

# Interim System Operator Incentives from 2017 Consultation

Response on behalf of Storelectric Ltd

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## Feedback Summary – Objectives

The main failure of System Operator (SO) incentives is their timescale, which gives a very short sighted perspective on operating and managing the system. The current 8-year RIIO framework within which 2-year incentives are structured means that all contracts are up to 2 years unless there is some medium term benefit, in which case the horizon can be extended to the end of the RIIO period. This provides enormous financial and risk disincentives to the SO to manage a system to benefit the country over a 30+ year timescale, and prevents them incurring the unmitigated risks of longer term contracts without explicit government backing. This in turn prevents all large investments outside government subsidised or specially regulated long term regimes such as ROCs, CfDs, OFTOs and CATOs. The consequence is that the system is being run into the ground, with National Grid forecasting dependence on imports for over 25% of future peak demand, and relying on “vapourware” (projects that may never get beyond the drawing board, such as CCS generation and widespread nuclear roll-out) for a further 50% or so of peak demand. Without a radical overhaul of the system, it will collapse.

This response should be read in conjunction with the appended document, A 21<sup>st</sup> Century Electricity System, which outlines a very simple regulatory structure that will not only minimise costs in the medium and long term and control them in the short term, but also incentivise capital investment, green energy and innovation – all without special contracts, subsidies and special regulatory mechanisms. There may be individual cases to implement initial subsidies for novel technologies, but these can be ramped down in a predictable way as the technologies are rolled out.

## Feedback Summary – Short Term

Britain has been dubbed the country least suitable for energy investment in the EU, because of both the short term regulatory horizon (see above) and the constant changes and threatened changes of regulatory regime. The mere fact that you are mooted short term changes in this consultation, in the recent embedded benefits consultation and in numerous other consultations, makes the investment landscape almost impossible. Even existing major players awarding PPA contracts are so spooked by all these changes that they are increasingly rejecting all regulatory risk, pushing it back to the generator and thereby increasing the generator's costs greatly and unpredictably. You may have identified £491m of benefits, but the dis-benefits of disincentivising investment in this way vastly outweigh that. Therefore, in order to minimise the damage to investment and to the grid as a whole, these changes need to be kept to an absolute minimum.

We believe that in the short term, 15-year contracts should be mandated for new technologies as an interim measure pending introduction of the complete regime we propose. These 15-year contracts should permit such a delay before the start date as is needed for design, planning, construction and grid connection – the last of which takes a minimum of 4 years for a new connection on the transmission grid, according to National Grid's own website.

As an alternative, a category of CfD eligibility should be created for the first 2-5 plants built substantially using new technologies.

The 3-project and £10m limits on long term projects should be eliminated. Ofgem should create a third category of NIA / NIC project to complement its DNO and SO supported projects. This category, with unlimited funding potential, should be for new technologies of substantial benefit to the grid and system, but that DNOs and the SO cannot easily support – for example, generation or storage technologies over 6MW, innovations that would reduce DNO and/or SO revenues, methods of managing and controlling stacked revenue streams, evaluation of system upgrade deferral benefits and the sharing of those benefits with the project developers, etc.

Other changes to the regime should be delayed until the whole regime is changed. Such changes should be flagged well in advance, including but not limited to:

- ◆ Embedded benefits revision;
- ◆ Removing black start into a separate mechanism;
- ◆ Incentives for more accurate forecasts;
- ◆ Changes in the overall value of the incentives system;
- ◆ Regulatory definition of storage, with its supporting regulatory regime;
- ◆ Stacking and simplification of revenue streams;
- ◆ Incentives for introducing innovative and green energy technologies.

### **Your Executive Summary**

Consumer costs today and tomorrow are not the be-all and end-all of regulation: medium and long term costs matter much more. To explain this last point, the cheapest way to provide energy against a 2-year contract is to patch up a clapped-out and fully amortised power station. At the end of that contract, the same is repeated – but the power station is a little more clapped-out, more failure prone and more expensive to both patch up and run; its emissions are also higher. Over repeated 2-year contracts the same is repeated, until the power station dies of old age with nothing having been built to replace it. Over a 20-year period the increasing costs of the system mean that more would have been paid for the energy than if a 20-year contract had been let, which would have been delivered most cost-effectively by building a new and more efficient power station. So over a 2-3 decade horizon, the current system delivers more expensive, polluting and failure-prone electricity than 20-year contracts would provide, while simultaneously failing to incentivise the ongoing investment in new plant that the system requires.

You have identified £491m potential savings. But to achieve them, you are proposing to make short term interim changes to the revenue streams of investors in and operators of major plants which have amortisations lives of 20+ years. No investor will invest in that with the regulatory regime and therefore costs and revenues changing three times in the 10 years between project inception and grid connection. Indeed, the changes are coming so thick and fast that even upgrade and refurbishment projects are on hold, because there is no certainty of financial pay-back. Moreover, such a moving playing field is far harder for new entrants to manage than for incumbent operators, thereby creating major barriers to entry for new players and restricting competition. Thus making short term changes for such minor sums in the grand scheme of the costs and future of the entire electricity system of

£46bn plus subsidies and other government payments<sup>1</sup> is being penny wise and pound foolish: targeted savings are around 1% of total system costs.

And these proposals ignore the incentives for new technologies, new investment and energy storage (especially at the large scale) which are the most urgent system needs.

## 2. Balancing cost incentives

Q1: Not before a full system overhaul.

Q2: Not before a full system overhaul.

Q3: It should remain as close as possible to today's system until full system overhaul.

Q4: Not before a full system overhaul.

The BSIS exists to provide an incentive to the SO to manage the system more efficiently. Do you want to limit their efforts in that direction? Because any cap and floor do exactly that. Much better to reduce their share of the benefits (e.g. to 20%) and remove the cap and floor altogether. There should be no problem with justifying to the tabloid press and politicians that you are incentivising the SO to make the maximum possible benefits for consumers.

But this would have to be done in line with introducing long term (15 and 30 year, possibly 50 year) incentives that are substantial enough to ensure that the shorter term savings do not come at the cost of the longer term performance of the system. Without this safeguard, the SO's incentives will lead them to sweat the asset like a cash cow and run it into the ground, at enormous cost to the country and its economy as a whole.

## 3. Black Start

Q1: Not before a full system overhaul.

Q2: Black start contracts need to be long term contracts, to enable them to be used in the justification of new plant construction. While most black start capability should be tendered openly, some should be subject to bilateral contracts if part of a group of contracts that is placed to incentivise new investment. Not before a full system overhaul.

Q3: It seems reasonable, but adds to the complexity of the contracting framework. Not before a full system overhaul.

We don't know of any electricity system globally that has more contract types. Storelectric's full revenue stack would be 8-12 different contracts of different durations covering different periods of the day, week and year, all of which would have to be tendered every 6-24 months (with attendant risk of contract loss) and all with conditions to be ensured in the operation of the plant. Each of the 30+ market

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<sup>1</sup> 2015 UK electricity generation is 339TWh. Domestic = 30% @€201/MWh, other = 62% @ €134/MWh, losses = 8%. Assuming that domestic and other pay for all losses, total system cost = €22.2bn domestic + €30.6bn industrial = £46bn. Source: volumes from Dukes 2016 <https://www.gov.uk/government/statistics/digest-of-united-kingdom-energy-statistics-dukes-2016-main-chapters-and-annexes>, prices from Eurostat [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Electricity\\_and\\_gas\\_prices,\\_second\\_half\\_of\\_year,\\_2013%E2%80%9315\\_\(EUR\\_per\\_kWh\)\\_YB16.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Electricity_and_gas_prices,_second_half_of_year,_2013%E2%80%9315_(EUR_per_kWh)_YB16.png), exchange rate from Google 11/1/2017

mechanisms has scores of pages of its own special terms, conditions and other provisions, which differ in subtle but important ways from each other and therefore each have to be understood separately. Assuming we win every tender we seek, this will require 200-400 contracts (with 200-400 contract risk premia on the invested capital) during the 40-year amortisation life of the plant, rising sharply if our success rate is imperfect. The administrative burden is immense. Worse, it is almost uninvestable, whatever the returns we get on the plant.

#### **4. Forecasting incentives**

Q1: This is the wrong issue. The overall costs of providing stable power are at issue; there is no need to regulate the elements (e.g. generation of individual renewables, and balancing budgets) of these overall costs. What should be incentivised is the overall system cost. And this should be done within the context of longer (15, 30 and 50 year) term regulation so we don't mortgage tomorrow's system in favour of today's incentives. Not before a full system overhaul.

Q2: Ditto.

Q3: Ditto.

Q4: Ditto.

Q5: Ditto.

Incentives should be on whole system performance, stability, long term viability, both short and long term cost, and data provision. That's all. Anything more gives room to game the system to maximise incentive payments rather than system performance.

All of the demand and supply forecasting, together with its accuracy, should come within the data provision incentive on the SO. It should be flexible enough for the SO to develop the best possible tools – what we see in both the consultation and published data risks being over-prescriptive. Indeed, what is published is an information over-load: data, not information. As a very simple example, to estimate the total cost of electricity to the country I had to take some data from Dukes, others from Eurostat, apply an exchange rate and ignore all direct governmental payments.

To build up a picture of what our revenues and costs would have been over the last year, if we had been operating, takes about 100 web pages all in different parts of websites, all with anything up to 24 spreadsheets per page. Much better to:

- ◆ Mandate a database that can be mined by users;
- ◆ Simplify the numbers of contracts and their terms;
- ◆ Extend contractual durations;
- ◆ Simplify performance incentives vastly.

#### **5. SO -TO mechanism**

Q1: Yes, but much more simply.

Q2: Yes, it needs to be piloted before rolling out. Just like all regulatory changes, to try to forestall all perverse incentives such as those that led to the construction of many diesel reciprocating engine generators.

Q3: This should be within the data provision incentivisation. Better to produce data live into the publicly mineable database.

The proposed mechanism for National Grid to pay Scottish Transmission Operators (or vice versa) to do work of benefit to itself is a very complex mechanism comprising at least the following:

- ◆ SO license modification
- ◆ Network Access Policy modification
- ◆ New SO:TO Code provisions
- ◆ Protocols for agreeing costs for every outage
- ◆ Protocols for agreeing risk on all projects
- ◆ Protocols on the proposal of changes
- ◆ Project justification protocols
- ◆ Separate quarterly reporting and incentives
- ◆ A £1.4m limit to the annual total of such payments

The mechanism can instead be modelled on a contract to deliver works: NGET could pay the Scottish TOs to undertake works that are of benefit to the NGET system, and vice versa. Whether a more complex mechanism (as proposed) is needed is questionable. Placing a cash limit on such payments is counter-productive: if more work up north can benefit the system disproportionately down south, why not allow it all to be paid for without regulatory derogation? However it may well be appropriate for a pilot year.

You correctly state that “This part of the mechanism has a potential to be time-consuming and require significant resources”, but in the next sentence propose that “in addition to a provision for a further information request for the Authority, we intend to insert a provision where we would send the project back to NGET for further evidencing and resubmission. Also ... we will have the option of delaying consideration until a later year or not grant any funding if this is not possible.” This merely multiplies the complexity, cost and bureaucratic inertia.

Creating transfer / funding limits leads inevitably to a “funding pot” mentality whereby the SO thinks in terms of the amount of the pot that is spent and what is gained from spending it, rather than thinking in terms of overall system costs and benefits.

## **6. Transparency, Model Development and Innovation**

Q1: Not if done outside the context of wholesale regulatory change.

Q2: The complexity of financial incentives is immense and leads to opportunities to game the system, to which this proposal merely adds more complexity.

Q3: The SO should not run its own model. There should only be one model including both constraints and energy – and, preferably, black start too. No changes should be made prior to full system overhaul.

Q4: Ditto.

Q5: There needs to be a mechanism for funding innovations that don't fit with a DNO or the SO, probably run by Ofgem. This is not part of the regulatory framework and can therefore beneficially be implemented as soon as possible.

Transparency of the system must not be at the expense of encouraging innovation, new technology introduction and new entrants. There must be permitted spaces to work out the best ways to introduce these, with after-the-event reporting and with retention of some confidential data.

The best gain in transparency, and in the competitiveness of the market, will be obtained by simplifying the system, which is so complex that many industry insiders don't understand it fully. By salami slicing the market into over 30 mechanisms (different people come up with different counts, as it's so complex), each mechanism has little value and low competition, as well as having its own welter of terms, conditions and other provisions that have to be understood.

### ***Model Development Licence Condition***

The existence of the two separate models is problematic: if there's enough energy in the system but it's in the wrong part of the system, then that creates further constraints; the constraints reduce the usefulness and availability of the energy. Instead, a single model covering both constraints and energy should be run. Ideally this should include black start. Moreover, it should be run by Ofgem, not by the SO: it is in the SO's interests to ensure its accuracy, but they should not run the system on whose targets they are paid, as it creates the potential for conflicts of interest. If the SO wishes to operate its own models in parallel, then that is their commercial decision.

### ***System Operator Innovation Roll-Out Mechanism***

Why should Ofgem limit NGET to £10m and to 3 innovative techniques with benefits longer than two years? Moreover, they are only allowed to support innovations that fit in with their licence, which excludes all generation, all storage and a number of other technology areas from which the whole system could benefit greatly. Do you want to limit the amount, size and type of innovation they undertake? Because that is the effect.

By limiting National Grid to just 3 longer term projects, they will be inclined to reject potentially beneficial ones in case an even better one were to come along later. So this limit does not just limit innovation to 3 project, but to fewer. By limiting National Grid to just £10m, it means that the size of innovation is severely constrained – and that, again, they will be inclined to reject good projects in case a better one were to come along later. Better to eliminate both limits, and require a justification – and for Ofgem's default position to be to accept the project.

SO-IRM is required unless NIA and NIC are de-limited in project scale, duration and pay-back time.

Beyond this, Ofgem should create a third category of NIA / NIC project to complement its DNO and SO supported projects. This category, with unlimited funding potential, should be for new technologies of substantial benefit to the grid and system, but that DNOs and the SO cannot easily support – for example, generation or storage technologies over 6MW, innovations that would reduce DNO and/or SO revenues, methods of managing and controlling stacked revenue streams, evaluation of system upgrade deferral benefits and the sharing of those benefits with the project developers, etc.