



January 10<sup>th</sup> 2017

Re 'Smart Flexible Energy System' Call for Evidence

Dear consultation team,

Please find below our feedback on the key points that we have identified in the consultation.

We have focused on the areas that are most relevant to our work as a community energy facilitator but also most likely to lead to systemic change.

While Repowering have successfully supported the development of several hundred kW of community owned rooftop PV in urban areas, as an illustration of the ways our projects are evolving we are currently:

- Developing models for the balancing of local generation and local demand
- Preparing to pilot domestic and community scale battery storage
- Facilitating community led energy data collection
- Supporting community energy groups to lead energy efficiency and demand reduction projects

While the scope of the Call is broad, we believe there are actually a relatively small number of lynchpin issues which if addressed will allow a wide range of stakeholders to participate in the delivery of the detail.

We very much welcome the aspirations indicated in the Call and look forward to playing an active role in the realization of a smarter energy system that benefits all consumers and communities.

### **Q 1-6 Enabling storage**

This section provides a clear overview of the range of challenges facing energy storage and we agree with the assessment of options. We would emphasise that while work is underway with the ENA regarding the connection methodologies for storage, the outcome that we would like to see is that storage is able to connect in any circumstances where this increases network capacity for additional demand or generation without reinforcement. Regarding the definition, our preferred approach is for storage to have a legal definition which sits independently of current legislation (i.e. option d), which would otherwise frame it incompletely as either a form of generation or demand. While this will take time to implement, it is the clearest approach which will ultimately be in the best interests of the sector. This clarity, as a distinct activity to generation, is particularly important for finance



providers and will unlock the deepest pools of finance in the long term. Transitional arrangements based on option b would still be viable, and in either scenario we would expect 'small scale storage' to be a license exempt activity in line with current practice for electricity generation for instance.

As an additional point, we note that the emerging deployment scenarios for storage tend to focus on either domestic/commercial (on-site) or grid scale (whether distribution or transmission connected). However the modeling undertaken for BEIS by DNV GL indicated that community or neighbourhood scale storage could have a strong business case. This raises the question of why it isn't more widespread. The basic requirement in this scenario is for the storage system to be both electrically and commercially linked to the individual demand sites, so that the network and supplier costs they are exposed to can be treated as applying to a single (aggregate) entity e.g. a virtual power plant or microgrid. Except on private wire networks this is difficult to achieve at a small scale and with low transaction costs in the current market. We will comment further on these issues in the sections below.

#### **Q 7-10 Clarifying the role of aggregators**

We agree that aggregators have and will have an increasingly important role to play, particularly in allowing smaller consumers to receive value from flexibility. The transition to half hourly settlement will in itself help align the activities of aggregators and suppliers of consumers who currently have NHH meters. We do not have a strong view on whether aggregators should be allowed direct access to the BM, and given the number of new supplier entrants it is probably too soon to tell if there are real barriers.

However from our discussions with a range of commercial aggregators it is clear that there is a minimum threshold for the size of load or generation that it is financially viable for them to include directly in their portfolios (typically 0.1-0.5MW). We would welcome consideration of the potential role of local aggregators who may be better placed to cost effectively recruit even smaller consumers and establish a commercial relationship either directly with a SO or DSO, or with another aggregator.

#### **Q 11-24 Price signals for flexibility**

As noted in the Call, the foundational requirements for a more flexible architecture are smart metering and half hourly settlement. While a number of interesting approaches to network charging are considered, we are concerned that the smart meter roll out itself is facing a number of challenges which will delay the take up of HH settlement and the other innovations based around it. While the Call does acknowledge this as a priority, we can report practical experience of challenges in the provision of smart meters for customers with 'restricted' meters, or with three phase supply, and where specific forms of prepayment are required. It is important that the SMETS 2 standard is finalized and implemented so that as meters are installed they are not already out of date and are capable of the fullest functionality- this is particularly relevant to enabling domestic DSR.



Once widely deployed, we expect the bulk of the innovation in pricing to come from suppliers rather than DNOs, and given the complexity of the current DUoS charging methodologies change is likely to be incremental. However in general we would support a focus on capacity rather than volumetric charging, to ensure that base network costs are recovered but without penalizing the efficient use of embedded generation on-site for instance.

We strongly support further trials of different charging arrangements, for example to reflect the system impacts of high levels of local generation and demand matching. As such we welcome the recent proposal from Electricity North West and hope that this indicates a more open minded approach to innovation in this area for both DNOs and Ofgem.

### **Q 25-27 Other government policies**

The Feed In Tariff has clearly been a significant driver for a wide range of stakeholders and new entrants to participate in the energy system, which has in turn driven much of the innovation that this consultation considers. Although the dramatic changes to the scheme have had a severe impact, certainly within the community sector there remains a strong desire to realize whatever opportunities still remain, and incorporate new technologies as part of evolving business models.

However outside of niche applications the majority of technologies and technology scales currently supported by the FiT are unlikely to be viable on a completely subsidy free basis by 2019. This is compounded by the long term downward trend in wholesale prices which is driven by a number of factors but we do not expect to see significant change to this trend in the near/medium term. While volatility may increase, this does not create a stable investment environment for new, small scale generation that is typically not part of a wider portfolio.

As such we would encourage BEIS to outline options for the successor of the FiT scheme, which could potentially include other technologies (such as storage), and a more focused approach to scheme eligibility to help ensure maximum value for money in terms of carbon and societal impacts.

We would also support the retention of the incentive for generation (per se) rather than export as this provides the greatest flexibility for an evolving system where the potential for export may be very limited in some cases and on-site consumption is likely to be the most efficient use of energy generated where this is possible.

### **Q28-39 A system for the consumer**

In the short-medium term we see the main opportunities for domestic DSR in heat, cooling and battery storage. Electric storage heating remains an underutilized resource for providing more dynamic response, especially considering that one storage heater is equivalent to approximately 5 fridges in terms of maximum demand.



However for there to be significant take up of domestic DSR and for vulnerable consumers to be adequately protected, we need an approach that goes beyond national information campaigns and data protection.

Building on the growing evidence base for the importance of local intermediaries in ECO projects, as well as consumer acceptance of renewable technologies, we believe there is a key role for trusted local organisations to both initiate area based DSR projects and provide ongoing peer to peer support. The ACCESS project on the Isle of Mull in Scotland provides a good example of the key role a local body has played in promoting and managing a local DSR scheme for managing grid constraints as part of a community owned energy project. Further trials of this approach should be considered through innovation funding, as well as ongoing support through the Rural Community Energy Fund.

#### **Q43-46 System roles**

While a wide range of options are considered in this section, in general we would support a principle of subsidiarity or devolution, whereby system functions are held at the lowest level that is feasible. There are a number of arguments in favour of this approach but perhaps the strongest is that it is the only one that is compatible with a smarter energy system where we will see an increasingly heterogeneous system at the regional, local and neighbourhood scale. Addressing the specific and evolving needs of these areas while integrating them in the wider system requires distributed intelligence and local market information, as well as an independent SO that is not invested in any particular type of network or generation infrastructure.

As such we support the vision of empowered DSOs, an independent SO, and the widest possible participation of local stakeholders through procurement mechanisms which could in turn transition to a market platform.

The final merging of network pricing information and energy pricing may be some way off, but in the meantime there are relatively simple ways of achieving similar outcomes through local balancing schemes which seek to incentivize the matching of demand and generation within a given community area. Differential pricing for locally matched and unmatched volumes (i.e. spill/import) is likely to become part of the offering from mainstream suppliers, but it needs to be complemented by DUoS tariff arrangements that reflect the system benefits of local balancing, such as the reduced use of upstream assets and the reduced need for wider reinforcement. With the right incentives, local balancing schemes provide a suitable business model for the 'community scale' battery systems mentioned earlier.



Creating Local Energy

## Q47-48 Innovation

We strongly support the areas identified for additional innovation support, with the caveat that it is vital for the support to be accessible to a wide range of stakeholders, including electricity suppliers, aggregators and local energy groups. To date Innovate UK and LCNI funding has heavily favoured technology companies and existing utilities, which has led to a lack of diversity and real world replicability of the some of the projects taken forward, as well as greater emphasis on technical achievements rather than social or economic impacts. While there are some very good examples of collaboration such as UKPN's Energywise project in Tower Hamlets, we would like to see a requirement for collaboration as well as social impact reporting built into future innovation support schemes. The Scottish Government's Local Energy Challenge Fund provides a good example of how effective this approach can be.

Kind regards,

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Recognized as an...  
Infrastructure 100: World Cities Edition Project; 2012 Brixton Solar One project

Shortlisted for:



Renewable Energy Project of the Year - Business Green Leaders Awards 2013