Response from the Solar Trade Association

18 September 2018

# About us

Since 1978, the Solar Trade Association (STA) has worked to promote the benefits of solar energy and to make its adoption easy and profitable for domestic and commercial users. A not-for-profit association, we are funded entirely by our membership, which includes installers, manufacturers, distributors, large scale developers, investors and law firms. Our mission is to empower the UK solar transformation. We are paving the way for solar to deliver the maximum possible share of UK energy by 2030 by enabling a bigger and better solar industry. We represent solar PV, solar thermal and energy storage.

## Respondent details

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| Respondent Name: | Nicholas Gall, Gemma Stanley |
| Email Address: | [consultations@solar-trade.org.uk](mailto:consultations@solar-trade.org.uk) |
| Contact Address: | Greencoat House, Francis Street, London, SW1P 1DH |
| Contact Telephone: | 0203 637 3301 |
| Organisation Name: | Solar Trade Association |
| Would you like this response to remain confidential? | No |

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| 1. **Do you agree with the case for change as set out in chapter 2?** | We agree with many elements of the assessment as set out by Baringa Partners LLP (2018) of the case for change to network access and forward-looking charging arrangements. Under the access and forward-looking charging framework presently in place:   * **Small distributed generation’s (DG) network access rights are inadequately defined.** As a result, DGs lack access to technologically and economically viable options to hold a greater diversity of either firmer or more flexible connections depending on their individual circumstances. * **Unreasonable connection queues and unaffordable connections are holding back the decarbonisation of our energy system.** In order for the Government to meet the legally binding commitment to reducing UK greenhouse gas emissions by 57% below 1990 levels by 2030, power sector emissions must be reduced by approximately 60% below today’s levels in just 11 years. This cannot be achieved without a massive increase in the volume of low-carbon generation connected to our distribution networks, but a lack of available connections are holding back tens of GWs of potential low-carbon DG capacity from being developed. * **Our centralised and inflexible grid is ill-equipped to accommodate significant growth in demand resulting from electrification of heat, transport and industry.** The present charging framework does not adequately incentivise demand-side flexibility or deployment of large-scale energy storage.   However, we are deeply concerned by the prospect of reducing embedded benefits to DG due to a perceived need to “level the playing field” with regard to transmission-connected generation. |
| 1. **Do you agree with our proposal that access rights should be reviewed, with the aim to improve their definition and choice?** | We broadly agree with the proposal to review access rights. Large-scale solar PV development is contingent on locally specific conditions in terms of availability of suitable land or roof area, prevailing irradiance, and local grid congestion. At the same time, the use of on-site battery storage, or potential for coupling conventional generation assets at large-scale PV sites, could dramatically improve the utilisation of a DG connection, but under present regulatory conditions these opportunities may not be fully realised. We would thus support offering a greater variety of network connection options to meet different local circumstances, further enabling the sharing of a connection between different DG assets, or providing DGs with the option of securing a firm connection and thus compensation for curtailment. |
| 1. **Specifically, do you have views on whether options should be developed in the following areas as part of a review?**   **a) Establishing a clear access limit for small users, with greater choice of options (as considered under b) and c) below) above a core threshold – do you agree with our proposal in paragraphs 3.5-3.10 that this should be considered? Do you have views on how a core threshold could be set?   b) Firm/non-firm and time-profiled access – do you agree with our proposal outlined in paragraphs 3.15-3.21 that these options should be developed?   c) Duration and depth of access, discussed in paragraph 3.25-3.32 - would these options be feasible and beneficial?** | 1. We could potentially support further study and exploration of options for clarifying access rights and choices for domestic users and micro-businesses, with the ultimate intention of ensuring that access arrangements support efficient network development. However, we take issue with the premise that households and micro-businesses will tend to have limited ability to change or how much electricity they consume. We would strongly urge Ofgem to refer to the 2017 research paper they commissioned from Cambridge Economic Associates on the distributional impact of Time of Use (TOU) electricity tariffs, which found no significant evidence of any disproportionate impact of TOU tariffs on low income households. The authors noted that many vulnerable customers would be better off on ToU tariffs, and that any efforts to mitigate distributional impacts from the tariffs would lead to harmful market distortions. Instead, the authors recommend that fuel poverty would be more effectively countered by: “Support for energy efficiency measures; Information and awareness; Supporting the customer’s tariff decision by facilitating the use of smart meter data for bill projections; and if or when such technologies become cheap enough, assistance with supportive technologies such as domestic electricity storage.”   Rather than concentrating efforts on determining a “core level of access” to counteract the impact of a move toward more economically efficient pricing network usage, we concur with the view that supporting domestic consumers and microbusinesses in engaging in demand response through deployment of batteries and distributed generation, improvements to energy efficiency, and the provision of timely and higher-quality information on their electricity usage would provide a more effective and fairer approach to reducing fuel poverty and improving energy security.   1. We strongly support developing options for firm/non-firm and time-profiled network access. A move toward time-profiled access specifically with regard to constraint management is indeed closely related to our ongoing work with DNOs, regulators and stakeholder on the impact of network outages on solar DGs. We recently published voluntary Best Industry Practice guidance for both generators and DNOs covering communications, protocols for advance warning, and recommendations of possible mitigation approaches (including conducting grid infrastructure maintenance and upgrades during months of lower average solar irradiance wherever possible). This document has thus far been formally endorsed by both UKPN and WPD.   Far from being merely a minor inconvenience, constraints on PV generation due to both planned and unplanned network outages are the most significant cause of lost production, and hence lost revenue, for UK solar generators. Between 2015 and 2017, these losses equated to approximately 1% of total installed capacity, or £10m per year in foregone revenues across the solar industry.  Some early research carried out by Quintas Energy on behalf of the STA showed the impact and nature of grid disconnections around the country. This information is presented as a Table in Appendix I.     1. Whether or not different durational options might be beneficial for a solar DG would depend on highly specific project cost and financing conditions and would need to be evaluated on a case by case basis. We would be broadly supportive of further study of this possible approach.   In terms of Depth of Access, we would strongly oppose any effort to move from usage-based to connection capacity-based charging. It is critical that usage-based incentives for energy efficiency, increased deployment of DG and storage, and DSR must be maintained in order to achieve a smart, flexible and low-carbon future energy system.  We agree with the statement that “charges incurred should still reflect the costs that they create on the network” (p. 36), and the reality is that any system management costs imposed by variable DG are vastly outweighed by the benefits of avoiding extremely costly infrastructure upgrades and build-up of large-scale, conventional generation capacity. A 2016 study from the Carbon Trust and Imperial College London found that the net benefits of deploying flexibility technologies, inclusive of their costs, are in the range of £1.4-2.4 bn/year in 2030, assuming an electricity carbon emissions intensity target of 100 g/kWh in 2030. |
| 1. **Do you agree with the key links between access and charging we have identified in table 1? Why or why not? Do you think there are other key links we have not identified?** | We agree with the key links put forward in Table 1 with regard to firmness, time-profiling and duration of network connection. A number of our members have expressed that a more flexible or time-profiled connection could be a feasible option for future development of utility-scale PV, provided that they indeed faced sufficiently lower charges for access rights under these circumstances.  However, we are concerned with the potential implications of what seems to be a prevailing preference expressed in this document for capacity vs. usage-based charges insofar as these charges could apply to demand customers with on-site PV generation and/or battery storage. The innovators who invest in these technologies are fully entitled to fair compensation for their contribution to reducing peak demand on the transmission system. Any effort to remove incentives for reducing demand from centralised, large-scale generation would severely undermine the economic case for these technologies, thus jeopardising the low-carbon, smart energy system transition. |
| 1. **Do you agree with our proposal that targeted areas of allocation of access should be reviewed?** | Improving distribution network queue management is a high priority for our members. There could be circumstances where a potential connection would be most valuable to a large-scale DG developer – for example, a brownfield site in an area of exceptionally high irradiance. Thus it is theoretically possible that a ‘targeted auction’ approach could be beneficial in certain cases, and we could support some further study into the feasibility of this approach.  Depending on the specific scope of what was being proposed, we could support further study of new access conditions and the possibility of distribution network connection exchange mechanisms. However, we feel that reducing the connection queue could be better addressed through penalties and incentives to encourage optimal network utilisation, and that an exchange mechanism could be vulnerable to rent-seeking behaviour. |
| 1. **Do you agree that a comprehensive review of forward-looking DUoS charging methodologies, as outlined in paragraphs 4.3-4.7, should be undertaken?** | In principle, we would support a review of forward-looking DUoS charging methodologies with a view toward improving the cost reflectivity of local network conditions. However, it would be deeply unfair and counterproductive for such a review to exempt small-scale demand customers, as this consultation document seems to suggest. If households are unable to flexibly respond to the costs that their energy usage imposes on the system then the regulator should be focused on supporting them in doing so.[[1]](#footnote-1)  We fail to see how even a highly granular time-profiled capacity-based charge would be more complementary than a volumetric ToU to a time-profiled off-peak connection, and would welcome clarification from Ofgem on this point as set out in 4.6. |
| 1. **Do you agree that the distribution connection charging boundary should be reviewed, but not the transmission connection boundary?** | We do not consider a review of the distribution connection charging boundary to be a high priority for our sector at this time. |
| 1. **Do you agree that the basis of forward-looking TNUoS charging should be reviewed in targeted areas? If you have views on whether we should review the following specific areas please also provide these: a) Do you agree that forward-looking TNUoS charges for small distributed generation (DG) should be reviewed, as outlined in paragraphs 4.19-4.23?   b) Do you consider that forward-looking TNUoS charges for demand should be reviewed, as outlined in paragraphs 4.24-4.27?** | Ultimately, we do not see a need for a review of forward-looking TNUoS charges for small DG at this time. While we are in principle supportive of ensuring that TNUoS charges send efficient locational signals for DG development, this is not in our view a sufficient reason to invest further time and resources in such a study, particularly in the midst of such a challenging time of regulatory uncertainty.  Low-carbon DG is entitled to fair compensation for the long-term, whole-system benefits it provides to the energy network. If there is an intention to move toward more locationally-determined TNUoS charging then given the significant constraints inherent in the locational conditions (principally irradiance and land availability) required for solar PV, it would make sense for these developments to be exempt from any reform toward sharper locational signals in TNUoS charging, as compared to conventional thermal DG. |
| 1. **Do you agree that a broader review of forward-looking TNUoS charges, or the socialisation of Connect and Manage costs through BSUoS at this time, should not be prioritised for review?** | We strongly agree that this is not the appropriate time to undertake a broader review of forward-looking TNUoS charges or BSUoS charges. In our view, there is no issue of urgent concern associated with BSUoS which would justify taking action prior to the suggested review of these charges by a dedicated task force proposed as part of the ongoing consultation on Network Access and Forward Looking Charges. To change certain elements of BSUoS such as the embedded benefit or generator charge prior to having carried out detailed analysis of these charges specifically does not make sense, as decisions would be being made on the basis of incomplete analysis and create significant disruption unnecessarily with the possibility of further change being implemented shortly thereafter |
| 1. **Do you agree that there would be value in further work in assessing options to make BSUoS more cost-reflective, and if so, that an ESO-led industry taskforce would be the best way to take this forward?** | Significant investment in embedded renewable generation has been made on the basis of existing charging and embedded benefit arrangements, and any changes to these arrangements need to be considered in the context of their long term impact on consumer costs and decarbonisation. We consider that any changes to BSUoS charging in the near term would be unnecessary given the relatively small magnitude of any distortions created by existing arrangements, and would be seen by investors as retroactive and hugely damaging to investor confidence in UK infrastructure investments. In particular, it would significantly increase the cost of capital for future investment in unsubsidised low-carbon generation. Increasing the cost of capital for investment in unsubsidised solar and wind (and reducing the revenue streams) will delay installation by years, compromising the UK’s decarbonisation goals and increasing long-run costs for consumers by perpetuating the need for expensive fossil-fuelled electricity generation. We strongly recommend that there be a pause of any broader consultation that might encompass BSUoS charges until a full review of these charges has been carried out by the proposed task force, including a proper analysis of the impact of changes to BSUoS on future renewables deployment. |
| 1. **What are your views on whether Ofgem or the industry should lead the review of different areas? Please specify which of SCR scope options A-C you favour, or describe your alternative proposal if applicable.** | As the competent regulator and a neutral third-party, Ofgem is in our view best placed to coordinate and oversee an unbiased evaluation of charging arrangements. However, we agree that there could be value in enabling the DNOs and ESO to volunteer their expertise and solutions within the defined scope of the review, and provided sufficient regulatory oversight were in place.  While we do not see a review of allocation of access rights as an urgent priority for our industry, we agree that there could be value in an industry-led exploration of options for reform in this area, and would therefore endorse a Moderate Ofgem-led review (Option B). |
| 1. **Do you agree with our proposal to launch an ‘Option 1’ SCR for areas of review that we lead on?** | We would strongly prefer that Ofgem lead the development of and ultimately raise specific modification proposals at the conclusion of the SCR process to be brought forward through the standard industry code modification process. We do not feel there is a compelling reason to entrust industry incumbents with fleshing out the details of “high level principles”. Beyond simply coordinating industry expertise, we feel that Ofgem has a critical role to play here in directly intervening to ensure a fair and unbiased process. |
| 1. **Do you agree with the introduction of a licence condition on the basis described in paragraphs 5.11 and 5.12 and Appendix 5? Why or why not? Do you have any comments on the key elements set out in table 7 of Appendix 5a, or consider there are any other key elements which should be included?** | We are broadly supportive of the proposal to introduce licence conditions pertaining to mechanisms for the allocation and re-allocation of access, and feel that there could be value in enabling industry to proactively determine solutions within this scope.  As we have demonstrated with our Best Industry Practice guidance for DNOs and generators on management and mitigation of network outages, we believe that industry is capable of effective stakeholder engagement and collaboration to achieve measurable progress on best practice standards above and beyond regulatory minimums.  The provisions described in sections 6 and 7 of Table 7 (Appendix 5) present a good starting point for regulatory oversight for industry-led progress. |
| 1. **Do you have any comments on the draft wording of the outline licence condition included at Appendix 5b?** | n/a |
| 1. **What are your views on our indicative timelines? Do you foresee any potential challenges to, or implications of, the proposed timelines and how could these be mitigated?** | We are very concerned by the lack of coordination in terms of the timeline for this consultation process and the parallel residual charging review, both of which will have profoundly important implications for the future of our industry, which as has been noted elsewhere in this response is in the midst of a period of severe market uncertainty. We would urge Ofgem to consider bringing those two processes into synch with each other in terms of the consultation process, or at the very least to ensure that there is less of a gap between implementation of the two. |
| 1. **What are your views on our proposals for coordinating and engaging stakeholders in this work?** | What this consultation process would seem to lack is sufficient scope for a holistic, whole-system consideration of costs and benefits of the potential charging frameworks. |

Appendix I:  
  
  
Table of Factors for calculating Solar Generation Output – UK DNO Licence Regions

The following table gives factors which can be used as a multiplier of the installed capacity of a solar site to calculate the approximate output generation in any specific month.

The factor is calculated using output expected in MWh / Peak Output in MWp. The Factor has been calculated for each month then divided by the number of days in the month.

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| DNO Licence Region | Daily Yield Expected Factor by Month | | | | | | | | | | | |
| **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** |
| East Midlands | 0.9 | 1.3 | 2.6 | 4.0 | 4.1 | 4.4 | 4.0 | 3.3 | 3.0 | 1.8 | 1.1 | 0.7 |
| Eastern | 0.7 | 1.3 | 2.4 | 3.8 | 4.3 | 4.4 | 4.2 | 3.6 | 2.9 | 1.8 | 1.0 | 0.6 |
| North West | 0.6 | 1.2 | 2.3 | 4.0 | 4.5 | 4.4 | 4.0 | 3.3 | 2.7 | 1.6 | 0.7 | 0.4 |
| South Eastern | 0.8 | 1.3 | 2.5 | 4.1 | 4.2 | 4.6 | 4.3 | 3.6 | 3.0 | 2.0 | 1.1 | 0.7 |
| South Wales | 0.9 | 1.7 | 3.1 | 4.5 | 4.8 | 5.0 | 4.6 | 3.9 | 3.4 | 2.0 | 1.2 | 0.8 |
| South West | 1.0 | 1.7 | 2.9 | 4.4 | 4.4 | 4.9 | 4.1 | 3.6 | 3.3 | 2.0 | 1.3 | 0.9 |
| Southern | 0.9 | 1.3 | 2.6 | 4.0 | 4.1 | 4.5 | 4.2 | 3.5 | 3.0 | 2.0 | 1.1 | 0.7 |
| Manweb | 0.8 | 1.1 | 2.3 | 3.7 | 4.1 | 4.1 | 3.7 | 3.0 | 2.7 | 1.5 | 0.8 | 0.5 |
| West Midlands | 0.8 | 1.3 | 2.6 | 3.9 | 4.0 | 4.4 | 3.9 | 3.2 | 2.9 | 1.8 | 1.1 | 0.7 |
| Yorkshire | 0.8 | 1.3 | 2.7 | 4.0 | 4.4 | 4.2 | 4.1 | 3.1 | 2.9 | 1.7 | 0.9 | 0.6 |

1. For examples and further detail please see *Blueprint for a post-carbon society: How residential flexibility is key to decarbonising power, heat and transport* – Imperial College and OVO Energy, 5 September 2018 – available from: <https://www.ovoenergy.com/binaries/content/assets/documents/pdfs/newsroom/blueprintforapostcarbonsociety-2018.pdf> [↑](#footnote-ref-1)