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From:

Response to RIIO-2 Framework Consultation 2018

Keith Jackson

13th April 2018

Dermot Nolan,

Chief Executive Officer

OFGEM

9 Millbank

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Dear Sir,

Re: RIIO-2 Framework Consultation.

You have set the scene and have posed a number of questions to enable you bring about improvements to the present regulatory framework.

Themes that have been outlined in your consultation paper include 'Giving Consumers a stronger voice', 'Developing the networks to respond to uncertain changes and putting controls in place to protect consumers' and 'Driving Innovation and efficiency to benefit consumers.'

You have encouraged written comments.

My contribution is mainly related to:

1. Quality of supply and
2. The current lack of incentive for Distribution Network Operators to seek energy savings for customers and CO2 savings to meet the HMG Sustainability targets.

My suggestion is that the new Framework should strengthen the case for customers (you call them consumers).

The attached paper 'Proposed regulation to achieve energy savings for customers and savings of CO2 for the UK' makes a case for a revised regulation RIIO-2 to broaden the role of the network companies to include the optimisation of final customer voltage in the interest of energy savings for customers and CO2 savings for the nation. It predicts the order of magnitude of savings to be made.

I have registered to attend your Future of Networks Event in Glasgow on 19th April. I am hopeful that this topic can be considered within the programme. Otherwise I would appreciate a separate discussion with one of your representatives.

Yours faithfully

Keith Jackson

Attached :

1. Proposed regulation to achieve energy savings for customers and savings of CO2 for the UK.

Proposed regulation to achieve energy savings for customers and savings of CO2 for the UK.

Introduction.

I make this submission towards your consultation as an individual member of the public who is now in active retirement.

I have an extensive background in the Electricity Supply Industry, as an operational engineer and later as a Board Director in the public and private ownership periods. I initiated the original guaranteed standards of service (still prevailing) where the companies are required to pay customers when service levels are breached.

I have always been on the side of the customer and in recent years have been involved in my local community where we have developed a Neighbourhood Plan, now passed by referendum, and which contains ambitions for energy savings. A local study has confirmed, similar to experiences elsewhere in the UK, that the distribution network tends to be designed and operated towards the upper end of statutory voltage.

Hence this submission centres on this aspect of the OFGEM Regulatory Framework.

Objective of RIIO-2.

RIIO-2 is an approach to ensuring that the monopoly companies who run the networks have enough revenue to run a network that delivers what customers need at an efficient cost. As such It.....

- includes a wish to improve customer engagement, support the more vulnerable, and give customers a stronger voice.
- must be aligned with legally binding carbon reduction targets set out in the Climate Change Act 2008.
- is looking for innovation and efficiency to help to reduce costs and deliver better value for consumers.
- has to guard against the uncertainty of changing network demand and growth in remote generation.

Achievements made so far with RIIO-1.

You have said that around £100bn has been invested since 1990 resulting in:

- cost savings of 17% in transporting electricity since the mid 1990's
- power cuts have been nearly halved since 2001
- customer satisfaction at high levels

This is very laudable but is only partial success. RIIO-2 is an opportunity for improvement.

Possible blind spot by RIIO-2.

DNO's are, quite naturally, gaming the system this has possibly resulted in perverse policy decisions. For example:

- final distribution system is regularly running with excessive voltage.
- the network is systematically carrying unnecessary spare capacity that the customer is paying for.
- there is too much emphasis on efficiencies and cost savings by network operators. There are no incentives to help customers make direct energy reductions (other than the raw scale of bills).
- the present quality of supply target is simplistic and is purely aimed at frequency of interruptions and duration of outages (minutes lost).
- There is no target associated with voltage range, sag and swell, flicker, or waveform.
- There is a perverse incentive for DNO's to keep voltage high since it increases their revenue.

Hypothesis and evidence offered to justify an improved regulation framework.

- most domestic customers are naive and disengaged. Customers do not understand voltage. They pay the bill without knowing whether it is value for money since there is no competition. Their only guide to quality of supply is by recollection of supply outages. RIIO-2 should be designed to give customers more meaningful information and suppliers to take a view from the perspective of the paying customer. *(Note that I call them 'customers' but your regulation tends to call them 'consumers'. Perhaps an indication of which side the suppliers are batting for?)*
- statutory voltage at the domestic customer terminals is 230v (plus 10%, minus 6%)(253v -216v)
- actual voltage delivered is systematically skewed towards the upper end of the statutory range (typically at around 242v).
- excessive voltage causes excessive bills. (watts = volts x amps)
- there is no incentive for DNO's to optimise voltage delivered at customer terminals.
- domestic apparatus is designed to operate at voltages down to 216v.
- excess voltage can cause shorter life and damage to customer equipment.
- distributed generation (eg solar and wind) is having the effect of increasing voltage on the final distribution system and thereby pushing customer volts upwards.
- reduced voltage does make energy savings for motive power and electronic equipment and lighting.
- a reduction of 5% of voltage (ie from 242v to 230v) could produces typical savings of 2% in energy consumed without loss of functionality.
- a reduction of 5% will bring approximately 2% CO2 savings and make a significant contribution towards global targets.
- smart meters may offer the potential for close scrutiny of quality of supply at individual properties.

My proposal.

In studying your RIIO-2 Framework Consultation document I have found that Question 10 has the closest relationship with the theme that I have developed.
Hence, I make the following submission in the hope that it will help your deliberations.

Your Question RIIO-2 number 10.

Question 10 asks *"In light of future challenges such as the decarbonisation of heat, what should be the role of network companies, including SO's in encouraging a reduction in energy use by consumers in order to reduce future investment in energy networks?"* and, *"What could the potential scale of this impact be?"*

Response.

The present RIIO-1 regulation does not provide an incentive for network operators to encourage customers to reduce their energy use.

My contention is that DNO's are deliberately keeping voltage high and, as a consequence, customers are having to buy more energy than they need for the satisfactory operation of much of their equipment. Customers do not know what voltage level is provided and, therefore, are unaware of the poor quality of supply. If they become aware of unsatisfactory voltage they can turn to Regulation 13 which requires the DNO (under penalty of £30 default) to *'send out a written letter explaining the issue within 5 working days OR offering to visit the customers property within 7 days'*. This is but a token penalty. It is not an incentive.

Under RIIO-1 supply interruptions and duration of outages are measured and monitored and incentives are in place under regulations 4-11. This is not sufficient and the incentives should be broadened to encompass quality of supply when supply is not interrupted.

Hence, The role of the network companies should be to contain the final distribution voltage to a level which secures a reliable supply but which has respect for the overall efficiency which includes energy in use by the customer. Targets should be set and monitored and incentives should be put in place to achieve this outcome.

A cursory study in my own community of 2000 domestic premises, fed by 17 substations, has resulted in a calculated potential saving of 2% of purchased electricity if voltage is reduced by 5%.

Hence a simple transformer tap reduction of 5% (11.5 volts) would leave all customers with volts that are well above the minimum level and the majority at or near to 230volts. I have already achieved this saving at my premises by installing a voltage reduction device on my side of the supply terminal, but at my cost.

In the future there may be two competing trends being:

- a) decarbonisation of heat, and charging electric vehicles which may add electrical load onto the final distribution system – and potential drop in voltage OR
- b) growth in distributed generation which may cause an increase in voltage.

Under any scenario there is no justification for excessive voltage.

There is a need for an incentive within the regulatory framework of RIIIO-2.

Hence, the potential scale and impact of this proposed regulation revision could amount to 2% savings of electricity purchased and a commensurate reduction in carbon emissions. It would also reduce the number of failed appliances and provide social benefit to vulnerable customers?" It would free up capacity on the final distribution network.

END