



BEIS Electricity Systems Team

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## Smart and Flexible Energy call for evidence: 10:10 response

Dear BEIS and Ofgem,

Many thanks for inviting evidence on the UK's shift to a smarter, more flexible energy system. We believe this work will be key to providing an appropriate framework to support the ongoing decarbonisation of the UK's energy mix, in particular accommodating a growing proportion of intermittent, decentralised renewable generation.

10:10 is a climate change charity focused on public participation in the low carbon transition, and in pursuit of this object we have been closely involved in supporting recent growth in the UK's community energy sector. Our response focuses on the important reciprocal roles smart power and community energy can play in supporting one another in the years ahead.

Yours sincerely,

Leo Murray,

Director of strategy

## Overview

We feel compelled to note that the overall thrust of both this call for evidence and Ofgem's embedded benefits reviews - towards 'cost reflexivity' - appears to seek to address only the system costs imposed by distributed and intermittent generation. Moving to true cost reflexivity would also need to address critical externalities such as the climate change impact of fossil generation. Yet recent changes to charging such as the removal of LECs from renewable generators have had the opposite effect.

Carbon is not yet adequately priced in the wider UK economy, either through the EU ETS or the CPF, and engineering energy system costs in a way that effectively penalises and disadvantages renewable generators for distribution connection and intermittency, without seeking to internalise the negative externalities of fossil plant, is a dangerous and wrong-headed endeavour at a time when the UK is striving to drive emissions down steeply. The CCC has pointed out a large policy gap for meeting forthcoming carbon budgets, and the sum effect of these recent and imminent changes is to make this challenge more difficult, not less. Not enough attention is being paid to this element of the energy trilemma.

We also want to highlight a disappointing omission from your assessment across the scope of the entire call for evidence: any explicit recognition of the transformative potential of local energy markets. The business case for flexibility in the UK energy system will be proven in the real world at the local, not the national level, and the National Infrastructure Commission "Smart Power" report found that "Most of the potential for storage and demand flexibility will be embedded in local networks".

A smart, flexible energy system which fosters rather than deters innovation must facilitate local energy markets as a key arena for propagating new, non-traditional, locally-specific business models. Promoting maximal competition cannot be realised if actors are structurally required to have national or regional scale to compete. Facilitating the establishment of functional local energy markets in the UK is likely to be one of the most effective means of driving the development of storage and DSR within the wider UK energy system.

## Summary of recommendations

- clarity on introducing a new definition and licencing system for storage;
- instances of double charging for storage must be eliminated
- Ofgem should not enact the proposed code modifications for embedded benefits as outlined in the "Open Letter" and instead carry out a holistic review of network charging to ensure the price signals on the network support the move to a smart and flexible energy system;
- Ofgem should actively support suppliers introducing half hourly settlement of domestic customers to enable the development of innovative tariffs;
- BEIS should provide support and funding for local groups to work with vulnerable customers on smart meters and appliances;

- the role of local energy markets and the link to non traditional supply models should be clearly recognised by BEIS and Ofgem. A core principle of the design of Distribution System Operator (DSO) market platforms for flexibility or development of local balancing units should be enabling a wide variety of market participants to participate, including those with less expertise in the energy market.

1.1 The most urgent task is clearly to legally define and regulate a new discrete asset class that recognises the unique properties of storage on the electricity system.

1.2 Policy risk translates directly into increased cost of capital, undermining investment appetite, as has been seen clearly in the UK renewables sector since summer 2015. This erosion of investor confidence has bled out across the whole UK energy sector, adversely affecting investment in emerging areas such as storage. The piecemeal changes to the embedded benefits regime in the pipeline now are likely to have a similarly chilling effect on the storage sector, particularly when it comes to innovation and new business models. One knock-on effect of this, without further intervention, is likely to mean investment in storage does not reach optimal levels, leading to higher costs for consumers as a consequence of under-deployment of storage in favour of recourse to more expensive but less unfamiliar solutions to system challenges. Uncertainty is the key problem here, so urgent clarity on the regulatory framework for storage moving forward is critical.

3.1 The current DNUOS charging methodology wrongly treats a new storage facility as either an intermittent generating asset, subject to grid charges as per generation and to prevailing grid constraint and associated network reinforcement costs; or as a demand end-user. Neither charging treatment accurately reflects the role storage could and should play in both reducing network operation costs and bolstering security of supply. An immediate priority here is to eliminate all double-charging of storage assets as both generation and demand.

Overall, the wider reform of network charging underway must take a properly holistic view and ensure a level playing field for energy storage, DSR and other forms of system flexibility. We believe that the current treatment of the relationship between networks and storage has this backwards; storage provides services to the network, not the other way around. An equally valid perspective would be to view storage as an integral part of the network, as it has far more in common functionally with the wires and substations than it does with demand users or generators. As such it is very unclear that storage assets should be subject to any network cost recovery charges at all.

3.2 Yes, but these also should also be offered retroactively to existing connectees, in return for appropriate remuneration, to free up network capacity for additional storage and generation assets. Co-locating storage with existing generating assets could play a big role here.

4.1 This will become more and more important as DNOs move from passive network administration to active system management as DSOs; network operators must be free to deploy storage where this is advantageous for balancing relative to alternatives.

4.2 Much greater transparency around locational need is required to allow a functional competitive market, and Ofgem should consider requiring DNOs to publish heat maps and related information into the public domain to create a level playing field for all potential market actors.

Optimal siting of storage on the network will be very location specific, and optimal sites will be finite in number. Communities whose energy needs will be serviced by storage assets should have access to a mechanism similar to the Asset of Community Value under the 2011 Localism Act to allow them to bid to develop these sites for community benefit within a 6m grace period before private sector competitors are allowed to bid. Such a measure would be likely to result in more optimal integration with other local energy planning as well as forming a nucleus around which to coordinate the roll out of storage with smart metering, demand response, EV and electric heating, and distributed generation, whose impact on the local distribution network can be effectively mitigated if their interactions are actively managed, and the phasing of their development in each location is planned. More broadly, this would help to support the establishment of functional local energy systems and markets.

4.3 Network operators should be free to deploy storage assets in preference over more expensive (and technically unnecessary) network reinforcement where appropriate. This should be explicitly accommodated under any new definition for storage, as storage can sensibly substitute for increased network capacity as well as generation and demand, but current regulatory arrangements preclude this. Direct ownership may be important here because of the high degree of control and oversight needed to allow storage to substitute cost effectively and securely for network reinforcement.

If DSOs are not permitted to own and operate their own storage assets, this is likely to increase costs for end users as a consequence of increased transaction costs between network and storage operators. Network companies should be allowed to judge where and when to procure storage from a third party, and when and where to own it themselves.

7. Aggregators should not be obliged to acquire a senior supply licence in order to access the balancing mechanism. The process of supply license acquisition is already too onerous and in need of reform to allow localised market entrants. Aggregators could perhaps be afforded a licence exemption below a certain threshold of demand/supply capacity, eg 10MW, under which they could be subject to a lighter touch set of regulatory rules.

Another option would be the introduction of a local balancing unit or LBU, as proposed by Cornwall Energy & Elexon, which could allow new aggregator business models to create and access new value in the energy system through facilitating local balancing within a DNO region before positions are reported nationally. The effect of this would be to reduce the scale and cost of potential imbalance and improve the competitiveness of new, smaller suppliers. This could avoid complications arising from allowing independent aggregators direct access to the BM, and would likely be suitable for most circumstances in which aggregators are seeking to operate.

9. A full supply licence requirement would act as a very significant barrier to establishing a functional and competitive aggregator market in the UK. A specific aggregator licence could also be an acceptable approach. We would support a BSC modification to allow aggregators

to participate in the BSC. The most effective route, in our view, would be a BSC modification to introduce an LBU, accompanied by an obligation on supply licence holders to sign bilateral agreements with aggregators to access this. The lack of any such obligation being attached to Licence Lite has severely limited its uptake and utility.

10.1 The risks appear to be overstated in our judgement. It is difficult to envisage scenarios in which serious adverse effects on stability arise from aggregation.

15. We are closely involved in the Energy Local trial of a smart tariff balancing local hydro generation with aggregated household demand Bethesda, North Wales. Deriving maximum system benefits from smart metering will mean facilitating localised, non-traditional business models for energy companies - something the present energy system and regulatory framework does not do. There is huge promise in the Community Energy Service Company (CESCo) model, which can use HH settlement to provide real time price signals to reward demand shifting, alongside a host of other benefits which we explore further in our response to question 46.

Examples of changes Government and Ofgem should enact to realise these opportunities include:

- A local supply innovation fund to drive innovation on this frontier, along the lines of the Scottish Government's Local Energy Challenge Fund
- Re-convening and resourcing the Local Supply Working Group or an analogue of this to help guide the development of local energy markets
- Reforming market rules so that these are not exclusively national in scale and scope, but contain provision for location specific energy offerings, eg specifically clarification around the national supply requirement
- The introduction of a Local Balancing Unit as proposed by Elexon and Cornwall Energy
- Reintroduction of LECs for renewable generators
- Protection and formalisation of the complex sites derogation used by some existing local energy pioneers

Another salient point here is that realising the full benefits of smart tariffs would entail behaviour change as well as automation and smart appliances. Again, this is best pursued through local networks and relationships probably via trusted intermediaries such as local authorities and community energy groups. Regulations and policies should support and facilitate such actors to bring about behaviour change, but there is little to indicate that this is being considered in this call for evidence.

We fully support the move towards elective and ultimately mandatory half hourly settlement, and urge Ofgem to provide more direct support to suppliers seeking to offer smart tariffs. We also note that SMETS 1 and 2 are not set up to support HH settlement,

which seems like a serious oversight; advanced meters should evidently now be the focus of the smart meter rollout.

22. There is an emerging consensus amongst energy transition practitioners that network charging in a much more decentralised energy system will have to move to a predominantly capacity/availability basis rather than a volumetric transmission/distribution dominated one . A smart, flexible and clean energy system will be far more granular, with large proportions of the constituencies served by the grid by and large meeting their own electricity needs locally or regionally, with the wider national grid being primarily used for backup and security of supply.

10:10 agrees with RegenSW that DUoS charges should adhere to the following principles:

- Cost reflective and support competition
- Incentivise long term reductions in network costs
- Ensure that grid charging is aligned with other energy policies to meet the UK governments long term decarbonisation and energy security objectives
- Support innovation and the development of new technologies and competitive business models
- Encourage network balancing by strengthening the appropriate locational and temporal signals while retaining, as far as possible, the principle that charging reflects the true cost of the network
- Ensure the charging regime is transparent and charges are visible to all customers
- Changes are made in open consultation with all stakeholders and not subject to vested interest
- A holistic approach is taken, specifically any review should:
- Consider the full scope of all grid charging mechanisms at both a transmission and distribution network level and how they interact
- Strike an appropriate balance between charges levied on generation and those on demand
- Support increased integration via interconnection with European energy networks and the need to harmonise grid charging to facilitate this.

25. Piecemeal changes to the embedded benefits regime underway represent a very substantial risk to the ongoing deployment of decentralised renewable energy generation, the establishment of functional local energy markets, and by extension to our national renewable energy and emissions reduction targets.

The removal of LECs from renewable generators was particularly damaging to investor confidence as it was retroactive and damaged hitherto guaranteed revenue streams, having deleterious knock-on effects on investment in all UK energy infrastructure. Likewise abrupt and extreme changes to renewable subsidies over the past 18 months. Meanwhile the many layers of indirect government subsidy (eg tax breaks) for fossil fuels continue to provide old

energy with an unfair advantage over renewables, before even coming on to the question of carbon pricing to reflect the negative externalities of emissions through climate change impacts. Moving to 'cost reflexivity' is right and something we fully support, but this is being approached in a dangerously one sided way at present, which does not give enough weight to the benefits of low carbon generation relative to the technologies it supplants.

We also note that the de facto planning moratorium on onshore wind in England and Wales runs directly counter to the public policy goal of decarbonisation at least cost, and represents a significant barrier to the transition to a smart energy future.

The top-down, national approach to energy system transformation with which this call for evidence is in continuum remains a barrier to the transition to a smart energy future. Explicit support for a more decentralised system with a plurality of functional local energy markets would drive innovation on this frontier much faster.

27. Local energy markets offer a very promising route to fully accounting for the system costs of intermittent, distributed generation whilst still providing adequate incentives to deployment. Smart technology, storage and demand aggregation at the local level will allow much more effective balancing of local demand and supply, both reducing system costs and deriving much more equitable value retention for asset owners, local end users and their communities.

43. We broadly agree with the emerging system requirements identified in Figure 1, but there is an important omission from the drivers identified: final demand reduction. There is both great scope and great need to incentivise overall reductions in energy demand amongst all classes of consumer in order to meet our climate change commitments at least cost. The smart energy transition offers many avenues to pursue this goal and it should feature as a driver of the transition.

There are also two related omissions from the system requirements identified: the need for the system to accommodate local models, and to facilitate access to the additional value these can create in the energy system; and the need to for the system to enable a wide variety of market actors to participate effectively, including those with less expertise in the energy market.

46. We note that Ofgem's 2017-18 draft Forward Work Programme indicates exploration of scope for introducing competition to monopoly areas of the energy system. However, this work will be limited to actors in the large scale transmission network. 10:10 believe that there is no clear rationale for protecting the monopoly status of the current DNOs. The present arrangements bring the downsides of private ownership and profit extraction with none of the benefits of exposure to competition.

A smarter, cleaner and more decentralised energy system could both allow for and be supported by a more granular ownership and operation structure for future system



operators. Germany has nearly 900 distribution system operators, and, by the end of 2012, 190 German communities had been successful in bidding to run their local electricity distribution grid, with at least nine of these being wholly community-owned ventures. Communities, town and city councils and local entrepreneurs should all be able to compete fairly for ownership and control of their local network, and we urge Ofgem to explore the potential for facilitating this in the UK; or in the absence of this, to set out a clear rationale for maintaining the present private monopolies in the face of an express drive to maximise competition elsewhere in the UK energy system.

The rise in distributed generation has nuanced the dynamic between consumers and other actors in the energy system, and the legacy system of consumer protection is no longer suited to mediating these relationships. The new prosumer model, whereby consumers are also producing electricity, can also be applicable to an aggregated grouping made possible through the advent of smart energy, whereby arbitrage can realise additional collective benefits for participants. The historic model of competitive supply and regulated monopoly distribution could be inferior to direct democratic control at the local level as a means of consumer protection in such circumstances. Community Energy Service Companies (CESCs) offer a fundamentally novel and distinct alternative means to protect the interests of energy consumers.

10:10 is closely involved in Energy Local's Bethesda trial, and developing plans to roll this model out. We are also aware of or involved in a number of other ventures on this frontier, including RegenSW's Sunshine Tariff, Community Energy Scotland's Tower Power project, and Bristol Energy Network's Owen Square project in Easton.

Finally, 10:10 believes that the absence of any formal duties or responsibilities for decarbonisation at the system operator or DNO level is an oversight that represents an important obstacle to smooth transition to a low carbon energy system. Distribution system operators should be delegated a formal responsibility for meeting the targets determined by the Committee on Climate Change ie the reduction of grid carbon levels to 50 gCO<sub>2</sub>/kWh by 2030. We also note that Ofgem's insistence that it cannot discriminate between different types of customer closes off an important potential driver for decarbonisation, namely merit order access to the grid, with priority given to renewables. This is now being challenged in Germany by the EC under State Aid rules, but as the UK is now committed to leaving the EU that is not a problem we would face here if such a mechanism were introduced.