The future for small-scale, low carbon generation

A consultation on the Smart Export Guarantee

Response from Regen and the Electricity Storage Network, March 2019

Regen and the Electricity Storage Network (ESN) have 180 members from business, local authority, community energy, consultants, academic institutions, and research organisations across the energy sector.

Regen is an independent, not-for-profit centre of expertise on sustainable energy with 15 years frontline experience of working in the renewable energy sector. Regen manages the ESN - the UK industry group formed in 2008 dedicated to electricity storage.

Introduction

Following the reduction of the Feed-in Tariff (FIT) rates in 2016, deployment of small-scale generation has decreased significantly[1] – with the complete closure of the FIT in March 2019, deployment is expected to slow significantly[2]. The role that small-scale generation plays in a low-carbon energy future is critical and its value to the energy system should not be underestimated – National Grid's Future Energy Scenarios show microgeneration (under 1MW) as a key part of the transition to decarbonisation, with their 'Community Renewables' scenario putting microgeneration at 31% of total generation[3].

> *The government sees the sustainable growth of the small-scale low carbon sector as an important part of the evolution of the grid, delivering on resilience, carbon and value*
>
> Claire Perry, Energy Minister
> January 2019[4]

Beyond the economic value, small-scale generation has proven its worth to the energy system and to the UK's ability to tackle climate change. With more locally produced generation, balancing demand and supply at the local level can reduce infrastructure costs and help manage demand as we see an increase in electric vehicles and domestic heat pumps. Critically, small-scale generation involves individuals and communities in their energy production; it prompts concerns about energy efficiency, security of supply and, above all, engages people directly in the fight against climate change.

The Smart Export Guarantee (SEG) is a step in the right direction to encourage the evolution of the energy system to a smarter, more reactive network. Crucially, it ensures that small-scale generators will not be providing electricity to the grid for free. However, by BEIS' own admission, deployment is

[1] Feed-in Tariff Installation report, 31 December 2018, Ofgem
[2] Impact Assessment, government response to the FIT scheme closure. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/767081/FITs_2018_Consultation__Response_Impact_Assessment_signed.pdf
[3] Figure 3.6, National Grid Future Energy Scenarios 2018. http://fes.nationalgrid.com/fes-document/
[4] https://www.energylivenews.com/2019/01/08/claire-perry-from-power-stations-to-solar-panels-the-future-is-local/

likely to be very low with no increase as the scheme progresses[5] and it is vital that other measures are put in place to support deployment of small-scale renewables and achieve the government's stated ambition of sustainable growth of the small-scale low carbon sector.

1. The future is smart

The smart element that this scheme aims to encourage captures the ambition of the industry and the flexible, decentralised world that we are aspiring to. In some ways, the proposed dynamic element of this scheme is ahead of its time – network infrastructure is, on the whole, not quite ready to take full advantage of the smart, dynamic nature of the tariff.

We support the ambition of the scheme and agree that the government should be looking to introduce legislation ahead of technical developments, rather than retrospectively, as is usually the case. However, as we will describe below, there is some work to do by both industry and government to ensure that small-scale generators and prosumers can take advantage of the scheme.

2. Metering arrangements are insufficient and cost of delivery is high

Many concerns have been raised by industry about the metering arrangements required to facilitate accurate export payments, particularly half-hourly metering for smart tariffs. Although smart meters with SMETS2[6] specification should be able to measure export, this is not widely tested and there are concerns that arranging access to export data with the Data Communications Company (DCC) is difficult, lengthy and potentially costly. A 2018 report by the National Audit Office (NAO) has concluded that it could be years before it is known whether the SMETS2 and DCC system works in its entirety and has also highlighted the technical difficulties experienced with installing SMETS2 meters that have not yet been overcome[7]. Suppliers are therefore concerned that arranging adequate metering entails cost and time that could be prohibitive for consumers.

A 2018 paper from Pixie Energy[8] provides a thorough and detailed analysis of the major stumbling blocks for metering arrangements and potential solutions that would need to be put in place to enable generators to access the SEG.

Recommendation: the government should undertake testing to understand the technical and cost implications of measuring export using SMETS2 meters.

3. The SEG is only practical for a narrow range of generators

All small-scale generation under 5 MW is eligible for the SEG, consistent with the FIT, however, the range of generators and prosumers that will actually be able to take advantage of the scheme is likely to be very narrow. Feedback from our membership has been that many schemes over 50 kW are already able to negotiate PPAs, and BEIS themselves only really see this applying to assets under 30 kW. However, there is also concern that only a small number of domestic prosumers will be engaged enough to participate in the scheme. If this is the case, the number of small-scale assets

[5] Table 2, Impact Assessment, Consultation on Smart Export Guarantee Scheme. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/769587/smart-export-guarantee-impact-assessment.pdf

[6] Smart Metering Equipment Technical Specifications (SMETS)

[7] Rolling Out Smart Meters, National Audit Office, November 2018. https://www.nao.org.uk/report/rolling-out-smart-meters/

[8] Rationalising Micro-generation Export, Pixie Energy, December 2018. https://www.cornwall-insight.com/insight-papers/rationalising-micro-generation-exports

that will benefit from the scheme will be minimal, with less mainstream technologies (e.g. hydro, anaerobic digestion) being left without a viable route to market.

The offering to domestic consumers needs to therefore be as clear as possible, with easy routes for third parties to provide intermediary services such as price comparison, negotiation or aggregation. Less mainstream technologies must be supported and viable routes to market explored.

Recommendation: suppliers should be mandated to provide clear and easily accessible guidance for generators.

4. The SEG is unlikely to drive deployment

The SEG is not designed to encourage or drive deployment. Our members are not anticipating a large take-up and BEIS' impact assessment only predicts a deployment rate of 3.2 MW/year of solar PV[9] – this is a significant decrease on the 72 MW installed in 2018, the lowest year for installations since the reduction of the FIT rates in 2015[10].

However, there are no other policies coming from government that are designed to encourage and increase deployment of small-scale renewables, despite predictions from National Grid that small-scale renewables will play a large role in the future energy mix (up to 31% of total generation (80 GW) in the 'Community Renewables' scenario) and supportive messaging from ministers.

In response to the call for evidence in Summer 2018[11], we made several recommendations which would help to increase the market for small-scale renewables. We are pleased that BEIS acted on our primary recommendation to provide a guaranteed route to market, but there are other steps that need to be taken to encourage further growth of the small-scale sector.

To increase deployment, we recommend that:

- A meaningful floor price is provided at a discount of the wholesale price (see question 4 of below responses for further detail).
- Ofgem should establish a clearer definition and code of conduct for marketing green tariffs – green-washed tariffs are currently undermining the market for renewable energy.
- Ofgem's network charging reforms should support the local energy generation market.
- Government should exempt small-scale renewable installations from business rates.
- Innovative local supply models should be explored and enabled, including local generation tariffs, microgrids, peer-to-peer trading and aggregation.

More detail on these proposals can be found in our response to the call for evidence[11] and in our paper 'Local Supply: Options for selling your energy locally'[12].

Summary of recommendations

- The government should undertake testing to understand the technical and cost implications of measuring export using SMETS2 meters.

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[9] Table 2, Impact Assessment, Consultation on Smart Export Guarantee Scheme. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/769587/smart-export-guarantee-impact-assessment.pdf

[10] Feed-in Tariff Installation report, 31 December 2018, Ofgem

[11] https://www.regen.co.uk/response-to-beis-call-for-evidence-the-future-for-small-scale-low-carbon-generation/

[12] https://www.regen.co.uk/publications/local-supply-paper-3rd-edition/

- Suppliers should be mandated to provide clear and easily accessible guidance for generators.
- BEIS should set a meaningful floor price above zero at a fixed discount to the wholesale price.
- Ofgem should put measures in place to assess whether, as the SEG scheme progresses, non-renewable assets are benefitting from the scheme.

Response to consultation questions

Note: not all questions answered

1. *Will the SEG as described provide a suitable and practical route to market for exported electricity?*

Yes, this will provide a route to market, but in practice it will only be relevant and applicable for a small range of generators. Our members have provided feedback that installations over 50 kW will already have a route to market through Power Purchase Agreements (PPAs). There is also some concern in the industry that this is too complex for domestic customers to engage with and returns will be minimal. Given that domestic customers represent 95% of Feed-in Tariff installations, this leaves a somewhat narrow range of generators that will benefit from the SEG. Technologies that are less mainstream (e.g. hydro, anaerobic digestion) will be left without support or a viable route to market.

The offering to domestic consumers needs to therefore be as clear as possible, with easy routes for third parties to provide intermediary services such as price comparison, negotiation or aggregation. Less mainstream technologies must be supported and viable routes to market explored.

Recommendation: suppliers should be mandated to provide clear and easily accessible guidance for generators.

2. *Will the SEG support innovation towards the 'smart' energy transition and if so how?*

The smart element of the SEG is certainly a move in the right direction and provides the impetus needed to truly integrate smart technologies and dynamic pricing into customer offerings. There are many positive initiatives underway to evolve the UK energy system to incorporate new data- and technology-led practices, such as Ofgem's work on market-wide half hourly settlement[13]. However, at present the sector has not yet evolved to a point that easily allows smart offerings, particularly at the smaller scale.

The SEG, in principle, gives a necessary push to the sector to facilitate smarter offerings, but it is unlikely that the supporting infrastructure will be in ready in the timeframes BEIS are proposing for the SEG and certainly not immediately following the closure of the Feed-in Tariff at the end of March 2019.

The design that BEIS proposes to legislate must encourage suppliers to provide a smarter tariff. Any guidance surrounding the SEG should clearly set out BEIS' expectations on suppliers to provide smart, dynamic tariffs.

3. *Given the options set out above in table 1, what type of SEG tariff would be appropriate at this point? Please provide justification for your answer.*

The tariff mandated by BEIS must be more advanced than option A given in Table 1 – simply a tariff above zero. Suppliers may want to retain the option of offering a 'simple variable' tariff as described in option B in cases where the more advanced tariffs are not practically feasible.

4. *Do you agree that Government should not take a role in price setting, e.g. through a fixed discount against a 'wholesale price', as this would detract from the objective of the SEG, for example by reducing location and time specific price signals?*

[13] https://www.ofgem.gov.uk/publications-and-updates/market-wide-half-hourly-settlement-hhs-strategic-outline-case

No, we do not agree.

Without a meaningful floor price, the SEG does not provide the necessary security for investment - a price that is simply above zero is not enough of a guarantee. For those generators/prosumers that do find the SEG a useful route to market, the level of risk associated with a (likely) short export contract, coupled with the absence of a guaranteed price above £0/kWh, would not encourage investment. We do not think that mandating a price at a discount of the wholesale price would 'detract from the objective of the SEG' or prohibit innovative pricing structures, although the price would need to be set in consultation with suppliers to understand administration costs.

The parallels with the Contracts for Difference (CfD) scheme should be noted and there is good practice that can be taken from this scheme when designing the SEG. For example, the tariff for intermittent generation under the CfD scheme is calculated using the Intermittent Market Reference Price which tracks the wholesale price using day-ahead data. If this provides a fair price for renewable generators at the larger scale, it could also provide a fair price for smaller scale generation.

Recommendation: BEIS should set a meaningful floor price above zero at a fixed discount to the wholesale price.

7. *We are aware that whilst segments of the small-scale sector (e.g. commercial rooftop PV) are able to deploy without direct support, others, particularly some of the less mature technologies and more complex community developed schemes are still often marginal at best in delivering commercial returns. Do the proposed arrangements create additional challenges for certain segments, e.g. through reducing access to finance, and how can these be effectively mitigated through the SEG?*

The SEG will not encourage investment in less well-developed technologies or zero-marginal cost schemes without a minimum price. Technologies that are less mainstream (e.g. hydro, anaerobic digestion) will be left without support or a viable route to market.

8. *How long will it take for suppliers to put systems in place in order to administer the SEG, and what would the associated administrative costs of the SEG be? Please provide justification for your answer.*

Feedback from our membership is that best products would not be ready for implementation in the timeframes proposed for the SEG. This is due to a number of factors, but the main barriers are metering and logistical arrangements to set up data transfer with the Data Communications Company (DCC). Because of these technical and logistical problems, coupled with the additional administration to include the export values in the balancing settlement, the administrative costs are likely to be higher than they currently are for the Feed-in Tariff.

11. *What factors would suppliers consider when setting a SEG tariff, and what additional costs do suppliers expect might be incurred as a result of providing a SEG tariff?*

See above.

18. *Where storage is co-located with an eligible generation technology, should SEG payments be made on 'brown' electricity exported from storage or limited to exported 'green' electricity? Please explain your reasoning.*

Yes, payments to storage should be allowed through the SEG.

Storage, at any scale, has been proven to have the ability to benefit the system by providing flexibility. Not allowing storage to participate in the SEG would create additional barriers to

deploying small-scale storage. Flexibility is vital in aiding the transition to a low-carbon energy system and characterising this provision of flexibility as 'gaming the system' unfairly demonises storage; it does not stand to reason that all energy imported from the grid by storage is necessarily 'brown' electricity.

Allowing small-scale storage assets to participate in the SEG would level the playing field with larger commercial assets. At present, small-scale storage assets participating in ancillary services are currently only paid the service fee as there is no opportunity to receive payment for the export itself. Allowing storage to participate in the SEG would put small-scale storage assets on a level playing field with larger scale storage which currently receives the service fee for ancillary services, plus the system spill price or export rate through a supplier.

However, there must be measures in place that prevent non-renewable generation from co-locating with storage and benefitting from the SEG. Ofgem should introduce a series of checks and balances to ensure that non-renewable generation cannot benefit from the SEG.

Recommendation: Ofgem should put measures in place to assess whether, as the SEG scheme progresses, non-renewable assets are benefitting from the scheme.

19. *Do you agree with the metering arrangements when co-locating storage with generation technologies eligible for the SEG? If you disagree with the proposal, please explain why and provide reasoning.*

Ofgem has provided extensive guidance on the metering arrangements required for storage to participate in the Feed-in Tariff – there seems little point in putting in additional requirements.

31. *Should deployment of installations through the SEG be submitted to a central register administered by Ofgem?*

Yes. We believe that the register created by the FIT has provided significant value to the energy sector when assessing deployment, modelling impacts on the system and projecting the future energy mix. It is important that the sector continues to have access to this data for these purposes.

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