



UNRESTRICTED REPORT

Strategy consultation for the RIIO-ED1
Electricity Distribution Price Control
EA Technology's Submission to Ofgem's Consultation

November 2012

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Delivering Innovation in **Power Engineering**

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EA Technology

EA Technology is one of the UK's leading power asset management companies, based at Capenhurst, near Chester. Its origins date back to the mid-1960s, when it was established as the UK Electricity Industry's Research and Development arm. The business has since evolved and developed to its present status of an independent, employee owned company, working on behalf of clients in the electricity, energy, infra-structural and associated sectors.

EA Technology provides a wide range of specialist services to the Distribution Network Operators and network users in the UK and overseas, including surveying and monitoring of asset condition; consultancy services on strategic asset management for ageing networks; failure investigation and analytical services, and supply of specialised instrumentation for condition assessment and fault location for cables and switchgear. We also coordinate a number of forums which the DNOs participate in, enabling them to develop common approaches to tackling shared projects and to learn from each other's best practice. Over recent years, we are increasingly recognised as thought leaders in the future networks arena, actively participating in a number of Low Carbon Network projects and working with the Smart Grid Forum.

EA Technology welcomes Ofgem's strategy consultation for the RIIO-ED1 electricity distribution price control and is pleased to provide its response in the following pages. We have endeavoured to ensure that our response to this consultation is a useful contribution to the process and have aimed to keep it concise. We are willing to discuss any of the issues raised in further detail, if required.

Our responses to the Consultation

EA Technology routinely works with a wide range of stakeholders, within the electricity industry and wider energy sector. We therefore fully appreciate the size and the complexity of the task facing Ofgem in setting this first Electricity Distribution Price Control under the RIIO framework. The task is further complicated for this price control review by the current economic climate and the uncertainty both in the rate of take-up of Low Carbon Technologies and in the optimum way to design, build and operate networks to accommodate a range of penetrations of Low Carbon Technologies. That said, we fully support the RIIO framework as a means to incentivise the DNOs to meet the challenges of delivering a sustainable energy sector in an economically efficient manner, whilst providing the flexibility to accommodate a range of outcomes from economic and low-carbon drivers. We believe that this is both in keeping with Ofgem's longstanding commitment to champion the interests of customers and to seek continuous improvements in performance, as well as the more recent focus on promoting sustainable electricity networks.

EA Technology's responses to the chapters of the RIIO-ED1 Overview consultation document and to the specific questions raised by the consultation are provided in the following pages. Our response takes the form of a combination of direct responses to some of the specific questions posed by Ofgem in the Overview consultation document, along with a broader discussion of some of the topics contained within the chapters, which we believed would benefit from further comment. Where necessary we have made reference to specific parts of the Associated Documents. We have targeted our response to those areas where we feel we are qualified to contribute and have therefore not responded to those questions

outside our expertise. Where a question has wider scope we have not commented outside of our expertise.

Chapter 3. Incorporating stakeholders views

In the competitive world, a successful business is one which delivers products and services which are valued by its customers, of a quality and at a price which its customers judge to be appropriate and reasonable. If either the products and services it provides are not perceived to be required or the price is considered unreasonable then the business will not be able to trade successfully. It is essential for any business to listen to its customers and engage frequently with them in order to understand their wants, needs and constraints.

Distribution networks are natural geographic monopolies and therefore are regulated, with Ofgem acting as the surrogate customer. However, the challenges on distribution networks are becoming more complex and varied. Specifically there are already distinct geographical differences in the rate of take-up of Low Carbon Technologies, driven by regional economic and political differences. We believe that it is no longer possible for a “single customer voice” to fully represent the myriad of views.

The proposed stakeholder approach should enable DNOs to learn the views of their consumers and wider stakeholders and hence form a clearer view of what its customers require and how these services are valued. It remains to be seen if there will be markedly different responses from the stakeholders of the different DNOs. In the event that there are marked differences between “local” views and more general views discovered by Ofgem’s stakeholder engagement then we hope that DNOs are positively encouraged to accurately represent and react to these views in their business plans and provided that they are well-justified these would take precedence.

Chapter 4. Form and Structure of the Price Control

We support Ofgem’s movement to a longer price control period with the emphasis on stakeholder engagement and sustainability. We have no specific comments on the appropriateness of timetable and materiality of proposed changes in allowed revenues and charges between price controls.

Chapter 5. Ensuring Output Delivery

We believe that output measures are beneficial in establishing a clear framework for DNOs to demonstrate the effectiveness of their strategies for both satisfying customer’s requirements now and ensuring that their networks remain fit for purpose into the future, even though the detail of that purpose is likely to change. Not unexpectedly, Ofgem’s research has shown that customers value a reliable network and while they understand that supplies cannot be 100% reliable, nevertheless they want supply to be restored quickly and they want effective communication, both in times of loss of supply and when they want to connect to the network. They want the network to be safe and it would be better if it doesn’t damage the environment. They are likely to be less interested in what is required to ensure reliability or what is required to change networks to accommodate Low Carbon Technologies.

It is difficult to assess, over the relatively short timescale of a price control period, what is most efficient and well-targeted investment. Network assets have long lifetimes, many times greater than a regulatory review period. Network performance indicators today depend not only on investment and activities today, but are also strongly dependent on the past asset management activities which can have occurred over many years. Network performance in the future depends on asset management activities today, and also on the choices that are made when investing to accommodate low carbon technologies. It is difficult for customers to understand and judge what is appropriate in this regard.

The division of outputs into Primary Outputs and Secondary Deliverables is helpful in this regard. Primary Outputs form the headlines for communicating with consumers today and are likely to be used by them when assessing value for money. If a DNO concentrates only on delivering its Primary Outputs, it is possible that it does not deliver necessary actions to ensure the longer-term delivery of Primary Outputs. Secondary Deliverables can be used by Ofgem to assess the efficacy of the actions that DNOs are taking to ensure that their networks are fit for their future purpose, insofar as this is known.

DNOs know their networks much better than a regulator ever could, therefore it is appropriate that the DNOs set out their plans for output delivery of secondary deliverables, with a cost and benefit justification. It is also appropriate for the DNOs performance in delivering the secondary deliverables, against their plans, is monitored by Ofgem.

Many of the Output Measures have been used in DPCR5 and are considered to be operating well. We believe it therefore is appropriate to continue these in RIIO-ED1. We support the use of output measures which are closely coupled to the actual long-term performance of DNOs, for the reasons given above. There is currently great uncertainty regarding the rate of uptake of low carbon technologies and the extent of geographical differences. Initial experience suggests that there may be large regional differences in the number of connections at any given time. Therefore we believe that specific output measures associated with the connection of low carbon technologies are not appropriate. Similarly, because the rate of uptake of low carbon technologies is not known we believe that it is not appropriate to have specific reliability measures associated with low carbon technologies. Therefore we agree with Ofgem's proposal not to introduce a specific output focussed solely on low carbon technologies.

We note that Ofgem proposes to ensure a more consistent methodology for assessment of Load Index and Health Index. Consistency in methodology is required for a fair and meaningful comparison of performance, providing that the framework that is adopted is well considered and can adequately represent differences in the strategies which are adopted to manage the assets. We therefore believe that it is for the individual DNOs to comment on the appropriateness of the proposed methodologies.

We strongly support the introduction of criticality of an asset. Primary Outputs should describe actual performance. Secondary deliverables should provide an indication of likely future performance and therefore ideally should be a robust measure of the risk that is carried by a DNO, of not achieving future Primary Outputs. Risk is the product of the probability of an event and the consequence of that event. An event that has low consequence carries a lower risk than one which has the same probability of occurring but has a greater consequence. Criticality is a measure of consequence and its inclusion as a secondary deliverable should help DNOs to focus their attention on those assets that represent the highest risk. In order to achieve this aim it is imperative that an appropriate definition of criticality is adopted.

We note that in the overview document it is stated that "it is intended to enhance the health index to include criticality" and in the annex on reliability and safety it is stated that "it is

intended to enhance the health index methodology to include criticality”. Our view is that this subtle difference could have major implications. In order to understand the most efficient and effective way to manage risk it is essential that probability and consequence are assessed separately and then combined to produce and estimate of risk. This is necessary to correctly determine whether the most appropriate risk reduction action is to reduce probability or reduce consequence. Therefore we support the enhancement of the method but strongly believe that the measure of criticality should be additional to the measure of health index and not combined within it. We support the principle of the approach illustrated in table 6.5 and table 6.6 of the annex on reliability and safety.

We strongly support the approach of the use of health indices and particularly paragraph 6.30 of the Reliability and Safety annex. We consider that risk reduction is the most appropriate means to measure the effectiveness of delivery.

We are generally happy with the proposed approach to use load index as an output measure. However we do have some concern over the concept of “target utilisation” as illustrated in figure 5.2 of the Reliability and Safety annex. While it might be informative to benchmark relative levels of utilisation across the GB network, we feel that it would be inappropriate to specify any particular value as optimum. The most efficient utilisation will need to take into account stakeholders’ views on for example quality of supply, asset lifetimes and operational flexibility. It is unlikely therefore that a “one size fits all” approach would be appropriate.

We note that it is intended to enhance the health index methodology to include criticality but it is not proposed to similarly enhance the load index methodology. The use of load indices is more recent than the use of health indices and therefore it is probably appropriate that at this time criticality is not introduced, however the load index alone, without consideration of criticality, is not a measure of risk. We recommend that the methodology for this is developed over the price control period. This would be a significant step towards achieving Ofgem’s goal of a risk-based framework for all network investment.

We support the proposal to replace the DPCR5 losses output measure using settlements data. We have for some years believed that an appropriate input measure is the most cost effective way of incentivising DNOs to actively pursue the most cost effective solutions for reducing network losses and employ equipment that is guaranteed to reduce network losses where it is cost effective to do so. Therefore we agree with the proposal to introduce an obligation to reduce losses and a statement of how losses reduction is planned to be addressed along with an allowance for reducing losses.

Chapter 6. Assessing efficient costs

We believe that the introduction of a requirement for business plans is a positive step, as it enables DNOs to describe *why* they are proposing their planned actions and expenditures in addition to describing *what* their planned actions and associated costs are expected to be. It is likely that consumers will not understand the need for, and value of, any investments that are made ahead of immediate need. However reactive investment only is likely to be both inefficient and result in deteriorating network performance. DNOs know their networks better than a regulator. The opportunity for DNOs to explain in their business plans why certain actions are required and what the benefits of the proposed investments during the RIIO-ED1 period are, should enable Ofgem to better facilitate an industry-wide understanding of the costs and benefits of smart grids solutions, potential barriers to their implementation and how to resolve them.

We believe that the proportionate treatment has the potential to deliver substantial efficiency benefits, both for DNOs that are fast tracked and for Ofgem. It also will enable those DNOs that are fast tracked to mobilise earlier in preparation for implementing their strategies under for RIIO-ED1 than would otherwise be the case. The transfer of strategy to activities is therefore likely to be better planned and more likely to deliver the planned outputs.

The high level descriptions of the criteria for assessing business plans seem reasonable however it is not clear to us whether a DNO that has a well justified plan which shows materially different numbers to those predicted by Ofgem's cost assessment model (as illustrated in figure 6.2 of the cost assessment annex) would be fast-tracked, however well explained it is.

With regard to the provision of condition information as an essential input into the cost assessment process, we propose that Ofgem define the required data, such as asset life curves, that would be necessary for Ofgem to rapidly and efficiently form a view as to whether a particular business plan is well justified - thereby enabling the price control for that DNO concluded early (assuming no other issues with the business plan).

There is a risk that the incentive of seeking the benefits of early conclusion of the price control results in DNOs following a forecasting methodology which is effectively prescribed by Ofgem, rather than stimulating the development of more innovative approaches where they can demonstrate clear benefit.

Chapter 7. Innovation

We believe that innovation is essential if DNOs are to ensure the delivery of a sustainable electricity sector and facilitate the transfer to a low carbon economy. Therefore we fully support the aims in RIIO-ED1 to stimulate innovation.

The IFI and the Low Carbon Network Fund incentives have been successful in stimulating both innovative developments and network demonstrations; however the belief in the need for innovation and the culture to ensure it occurs is not yet sufficiently embedded in DNOs for innovation incentives to be removed. We support the philosophy of a time-limited innovation stimulus, both to stimulate the innovation that is necessary in this price control period and to reinforce in the culture of DNOs, that identifying, funding and managing appropriate levels of innovation is an essential element of a well-considered business strategy.

We believe that innovation incentives should continue until DNOs are demonstrably investing in innovation outwith the innovation stimuli, using well justified business cases that are accepted by Ofgem. There is a need for learning through experience by the DNOs (and by Ofgem) for the appropriate culture to be established where innovation is a natural part of a DNOs business. We consider that the Network Innovation Competition and Network Innovation Allowance are good vehicles to facilitate this learning.

We have responded separately to the informal consultation on the Network Innovation Competition and the Network Innovation Allowance Governance Documents and therefore we have not commented further in this response.

Regarding the funding threshold for the Network Innovation Competition, our view is that unless there is clear evidence that LCNF projects are not generating good learning for all DNOs and delivering benefits to consumers then the threshold should be set at, or close to, the upper limit of £90m per annum for the first two years of RIIO-ED1. We support the

proposed comprehensive review in 2016 of LCNF projects and that the outcome of this review should set a revised level of the NIC from 2017-18 onwards.

The Innovation Roll-out Mechanism appears to be a useful mechanism for DNOs to recognise and take advantage of innovative approaches within the price control period, rather than waiting for the next price control.

We perceive a potential perverse incentive for DNOs to understate the benefits that they receive from innovation, as this could lead to reduced cost allowances and therefore lower increases in income and RAV in the future. We suggest that before removing the time limited innovation stimuli Ofgem propose and consult on a benefit sharing mechanism between customers and DNOs which enables DNO shareholders to retain and benefit from a proportion of the value that is generated from innovation. We believe that such a mechanism would help innovation to become a natural part of a DNOs business.

Chapter 8. Managing Uncertainty

One thing is certain.....the future is uncertain. Setting this price control is complicated by the current economic climate and the uncertainty both in the rate of take-up of Low Carbon Technologies and in the optimum way to design, build and operate networks to accommodate a range of penetrations of Low Carbon Technologies.

We believe that the proposed uncertainty mechanisms are generally in line with the principles of RIIO and should enable the revenues of DNOs to be adjusted in the light of variations in the broader environment in a transparent and effective manner. We have a specific comment on the proposed low carbon technologies volume driver.

We agree that there are merits in having a common, appropriately calibrated volume driver across all DNOs. We believe that neither of the two options is ideal. Our reasoning is:

Option 1: Our analysis has shown that clustering has a significant impact on the amount of low carbon technologies a network can accommodate and the cost of intervention to ensure that the network is fit for purpose. We would argue against a £/MW of low carbon technologies connected because many networks can accommodate reasonable numbers of LCT if deployed uniformly across GB. It is apparent from the roll-out of photovoltaics that both rational and irrational clustering occurs in practice. A broad-brush £/MW is likely to penalise networks where clustering is taking place and investment is needed.

Option 2: Allowing a unit cost per intervention with no mechanism to tie it to the number of LCTs that have been connected might result in interventions being made on networks at the wrong time.

Therefore we believe that a hybrid of these two approaches could be appropriate. This could either be achieved by using the unit cost per intervention and the degree of clustering to establish a reasonable unit cost per MW for a given network type; or the number of MW could be used to establish a reasonable trigger point for an intervention, for a given network type.

To be applied with confidence the volume driver that is chosen would need the assumptions which underlie the mechanism to be sufficiently granular and robust. In order to accommodate uncertainties in the assumptions we suggest that the size of the dead band or trigger point for the low carbon technologies volume driver uncertainty mechanism be explicitly related to the magnitude of the uncertainties in the assumptions.

On the basis that the quantum of investment associated with LCT is likely to be significantly lower for the RIIO-ED1 period than that predicted in RIIO-ED2, an alternative approach might be to set allowances on the basis of conventional reinforcement thereby giving an incentive to the DNOs to outperform by using more innovative interventions. We believe that the marginal cost increase in following this approach would not be high and it would enable the true costs of innovative interventions to be set by the market. Ultimately we believe that the cost savings from using innovative interventions that are identified by DNOs within RIIO-ED1 could be passed on to customers in RIIO-ED2 and beyond.

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