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Dear Ms Jenkins

Regulating Energy Networks for the future: RPI-X@20 Emerging Thinking

The IET is one of the world's leading professional bodies for the engineering and technology community and, as a charity, is technically informed but independent of network company, equipment supplier or service provider interests. We are pleased to comment on the emerging thinking from Ofgem's valuable RPI-X@20 work.

The IET welcomes Ofgem's RPI-x@20 Emerging Thinking consultation and the work behind it. The scale of change in the electricity industry over the next 10-20 years cannot be overstated if we are to achieve the 2020 and 2050 targets for decarbonisation. The opportunity for major change to network regulation comes only rarely and it is important that whatever changes are made are fit for purpose for the very different and much more uncertain world we are entering.

The IET stands ready to support Ofgem in navigating this uncertainty and we offer the IET's good offices to assist in building links between new stakeholders, making use of our impartiality, industry knowledge, and facilities.

This submission has been prepared on behalf of the Board of Trustees by the IET's Energy Policy Panel and takes into account input from the IET Power Trading and Control Technical and Professional Network.

Please let me know if the IET can be of any further assistance.

Yours sincerely

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REGULATING ENERGY NETWORKS FOR THE FUTURE:
RPI-X@20 EMERGING THINKING

Submission by the Institution of Engineering and Technology (IET)

Introduction

The scale of change in the electricity industry over the next 10-20 years cannot be overstated if we are to achieve the 2020 and 2050 targets for decarbonisation. The opportunity for major change to network regulation comes only rarely and it is important that whatever changes are made are fit for purpose for the very different and much more uncertain world we are entering. Within the next 20 years we are likely to see:

- The smart home becoming a reality, with extensive automation built in, even without drivers for demand management
- Extensive deployment of community energy as developers and local government strive to meet zero carbon development targets. This will likely include distributed renewable generation, CHP and use of district heating and perhaps district cooling
- Potentially, a switch to an electric vehicle fleet, which could occur quite rapidly once adoption tipping points are reached – with major implications for charging infrastructure and network capacity.
- Potentially the mass adoption of air and ground source heat pumps, each a source of new and potentially time-shiftable electricity demand
- Mass participation of the demand side in the management of the electricity network

All these developments will have a major impact on networks and will need a step change in the capability of network operators to innovate and deliver new solutions at scale. Smart metering and smart grids will need to become the norm, and will continually evolve as the shape of the new energy economy becomes clearer. Mistakes will inevitably be made, and distribution network operators (DNO)s will need to be incentivised to balance innovation as the norm with risk management in deployment of new technologies.

A feature of this new world will be much greater levels of integration, which will challenge current industry structures. Network operators, supply companies, meter companies, local authorities, car park operators, ESCOs, suppliers of white and automotive goods, distributed renewables and home automation will all need to work closely together to make solutions seamless. This is completely outside current industry experience and will need also to be compatible with what is happening across the rest of Europe and elsewhere. Technical standards will need to be developed and accepted.

The IET stands ready to support Ofgem in navigating this uncertainty and we offer the IET's good offices to assist in building links between new stakeholders, using our impartiality, industry knowledge, and meeting facilities.

The IET's key messages

A Given the numerous uncertainties that lie along the development path, it would be helpful if the nature of the innovation process was more clearly acknowledged. It is an inevitable part of this process that some technical and commercial innovations will result in initiatives that come to a premature termination. In such cases, it is important that costs are allocated in a fair manner and that there is a constructive understanding

between network companies and the regulator on matters such as early asset write offs. (Q1.1)

B We have a concern that the necessary stakeholder executive framework has not been identified as a key element. For example the development of standards, testing and certification is beyond individual network companies to address. Co-ordinated action is essential and this should be provided with executive authority from government and regulator. The problems are too complex to progress if addressed at a technical working level alone. (Q1.4)

C Climate change adaptation should in our view form the basis of a practical measure that is directly in the interests of customers. In particular the inter-dependencies between the energy sector, transport and communication sectors will be critical in the national interest at times of duress. (Q2.2)

D The consultation document does not address the necessary resourcing, in terms of new skills needed for the future, and how these will be developed and funded. It is our observation from an engineering perspective that network companies have limited professional resources all of whom are highly utilised (in practice over-committed). A business plan filled with ambition will carry little conviction unless the business infrastructure, competences and cultures are also part of the planning. (Q4.2)

E The change of paradigm ahead, with greater customer engagement and distributed energy resources, would benefit from a fundamental review the roles of suppliers, network companies, and the supplier hub including consideration of the role of Distribution System Operator (DSO). (Q5.3)

Our detailed responses to the individual questions are given below:

CHAPTER 1 A NEW REGULATORY REGIME FOR A SUSTAINABLE ENERGY SECTOR

Question 1.1: Do you think our desired outcomes for the future regulatory framework are appropriate? Are there any we have missed?

Ofgem's consultation has been comprehensive and this document provides an informative and helpful perspective. As regards desired outcomes, a point that we would wish to add would be to note the importance of working with the grain of innovation. That is to say, recognising the nature of innovation processes and ensuring alignment of regulatory frameworks, incentives and targets to accommodate new activities that differ from traditional business in the companies. This will be of importance in view of the numerous uncertainties that lie along the development path.

It will be important that this goes beyond periodic review points and a flexible approach to governance. For example, the nature of the technical and commercial innovation ahead will inevitably result in initiatives that come to a premature termination. The underlying reason for reaching these 'dead ends' may be as a result of poor implementation, but equally may be the inevitable outcome of the innovation process. If the latter, it is important that costs are allocated in a fair manner and that there is a constructive understanding between network companies and the regulator on matters such as early asset write offs. Acknowledgement of the nature of the innovation process would be helpful and further work might usefully be undertaken to more comprehensively dimension the regulatory perspective.

Question 1.2: Do you agree that we need a fundamental change to the existing 'RPI-X' frameworks to ensure these outcomes are delivered?

Yes, we agree that today's frameworks are not sufficient for the future.

Question 1.3: Do you think the suggested new framework is the best way of delivering these outcomes in the future? Are there any aspects you would change? Have we missed any key aspects?

There is much good thinking presented here that we support, noting that of course much will depend on the detail. As regards the large building blocks, we have a concern that the necessary stakeholder executive framework has not been identified as a key element. This is of course wider than the regulatory framework, but the regulator is a principal stakeholder. The reason for identifying this is the concern that we have for the scale of changes ahead, the complexity of integrating new with old, and the pace of change that is required. To offer one example, it is widely recognised in engineering sectors that effective implementation with minimum risk requires development of standards, testing and certification, so that open systems are created, procurement can be cost effective and in service performance guaranteed. This is essential but time-consuming work; it requires an international perspective, experts with deep knowledge (who are in short supply), and GB-wide (but not GB-specific) solutions if global manufacturers are to engage with us. In practical terms this is beyond individual network companies to address. We would be pleased to amplify these points but in summary are of the view that co-ordinated action is essential and that this should be provided with executive authority from government and regulator. The problems are too complex to progress if addressed at a technical working level alone.

It would be to consumer detriment if these issues were not addressed and Ofgem's references to perhaps allowing greater involvement by third parties, energy service companies and so on, adds to the importance of the stakeholder framework being carefully defined and governed.

CHAPTER 2: AN OUTCOMES-LED FRAMEWORK

Question 2.1: Do you agree that a new regulatory framework should focus on delivery of desired outcomes?

This is in our view a good general principle, but can be problematic to define where outcomes may be long term or the actions being taken are facilitative. It will be important that implementation is pragmatic and not over-prescriptive.

Question 2.2: Do you have any comments on the categories of outputs related to these outcomes?

Appendix 2 provides a comprehensive list of challenges for network companies and rightly identifies climate change adaptation. This should in our view form the basis of a practical measure that is directly in the interests of customers. The topic requires careful definition and extends far beyond matters such as flood defences; in particular the inter-dependencies between the energy sector, transport and communication sectors will be critical in the national interest at times of duress. This matter might usefully be identified in 'Proposition 3'.

Question 2.3: Do you have any comments on how these outputs should be incorporated into the new regulatory framework?
Nothing to add.

CHAPTER 3 EFFECTIVE ENGAGEMENT AND ACCOUNTABILITY

Question 3.1: Do you agree that it is appropriate for network companies and Ofgem to improve their engagement with stakeholders as a way of improving the quality and

legitimacy of decision making? Do you have any ideas on how to improve engagement by network companies and Ofgem?
Nothing to add.

Question 3.2: Do you think we should consider introducing a third-party merits-based right to challenge our final price control proposals?
Nothing to add.

Chapter 4 INCENTIVISING EFFICIENT LONG TERM DELIVERY

Question 4.1: Do you have views on our suggestion that financial commitments could be provided for longer than five years for some elements of the price control? What would be the appropriate length of this partial 'longer' period? To which aspects of the control might it be appropriate to give a longer-term commitment?
Nothing to add.

Question 4.2: Do you have views on our suggestions on what business plans might look like in the new regulatory framework?

This chapter of proposals is bold and presents a vision of highly proactive regulated companies. It is our observation from an engineering perspective that these companies have limited professional engineering resources all of whom are already highly utilised (in practice over-committed). The consultation document does not address the issues of enhanced resourcing, the skills needed for the future, and how these will be funded. A business plan filled with ambition will carry little conviction unless the business infrastructure, competences and cultures are also part of the planning. This appears to be absent from the analysis yet is a problematic matter to address from a management perspective. We would suggest that the good thinking evidenced in RPI-X@20 to date, including the consideration of incentives and initiatives, should be extended to this topic area while the ink remains wet. It would strengthen confidence in the deliverability of the changes presented.

Question 4.3: Do you have comments on our ideas on how efficient costs might be assessed in the new regulatory framework?
Nothing to add.

Question 4.4: Do you have comments on our ideas on how efficient long-term delivery might be incentivised in the new regulatory framework?
Nothing to add.

Question 4.5: Do you have comments on our suggestions of how the new regulatory framework might encourage network companies to anticipate and deliver on the needs of existing and future consumers and network users?
Nothing to add.

Question 4.6: Do you have views on our ideas on how the interactions between charging and price review incentives might be taken into account at price reviews?
Nothing to add.

Question 4.7: Do you have comments on our suggestion to treat companies differently at the price control, both in terms of process and incentives, reflecting planning and delivery performance?

This proposal has merits and de-merits; of some concern from our perspective is the potentially subjective nature of some of the performance criteria identified – for example 'engagement', 'proactivity' and 'working with others'. These are in effect inputs, not outputs,

and might be better regarded as contextual information rather than performance measures when comparing companies.

Question 4.8: Do you have views on our suggestion to open up some aspects of delivery to competition?

This has merits as a concept and perhaps as a rather crude incentive, but its enactment could also be seen as an admission of failure to create strongly-performing regulated companies. If Ofgem is having to contemplate such measures, is it sure that it has understood what is holding back performance where it thinks that is the case?

Competitive awards might be open to the challenge that they are cherry-picked and are unrepresentative of regulated company business over all. Care will need to be taken to gain the best of introducing a partial competitive environment while having regard for the responsibilities that must be discharged under Licence obligations by the regulated companies.

Question 4.9: Do you have comments on the design of a cross-sectoral time-limited innovation stimulus that is open to a range of parties?

While opening awards to non-network parties is an interesting idea to develop, the idea of cross-sectoral approaches might bring complexity and administrative burden beyond its real value. Incentive mechanisms tend to be straightforward in concept, but have 'the devil in the detail' and it will be important to evaluate the costs as well as the benefits of a cross-sectoral development. (A Regulatory Impact Assessment might be helpful at an early stage).

Question 4.10: Do you have comments on our straw man on how we would embed our financeability duty into the new regulatory framework?
Nothing to add.

Chapter 5 CROSS-SECTORAL SOLUTIONS FOR A SUSTAINABLE ENERGY SECTOR

Question 5.1: Do you agree that a new regulatory framework can deliver our desired outcomes within the existing industry structure?

Industry structure clearly cannot be taken for granted as it was established for a different context. It is likely that changes to structure will be beneficial.

Question 5.2: Do you agree that it is appropriate to encourage network companies to work with others to identify cross-sectoral solutions to the challenges the sector faces?

Working with in partnerships, alliances and other collaborative mechanisms is likely to be necessary and helpful in view of the increasing inter-connectivities across sectors (e.g. with communications, transportation and the built environment) and the need for competences beyond those found in traditional regulated companies (for example closer public and customer engagement for distributed energy and demand response). However it is our observation that effective partnerships take considerable time to mature and become effective and the form of the regulatory measures and incentives should recognise the long-game that has to be played out here.

Question 5.3: Do you agree that the regulatory framework should ensure energy network companies facilitate effective competition in energy services?

We have some concern that Ofgem's proposals appear to focus on Energy Service Companies as the exclusive model. The change of paradigm ahead with greater customer

engagement and distributed energy resources, would benefit from a fundamental review the roles of suppliers, network companies, and the supplier hub. For example, introducing the role of Distribution System Operator (DSO) might be expected to bring a number of benefits.

IET
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