schedule 2 EIA development. Therefore, for co-location on an existing windfarm, EIA may be a more critical issue.

If an EIA has been carried out in relation to an existing planning permission, an update to that EIA may be required if a developer is seeking to vary that planning permission to facilitate storage and co-location. In these circumstances, a standalone planning permission for the storage element may be preferable. One of the main environmental impacts of a storage installation, which may not have been considered in relation to the renewable development, is its landscape and visual impact.

Structuring

Ultimately, ownership and exit strategy considerations, including in relation to securing funding, will also be important considerations in securing a bankable co-location consent.

To avoid cross liability and enforcement issues between the renewable and storage elements, the planning strategy should seek to deliver consents that can properly be allocated to, or apportioned between, the elements of the co-located project. This requires clarity at the outset and a working relationship with the LPA to enable that LPA to understand the different impacts of the different elements of a co-located project and draft precise planning conditions to reflect this.

Otherwise, joint restrictions may be imposed under planning conditions, relating to issues such as capacity and noise limitations, which apply to both elements of the co-located project. Addressing consenting issues at an early stage and within the planning strategy avoids complex arrangements in the event that ownership of the different elements of the co-located projects is different or split at a later date.

Land rights

Written by Leilah Rawle, Senior Associate, Real Estate

Location of storage site

The retrospective addition of energy storage to an existing renewable project throws up some interesting issues in relation to land rights. We set out below a checklist of initial issues to consider:

- 1. Location of the battery:** the first basic check to carry out is whether the battery will be located within the renewable landowner's site boundary (and if so, whether this is within the existing renewable lease demise) or whether negotiations are needed either with the same landowner for additional land or whether engagement is required with a third party to secure the battery site. Early engagement is key to avoid project delay.
- 2. Location of the Point of Connection:** this should also be verified as, in our experience, its location can be critical to the success of a project. Can the same point of connection be used as for the renewable site or will a new one be needed? If a new point of connection is needed, are sufficient land rights available or will additional rights need to be granted?
- 3. Lease terms and potential deed of variation:** if the battery is to be located within land already demised for the renewable project, the lease terms will need to be checked carefully. Unless future use of part of the site for storage was anticipated at the time of lease grant, the lease will need to be varied to allow the relevant area to be used for storage and for additional rights to be granted regarding, amongst other things, cabling to the point of connection and access to the battery site. There may also need to be a separate method of rent calculation and trigger for payment in relation to the battery site, as the market norm is for this to be different to the rental basis for the existing renewable project.
- 4. Landlord consent for works:** if the battery is to sit within the existing renewable lease demise, under the terms of the existing lease, landlord consent to the battery installation and associated cabling works may be required. The timing implications of this process will need to be factored into the project.

Alternatively, if the proposed battery storage site falls outside the renewable site existing demise, a new lease will need to be obtained from the relevant landowner.

Standard terms and conditions

Although a relatively nascent industry, we have seen certain terms of new battery leases becoming "standard" and acceptable to most landowners. We have set out below several such terms and related issues to be aware of:

- **Rent based on per MW of battery capacity:** this has become a fairly standard basis on which rent is charged for battery storage sites. However, attempts to set a maximum capacity as part of the permitted use should be resisted as this could prevent implementation of improved technology, or asset optimisation, during the life of the lease and would require a subsequent lease variation (potentially with a payment to the landlord for agreeing the change). Another consideration is when the rent should start to be payable: will the landlord grant a traditional "rent free period" for "fit-out" or should there be a different rental trigger?
- **Inflation-linked rent review:** this seems to be a fairly standard approach to battery rents that are capacity-linked, but the formula used should be checked carefully. We have seen numerous incorrect drafting issues in battery leases which would create much larger than intended rental increases over the lease term.
- **Permitted user:** there is much confusion over the appropriate definition to use here. Part of the difficulty may stem from the planning regime, pursuant to which a battery is treated as a generating asset, even though in practical terms it does not "generate" electricity. Further information on this is set out above in the Consenting section.



Power purchase arrangements

Written by Louise Dalton, Senior Associate, Energy

Renegotiation of existing Power Purchase Agreement (PPA)

To date, we have found that PPAs have not been a major focus for developers. However, in light of the shift in focus away from the frequency response and Capacity Market revenue streams we expect the market access that the offtaker may be able to offer will be of increasing importance.

Prior to the installation of the co-located storage, the project's existing power purchase arrangements will require review and may need to be renegotiated in relation to aspects such as:

- requirements regarding maximising the amount of electricity exported from the generating station (which may not be fulfilled given storage technologies are not 100% efficient);
- provisions in relation to forecasting and access to generation and export data, particularly in relation to solar projects, whose export profile may shift significantly;
- restrictions on providing ancillary services or participating in the Balancing Mechanism without the offtaker's consent;
- provisions requiring the revenue sharing of any "New Benefits" with the offtaker;
- metering provisions, particularly where additional metering will be installed; and
- allowing for trading of the storage capacity in the wholesale market.

The offtaker may seek to share in any uplift in the project's revenues e.g. ancillary services revenue.

Conversely, the generator may be able to obtain as a result of co-location more favourable PPA pricing by reducing the discount to market price as a result of being able to manage its own imbalance risk more effectively.

Supply arrangements

If the project structure requires the import of electricity from the system, the PPA could be amended to provide for such supply of electricity. Alternatively, separate electricity supply arrangements will need to be entered into. Following Ofgem's storage licensing consultation, any import arrangements will need to reflect the licensing status of the storage asset and therefore reflect whether the import electricity is exempt from final consumption levies.

Storage revenues

Written by Louise Dalton, Senior Associate, Energy

Ancillary Services

The installation of storage opens up the possibility of the project providing ancillary services and securing additional revenue streams. Whether this is appropriate for a specific project will be influenced by a number of factors, including:

- whether the project is willing or able to import electricity from the electricity network to ensure that it is capable of fulfilling its obligations under such ancillary services contracts; and
- the approach of the existing offtaker to the provision of such services.

Frequency response has been the focus of developers to date. However, NGET has noted that frequency response is a finite market and therefore this should not be the sole basis for storage projects' revenue. Further, NGET is currently reforming how frequency response will be procured through its Product Roadmap e.g. trialling week ahead procurement.

Capacity Market

Capacity Market revenue has been important to unlocking investment in the storage industry, given the long term nature of the revenue stream available for new-build projects. However, generating stations currently in receipt of low carbon subsidies are not eligible to participate in the Capacity Market. As a result, an analysis of the co-located project structure will be required in order to establish whether the storage device can receive Capacity Market revenues. Given the historically low clearing price of the 2017 T-4 Capacity Market auction held in February 2018, developers are now seeking to stack further revenue streams, and are allowing for flexibility between revenue streams.

Triads

In June 2017, Ofgem confirmed its intention to adopt a CUSC modification, pursuant to which the portion of triad avoidance payments relating to the residual element of the TNUoS charges will be gradually reduced by a third each year over a three-year period, starting in April 2018. These payments will be reduced from £47/kW to between £3/kW and £7/kW. As the change is due to be phased in over three years from April 2018 to 2020, embedded benefit payments for winter 2017/2018 will not be affected. However, the change will apply to all existing and new-build embedded generators.

As a result, the Triad revenue received by a co-located renewable project will be reduced. In particular, the upside for solar parks to be able to export anticipated triad windows has been reduced.

We note that these proposals are currently under judicial review.

Merchant revenue streams

Given the reductions in the frequency response and Capacity Market revenues, such projects are also looking at participating in wholesale trading and participation in the Balancing Mechanism. Such an approach brings further challenges in terms of requiring more active management of the battery, state of charge and degradation risks.

Alternative options

There are a number of other services that storage assets are capable of providing, such as Black Start and power quality services. Further, it is expected that future revenue streams will become available as the merchant moves to the Distribution System Operators model e.g. due to avoidance of network reinforcement.



Licensing

Written by Louise Dalton, Senior Associate, Energy

Storage licensing arrangements

On 29 September 2017, Ofgem released its consultation on modifying the standard form electricity generation licence to accommodate electricity storage. Licensing of the storage asset is designed to enable the storage asset to be exempt from final consumption levies (in respect of the costs of the Renewables Obligation, the Feed-in Tariff (FiT), a Contract for Difference (CfD) and Capacity Market) on electricity imported from the network.

Subject to this consultation, the changes to the generation licence will come into effect in the first half of 2018.

The consultation proposes that all of the existing generation standard licence conditions will apply to electricity storage. In terms of code compliance, this will mean as follows:

- **Grid Code:** The obligation to comply with the Grid Code depends on what services the storage asset provides, for example, whether it is connected to the national energy transmission system or it is used for trading purposes.
- **Distribution Codes:** This is also dependent on the services the storage asset provides and that it is distribution connected.
- **BSC:** The consultation confirms that storage facilities below 50MW would not need to accede and comply with the BSC. However, any facilities exceeding this capacity will need to do so.
- **CUSC:** The consultation confirms that storage

facilities below 50MW would not need to become a party to and comply with the CUSC. However, any facilities exceeding this capacity will need to do so.

Class exemption from licence

The consultation confirms that the Electricity (Class Exemptions from the Requirement for a Licence) Order 2001 will apply equally to electricity storage. As a result, facilities with capacity below 50MW will automatically be exempt from the requirement to hold a licence and facilities above 50MW up to 100MW could apply for a specific exemption with the approval of the Secretary of State.

However, facilities that seek to operate under such an exemption would still be subject to final consumption levies, which represents a significant barrier to the emergence of small-scale storage assets.

Existing licensing arrangements

In terms of co-locating with an existing renewable facility, the majority of solar and onshore wind facilities benefit from a class or specific exemption. Depending on the structure of the co-located facility, this could theoretically push the total generating capacity of the combined project over 50MW and, as a result, the licensing status of the entire development may need to change. Alternatively, the existing renewable facility could seek to retain its exempt status and the storage device could seek a separate generation licence, if structured appropriately and depending on other considerations e.g. revenues, consenting, etc.

Renewable support schemes

Written by Louise Dalton, Senior Associate, Energy

Existing renewables projects are highly likely to benefit from one of the following revenue support schemes:

1. Renewables Obligation Certificates (ROC), which is now closed to new projects;
2. FiT; or
3. CfD.

Until recently, the impact of the co-location of storage on such renewable revenue support schemes has been unclear, for example, storage is neither prohibited nor expressly provided for in either of the ROC or FiT schemes' legislation.

Key Principles for ROC and FiT schemes

On 14 December 2017, Ofgem published its *"Draft Guidance for generators: Co-location of electricity storage facilities with renewable generation supported under the Renewables Obligation or Feed-in Tariff schemes"* (Draft Guidance). As Ofgem makes clear in its covering letter, the Draft Guidance does not introduce new policy, rather it is intended to provide further detail and clarification of how the installation of storage on existing accredited sites will be treated under the ROC and FiT schemes. The Draft Guidance was open for stakeholder comment until 8 February 2018 and we understand Ofgem is aiming to issue the final guidance in Spring 2018.

The Draft Guidance emphasises that where the requirements of the ROC and FiT schemes continue to be met, storage can be deployed without impacting the relevant accreditation. In order to do so, such co-located storage must meet the following key principles:

1. **No change in obligations:** Co-located storage does not change generators' obligations to comply with the ROC or FiT schemes' requirements.
2. **Support only in relation to renewable generation:** Generators will only receive support for eligible renewable electricity generated by an accredited ROC generating station or FiT installation. In our experience, Ofgem is concerned with storage installations that are seeking to import electricity from the wider network in particular.
3. **No increase in installed capacity:** Installing storage will not alter the Total Installed Capacity of the ROC generating station or FiT installation.

4. **Technology neutral:** The ROC and FiT schemes' eligibility requirements are not changed by different storage technology selections.

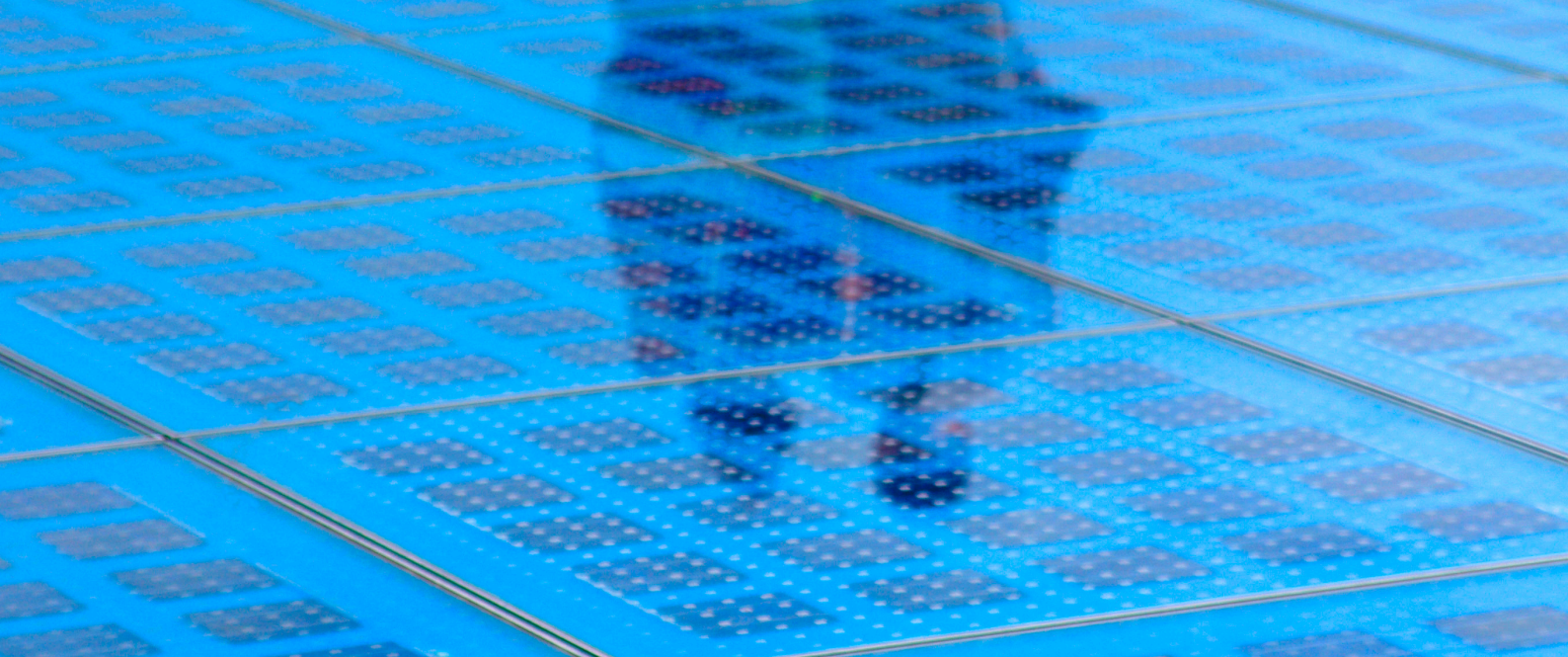
However, even where the relevant accreditation is retained following the co-location of storage, depending on the configuration of the storage, the project could receive lower or even no revenue support following the co-location. For example, co-location of storage at a FiT project could result in the loss of the generation tariff and/or the export tariff.

Process for notifying changes to ROC or FiT accreditations

Installation of co-located storage is a change to the generating station or installation that needs to be notified to Ofgem or, for smaller-scale FiT installations, the relevant FiT licensee. The Draft Guidance makes clear that generators will need to apply to amend their accreditation and provide additional evidence and information (such as single line diagrams) to ensure that the relevant authority is satisfied that the project is still eligible for support under the relevant scheme. However, the Draft Guidance states that each project will be considered on a case-by-case basis and reiterates that Ofgem is unable to provide any assurance of proposed schemes prior to installation of the storage asset. Ofgem also notes a number of other points for developers and investors to consider, including that:

- depending on the configurations, the amount of support received may decrease; and
- the same generating capacity cannot receive support under the RO and the Capacity Market. As a result, if a Capacity Market revenue stream is being sought by the storage device, these arrangements need to be carefully considered.

In March 2017, Ofgem updated its RO Guidance for Generators to provide further information in relation to the amendment of RO accreditations. There is no specific provision in the RO legislation that provides that a material change can be reversed. Ofgem recognises that the lack of a reversal right is considered a key risk by industry. As a result, where Ofgem decides that the storage device constitutes a material change to the renewable project's accreditation, the Guidance states that *"scope may exist to reverse the change such that accreditation can be maintained"*. We are not aware that any operator has successfully reversed a material change since this section was inserted into the RO Guidance.



ROCs

On 13 September 2017, Ofgem announced:

"We have determined that the arrangements in place at several commercial-scale solar installations allow for ROCs to be claimed on all the renewable electricity generated, including any that is used to charge the storage devices."

The Draft Guidance emphasises that developers of co-located storage sites must:

- ensure that the net generation from the ROC generating station can be accurately measured; and
- demonstrate that such generation is either:
 - supplied to customers in Great Britain or Northern Ireland; or
 - used in a permitted way for the purposes of the ROC legislation.

The RO case studies set out in the Draft Guidance consider a range of co-location options considering a range of variables:

- whether owned by the operator of the generating station or a third party;
- the specific metering arrangements for both the generating station and the storage asset;
- whether the storage asset imports electricity from the wider network; and
- different "permitted ways" that may be applicable e.g. on-site usage and private wire supply.

FiT

The Draft Guidance states that the developer of a co-located FiT installation must satisfy its ongoing metering requirements. In particular, it highlights that the FiT Scheme does not permit using multiple meters to measure any electricity imported to calculate net generation or export, specifically that the legislation only provides for "a" meter.

The FiT case studies consider a range of co-location options considering a range of variables:

- the location of the storage asset relative to the generation and export meters and the FiT installation;
- the generation and export meter technology;
- whether the storage asset imports electricity from the wider network; and
- the impact on the generation payments and export payments by such technical arrangements.

CfD

BEIS has made the following amendments to the CfD contract for the second allocation round to allow for the co-location of storage with generation supported by a CfD:

- **BM Unit:** requiring either that the storage asset is:
 - **separate BM if import:** registered in a separate BM Unit. This means that the CfD payments are calculated at the time of generation, not the time of subsequent export from the storage device and ensure that CfD support is not given in respect of any electricity imported into the storage asset; or
 - **same BM if no import:** registered in the same BM Unit as the CfD facility if the developer can demonstrate to the LCCC's satisfaction that the metering arrangements ensure that at all times storage can only store electricity generated by the generating unit supported by the CfD and does not store electricity imported from any other source.
- **Definition of Facility:** any storage installed is explicitly excluded from the definition of the facility in the CfD.
- **Definition of storage:** the introduction of definitions of "electricity storage" and "electricity storage facility" into the CfD.
- **Initial Condition Precedent:** An additional Initial condition precedent requires that generators submit a description of any electricity storage intended to be located within the CfD site or to be associated with the CfD facility, where they have such plans in place at the time of signing the CfD. This requirement does not preclude the option for generators to add storage at a later stage should they wish to.

Grid connection

Written by Louise Dalton, Senior Associate, Energy

The approach to the connection arrangements for the installation of a storage asset on an existing renewable project will depend on:

- **Storage revenue streams:** whether the storage asset will:
 - provide ancillary services, such as frequency response;
 - participate in the Capacity Market;
 - provide price arbitrage for the renewable project; and/or
 - participate in wholesale market trading.
- **Existing Connection:** the review of the terms of the existing connection arrangements that are in place.

Separate Connection

It is possible for the storage asset to obtain a separate connection to the network, which has the advantages of:

- ensuring that the technical characteristics of the connection are optimal for the storage asset; and
- where the storage asset is to be developed by a separate entity, ensuring that the connection is held by that storage SPV.

However, a separate connection reduces the ability to optimise the use of the existing connection and the export of the electricity produced by the existing renewable project. Further, the new connection could have timing and cost implications for the development of the storage project.

Existing Connection

In our experience, use of the existing connection infrastructure has been preferred as it optimises the existing connection and the renewable electricity produced; it also reduces project costs and the risk of project delays. As a result, the following factors need to be considered:

- **Import capacity:** the existing connection for renewable projects tend to have only a nominal import capacity. The storage asset is likely to be providing at least one other service to the wider network, for which there are reductions in payments or penalties for failing to provide such service. As a result, relying solely on the electricity produced by the renewable project is not sufficient and the import capacity will need to be increased on application to the network operator.

- **Technical characteristics:** The technical characteristics of the connection will impact on the storage asset's eligibility and suitability to provide additional revenue services, for example:
 - The Enhanced Frequency Response tender required a ramp rate of 0.5 seconds and NGET expressed a preference for double circuit connections;
 - Developers are seeking to ensure that the connection arrangements are future proofed to allow participation in NGET tenders and services following the ongoing System Needs and Products Strategy, any future services to be procured by any Distribution System Operators, and the implementation of Projects TERRE and MARI; and
 - Often the existing connection technical characteristics will need to be amended by application to the network operator in order to allow such flexibility.
- **Sharing arrangements:** where the storage is being developed by the same entity that owns the renewable project, no arrangements need to be formalised to share the connection rights. However, where the storage project is owned by a third party or where a further split is anticipated, there are a number of issues that need to be dealt with:
 - whether the renewable project, the storage project or a shared grid company holds the grid connection rights;
 - how the:
 - costs and maintenance responsibilities;
 - operation of the rights under grid connection arrangements e.g. variations; and
 - liabilities are to be allocated; and
 - how the interface of any required connection construction works for the storage assets, and any potential liabilities in relation to such works, are dealt with.



EPC and O&M contracts

Written by Joanna Buttivant, Associate, Projects

Allocation of risk

There are a number of issues to consider when negotiating an engineering, procurement and construction contract for a battery storage project on a co-located site, ranging from shared access rights to shared infrastructure.

- **Third parties:** A key concern is often around how the risk of third parties on site (and the potential delay that this can cause to the construction programme) is allocated between an employer and a contractor. This will, of course, depend on the identities and relationships of the parties, but contractors are not always willing (or able) to take the risk of third party interference if a delay to completion would result in liquidated damages being payable to the employer. Contractors may seek to allocate this risk to the employer by requesting that an act of prevention by another contractor gives rise to an extension of time and additional costs.
- **Physical damage:** Property and equipment damage during construction, both to the renewable project in question and to the co-located storage asset, and downtime of existing assets, should also be addressed in the EPC Contract. An owner of a co-located renewable asset is likely to require collateral warranties from contractors on site which, whilst fairly standard form, will increase the number of documents that a storage contractor is required to deliver at contract signature.
- **Interface:** Whilst a general obligation to co-operate and co-ordinate with third parties on site may be sufficient in some cases (for example, a standalone project simply using shared land or grid connection), other projects will require far more complex provisions if storage is to be added retrospectively to an existing renewable asset. Consideration should be given in

particular to the physical interfaces between technologies, the impact of construction and commissioning tests on ongoing generation, and the risk of defects on the performance of the assets. Employers should ensure that they have the necessary IP rights to modify existing assets. Unconnected contractors are usually reluctant to enter into formal interface agreements with each other, which means an element of interface risk may need to be retained by the employer.

Operational benefits

Once the construction risks have been successfully navigated, the operational aspects of co-located sites should not be underestimated.

- **Cost savings:** Significant cost savings can be achieved through shared site security, monitoring, maintenance and asset management. However, if separate O&M contractors are to be retained, similar issues to those mentioned above will need to be provided for in the O&M. However, given the different type of technology involved in storage assets as compared to, say, solar PV assets, employers are likely to find a much reduced universe of entities that are capable of providing a comprehensive O&M solution.
- **Interface:** Interface with third parties can be addressed in the variation mechanism or “relief event” type drafting. However, the question as to who bears the risk of interference by a third party or third party asset on availability and performance is an issue that will require careful consideration with both technical and legal advisors.

Interface Agreements, Asset Management Agreements and Direct Agreements in relation to the EPC/O&M may also be applicable, and should be considered from the outset of the project.

Financing

Written by Huw Knott, Associate, Finance

Senior debt financing of energy storage assets is still in its infancy in the UK but we are seeing an increased appetite from debt providers to finance such assets as they become more comfortable with the merchant risk associated with co-located renewable projects and energy storage assets. The terms of such financing would be dependent on a number of variables including, but not limited to, whether the existing renewable project, which will be generating a proportion of the input electricity for storage in the proposed energy storage asset, is already financed by way of debt.

In the context of a new build renewable energy project senior debt finance should be more readily accessible to co-located energy storage. Obtaining senior debt funding for projects where the co-located energy storage assets are to be introduced on a retrospective basis is likely to be more complex.

Debt financing of an energy storage project

To the extent a storage developer is looking to finance an energy storage project by way of debt, we would expect that the terms of such financing would, among other things, address the following:

- 1. Equity contribution/loan to value** – The debt providers are unlikely to finance the entire cost of the storage project so an equity contribution is likely to be required by the borrower. The amount of such equity contribution will be influenced by the debt provider's loan to value requirements. The determination of the required equity contribution will be dependent on the specific project, the sponsors and the individual credit requirements of the debt provider.
- 2. Tenure of debt** – Long term debt financing is unlikely due to the short-term nature of the key revenue producing contracts underpinning the storage project.
- 3. Security** – The debt providers are likely to require a comprehensive security package including debentures, legal charges, shares charges, direct agreements, duty of care deeds and assignments in security over the relevant project documentation (including, but not limited to, any grid sharing agreements and contracts with aggregators).

In addition to registering the security at Companies House and the Land Registry (as appropriate), certain security interests over, for example, a capacity agreement and/or a generating unit comprising the CMU, may also be required to be registered on the Capacity Market Register in

accordance with Rule 7.5.3 of the Capacity Market Rules 2014 (as amended).

- 4. Intercreditor arrangements/restricting other debt** – An intercreditor deed is likely to be required to ensure that the debt providers have first priority of security and repayments ahead of the equity providers and any other junior creditors to the project until the senior debt is repaid in full. The debt providers are also likely to require a complete restriction on the borrower incurring any other debt for the duration of the loan, other than in certain limited circumstances where such debt or liabilities are fully subordinated.
- 5. Distribution lock-up** – The requirements of debt providers with regards to any distribution lock-up (i.e. the ability for the borrower to make distributions to its shareholders/equity investors by way of dividend or repayment of any subordinated debt) will vary for each transaction but these could range from a full distribution lock-up for the term of the loan to temporary restrictions that may, for example, apply where an event of default has occurred and is continuing or where certain pre-agreed financial covenant levels have not been maintained. It may be possible for the mentioned restrictions to be lifted where the event of default is capable of remedy and is remedied within any grace period permitted by the debt providers or where the required financial covenant levels are restored.

Interaction with existing renewable project funders

Where a borrower is seeking to debt finance the retrospective addition of energy storage assets to a proximate existing renewable project that is already financed by way of debt, we would expect that borrower would require the consent of the debt providers to that existing renewable project (Existing Project Funders) prior to the installation and potential financing of any co-located energy storage asset. It would therefore be prudent for the borrower to approach the Existing Project Funders as early as possible in the process to determine whether they have any appetite to consent to and potentially fund the retrospective addition.

As a pre-requisite to consent, the Existing Project Funders are likely to require:

- 1. Costs:** payment of their costs and expenses (including legal and other advisory fees) in relation to the consent process;



2. **Fee:** payment of a fee or an increased return to reflect any additional risks to their financing that they perceive as a consequence of the introduction of the energy storage asset; and
3. **Amendments to existing financing:** amendments to the existing renewable project senior finance documents or the introduction of changes to any proposed financing documents in respect of the energy storage asset to address, among other things, the concerns discussed further below.
2. **Key contractor risk** – The Existing Project Funders may have concerns regarding the solvency of a key contractor for the construction or operation of the energy storage asset as well as their expertise and reliability in delivering such a project. The Existing Project Funders may also require an element of control over who will be a key contractor (to mitigate any risk to the existing renewable project). Key contractors may be required to mitigate, or provide recourse, in respect of any damage to the existing renewable project site or equipment, in the form of warranties, guarantees, indemnities, duty of care deeds, etc.

To the extent that the Existing Project Funders will also be the debt providers of retrofitted energy storage asset, this would simplify matters (in particular with regard to the treatment of perceived risks to the existing financing) and obviate the need for complicated intercreditor arrangements.

Potential key concerns for Existing Project Funders

1. **Grid sharing risk** – The Existing Project Funders will be concerned as to the ongoing access to the grid for the existing renewable project. Any proposal regarding the sharing of a grid connection or access to the grid for the storage asset will be analysed and contractual comfort will be required (whether in the form of indemnities or guarantees) with regard to any losses the existing renewable project may suffer in this regard. Any grid sharing arrangements will need to withstand the security requirements of the Existing Project Funders in respect of the grid connection documentation and insulation of the existing financing in the event of a default.
3. **Cross default** – In the event that there is a cross-over in respect of borrowing entities/groups, the Existing Project Funders may require cross-default provisions as well as covenants regarding the solvency of the borrowing entity/group involved in the storage asset.
4. **Intercreditor requirements and payment cascades** – The intercreditor requirements of the debt providers should be ascertained as soon as possible particularly, in the event where the energy storage assets might not be debt financed by all of the Existing Project Funders. The Existing Project Funders and any funders of the energy storage asset will need to reach agreement in respect of matters such as the ranking of security and payment cascades. To clarify, such requirements would be in addition to any intercreditor arrangements required by any funders to the storage asset referred to and are likely to be a condition to the Existing Project Funders providing their consent.

Our storage experience

CMS is a full service commercial law firm offering top quality, pragmatic advice to a wide range of clients, both at home and abroad. As a single organisation with 74 offices in 42 countries across Europe and beyond, including Russia, China, South America and North Africa, our extensive worldwide presence is supported by deep, local and sector-specific expertise.

We are a recognised leader in the energy sector having won the **Energy and Infrastructure Team of the Year at the Legal Business Awards 2017** and the **Energy Team of the Year at the Lawyer Awards in both 2016 and 2017**.

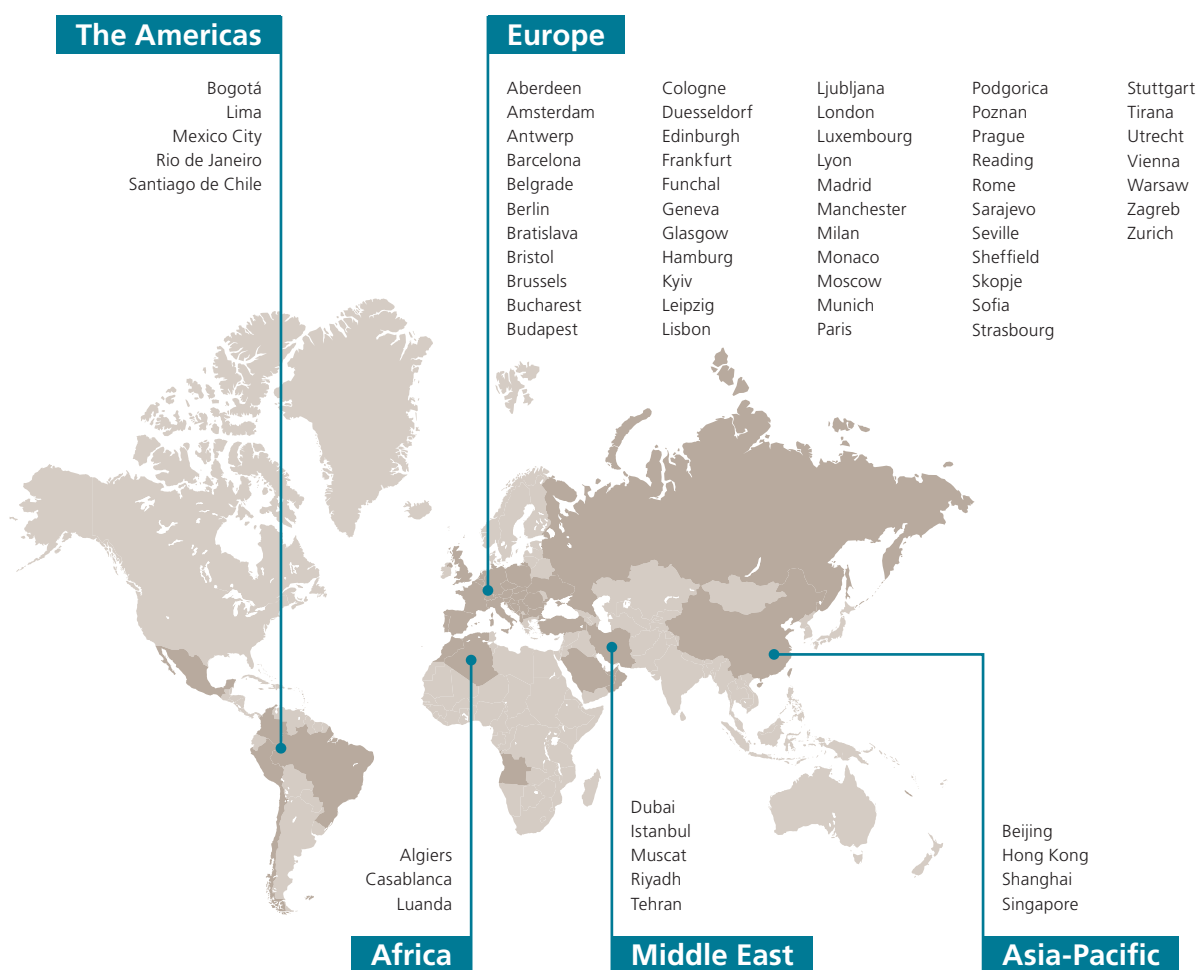
We have market-leading advisors in the energy storage market and, using our extensive network, we have provided cross-jurisdictional support on some of the first new battery storage projects in the UK and across Europe. We have advised developers, investors, lenders and contractors on a range of projects, including standalone, co-located and behind-the-meter energy storage developments. From contracting, to land rights, to regulatory advice, we have specialist teams to assist at the start of your storage project and see it through to its completion. We continue to advise clients during the operational phase of their projects, giving us valuable insight into the issues that affect these assets on a daily basis.

Examples of our recent work include advising:

- a range of participants in relation to the first EFR tender;
- developers in relation to their portfolio of battery storage projects, including co-located projects;
- employers in relation to the procurement of their storage projects;
- on the sale and purchase of various portfolios of standalone and co-located battery storage projects;
- on all of the relevant revenue stream arrangements, including Capacity Market, aggregator arrangements and power purchase and supply agreements;
- on the development of a future pipeline of projects to be funded on a project finance basis.



Facts and figures



- **74 offices**
- **68 cities**
- **> 1,000 partners**
- **> 4,500 lawyers**
- **> 7,500 total staff**
- **Combined annual turnover:**
EUR 1.05bn (2016) *
- **42 countries**

* when currency fluctuation is removed

European countries

Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, France, Germany, Hungary, Italy, Luxembourg, Macedonia, Monaco, Montenegro, the Netherlands, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Switzerland, Turkey, Ukraine and United Kingdom

Outside Europe

Algeria, Angola, Brazil, Chile, China, Colombia, Iran, Kingdom of Saudi Arabia, Mexico, Morocco, Oman, Peru, Singapore and United Arab Emirates



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