REA Response to Ofgem/BEIS Consultation on the Update to the Smart Systems & Flexibility Plan

The REA has over 200 companies receiving updates on the energy storage industry among its membership, representing the range of energy storage project sizes and technologies, the largest of any trade body.

Our introduction is immediately below, followed by responses to the specific consultation questions and an Annex on the REA's proposals for support for small scale renewables, a critical factor for the continued success and deployment of clean technologies in the UK.

Introduction

The Smart Systems & Flexibility Plan (SSFP) has been a welcome document and we would like to reiterate our support for the approach it has taken, providing a 'roadmap' for the regulatory and policy framework for the sector.

However, we would like to see the actions taken forward at an even greater pace, given the current context for decentralised power and decarbonisation in the UK (closure of almost all existing renewable power support schemes and lack of flexibility markets), but we do recognise the constraints on BEIS and Ofgem at this time.

Regarding the challenging context for the sector at present, the Feed-in Tariff scheme is scheduled to close to new applications on 31 March 2019, with recent confirmation that any successor scheme will not be implemented straight away. Alongside this, the Renewables Obligation is closed to all new support and the CfD scheme has infrequent auctions only for 'Pot 2' projects (ie not for onshore wind, solar PV, biomass conversion, sewage and landfill gas) and the current grid charge reforms (loss of the Embedded Benefit / TRIAD, TCR SCR including charging of BSUoS to embedded generators and flattening of intraday C&I energy prices) constitute a further loss of revenue.

The TCR proposals in particular represent a significant threat to the whole sector as sites with storage and on-site generation installed will specifically pay more under the proposals.

While new and reformed markets are expected to come in the next 12-18 months, this is not quickly enough for those manufacturers, developers and installers which will see a drop off in activity this year.

The REA's sister organisation, RECC, which is the main consumer protection code for small scale renewables installers, with over 1,700 members, surveyed members on the impact of the proposals – these illustrate an overwhelming belief that the proposals will result in widespread job losses in the industry (over 40% of companies said they were considering withdrawing from the solar industry entirely), and highlight support for a continued export tariff.

80 Strand,
London, WC2R 0DT
Tel: 020 7925 3570
http://www.r-e-a.net/

The REA supports the government's goal of stimulating growth in jobs and investment in UK renewables and clean tech industries while helping to keep energy bill costs down. Sustained support by successive governments for investment in renewables coupled with putting a price on carbon have been central to the UK's success to date in deploying renewables. However, there is still a long way to go.

New investment in UK renewables is declining and the closure of the FIT will be another serious hit to the investment case for new projects. With the proposed closure of the FIT, uncertainty on the suitability of the Smart Export Guarantee (SEG, welcome in principle as it is), and a lack of policy detail on how the fourth and fifth carbon budgets will be met, the government is putting the UK's position as a leader in smart, clean energy and as an attractive place for investment at risk.

Need for an effective Route to Market - overriding priority

While the principle behind the SEG is welcome (although some of the details cause concern), there is anxiety more broadly behind an effective route to market for smart, zero carbon and flexible power resources, and this must be seen in the current energy policy context.

The Committee on Climate Change's latest progress report to Parliament stated that even if all of the government's current and announced emissions reduction policies fully deliver on their promised emissions cuts, there will still be a substantial 'Policy Gap' of further emissions reductions that must be filled if the UK hopes to meet our fourth and fifth Carbon Budgets.

Flexible smart technologies are inextricably linked to renewable power, in terms of renewable energy targets, the UK is not on track to meet our current legally binding 15% target for 2020. While there has been progress in the power sector, we are currently well behind our targets for heat and transport (DUKES, 2018). Over-achievement in power could help get us back towards achieving the overarching 15% renewable energy target.

In parallel the electrification of transport will cause a large increase in the requirement for power, which must be low-carbon to meet climate targets and air quality objectives. National Grid estimates that around 4GW of new power capacity will be necessary by 2030 to charge the Electric Vehicles on the road by that time.

In addition, substantial energy regulatory and market reforms are underway. These include major reforms like Ofgem's review of access and forward looking network charges that are designed to provide better price signals for efficient and flexible use of the grid are still some years away from landing. Such programmes will have major implications for revenue streams for investment in renewables and other types of flexible resources and leave significant uncertainty for investors while the details are worked out.

The Renewables Obligation (RO) has closed to new applications from any technology; and the successor CfD scheme is designed to support larger projects with complex, administratively burdensome requirements unsuited to support for small-scale renewables projects. In addition, CfD support is sporadic, with only two auctions held since 2014, meaning companies are unable to plan investment accordingly, and only available for projects commissioning after 2021. The

Renewable Heat Incentive (RHI) meanwhile closes to new projects in 2021 and there is no clarity beyond this date.

If the UK is to meet its emissions reduction and renewable energy targets and avoid pushing higher than necessary costs into the future, there will be a continued need for concrete measures to support the deployment and integration of renewable power generation. In the longer term, this will be possible without the need for government subsidies. In the short term, however, the government must ensure appropriate support remains in place until the investment landscape (including price signals from the underlying regulatory and market structures) improves.

Value to the UK of Smart Power and Renewables

It is very challenging to put a definitive value on the small-scale, distributed renewables sector to 'UK Plc' in terms of jobs and investment. Numerous reports, including the National Infrastructure Commission (NIC) in 2017, estimate the value of a more decarbonised, flexible energy system. The NIC report estimates an £8billion per year saving to consumers by 2030 if sufficient flexibility technologies are implemented, and these are best deployed alongside renewables.

We can definitively say that if the transition away from the FiT scheme is handled badly, then we could see several thousand jobs lost. We estimate that around 9,000 jobs were lost in the solar sector alone after the last significant reform of the FiT scheme in 2015/16. According to the latest REA REView publication (REView 2018, here), over 127,000 people were employed in the renewables, EV and energy storage sectors in the UK in 2016/17. The Energy storage (and EV) sectors accounted for around 16,000 jobs. Further analysis revealed we could be missing out on a further 11,000 jobs and £19 billion of investment by not supporting the renewables sector.

Consultation Questions

1. Are there actions relating to a smart and flexible energy system that you think we should be prioritising, which are not discussed above (or included in Annex 1)? Please provide evidence and analysis to support your answer where appropriate.

The plan is comprehensive in it's coverage, however the route to market in the next 12-18 months is critical and must be addressed, proposals for this (in relation to the highly related small scale renewables sector) are contained in the Annex to this response but critical to this is the implementation of an effective replacement for the FiT Export tariff (via the SEG) for smaller scale renewable power projects such as wind and solar. This is important for flexibility resources as it is clear that the co-location of renewables and storage at all scales is one of the key routes to market for storage technologies. An effective floor price (ie above 'more than zero' stated in the initial proposals) and a decent fixed term for such contracts is crucial. Above all, a holistic view is needed to deliver a coherent set of price signals.

There are also some continuing frustrations regarding the timeframes and coordinated approach required to deliver many of the actions.

This is especially the case regarding the ongoing grid and network charging reforms which are very inter-related and complex (although we appreciate the efforts being made to simplify and communicate these, for example via the Charging Futures

Forum podcasts and the Open Networks programme) - as a minimum, the Targeted Charging Review Significant Code Review (TCR) and Access & Forward Looking Charges Significant Code Review must be coordinated and implemented in parallel, which the projected timelines indicate should be possible. This is especially important when modelling suggests that the likely impact of the TCR will be very negative on most smart, flexible technologies, but that of the Forward-looking charges may balance this out to some degree.

Recent proposals regarding reforms to the planning regime for large co-located storage and generation projects are welcome, but could easily go further – raising the installed capacity threshold above 50MW for standalone storage projects would have a significant beneficial impact, as at present most sites limit themselves to under 50MW even if local conditions would support more capacity. This is because the NSIP process is hugely time consuming and expensive - planning costs of seven figures are common for such projects and a delay of at least 12 months – meaning projects will do everything possible to avoid such a route.

We would also echo concerns regarding lack of opportunity for small scale domestic and C&I devices to access new flexibility markets and existing ones such as the Balancing Mechanism, as outlined below:

Ancillary services/Frequency response markets

- There is a lack of clarity on appropriate **frequency metering standards** for smaller assets seeking market entry.
- **Testing processes and registration** for frequency response markets are manual and are **not designed for automation and scalability**. This means the device registration/onboarding process is not suitable to enable residential assets to participate in ancillary services.
- The current processes and systems in Frequency Response Markets are not suitable for managing large portfolios of highly distributed assets where the availability of an individual assets at a given time may be uncertain (for instance EV drivers making an unexpected journey), this is despite the fact the portfolio availability itself is very predictable.

Balancing Mechanism market

- There are currently no appropriate standards or processes for using metering on devices for settlement.

On a broader scale, there also the possibility, via the current Ofgem consultation on Whole System licence conditions, to add a condition to the licences of the DNOs and ESO to consider how they can enable a smarter, decarbonised energy system in their activities. This would act as an enabler for future smart, flexible activities and decarbonising the power system throughout the core of DNOs and the ESO's activities.

2. Please identify and describe any key research and innovation needs which, if supported with funding in the next five years, could reduce the cost or increase the cost-effective deployment of flexibility in the system. Please provide evidence to support your answer where appropriate.

It should be noted that BEIS and Ofgem's innovation funding has been welcomed by industry and has played an important role in growing the industry, which industry acknowledges.

There is scope for innovation to bring down costs in storage technologies, and a broad range of technologies should be supported. It is also important to invest in the systems and IT networks that go with these business models and technologies, although these are already developing quickly.

Vehicle to grid technology could be an area where the UK can steal a march on competitors and there could be scope for R&D funding for hydrogen applications- where the UK has some IP and industrial leaders.

In addition, longer duration, even inter-seasonal energy storage is becoming more and more important for the system and will continue to do so, to balance variable renewable generation (for example as demonstrated through the *'Tipping Points'* 2017 BNEF/Eaton/REA study and follow up 2018 version) and would particularly benefit from more R&D resources and pilot programme deployment.

Conclusion

The Smart Systems & Flexibility Plan has been very welcome as a 'roadmap' and a great example of joint Government-regulator working, industry is supportive of its aims and the generally clear way this has been communicated. We now urge BEIS and Ofgem to implement those remaining actions as swiftly as practicably possible and take urgent steps on the closely related issue of providing an effective route to market for smart, clean technologies and renewable power in 2019 in the light of the closure of key support schemes for the sector and evidence of the likely impact.

Key for this is retaining a route to market and fair compensation for the power provided to the system from an effective Smart Export Guarantee offering a fair price and set length of contract.

The current grid reforms and the impact of these on clean tech projects needs to be understood further, with the TCR SCR and Access and Forward looking charges reviews taken forward in parallel and implemented at the same time, as a minimum.

The steps taken so far as part of the SSFP have been welcome as has the generally joined up approach, if the UK government is serious about cultivating a sustainable clean energy and innovation sector, the government must ensure that there is something to build on via sustainable routes to market and a faster pace for supportive reforms, for example balancing and ancillary services market reforms.

REA, January 2019

Annex A
REA Small-scale power support proposals

The REA's Top Three Asks

1. Continued 'Export Tariff' Payments

In the longer term, we expect that changes to underlying energy market and regulatory structures will mean small-scale renewable generators will be able to access markets that reflect the value of the electricity they supply to the grid. However, Ofgem's proposed timeframes to address this through its review of access and forward looking network charging is unlikely to lead to changes until at least 2023. Until there are meaningful price signals in the market, we see the retention of some form of export payments as the first step in a longer term transition to the 'end point' whereby export meters are widespread and a system of individual PPAs or directly metered payments from suppliers can be made. The stronger challenger supply companies are already working on this and expect to be able to implement such a system once various hurdles have been overcome.

Some form of continued or successor 'export tariff', or similarly named measure, would ensure that small scale projects are paid for the electricity they export to the grid. This would provide recognition of the power provided to the system which would otherwise not be compensated for at all. In the absence of this, some energy suppliers will be able to take advantage of small-scale renewables investors and get the benefit of the electricity they export for free – making it more difficult for consumers and communities to participate in the transition towards renewable energy. The export tariff should apply for all currently eligible projects. For smaller systems, retaining an export tariff would also mean that smaller systems would not need to install costly export MPAN meters straightaway, which would risk slowing the market at a critical time after the removal of the generation tariff.

There are different options for how an export tariff could be implemented, discussed below. Initially at least, our preferred option would be to retain the existing system of export tariffs. Such a tariff could be paid for by the larger electricity supply companies directly, as they could sell on the power procured to their retail customer base (not withstanding long running metering issues around settlement positions, referred to below). Other options include adapting the existing system to better reflect the market value of exporting electricity the grid. Some examples are provided below.

Option A: Retain existing export tariff system
The simplest option is to retain the existing system of export tariff payments, whereby the tariff does not change by hour or day and is flat-rate, inflation-linked (currently at 5.34p/kWh). This would then be paid for by the electricity suppliers as at present, although adjustments may be required for levelisation.

Export tariffs are only a subsidy if they give a higher return than market value. If all export tariffs do is to guarantee fair market value for the electricity exported to the grid, then the export tariff can be considered to be a guaranteed route to market, rather than a 'subsidy'.

One mechanism would be to index export tariff payments to an indicative reflection of wholesale prices to more accurately reflect the actual value of the power at a moment in time. Two possible options for this are discussed below:

Option B: Index to System Imbalance Price ('Spill price', previously the System Sell Price)
This could be done in two ways: firstly, by linking the payments to the 'Single Imbalance Price' otherwise known as the system spill price, what used to be termed the system sell price, which provides an indication of the impact on the system of generation at a particular time. Currently, any half hourly settled generation asset that has an export MPAN can receive this price on any power exported to the grid – therefore it is fair and logical to apply this to smaller scale generators, otherwise they would be the only form of generation not compensated for their generation.

Moreover, an examination of the data illustrates that in the past year the price has been broadly similar to the FiT export rate:

Year	System imbalance ("spill") price (£/MWh)	FiT export tariff (£/MWh)
2015	36.5	52.4
2016	40.0	52.4
2017	45.1	52.4
2018	54.5	53.4

Figure 1: System Imbalance Price, and FiT Export Tariff rates, 2015-2018
Source: Elexon Portal, 2018

Option C: Index to Day-ahead electricity price
Alternatively, as with the CfD mechanism, the export tariff price could be linked to the day-ahead 'spot' electricity price on the London market, for example the N2Ex market. This reflects the changing price of power throughout the day (on an hourly basis, therefore smart meters would be required to be implemented) and there is a precedent for using them already in place, however there can be low volumes traded on these exchanges at times and they can be volatile in nature.

Option D: Retain a fixed Export Tariff for deemed or non-smart metered export; and introduce time of export rates for FIT generators with smart-enabled export metering.
A hybrid option like this has the benefit of retaining the simplicity of retaining a fixed export tariff for installations without a smart export meter and mimicking the effect of variable price signals that will become available with the evolution of flexibility in the market. In this way, the FiT scheme could be used to encourage continued investment not only in small-scale renewables, but in systems that are more flexible and controllable. In addition, setting default variable export tariff rates would encourage suppliers to design better TOU offerings to attract customers, thereby contributing to accelerating the introduction of time variable pricing signals and the associated consumer benefits. To avoid any additional cost impact on consumer bills such time of export rates can be fixed to fit within existing budgetary envelopes.

2. Reform of ECO Scheme to include on-site renewable generation

The Energy Company Obligations scheme (ECO) is designed to relieve fuel poverty in the roughly one third of UK households at risk of fuel poverty. The latest iteration (ECO 3) was implemented just earlier this month (August 2018). It is now focussed on the most vulnerable, poorest consumers and is more geographically targeted. There is clearly scope to change some of the parameters of the scheme.
On-site renewables should be funded under the scheme as an obvious way to reduce energy bills in households. This would help support the deployment of more renewable power and could be combined with smart systems such as energy storage, and administered by the large supply company installing the measures.

How to implement: BEIS are the responsible department for the ECO scheme and can make changes to it via secondary legislation.

3. Tax Support & interest free loans

– Enhanced Capital Allowances, Enterprise Investment Scheme

Some technologies, Solar PV and AD for biogas for example, have been eligible in the past for EIS and ECA support. This was withdrawn over concern regarding 'double-dipping' of subsidy support once the FiT was established. After the closure of the FiT on 1 April 2019, the 'double-dipping' concern is no longer relevant and these forms of support could therefore be re-instated without the previous concern applying, in our view.

How to implement: The Carbon Trust administers the ECA eligibility list on behalf of BEIS and this can be updated in a relatively straight-forward way without as far as we are aware, the need for primary legislation. EIS support could be changed in the next Finance Bill.

Tax Support – *VAT rates*

VAT rates for solar and storage must be reduced for all installations, and small scale renewable installations, including on-site AD plants, must be exempt from VAT. HM Treasury has previously resisted any further reductions to VAT rates, and doing so would further be contrary to State Aid rules. The UK is already in open defiance of these in this area, and Government has already agreed to a reduction in VAT for some solar and storage projects.

How to implement: Any changes would have to be made in the Finance Bill following Budget.

Tax Support – *Business Rates*

The issue of business rates has become a major concern for many companies in the Commercial & Industrial sector, with on-site renewable generation schemes facing increased charges. Tapered relief or payment holidays for solar/wind/hydro on-site renewables and such projects co-located with energy storage would be very beneficial for small scale renewables. Another option would be a two to three year payment 'holiday' or exemption for such sites.
This is a fundamental issue of providing a level playing field – gas CHP equipment and plant is already exempt from Business Rates and therefore a precedent has

been established which actively discriminates in favour of a particular technology. Renewable sources should be given a level-playing field to be able to compete effectively.

How to implement: The VOA administers Business Rates collection and rateable values, the framework for doing so is set by HM Treasury.

Interest-free loans for renewable & storage installations

An interest-free or heavily subsidised loan programme could be introduced for small-scale renewable installations. Such a scheme was recently introduced in Scotland and would mean that consumers and businesses would not have to worry about finding the upfront capital to make an installation, which would arguably open up on-site generation possibilities to many more households. This would address one of the criticisms of the FiT scheme (only being accessible by more affluent households). The loan repayments could be funded by savings in energy bills. This could possibly be extended to include energy storage devices as this would benefit the system as a whole and the consumer in terms of maximising savings.

How to implement: The 'Home Energy Scotland Renewables Scheme' is administered by the Energy Savings Trust in Scotland[1], therefore the same body could administer such a scheme in England and Wales.

Other options to support small scale renewables

Improve support from existing mechanisms

New flexibility markets under development

As a principle, there should be no barriers to aggregated small scale renewables (most likely in combination with energy storage devices) being able to offer services and participate in the developing DNO flexibility markets referenced in the Call for Evidence. In the longer term, these should provide a revenue stream for the service that DERs can offer to the system. However, at present, the limited geographical availability, low value and uncertain contract lengths mean this does not provide a meaningful basis on which to invest in new small-scale renewable projects.

In any event, the availability of alternative revenue streams (in the future) doesn't change the importance of ensuring that small-scale generators can obtain fair value for the energy they export to the grid. Retaining an export tariff ensures generators receive fair compensation for supplying electricity to the grid while markets for other types of services develop.

Capacity Market Reform

Wind and solar must be enabled to participate in the Capacity Market since they are the only two technologies currently barred from the scheme. We welcome the recent consultation on this. However, as the Capacity Market has a minimum participation capacity of 2MW, this will do little to stimulate a market for small projects beneath this threshold.

Time of Use Tariffs (TOUTs)

[1] 'Home Energy Scotland Renewables Scheme', the Energy Savings Trust Scotland, http://www.energysavingtrust.org.uk/scotland/grants-loans/renewables/loan-scheme

Time of Use Tariffs (TOUTs) are essential to unlocking the savings that smart technologies and on-site generation can offer to the grid. In the absence of widespread access to TOUTs (and time of export tariffs), the customer bill and network benefits from price signals to encourage shifting consumption to times of low demand will continue to be out of reach. .
TOUTs are unlikely to be commercially available on a widespread scale until 2021, when half hourly settlement is fully required across the market.
Confirm position re projects under 5MW applying for CfDs post-FiT Closure
AD, Hydro, Onshore wind, Solar PV are currently excluded from the Contracts for Difference (CfD) scheme due to their eligibility for Feed-in Tariffs at 5MW and below[2]. This was due to concerns over double-subsidisation and associated issues of over-reward – concerns which no longer apply after spring next year and the closure of the FiT to new capacity.

Once the FiT closes to new entrants on 31 March 2019, it therefore follows that such projects (ie eligible technologies below 5MW), should by default become eligible for CfD support. Industry would appreciate confirmation of this and we would be happy to discuss further. An added advantage to the CfD scheme would be an increase in competitive tension in the CfD auction mechanism as more capacity enters each allocation round, therefore potentially pushing down clearing prices further and better utilising existing budgets.

How to implement: Varies, but for example includes decisions in the existing Capacity Market five year review, and a confirmation in the response to the Call for Evidence / Consultation, based on in-house legal advice, on CfD eligibility.
We are clear that these steps, while being relatively quick to implement, 'low hanging fruit' not requiring considerable effort, must be done in conjunction with a continued export tariff.

<u>Renewable and storage installations funded by Winter Fuel Allowance</u>
The Winter Fuel Allowance[3] is paid on an annual basis to all pensioners (ie non-means tested) and is designed to cover some of the cost of fuel bills for those at most risk of living in fuel poverty. The payment of c.£200 per household (£300 if both partners born before September 1938) could be reformed such that the payments are used to pay for the upfront cost of installing on-site renewable generation (with associated energy storage and low-cost energy efficiency measures).

Such installations would reduce the home's energy bill, therefore achieving the same net effect as the annual payment – ie a lower bill for the householder each year.
Details would need to be agreed, however this would target those at most need of on-site generation and lower bills, with fuel poverty a widespread problem in the UK.

How to implement: The Department for Work and Pensions administers the Winter Fuel Allowance and would need to be persuaded to make this change, which would likely require primary legislation.

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[2] See Contracts for Difference (Allocation) Regulations 2014:
Reg 14 – Excluded applications:
Reg 14(5) – can't apply for CFD for an extension on an accredited FIT installation

Reg 14(3) &(4), minimum of over 5MW for new CFD units (units of 5MW or less ineligible)
[3] Winter Fuel Allowance, Direct Gov, https://www.gov.uk/winter-fuel-payment/what-youll-get

Account for Solar and storage in EPC Ratings

By quantifying the carbon reduction benefit delivered from increased self-consumption of domestic PV systems when coupled with battery energy storage, this could be used to significantly increase the recognition of PV + storage in SAP calculations. This may then encourage new-build developers and building refurbishment contractors to install such measures as a means of achieving the required SAP building Energy Performance Certificate. Input would be required from BRE as the administrators of SAP.

How to implement: The SAP methodology is managed by BRE and Home Energy Certificates (EPCs) is an MHCLG policy.

Mandate on-site renewables on new buildings

Building regulations must be strengthened to encourage the use of renewables on-site at new housing and commercial developments. Such a target could mandate 15% of the building's power consumption be provided by solar PV on new buildings for example.

Similarly, a revival of the Government's Zero Carbon Buildings programme would be enormously beneficial to the renewables industry at no direct cost to Government.

How to implement: MHCLG can reform the Building Regulations, and are currently reviewing these.

Other Important factors

Development of database of future renewable and smart power projects

It is vital that in the world after FiTs, there is some means to track un-subsidised renewables as well as smart systems such as energy storage and EV chargers.

The REA is involved in an initiative in the 'Open Networks' programme, which evolved from the Smart Systems and Flexibility Plan, to examine the creation of a national database for distributed energy resources, designed in this context, to support the work of the DNOs and ESO in managing the grid network.

We suggest this work should be coordinated with BEIS's aims in this area as the objectives are the same and it will avoid duplicated activities.

We are also aware of the data held by Electralink (a subsidiary of the DNO companies), which could identify generation and smart products in individual homes based on meter usage. We therefore suggest that, subject to further information being available on this, and detailed discussions on implementation, using such data could be one way of compiling a central database of the required information. This would be subject to data access and privacy scrutiny controls and reliant on comprehensive set of data. Further discussions would obviously be necessary, but it is an example where the existing data might already be available for the task.

Importance of maintaining high standards (eg MCS & RECC) for installations

The removal of FiTs will mean there will no longer be a need to have work done by MCS accredited and RECC member installers, risking cowboys entering the market.

There must be a retained requirement for MCS and RECC/Consumer Code accreditation, in order to protect consumers, for example by linking any of the above measures to these schemes. So in practical terms, projects would only receive tax support, or an export tariff, etc for projects which are installed by reputable companies and to a high standard. The 'MID' Database is also a very valuable resource and tool for consumer protection and must be retained.