

FAO: James Veaney
By Email: riio2@ofgem.gov.uk

Dear James,

Thank you for providing us with the opportunity to give feedback on the proposed RIIO-2 framework.

Smart Wires is the leader in grid optimization solutions that leverage its patented modular power flow control technology. Our vision is to create dynamic transmission grids that are clean, reliable, affordable and safe. We partner with network companies across the world to address the rapidly evolving challenges of today and tomorrow by transforming the way that transmission grids are planned and operated. Our customers in the UK have already recognized the positive impact that our solutions can have on their electricity grid. By optimising their existing network, these companies deliver value to consumers. At present, we are helping a UK network company better integrate renewable energy sources by leveraging under-utilized circuits to improve transfer capabilities of the system.

Across the world, we find that network companies often do not have strong innovation cultures due to resistance to change, risk-aversion, lack of incentives, and an inherent preference towards traditional solutions. Furthermore, they are often not incentivised to invest in innovation, preferring to invest in traditional infrastructure solutions which are perceived to be less risky. As a result, many of these network companies struggle to transition innovative solutions from the innovation group to BAU projects. However, this is not the case in the UK due to Ofgem's regulatory framework. We see Ofgem as a leading energy regulator that has transformed the way network companies plan, develop and manage their grids while keeping consumers at the heart of investment decisions. The incentive-based RIIO framework has played a huge role in creating a regulatory environment that benefits all stakeholders. The emphasis placed on driving innovation and efficiency to deliver real value to consumers has helped UK network companies lead the way towards the low carbon, decentralised, flexible and dynamic grid of the future. Considering Ofgem's plans for RIIO-2, we support Ofgem's commitment to continue building innovation and efficiency into the cultures of network companies and streamlining the transition of projects from innovation into BAU, in order to maximise the value delivered to UK consumers. We advocate the roll-out of similar mechanisms across the world to incentivise network companies to make smarter investments that prepare their grid for the uncertain future.

In our response we comment on the aspects of RIIO-1 that we propose be retained in RIIO-2 and we address the consultation questions where we felt we could provide insightful information. Our response is focused on RIIO for electricity network companies.

RIIO-1 framework

We agree with Ofgem that RIIO-1 was successful in achieving its high-level objectives, particularly in terms of network companies responding to the changing needs of consumers and delivering on outputs that consumers value. While the returns earned by network companies may have been higher than expected, we believe that RIIO-1 led to network companies developing a more flexible, dynamic grid that safeguards the needs of both current and future consumers. RIIO-1 has been successful in embedding innovation into the culture of network companies and we hope that this will continue in RIIO-2. We truly believe that company culture is key to organisational change and will play an important role in facilitating the energy transition in the UK.

The innovation mechanisms have clearly increased the level of investment that network companies are making in innovative new technologies and business models. These investments have already delivered cost savings to consumers. We are pleased to see that Ofgem will continue to use the RIIO framework for the next regulatory period. In addition to these points, we have identified two important aspects of RIIO-1 that we propose retaining.

(1) Retain the Concept of Pay for Performance Using Output-Based Incentives (Question 19)

We suggest retaining the concept of pay for performance using output-based incentives in RIIO-2. We have found that network companies in regions outside of the UK often make investment decisions based on incentives towards large capital spends. However, in RIIO-1 network companies are rewarded for delivering on specific outputs. Consequently, UK network companies always consider the value to consumers of potential investments during the decision-making process. In this way network companies are encouraged to make efficient investment decisions to optimise the way they develop and manage their grids.

(2) Retain the Use of Multi-Scenario Analysis (Question 9)

In RIIO-1, Ofgem accepted that the future is uncertain and therefore it is impossible to perfectly predict what the needs of the future grid will be. Since the start of RIIO-1 we have already seen some major developments in the ways that energy is generated, managed and supplied, such as an uptake in electric vehicles, and increasing levels of local generation. These changes are creating unpredictable levels and patterns of demand as well as changing the way power flows through electricity networks. As a result, network companies are seeing increasingly variable levels of congestion in certain areas of their grid that may or may not disappear in years to come. While the need date for certain grid development projects is generally clear, the duration of the need is often unclear. If the duration of a need is unclear, large costly infrastructure projects may no longer be required in future scenarios. Bulk transmission solutions can therefore be quite risky as consumers will continue to pay for these permanent investments that may become redundant before the end of their asset life. For these reasons, we support the continued use of multi-scenario analysis for analysing options proposed by network companies in RIIO-2. Through assessing the options based on several possible future scenarios Ofgem is ensuring that the best option is selected, no matter how the industry evolves. This will minimise the risk of selecting solutions that will likely become underutilised or redundant in several scenarios.

The next section of our response focuses on questions, 1, 9, 11, 12, 13, and 15. In response to these questions we provide feedback on Ofgem's proposed changes for RIIO-2.

Giving consumer's a stronger voice (Question 1)

We broadly support an increased level of stakeholder engagement in the preparation of the business plans. We believe that a more collaborative process, that considers the views of a variety of different stakeholders, will result in higher quality business plans that deliver real value to consumers. Through open discussions with stakeholders, network companies will be equipped with the information they need to make the best possible business decisions. However, we think that network companies, in both distribution and transmission, should retain control of the initial stages of creating the business plan. We agree with CEPA that RIIO-2 should specify where stakeholder input is most valuable in the business plan process in order to achieve the best possible end result.

Responding to how networks are used (Question 9)

Networks Utilisation, Stranding and Investment Risk

The ongoing energy transition is creating uncertainty in the demand for electricity and load flows in the future, which will likely continue to fluctuate over the coming years due to new sources of demand, changes in energy generation, and changes in the way that consumers interact with the network. While the new energy future has the potential to deliver a vast array of benefits to consumers and society as a whole, it also contributes to the challenges of managing electricity networks.

It is clear from this consultation that Ofgem are committed to ensuring that UK network companies prepare their systems for the transition to a low carbon, distributed, flexible and dynamic energy system. We agree that the RIIO-2 framework must ensure that network companies meet the energy needs of both existing consumers and protect the needs of consumers in the future. To do this, network companies must develop an adaptable grid that can handle changing levels and patterns of demand as well as changing load flows.

In response to question 9 on this topic, we propose that the following options are incorporated into the project evaluation process in the RIIO-2 framework. These proposals align with Ofgem's higher level objective to create an adaptable framework that incentivises network companies to develop flexible dynamic grids that safeguard the needs of current and future consumers.

Option to Redeploy Assets

Firstly, we propose that Ofgem incorporates an option to use redeployable assets into the RIIO-2 framework. Large infrastructure projects are expensive and carry a high risk of becoming underutilised or even redundant if the future evolves in an unexpected way. Consumers will ultimately bear the costs of such infrastructure projects that turn out to be only required in the near-term. However, redeployable assets would mitigate the risk of asset stranding, as the asset could be moved from one location to another if the network needs change. Redeployable assets may even resolve a short-term network need entirely, eliminating the need for costly infrastructure. This minimizes the risk of consumers paying for expensive infrastructure that is not fully utilised, ultimately saving consumers money.

Option to Scale Up or Scale Down

Given the future uncertainty and the risk associated with large infrastructure investments, we propose incentivising network companies to invest in smaller projects that can be adapted to whichever future scenarios occur. While this is not always possible we think that large infrastructure projects should only be taken forward where the need is justified in both the near-term and the long-term. This would reduce the risk of capital expenditure on infrastructure that is likely to become redundant before the end of its asset life. Therefore, we believe that the ability to scale up or scale down a solution should be built into the project evaluation process and properly valued based on the benefits this quality provides. In this way, network companies would have the flexibility to adjust the scale of the project depending on how the network needs evolve over time, instead of trying to predict whether a large infrastructure investment that is needed in the near-term will still be needed in the years to follow. This would help to future-proof investments and ensure that the needs of both current consumers and future consumers are considered in the investment decision-making process.

Option to Defer an Investment Decision

We think that asset stranding could potentially pose a risk in RIIO-2 if there is no incentive to minimise large infrastructure investments, when possible. Large infrastructure investments with a long asset life are particularly at risk of asset stranding as, even though they may be required in the near-term, they may no longer be required in future scenarios and become stranded. If this turns out to be the case, consumers would ultimately bear the costs of these stranded assets for the remainder of their asset life.

However, we agree with the stakeholders' responses to the RIIO-2 Open Letter that the risk of asset stranding can be minimised if network companies are incentivised to consider alternative, flexible, least regret solutions. We believe that this can be best achieved through maximising the use of the existing grid, where possible. New technologies and business models are helping network companies to develop more flexible and dynamic grids that can manage changing patterns of load flow and demand. While non-build solutions may not always be possible, network companies should consider these as alternative solutions during the decision-making process for infrastructure investments. Therefore, we propose that network companies are adequately incentivised to defer a large investment decision if they can solve the near-term need without building new infrastructure. This aligns with Ofgem's higher level objective of creating an adaptable framework for RIIO-T2.

Driving Innovation & Efficiency (Questions 11 - 15)

The RIIO-1 framework has been successful in stimulating innovation projects and those projects have already delivered real value to consumers. We admire Ofgem's dedication to embedding a culture of innovation into network companies and we hope to see this continue in RIIO-2. We agree that the NIA, NIC and IRM should be retained in RIIO-2 as they enable network companies to trial new innovative technologies and business models that may otherwise be too risky for BAU. However, we think that the innovation stimulus should be more focused on moving the projects into BAU. We support the increased focus on transitioning more innovation projects into BAU, where the projects deliver long-term value to consumers, which has been a challenge in RIIO-1. This will enable more consumers to benefit from cost-efficient innovative solutions that have already been trialled on the network.

In response to question 12, we agree with the three broad areas of reform identified by Ofgem, particularly the increased alignment of funds to support critical issues associated with the energy transition challenges. We believe that this will help to focus network companies on solving the most critical issues that affect consumers and society as a whole. The RIIO-2 framework should encourage collaboration amongst network companies on these issues and reward shared efforts. If network companies are incentivised to work together, there will be a better overall result for UK consumers.

In response to question 13, we have suggested several trends that we think should be considered during the identification of the critical issues for electricity network companies.

- *Decarbonisation of energy generation* – integration of new sources of renewable energy in a time efficient manner.
- *Changing levels of demand and energy flows* – need for a flexible dynamic grid that can facilitate changing patterns and levels of demand as well as changing energy flows.
- *Distributed local generation* – growth in distributed generation connecting to local networks.
- *Consumer data* – protection and use of increasing levels of consumer data collected by network companies.
- *Consumer behaviour* – customers are demanding increasing levels of choice for the way they interact with the energy system.

We believe that the list of critical issues should be clearly defined and sector-specific (i.e. separately defined for transmission and distribution networks) to ensure that all network companies understand what their projects should be focused on. The list of critical issues should be regularly revised to take account of the changing environment.

We have enjoyed reviewing this RIIO-2 framework consultation and preparing our response. We now look forward to reading the final framework decision later this year.

Yours sincerely,



Grace McLoughlin
Strategy Analyst