




Part A: Generic

DCUSA Change Proposal (DCP)		At what stage is this document in the process?
<h1>DCP 350</h1> <h2>Creation of Embedded Capacity Registers</h2> <p><i>Insert date raised</i> 10 July 2019</p> <p><i>Proposer Name</i> Tim Hammond (represented by Lisa Waters)</p> <p><i>Company Name</i> Solarplicity Supply Limited (On behalf of the BEIS' Panel of Technical Experts (PTE))</p> <p><i>Company Category</i> Supplier</p>		<p>01 – Change Proposal</p> <p>02 – Consultation</p> <p>03 – Change Report</p> <p>04 – Change Declaration</p>
<p>Purpose of Change Proposal:</p> <p>To require the DNOs to create a national, public register of all sites that use their networks and influence the operation of the GB power market. The Register would contain details of each connected site and would be kept up to date by the DNOs.</p>		
	<p>Governance:</p> <p>The Proposer recommends that this Change Proposal should be:</p> <ul style="list-style-type: none"> • Part 1 Matter • Treated as a Standard Change • Proceed to Working Group <p>The Panel will consider the proposer's recommendation and determine the appropriate route.</p>	
	<p>Impacted Parties: All GB players, but notably DNOs, IDNOs and CVA Registrants.</p>	
	<p>Impacted Clauses: A new schedule [31] defining the contents of the Embedded Capacity Register and the obligations on the DNOs to keep the registers correct, up to date and publicly available (location to be determined).</p>	

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Indicative Timeline			 020 8239 9917
The Secretariat recommends the following timetable:		Other:	Insert name
Initial Assessment Report	17 July 2019	 email address.	
Consultation Issued to Industry Participants	16 October 2019	 telephone	
Change Report Approved by Panel	18 December 2019	Other:	Insert name
Change Report issued for Voting	20 December 2019	 email address.	
Party Voting Closes	10 January 2020	 telephone	
Change Declaration Issued to Parties	14 January 2020	Other:	Insert name
[Change Declaration Issued to Authority]	14 January 2020	 email address.	
[Authority Decision]	18 February 2020	 telephone	

1 Summary

What

While it is possible to see the generation/DSR/interconnectors connected to, or using, the GB transmission networks via registers held by the ESO, it is not possible to see the embedded power

plants/DSR/storage. With increasing use of embedded generation/DSR/storage for balancing, within the capacity market and to manage local issues, it is important that this market becomes more transparent. This proposal would therefore require the DNOs to publish and maintain a register of all generators/DSR/storage (starting with those >1MW) connected to and using their networks.

There needs to be a nation register, but we believe that this is probably best made up of regional registers, which would have identical data fields and would be aggregated to create a GB wide register of embedded sites.

Why

The market needs to rely on information to economically and efficiently plan and operate their businesses, as well as to effectively compete with one another to best meet the needs of customers. The more transparent the market, the more efficient the market should become. The transparency that this change would deliver should help:

- DNOs to check that they do know what is connected to and using their networks, which in turn will help with the efficiency of planning, investment and operational decisions;
- Generators/DSR/storage owners will be able to see what is in their local region which can influence operations and investments;
- Those in the wholesale market will be able to see which sites may be influencing the wholesale prices and the volume of capacity that could move between the various parts of the market (such as BM, ancillary services, etc.);
- Investors would be able to more easily see how the market is developing and where their options could be in terms of future investments in technology and location;
- New build and existing embedded sites may also be able to better understand who their projects are interacting with and may be able to trade rights (depending on Ofgem's charging review) or swap locations, etc. to get the most efficient outcome for their investments;
- Suppliers may be able to improve their forecasting with a better understanding of how the market may operate, such as being able to see changes in say solar capacity in real time rather than via annual updates;
- The ESO in undertaking its market wide forecasts, such as the FES, NOA and Capacity Market Report, would have access to much more robust data on actual installed capacity of different types of resources; and
- Government, Ofgem and their advisers will also be able to far more easily see how well policies are working, such as the roll out of renewable or new technologies, or identify if trading capacity would be practical, etc.

This change proposal has been proposed to address ongoing concerns about the lack of data on embedded generation and we believe that this will be impacting the ESO's ability to accurately forecast (see the 2018 PTE report). Without the necessary data to assess system security neither the Government nor the regulator can be sure that their policies are as robust as they could be.

This proposal would therefore better fulfil the DCUSA objectives, notably objectives 1, 2 and 3 as transparency will improve efficiency and competition.

How

With the growth in embedded generation, and in order to inform the market and help with market forecasts done by the ESO, a register of embedded generation is also needed. The proposal would be for each DNO to populate, and then keep up to date, as register of sites connected to their networks. This change proposes that the registers are presented both on the DNOs' individual web-sites and in an amalgamated register on another web-site. The GB wide register could be on either the ESO's web-site, with the other registers, or on another central web-site such as the DCUSA website.

The National Grid ESO maintains the Transmission Entry Capacity (TEC) Register which contains the following information:

- Customer Name (meter registrant)
- Project Name (power station/customer name)
- Connection Site (local substation name)
- MW Connected (current TEC)
- MW Increase / Decrease (expected increase/decrease TEC)
- MW Total (total TEC Capacity held)
- MW Effective Date (date the site goes live/expected to go-live/TEC changes)
- Project Status (scoping, awaiting consent, consented, live, terminated, etc.)
- HOST TO (which TO)
- Plant Type (CHP, CCGT, storage, etc.)

There is also an interconnector register and an embedded register, which includes the Scottish sites holding TEC, provide similar information. The purpose of this modification is to create a similar register of information on embedded sites.

The proposed data items for the new Embedded Capacity Registers (ECR) would be:

- Customer Name (meter registrant)
- Project Name (power station/customer name)
- Connection Site (local substation name, local GSP and OS Grid Reference)
- MW Connected (current connection capacity – size of physical connection rather than export/import rights)
- MW Capacity (current capacity rights – to use the network)
- MW Increase / Decrease (expected increase/decrease – i.e. where a site is altering a capacity right or is a new site not yet commissioned)
- MW Total (export and import capacity to be held at a date in time)
- MW Effective Date (date the site goes live/expected to go-live/capacity changes)
- Project Status (scoping, awaiting consent, consented, live, terminated, interactive, etc.)
- Host DNO (which DNO)
- Plant Type (CHP, CCGT, solar, wind, storage, etc.)
- Type of connection (firm, non-firm, shared)
- Licence area (DNO, IDNO)
- MPAN

This data will be given for both existing sites and those seeking to connect. However, it has to be recognised that the DNOs operate connection queues and individual connections can be interactive with each other. It may therefore be advantageous to find a way to show which prospective generators are interacting with each other.

We believe that there is a good case for requiring that the MPANs associated with each site are also disclosed that the generation from each fuel type could be collected under the BSC and past to the ESO, BEIS and Ofgem to allow for easier monitoring of aggregate emissions, informing wider policies. We would note that MPANs are already on the CM Register, so for many sites this data is already public.

As the intent of this proposal is to also identify the location of renewable generation as its operation is weather dependent, therefore a supplier, ESO, etc. would also benefit from linking the type of generation

with say local weather forecasts. We have proposed an OS reference is provided, again as the CM Register already requires this data.

To allow for time for the register to be set up, the proposal would be to initially set-up the register for all sites >1MW connection capacity (as we believe this data should be easy to locate and transpose). This will then be extended to include smaller sites (exact size to be determined by the working group). However, the work on the Loss of Mains Protection Settings should have resulted in the identification of the majority of embedded power stations, so we believe that creating a register should not be onerous nor take very long.

Some of this data should be easily found from other registers, such as the DNOs' charging systems, SVA data, capacity market registers, etc. Who owns the data needs to be considered in constructing the register, but we believe that as connection agreements are held by the DNOs that the data is theirs and they can therefore publish it, as the ESO does. For capacity market plant the majority of the data is on the CM Registers, so would appear to present no publication issues. However, if necessary the registers may have to go-live with less data while data any ownership can be resolved, but publication of as much data as soon as possible is the key to delivering benefits as quickly as possible. The workgroup may also decide that for smaller sites, for example domestic solar, it may be best to keep aggregate data by post code or other defined area.

In order to make the embedded capacity registers as robust as possible, we would also propose that there is an obligation on all DCUSA parties to notify the host DNO of any changes or errors in the register, and an obligation on the DNOs to make any corrections on a weekly basis.

The registers would also be public, as the ESO's registers are. While there has been a historic preference for password protection, as anyone can get a password this is an ineffective hurdle to data access. We note that the DNOs do publish Long Term Development Statements (LTDS), these are password protected, and hold some of the information this modification requests, but it lacks sufficient information to be value for the detailed forecasting of bodies such as the ESO.

In the longer term this data can be expanded as part of the centralised energy data systems that the Energy Data Task Force is likely to recommend. We also note that the Open Networks Project has also been working on proposals for a System Wide Resources Register that includes the data in this modification, but also commercial services data and reinforcement works. We would not want to stop such developments, but believe the GB energy market needs at least this basic data within the next few months to achieve better whole system outcomes in a rapidly changing market.

2 Governance

Justification for Part 1 and Part 2 Matter

This is a material change and therefore should be a Part 1 Matter. The issues around transparency and data sharing will have a material impact on competition, notably in generation. We therefore feel that the change should be signed off by the Authority.

Requested Next Steps

This Change Proposal should:

- Be treated as a Part 1 Matter
- Be treated as a Standard
- Proceed to Working Group

The sooner this data is published the sooner that all parties will be able to benefit from it and the effects feed through to end customers. We would therefore urge the parties to progress this in a timely manner.

3 Why Change?

We believe that the Government's policies around security of electricity supply will be more efficiently implemented if the ESO can undertake more robust forecasting to inform policy. The Panel of Technical Experts (PTE) has been disappointed by the ESO's inability to get data on embedded generation and we believe this proposal will help not only them, but all market players and policy makers.

There is a market wide need to better understand the role of embedded sites, and that need is becoming increasingly urgent as embedded generation in particular increases. The market is obviously in need of better data for forecasting, a fact the ESO acknowledges, but other parties are also becoming increasingly concerned by the lack of transparency in the market. For example, it is difficult for Ofgem to know if there is the potential for renewables and conventional technologies to share capacity as the data on the capacity by region is not there and they have their own energy Data Exchange service. Likewise, traders cannot see the volumes of different types of generation which may join the BM or TERRE in future.

We understand that the ESO has considered creating its own such register, but we believe that the DNOs are the parties best placed to create these regional registers, and keep them up to date, giving a GB wide register. The act of creating the registers will enhance their own knowledge of their networks, helping them to ensure that they have a detailed record of the sites on their own networks. They will be able to use the data to inform their decisions on reinforcements, better understand changes in system usage, where they need new services (as DSOs they are expected to buy local services), etc. All of which should enhance the performance of the DNOs.

Economic theory is clear that the more transparency and information that a market has the more efficient and competitive it is. The more efficient the market is then the better the value it will deliver to customers. With transparency Ofgem and BEIS can more easily monitor the impact of their policies and can more quickly fine tune them to get the greatest customer benefit at the least cost. We also believe that the data could inform environmental policy.

On a more microeconomic level, the data will allow the correct de-rating of different technology types. We believe that it is probably the case that the embedded, conventional plants probably should have high de-rating than their larger competitors. It should also facilitate parties trading locally with each other, will inform investors about what is in a congested area (far more than a heat map can) and it will allow them to make an informed decision about whether to progress an investment.

Ofgem has always been keen that suppliers should be better at forecasting their own customers' output, which includes the embedded generators. They will be helped by being able to better understand the contracted background in any given area. In a world with active DSOs this could become even more important.

For traders and wholesale market participants this data will also substantially improve their market knowledge. They will know what assets can respond to price signals, the rate of deployment of specific technologies, etc. This will enhance competition and therefore improve the efficiency of the market.

We appreciate that there will be a cost associated with this modification, but believe a lot could be achieved quickly and at a relatively low cost.

Part B: Code Specific Details

4 Solution and Legal Text

Legal Text

This is draft text as we are not lawyers, but we would expect this to be a new schedule to the DCUSA on the Embedded Capacity Register, but only its existence and requirement to update needs to necessarily go in the Code, with details sitting outside to facilitate easier change:

The following requirements apply in relation to the Embedded Capacity Register:

1. Each DNO will build and maintain an Embedded Capacity Register (ECR) covering their licenced area and which must contain the fields (either in the Code or in a document referenced by the Code):
 - Customer Name (meter registrant)
 - Project Name (power station/customer name)
 - Connection Site (local substation name, local GSP and OS Grid Reference)
 - MW Connected (current connection capacity – size of physical connection rather than export/import rights)
 - MW Capacity (current capacity rights – to use the network)
 - MW Increase / Decrease (expected increase/decrease – i.e. where a site is altering a capacity right)
 - MW Total (export and import capacity to be held at a date in time)
 - MW Effective Date (date the site goes live/expected to go-live/capacity changes)
 - Project Status (scoping, awaiting consent, consented, live, terminated, interactive, etc.)
 - Host DNO (which DNO)
 - Plant Type (CHP, CCGT, solar, wind, storage, DSR, etc.)
 - Type of connection (firm, non-firm, shared)
 - Licence area (DNO, IDNO)
 - MPAN
1. The Embedded Capacity Register is to comply with best practice regarding accessibility and the use of widely used or open formats.
2. The Embedded Capacity Register is to be made available on the public facing pages of the DCUSA and/or ESO web-site (the Public Pages) that are accessible by all.
3. The following information shall also be accessible through the Public Pages:
 - (a) Each DNO's Embedded Capacity Register
 - (b) An explanation as to the fields in the Register
 - (c) Contact details for each DNO so that a site which believes its details are incorrect can contact for a correction
 - (d) A date by each to show when the Register was last up dated
 - (e) Links to maps for each DNO region so that parties can identify regions referred to.
 - (f) Links to each DNO's heat map.
4. Each DNO will update their Embedded Capacity Register not less than weekly if there are changes to be made.
5. All the registered are to be combined to create one GB Embedded Capacity Register which will be on the Public Pages [ESO or DCUSA web-site, or both?].

6. All DCUSA parties will be required to notify the relevant DNO if they are aware that any of the data on the registers is incorrect and the DNO must update that data within a week.

We would note that the text in the DCUSA itself is probably best kept minimal and the details of the Register able to change with no requirement for a further code change. This has been an issue for the BSC with BMRS data, requiring mods to add new fuel types, etc. It is not difficult to envisage new fuel types, co-location, EV types, etc. all becoming potentially important pieces of data in the longer term, and therefore a form of governance to achieve timely changes to the Register is needed.

While not a DCUSA issue, the PTE hopes that the ESO will help inform this modification and may, depending on the DNO's register design, improve its own data provision to align with the new register.

Text Commentary

The PTE suggest that the Code only covers the creation and maintenance of the register, but the details sit outside the code such that the register details can be altered or refined without recourse to another modification to the Code. We therefore believe that the text should be very limited but obligate the DNOs to both create and keep updated the Register. It can then be for the Panel to review and alter the content as the market develops.

5 Code Specific Matters

Reference Documents

We are grateful for the help of the ESO, DNOs and Energy Data Task Force in providing comments on this modification.

6 Relevant Objectives

DCUSA Charging Objectives	Identified impact
<input type="checkbox"/> 1 that compliance by each DNO Party with the Charging Methodologies facilitates the discharge by the DNO Party of the obligations imposed on it under the Act and by its Distribution Licence	None
<input type="checkbox"/> 2 that compliance by each DNO Party with the Charging Methodologies facilitates competition in the generation and supply of electricity and will not restrict, distort, or prevent competition in the transmission or distribution of electricity or in participation in the operation of an Interconnector (as defined in the Distribution Licences)	None
<input type="checkbox"/> 3 that compliance by each DNO Party with the Charging Methodologies results in charges which, so far as is reasonably practicable after taking account of implementation costs, reflect the costs incurred, or reasonably expected to be incurred, by the DNO Party in its Distribution Business	None
<input type="checkbox"/> 4 that, so far as is consistent with Clauses 3.2.1 to 3.2.3, the Charging Methodologies, so far as is reasonably practicable, properly take account of developments in each DNO Party's Distribution Business	None

<input type="checkbox"/> 5 that compliance by each DNO Party with the Charging Methodologies facilitates compliance with the Regulation on Cross-Border Exchange in Electricity and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.	None
<input type="checkbox"/> 6 that compliance with the Charging Methodologies promotes efficiency in its own implementation and administration.	None
While this mod has no direct impact, in the longer term better data will allow for more cost reflective charging to be developed.	
DCUSA General Objectives	Identified impact
<input checked="" type="checkbox"/> 1 The development, maintenance and operation by the DNO Parties and IDNO Parties of efficient, co-ordinated, and economical Distribution Networks	Positive
<input checked="" type="checkbox"/> 2 The facilitation of effective competition in the generation and supply of electricity and (so far as is consistent therewith) the promotion of such competition in the sale, distribution and purchase of electricity	Positive
<input checked="" type="checkbox"/> 3 The efficient discharge by the DNO Parties and IDNO Parties of obligations imposed upon them in their Distribution Licences	Positive
<input type="checkbox"/> 4 The promotion of efficiency in the implementation and administration of the DCUSA	None
<input type="checkbox"/> 5 Compliance with the Regulation on Cross-Border Exchange in Electricity and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.	None

The provision of robust, transparent data on the number, size, types and location of embedded market participants will help in the development and operation of a more competitive and economically efficient market. This will help policy makers design “better” policy and drive market developments to deliver the best deal for customers. It will help inform forecasting by the ESO, DNOs, Suppliers and other participants. It will also help investors to reach decisions on location, technology choices, etc.

By improving transparency and market knowledge, the GB electricity market can operate more efficiently which will ultimately benefit customers. The modification therefore better fulfils objectives 1, 2 and 3.

7 Impacts & Other Considerations

Does this Change Proposal impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

Both the Open Networks Project and Energy Data Task Force are looking into this issue. However, the PTE believes there is now a pressing need to start to make progress on creating a register as the Capacity Market in particular needs more robust forecasting on embedded plant to deliver the policy intent. We have liaised with both these groups and they see no reason that their work could not build on this proposal in future. We are very grateful to the DNOs and ESO in particular for their help in drafting this mod.

Does this Change Proposal Impact Other Codes?

Please tick the relevant boxes and provide any supporting information. [\[See Guidance Note 6\]](#)

- BSC
- CUSC
- Grid Code
- MRA
- SEC
- Other
- None

Consideration of Wider Industry Impacts

This is an issue that is often discussed in relation to the ESO’s forecasting role, with National Grid planning to deliver such a register itself under its ESO Ambition Document, as well as mentioning the need for such data in documents such as its Forward Plan – see:

<https://www.nationalgrideso.com/document/141256/download>

<https://www.nationalgrideso.com/about-us/business-plans/forward-plans-2021>

The Government’s Panel of Technical Experts has also recommended that the ESO gets better data on embedded power plants in order to improve the forecasting underpinning the capacity market:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/723234/Panel_of_Technical_Experts_2018_Report_on_the_ECR.pdf

The Open Networks Project has a workstream looking at a System Wide Resources Register (product 8) the details of which are here:

<http://www.energynetworks.org/electricity/futures/open-networks-project/open-networks-project-workstream-products.html/workstream-1-t-d-process.html>

The Energy Data Task Force is also looking across industry data:

<https://es.catapult.org.uk/impact/specialisms/energy-data-taskforce/>

Confidentiality

None

8 Implementation

The PTE would like to see the ESO have access to this data as soon as possible, with even more detail on the larger sites by December 2019 being an improvement on where the market currently is. We expect this is a product that will develop over time, but if the DNOs could harvest existing data by late this year it would improve the ESO's forecasts for the next Electricity Capacity Report to the Secretary of State next summer.

Proposed Implementation Date

February 2020 Release (unless an earlier date is possible).

9 Recommendations

The Code Administrator will provide a summary of any recommendations/determinations provided by the Panel in considering the initial Change Proposal. This will form part of a Final Change Report.