PCS Submission to the BEIS/Ofgem consultation on A Smart, Flexible Energy System

1. Introduction

1.1 PCS trade union has around 180,000 members working in the civil service, public sector and on privatised, commercial contracts. This includes members working in the Department for Business, Energy and Industrial Strategy. PCS has a wide policy agenda on climate change and energy to which *energy democracy* in the form of renewable energy provision under public ownership and control is central.

1.2 As a union representing members in Government providing the framework policy and governance role in achieving a zero carbon economy we are particularly interested in proposals for the reconfiguration of the UK energy system. In both terms of what it means for our members jobs and for them as consumers.

1.3 PCS welcome the broad direction of better system flexibility to meet a range of new low (preferably zero) carbon technologies into the system. However we reject putting "effective markets and competition" (para 14, pg9) at the centre of your approach for a flexible, affordable and secure low carbon energy system. We believe this confuses the policy aim of this consultation which to our minds should be to map out an energy system that makes use of a smart technology system to manage supply/demand in order to meet the UK's climate obligations under both the Climate Act 2008 and the Paris climate agreement 2015.

1.4 Rather this paper appears to be grappling with a declining fossil fuel infrastructure that wants to increase gas usage as coal is phased out and generation plants are decommissioned. Therefore through the physical energy infrastructure and new roles/responsibilities to ensure competition and profit can thrive rather than real consumer energy 'control' and meeting sustainable energy needs.

1.5 There is also an underlying tone of individual responsibility that is recognisable throughout government policy i.e. such as in individual health budget etc. This is sparked by terms such as consumers playing an "active role in managing their energy needs" (p.g.1 Greg Clark introduction). Consumer (households and industrial) should play a role in decreasing energy use as part of the demand side response measures (DSR) but as the consultation acknowledges, the possibility for this is not the same for everyone.

1.6 Below we set out our response to each main section and some specific questions as indicated. Again we preface that central to our response is the need for a future energy system under public control and ownership, run (eventually) on 100% renewable energy.

1.7 We also conclude that aside from fostering greater market competition between all parts of the energy system, the purpose of the Smart, Flexible Energy system appears unclear

and is technology driven rather than by climate change concerns, consumer accessibility and affordability, or new developments in spatial location and decentralised energy supply. Overall, it appears to be proposing a complex labyrinth of market relationships which is going to require very skilful and detailed management by the system operator (not publically accountable) and ultimately government.

2. Removing regulatory barriers

2.1 *Enabling storage* – storage capacity is critical for increasing the use of renewable energy. This was recognised in the final report of the Energy and Climate Change Select committee. Specifically they note that "Storage presents a real opportunity for the UK. Strong public financial support and clear legislation in California have been vital in developing the storage industry and laying the foundation for the full integration of storage infrastructure in the grid. There are similar opportunities in the UK for legislation to help support investment in storage.**"**[1]

2.2 In line with our opening remarks, PCS believes that climate change targets should be central to the transformation of our energy system rather than driven by technology determinants. The market based approach will favour different fuel sources and generators therefore insufficient detail is provided on a scenario of zero carbon based energy. Storage is the link between generation and distribution and needs to be balanced to where needed including places that may be least attractive in market terms. However if considering capacity costs of energy then distributors such as municipal enterprises should be able to have a role in storage.

2.3 Planning law needs to be made easier for community groups to set up storage facilities as it currently gives preferential treatment to big energy companies, to enable them to participate in a decentralised energy system, including taking account of new spatial locations of energy, to be a generator, transporter, storage enabled, and distributor without a cost penalty (double accounting) under a public ownership model.

2.3.*Aggregators* - is this an unnecessary 'middleman' for putting in place 'efficiency' measures both on industrial and household scale to reduce demand side response? The fact that "it is possible for aggregators to directly control consumers' loads, bypassing their smart electricity meters" (para 69) raises a serious concern about use of the use of such technology.

2.4 It's understandable that the System Operator would be faced with managing multiple DSR contracts but seems there is a potential within the regulations (under a public sector approach) to agree industry level agreements as part of a wide reaching 'industrial' strategy. For example if supermarkets can agree an industry standard to reduce refrigeration times.

2.2 There is also need to consider how aggregators are perceived by the ordinary consumer – too much choice, mis-selling, lack of price comparisons etc. For consumer protection, in

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1 http://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/705/70505.htm#_idTextAnchor007

the existence of aggregators there should be strong regulation with monitoring of supply licences in meeting consumer protection standards.

3. Providing price signals for flexibility

3.1 *Smart tariffs* – have some sense but is chicken and egg. There needs to be a roll out of smart meters that is matched with sufficient safeguards on data privacy and security, and control of supply through smart meters. However the reality of domestic consumers' lives is not a neat pattern of living within a 9-5 work day or caring period for example. The Trades Union Congress (TUC) has shown that the move to labour market flexibility in recent decades has led to the growth of part-time work, precarious zero hours contacts, self-employment and importantly it's estimated around 1/8th of working people do shift work. The point being that people are interacting with the energy system on a more variable basis.

3.2 Reference is made to a radical shake up of the energy system akin to telecoms but do most domestic consumers really have the time or inclination to be constantly monitoring 'price signals'? It may be automatically built into smart appliances but this is in reality a false consumer 'control' which will lay the 'blame' of high energy prices on the consumer and does little, if anything, to address issues of fuel poverty. This largely negates the positive 'social impacts' of smart tariffs potentially enabled by half-hourly settlement.

3.3 Ultimately it appears that it's the machines that will participate via smart metering responses to price signals via information fed through the system. And unless this is controlled under a publically owned and controlled energy system, it's hardly feasible that consumer bills will much reduce given the profit motive of privately owned energy companies. Further, the machines that will participate may only be available to certain groups in society, for example only the rich if they are expensive options.

3.4 There will also be a need to take account of flexibility in relation to different types of domestic appliances e.g. heating versus power shower, air conditioning etc. Flexibility needs to mean equality of access so not one system for poor and one for rich.

3.5 *Other Government policies* – climate change targets and need to move towards 100% renewable power generation as a driver of a flexible, smart energy system are sorely lacking from this consultation. In fact as proven in the past few years, government back-tracking on renewables has lost significant investor confidence. The Guardian newspaper reported on 2nd January 2017[2] that "More than £1bn of future investment in renewable energy projects disappeared over the course of 2016" according to analysis by the Green Alliance.

3.6 Renewables that will generate energy from very different spatial locations, for example off-shore, on rooftops, onshore wind or solar farms etc need proper government support as part of an overall energy strategy. Therefore evidence as requested in Q27 – not least in light of point above - is clearly a coherent government policy around the overall energy systems, its operation, input, ownership and control.

[2] https://www.theguardian.com/environment/2017/jan/04/renewables-investment-uk-fall-95-percent-three-years-study-subsidy-cuts-emissions-targets

4. **A system for the consumer**

4.1 This section opens by saying that “consumers are at the heart of the development of a smart energy system” (pg 59) but where is the space for consumers, or better the public, to have a say on the system they want?

4.2 *Smart appliances* –obvious missing principles (Q28) is affordability and control. In an age of stagnant wages and declining incomes smart domestic appliances will remain the preserve of those with money to buy ‘smart’ (including electric vehicles). This will only further drive up the number of the fuel poor if future energy pricing is based around smart domestic white goods. Therefore incentives (Q29) need to be supported with other social measures including increasing the energy efficiency of buildings and scrappage schemes for replacement (affordable) domestic appliances.

4.3 There also needs to be consideration between home owners and rented accommodation including private and publically rented sectors. The latter may not be able to participate in replacement schemes therefore what legislation/regulation will there be on those who have to ‘suffer’ the domestic appliances they are furnished with?

4.4 A process of transfer to smart appliances will need to be overseen as a government programme that looks at all aspects of energy provision as part of an energy transition to 100% renewables.

5. There is little reference in the consultation document to show that the social costs and barriers to a smart energy system have been sufficiently addressed. The focus is solely on the market. Whilst reference has been made to various pieces of research such as the Energy Systems Catapult paper and scenarios to set out a pathway to achieve the fourth and fifth carbon budgets, there is little evidence in the consultation papers to support this.

5.1 Data privacy and security concerns of smart appliances will be a huge barrier to overcome; and with major connectivity problems to still resolve, this consultation cannot be considered in isolation to other infrastructure needs to support its aim. There also needs to be consultation with and consideration given to how different users will interact with the technology. Older generations, those with disabilities or others that may require to run expensive medical equipment at home for example.

5.2 *Consumer protection* – (Q40-42) needs to be central to a new smart, flexible energy system, including regulatory measures, monitoring and enforcement of breaches. Safeguards are also needed to ensure there will be no discrimination in supply or mechanisms within the smart metering system to switch off supply, and how links to other smart technology such as in payment/billing etc.

5.3 Public ownership and control of the energy system will install greater consumer confidence with the public accorded a role in both its design, management and governance.

6. The role of different parties in system and network operation

6.1 (Q43) A significant system requirement which is missing from the document is the driver of climate change and the need to transition to a zero carbon energy system. Central to this PCS believe is the need to take our energy system back into public ownership with new levels of 'control' for public, communities and individuals to really participate in an energy system that meets social needs, not the needs of competition.

6.2 The urgency and complexity of doing this will be made more straightforward by reducing the numbers of players. To make use of flexibility, to avoid the problems that are associated with it and to facilitate consumer engagement, there needs to be greater integration of the system. This proposal seems to be making it more complex.

6.3 Therefore a new model without suppliers acting as middlemen but a system operator under public control to balance industrial, municipal and household consumer energy needs through public distribution networks. This does not limit diversity in supply and certainly would seek to ensure localised energy networks that can likewise ensure all homes profits from rooftop solar as much as other community innovation models that may emerge/are encouraged.

6.4 For example, local energy systems aid flexibility as they can avoid unnecessary interventions and knock-on impacts to other parties. Competitive suppliers make this complex and add overheads rather than reducing overall transaction costs.

6.5 Coordination is a complex task and managed through such a variety of parties through market based competitive processes does not ensure a social need response, including at industrial or municipal level. The welcome increasing electrification of heating and transport needs also to be integrated with overall energy policy in terms of their particular infrastructure such as public rail networks or new electric heating system and boilers switching from gas.

7. Innovation

7.1 PCS believe that proper state investment needs to be made in innovation through research and development support to both academic and other professional institutions working on these areas, and through local schemes that harness community knowledge and needs. We believe that only government can underwrite and seriously invest in the infrastructure investment needed for the transformation of our energy system; not just to one that is flexible and smart but also one that is sustainable and meets our climate change obligations.

8. Conclusion

8.1 PCS does not support the central premise of this call for evidence of putting markets and competition at the centre of a flexible, smart energy system. We believe that climate change should be central to this, and how we respond to our obligations under both the Climate Act 2008 and the Paris climate agreement 2015. Unfortunately this consultation seems to be driven by the innovations of smart technology rather than its democratic application and joined up policy thinking across Government of how we transition to a zero carbon economy, key to which is our energy system.

8.2 PCS believe that only by bringing our energy system into public ownership can we make such a transition and to ensure that no one is left behind – in industry, workers, community. Just as smart technology offers new flexibilities, we believe this enables a new decentralised control of the energy system based on local and social needs. For example, in new community ownership models locating assets in local hands through local 'energy networks'. There is a strong role for government in this both centrally and locally as a system operator and facilitator balancing both energy supply/demands needs across the grid coupled with positive social action to ensure a fairer, affordable, and sustainable energy future for all.

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