

**Moixa Technology Ltd.  
29 – 31 Saffron Hill  
London  
EC1N 8SW**

**Response to Consultation  
RIIO-2 Framework**

Moixa Technology Ltd.  
29 – 31 Saffron Hill  
London  
EC1N 8SW

RIIO-2 Stakeholder Engagement Team  
Ofgem  
9 Millbank  
London  
SW1P 3GE

**\*Moixa approves this document to be publicly listed as part of Ofgem's  
consultation process\***

To Whom it May Concern,

Moixa enthusiastically welcomes the opportunity to participate in this consultation seeking industry's feedback on proposed price controls under the RIIO-2 Framework.

We believe RIIO-2 is a critical opportunity to provide clear market mechanisms for active management of local flexibility resources, storage to support the scale-up ambitions of electric vehicles and distributed energy resources. It is though difficult to address RIIO-2 without a clear timetable and scope for new Distributed System Operators (DSO's) that should supersede DNO's and enable effective local management of networks.

RIIO-2 itself covers a proposed period that will see significant adoption of Electric Vehicles, Energy Storage, and impact of distributed smart and IOT connected resources participating – regulated or not, in the energy system, and impacting price, trading and consumer bills. Without an effective policy then consumer energy prices could rise over 50% driven by increased network charges, green taxes and / or incentives.

Equally there is potential volatility from the growth in renewables, low connectivity to Europe (on interconnects and policy) and from smart meters and market-wide half-hourly settlement enabling time of day tariffs, low wholesale costs during solar and wind peaks. There will also be impacts to the reshaping of supply marketplace from Brexit in how it impacts currencies, inter-country trading and ownership of the energy system.

Moixa can lend insight to this consultation, as the UK leader in residential energy storage, smart batteries and aggregation via our GridShare platform, to enable distributed batteries and electric vehicles to share benefits across the energy system. We view Batteries in

homes and electric vehicles, are a market wide asset class that benefit Behind the Meter (BTM) end-users, At-the-Meter (ATM) Suppliers/ESCO's, Local to Meter (Networks and communities, developers) and aggregate front of meter (FTM) balancing and capacity value. We deliver our services to a series of clients, ranging from large utility companies to local authorities and offer direct battery sales to consumers.

We are therefore keen to see convergence amongst DNOs on how distributed resources can be actively managed and deliver secure contracts and returns to facilitate finance and use of such assets to reduce the infrastructure upgrade cost. The National Infrastructure report estimated a potential £8bn a year could be saved off consumer bills by the effective management and market participation of energy storage. This is critical in Island Nations such as the UK (& Japan), which have low energy system connectivity to other nations, and have to be effective in managing through advanced flexible and local flexibility markets, the growing swing in renewable generation, and in the Electric Vehicle fleet.

The UK currently has 2.5GWh of distributed batteries in the 125k consumer electric vehicles, which is set to rise to over 800GWh by 2030's and over 500GWh within the proposed RIIO-2 period. This will have differential impact on DNOs, and on urban infrastructure cost, so it is difficult to envisage a greater than 5-year price control period, without planned for and expected adjustments based on actual scale-up of electric vehicles and clarity of policy on DSO's and Smart Charging legislation, as well as proposed multi-utility billing via MPANs to help offset and share EV charge impacts. Moixa has experience across this by delivering large scale domestic battery projects for BEIS (DECC, InnovateUK), ERDF, NIC, LCNF over the last 8 years, that lends significant data and insight in how distributed Electric Vehicles will impact distributed networks and communities.

Please see the responses below to the questions detailed in the RIIO-2 Consultation Framework on behalf of Moixa. Should you require any clarification on these responses or would like additional information about Moixa, please get in touch.

Kind Regards,

Harrison Brook

Commercial Strategy and Regulation Manager, [harrison.brook@moixa.com](mailto:harrison.brook@moixa.com).

## RESPONSE TO CHANGES IN HOW NETWORKS ARE USED

### Length of Price Control

(Q2) Do you agree with our preferred position to set the price control for a five-year period, but with the flexibility to set some allowances over a longer period, if companies can present a compelling justification, such as on innovation or efficiency grounds?

The state of the energy market has dramatically changed since the initial release of RII0-1 and is expected to change further still over the next decade with varying mediums of innovation and electric vehicle adoption. Moixa understands that this modular change will incur unforeseen costs given the technological input required to deliver efficiencies, meaning that the current eight-year price control period may be too long given these changes. 5 Years with gateways to review on specific segments (e.g. EV's) would be advised as default, but where developers for new network connections (homes, EV's) could agree a longer fixed term (10 years) on bilateral basis if this reduced the network charges between parties, with a mechanism to review the 5-year extension to wider market events.

As Moixa is an innovator itself, it understands first-hand that exceptions for innovative solutions can directly benefit the market and the consumer alike. As such, it is wholly supportive of the proposal for exceptions to be made for these companies offering innovation, as long as there is an adequate and fair process in place regarding their authorisation. We recommend that any such authorisations have substantive trials, R & D and evidence that it's use will directly benefit the consumer. One proposed alternative which Moixa is less in favor of would be to maintain the current eight-year price control mechanism and implement an extensive review at four years, assessing on a case-by-case basis, whether controls need to be amended.

Certain cost categories should also be set over different periods; companies operating in areas that are undergoing significant change should be potentially given shorter price control periods. For instance, District Network Operators (DNOs) are in the middle of a prolonged transition to become District Service Operators (DSOs) as they begin to become more flexible and manage demand side response and grid flexibility. With changes such as these that directly benefit the consumer, Moixa believes that leeway should be provided with regards to price control periods.

### Whole System Outcomes

(Q3) In what ways can the price control framework be an effective enabler or barrier to the delivery of whole system outcomes?

There is a risk that setting price controls ahead of DSO plan/clarity could be a barrier for the effective delivery of DSO and EV transition.

With the energy traditional boundaries of the energy system's infrastructure beginning to blur, a great deal of consideration needs to be paid by regulators to ensure that barriers for innovation, particularly for carbon reducing technologies are not present. There is an overarching danger with new price controls, in that if they are too low, energy companies will not be able to maintain and develop their infrastructure, however if they are too high, the consumer will be subject to increased charging, potentially causing social, economic and even political repercussions.

Additional barriers to the delivery of whole system outcomes could be the lack of incentives to companies by the framework; there should be company specific financial packages / price control periods offered for innovation and network efficiencies.

With regards to enablers within the proposed framework, Moixa supports the notion set out of a price control that assesses whether network companies have rigorously tested the need for new investment while at the same time ensuring they can efficiently meet the network access needs of the users in a changing system. With smart technologies such as aggregated battery storage, the cost for the maintenance and development of infrastructure for transmission and distribution services are expected to remain constant (as it is implementing software using existing hardware), enabling the price controls to remain similar.

(Q4) Do you agree with our minded-to decision to retain the current start dates for the electricity transmission and electricity distribution price controls, and not align them?

Moixa is supportive of the proposal aligning the start dates for the transmission and distribution controls. We believe that these will allow the market to be better coordinated with pricing infrastructure improvements. This would also ensure that incentives in each sphere would remain fair and consistent.

(Q5) In defining the term 'whole system', what should we focus on for the RIIO-2 period, and what other areas should we consider in the longer-term?

When focusing on the 'whole system', Ofgem must pay equal attention to impacted sectors (i.e. energy, heat, transport etc.) and consider asset classes like BTM storage and EV's that impact the whole system.

. Greater consideration should be made to organisations that are making a conscious effort to decarbonise the energy / heat systems in both the shorter and longer-term, particularly those innovating. Moixa understands that there are already incentives for network companies that motivate them to utilize efficient and innovative system solutions; Moixa believes this should continue and be expanded.

Greater scrutiny also needs to be paid to the definition of what the 'whole system' is. There is a danger that this terminology is too general.

### **System Operator Price Controls**

(Q6) Do you agree with our view that National Grid's electricity, SO price control should be separated from its TO price control?

Separation in the price control should also reflect legal separation; the ESO is an asset light business in comparison to the TO. This seems like the logical next step given the 'delineation' of each's respective responsibilities and role in the market. The ESO should be governed alongside the DSO in RIIO-2.

(Q7) Do you agree that we should be considering alternative remuneration models for the electricity SO? If so, do you have any proposals for the types of models we should be considering?

The current Regulatory Asset Value (RAV) based approach is not necessarily the most appropriate; any new model should reflect the nature and evolving role of the ESO. Engagement with industry stakeholders would likely be the best approach (i.e. workshops, specific consultation etc.).

Not only should Ofgem engage further with industry, but they should utilise data that they have to hand. It should refer to industry to provide, where appropriate, real-time and real-world data to index network costs under RIIO-2. Moixa understands that remuneration models cannot predict future market activity, however greater scrutiny needs to be applied to using this data for forecasting purposes. For instance, NPG recently returned £77 million to their customers as rail electrification projects were cancelled, freeing up funds. If this could have been foreseen or expected, it would have saved the consumer the arduous process of paying excess money and then being refunded.

(Q8) Should we consider alternative remuneration models for the gas SO? \ If so, why and what models?

No Response

#### **Network Utilisation, Stranding and Investment Risk**

(Q9) What options, within the price control, should be considered further to help protect consumers against having to pay for costly assets that may not be needed in the future due to changing demand or technology, while ensuring companies meet the reasonable demands for network capacity in a changing energy system?

Given the current market transformation underway in the energy sector, measures must be taken to ensure investment is not made in underutilized parts of the infrastructure, or areas that are expected to be made redundant in the coming years. As such, companies implementing these measures should ensure adequate R & D is undertaken to make sure that the innovation is necessary, cost-effective and efficient. This will however have to be reviewed on a more specific level and on a case-by-case basis.

Consumer bodies should also be given more power to request a review of a price control when financial returns are deemed excessive. Under RIIO-1 network companies can request a review of the price control but consumers cannot. Moixa proposes that a mechanism is implemented, giving the consumer more oversight of their supplier. We believe that this would increase the accountability and efficiency of how funds are allocated.

Consumer's need to be protected from the rising cost (to DNO) of supporting EV medium and fast chargers. A typical home uses 500-700W at peak based on an average Elexon profile, and is typically sized at 2KW load for network design purposes, but each EV charge point has a 3kW or 7kW charge rate, and fast chargers in excess of 50KW. This is equivalent to a significant multiplier on peak domestic demand and infrastructure, so will become increasingly expensive to support network assets on close and constrained grids. This happened on PV (where Moixa has delivered battery projects to curtail peak solar), so needs clear price-controls and regulated obligations on DNO/DSOs to support low cost domestic EV points, and school/community points, and clear mechanisms to enable active management, to avoid stranding costs or over investment in networks for the occasional peak.

There is also a case for DNO/DSO's to be able to offer low cost finance to third-party assets such as storage and EV points, as is generally in the best position to cost the

benefit of such investments over other upgrade investments. Moixa's view is that DNO/DSO's should be able to be 'Battery Asset Providers' or BAPS, in a similar way to MAP (Meter Asset Providers), but should not be the operators of such assets – which need market wide platforms, such as Moixa has piloted with GridShare.

### **End-Use Energy Efficiency**

(Q10) In light of future challenges such as the decarbonisation of heat, what should be the role of network companies, including SOs, in encouraging a reduction in energy use by consumers in order to reduce future investment in energy networks? What could the potential scale of this impact be?

Moixa is a huge advocate for investment in local energy grids and mechanisms that give the consumer greater oversight over their energy use. We believe that the RIIO-2 Framework should follow the direction the we believe the market is heading – increased generation at local level coupled with greater self-sufficiency (from new tech and falling direct costs to the consumer). By utilizing and promoting local generation and energy aggregation from such technologies, the SOs can offset consumer concerns around both price and stranding.

Moixa supports Ofgem's proposal to implement requirements for network companies to demonstrate how they have considered alternative solutions such as non-building solutions (i.e. energy aggregation via software / platforms). Like any investment, the level of risk should be assessed – Moixa supports this concept and its applicability to RIIO-2; companies should be forced to demonstrate low levels of risk to any infrastructure investment. The impact if this is not assessed properly could be huge and may require alternative investment in the future (remedial in a sense), impacting the cost to the consumer.

BEIS can minimize barriers to investment in energy efficiency by promoting DSR measures and supporting the DNOs transition to a DSO. Moixa agrees with proposals in in the consultation, stating this could be done via low interest loans and direct subsidies to consumers for measures (i.e. smart batteries, solar etc.).

## RESPONSE DRIVING INNOVATION AND EFFICIENCY

### Innovation

(Q11) Do you agree with our proposal to retain dedicated innovation funding, limited to innovation projects which might not otherwise be delivered under the core RIIO-2 framework?

Yes, Moixa wholly supports any and all innovation funding as we are confident that this is integral in developing an energy system that works best for the consumer. We as an organisation have witnessed first-hand, the positive outcomes for the consumer from innovation projects.

Moixa is concerned to read "these incentives may not be strong enough to deliver the amount of innovation required, or within the required timescales; particularly if the innovation undertaken by one company is unlikely to deliver benefits back to that company within a price control period". If innovation is beneficial to the consumer and the wider market - it should be wholly supported and incubated to be developed correctly. Moixa views this as a major barrier to promoting innovation.

We also support the principle of the changes to innovation funding into RIIO-3, as overall RIIO has been significant in catalyzing innovation in the sector, and de-risking innovation ahead of network need, however there is a risk that exponential technology growth of EV, IoT, TAAS, Aggregation, VPP type approaches will significantly outpace regulation and policy.

(Q12) Do you agree with our three broad areas of reform: i) increased alignment of funds to support critical issues associated with the energy transition challenges ii) greater coordination with wider public-sector innovation funding and support and iii) increased third party engagement and (including potentially exploring direct access to RIIO innovation funding)?

Yes, Moixa agrees with this as a concept. We believe much greater detail is required to comment adequately on this.

There needs to be alignment with Challenge objectives and National Infrastructure Strategy, across housing, mobility, and de-carbonizing/security agendas.

(Q13) What are the key issues we will need to consider in exploring these options for reform at the sector-specific methodology stage, including:

(i) What the critical issues may be in each sector and how we can mitigate the bias towards certain types of innovation through focusing on these issues?

In order to mitigate bias, equal attention and review should be listed to each sector in the RIIO-2 Framework.

(ii) How we can better coordinate any dedicated RIIO innovation funding with wider public-sector funding and support (including Ofgem initiatives such as the Innovation Link and the Regulatory Sandbox)?

Moixa disagrees with the assumption made regarding third-party engagement and access to innovation funding. Ofgem made the decision not to provide direct access to funding for third parties, but to "introduce measures to increase third party involvement". If a third party has solutions to provide, it should have equal opportunity to access funding and work with SOs.



Opportunities for funding should be kept-up-to date on their respective advertising platforms – Moixa has noticed that there are frequently listings of opportunities that are no longer available and have expired, making the process increasingly tiresome.

Sandbox approaches should be scaled-up, and enable non DNO/DSO or DSO light entrants to leverage such funding to demonstrate lower customer costs within constrained networks. As such RIIO-2 funding should be made available (and deducted from DNO business plans) to the extent that OFGEM views opportunities by third-parties could better deliver market solutions.

(iii) How we can enable increased third-party engagement and what could be the potential additional benefits and challenges of providing direct access to third parties in light of the future sources of transformative and disruptive innovation?

If the objective is to engage third parties, direct access to funding should be permitted. Moixa understands that there is potential for these third parties to possibly be discouraged from bidding if it was mandatory to collaborate with network companies (not always be the case); it should however be optional (if required) to partner with network companies under certain circumstances. Moixa also appreciates that this may cause issues as innovations that promote high disruptive system changes to general network operations may be regarded somewhat less favorably by network companies, who may have limited incentive to progress them.

(Q14) What form could the innovation funding take – what would be the advantages and disadvantages of various approaches?

Moixa proposes that innovation funding is not a siloed compared to RIIO-1. As there are growing interlinkages between sector technologies and the development of a modernized energy system, any stimulus package should take this into account.

Moixa is supportive however of previous innovation funding schemes (i.e. Network Innovation Competition etc.). Schemes such as these should be reevaluated for to whom and what they are open to. An assessment should also be carried out reviewing the effectiveness of previous winners of scheme funding to get a better understanding of what works and what doesn't (e.g. what was good value for money with regard to directly benefiting the consumer).

(Q15) How can we further encourage the transition of innovation to BAU in the RIIO-2 period? How can we develop our approach to the monitoring and reporting of benefits arising from innovation?

If the five-year pricing control period is adopted, there will naturally be more frequent reporting of benefits as it will be required to formulated future proposals. Innovation can morph into BAU process by identifying successful technologies and trials and allocating significant funding and support to them to ensure their widespread implementation and adoption.

## Competition

(Q16) Do you agree with our proposal to extend the role of competition across the sectors (electricity and gas, transmission and distribution)? What are the trade-offs that will need to be considered in designing the most efficient competitions?

Given the monetary savings made from promoting competition via various mediums (i.e. comparative benchmarking) in RIIO-T1, Moixa supports the proposal to promote competition across the listed sectors.

We also support industries call for DSO-led flexibility markets, which could also promote competitive behaviours across the energy system.

(Q17) Do you consider there are any reasons why our new, separable and high value criteria might not be applicable across all four sectors?

Moixa supports these three pillars regarding electricity transmission.

(Q18) What could the potential models be for early stage competitions (for design or technical solutions)? What are the key challenges in the implementation of such models, and how might we overcome them?

Early stage competitions are at the heart of innovation. Frequency and focus is key in this and there must effectively be a constant platform for new innovation to have a voice in such competitions. Challenges lie in that identifying technical solutions that will benefit the consumer and the system in the long-run can be difficult to identify and may require significant trialing, research and development to implement.