

Siemens Energy Limited

Response to RIIO-2 Draft Determinations for Transmission, Gas Distribution and Electricity System Operator

About Siemens Energy

Siemens Energy Limited UK&I is a regional energy business and part of the Siemens group, which has been working with its customers on solutions for the evolving demands of industry and society for more than 170 years.

In the UK, Siemens Energy Limited has broad expertise across the entire energy value chain, along with a comprehensive portfolio for utilities, independent power producers, transmission system operators, the oil and gas industry, and other energy-intensive industries. With its products, solutions, systems, and services, Siemens Energy will address the extraction, processing and transport of oil and gas. It will also address power and heat generation in central and distributed thermal power plants, and power transmission and technologies for the energy transformation, including storage and sector-coupling solutions.

Siemens Energy holds the majority stake in Siemens Gamesa Renewable Energy which rounds out its future-oriented portfolio. With its commitment to leading the way in decarbonization of the global energy system, Siemens Energy will be a partner of choice for companies, governments, and customers on their path to a more sustainable future. With around 90,000 employees worldwide, Siemens Energy will help shape the energy systems of today and tomorrow. www.siemens-energy.com/

Our response to the RIIO-2 Draft Determinations

Siemens Energy is determined to support its customers in transitioning to a more sustainable world. Globally, we are investing GBP 750m every year into research & development to ensure we continue to develop innovative and sustainable solutions.

As such we fully stand behind Ofgem's vision around energy transition, achieving Net Zero and providing the best value to end-consumers.

We are concerned, however, about the way the suggestions laid out in the draft determinations may impact on the UK's ability to be a leading force in enabling the energy transition

The importance of continuity of work and framework models

For all our projects, **close collaboration with customers and partners from the earliest stage** has been key to finding the solution that delivers the best technical and commercial outcome for our customers and electricity users (e.g. working together on system studies or challenging the specification when it is not leading to the optimum solution).

A critical factor to enable this collaboration is **visibility of future projects** as it **leads to continuity of work** which:

- Helps establish a **strong team spirit between contractors**
- Builds **strong relationships** with our **supply chain partners**.
- Allows us to **capture lessons learned** from one project and apply it to subsequent ones

These prove particularly valuable when there are scope changes, tight timescales and unforeseen issues and lead to continuous improvement, better solutions and ultimately better value for electricity users.

Based on transparency of future projects, we **deliver projects via framework models with Transmission Network Operators** which enable the continuity of work for our construction teams and supply chain, leading to **faster response times and better planning accuracy**. It also allows us to move the same core team of people between sites where possible.

There is **complete transparency with our customers** (which could include sharing of quotations from our supply chain, the bill of quantities, resource histograms). There are **unique challenges to delivering some of our customer projects**. These include the remoteness of the sites, the weather and terrain (for example in the Scottish Highlands). The closer we work together the better we and our supply chain can **understand and prepare for these challenges**.

Especially for our most demanding projects it is questionable whether all key milestones would have been met had the projects been traditionally procured.

The importance of lead time and benefits of early engagement & collaboration

Before construction on a Transmission Network Operators project begins, **there can be six to nine months of "optioneering"** to develop the best solutions together. This follows a "clean sheet" approach, intent on challenging traditional thinking. **Big drivers in this approach are identifying efficiency savings, eliminating risk, and safety improvements**. At innovation workshops we explore new designs, new methods and new materials.

Working with customers on the concept, network analysis and outline design **results in fewer changes, reduced rework, and shorter and safer construction programmes**. Scope is identified earlier and identifying overall costs is smoother, simpler and with a much **higher degree of certainty**.

Throughout the initial project phase, we take a very **proactive approach to minimising project risk**. We hold risk reviews with the project teams and the customer to address the specific risks posed by each individual project.

If projects are not announced / approved with enough lead time (because they are not part of the approved secured funding) we are concerned that **risk identification and mitigation could be impacted**.

Early engagement between Siemens engineers and their customer counterparts also leads to **innovative solutions that result in lower costs, shorter and safer programmes, and greener networks**.

Early engagement enables more time to plan and **reach a design freeze sooner in the process** which results in a much lower likelihood of scope changes, a greater certainty of on-time delivery, and reduced costs.

Ultimately, early and close collaboration brings greater value-add to end-users, but **we require sufficient lead time** to make the most of this collaboration. If projects are approved at short notice, we might not have enough time to explore better, more environmentally friendly solutions.

Example: Reducing cost, footprint and achieving better outcome for the environment

One customer originally specified their project as an AIS substation. Early during the project, however, our design team suggested using a GIS solution instead. This reduced the overall site footprint greatly. Our finalised design, made possible due to **close collaboration with the customer and enough time to explore options**, led to reduced costs and civil works. As an environmental bonus, there was also significantly less earthworks and use of concrete.

The shift from secure funding to uncertainty mechanisms

Uncertainty mechanisms do not enable efficient planning of works; we are concerned this will directly impact on the resources and production capacity the supply chain holds.

We anticipate that **risks will be passed down the supply chain**, endangering numerous suppliers or forcing them to increase rates due to abortive work which is not funded. More transparency regarding upcoming workload could also alleviate some of the negative impact Covid-19 has on parts of the supply chain.

We understand the purpose of increased reliance on reopeners is to be able to react flexibly to changes brought on by the energy transition. If the supply chain is not able to plan for potential workload, however, there could be unintended consequences such as:

- **Reduced competitiveness** leading to higher prices as fewer suppliers decide to invest in uncertain tender events
- **Insufficient response to reopeners** leading to increased cost and delays as the required resources might not be available (because they have been reduced or are employed elsewhere); i.e. the inability of the supply chain to react to the unpredictability of workload
- **Reduced value-add for customers** as effort expended on developing solutions for projects that do not go ahead is costed into other projects

Potential impacts on technology-led innovation for a green transmission system:

A reduced budget will most likely lead to **reduced investment towards the NetZero goal**, as the technologies required (i.e. alternative fuels, efficiency improvement, carbon reduction) will need to be collaboratively developed and will demand, at times, significant investments.

With the current limited budget proposed, the routine maintenance costs will **likely prohibit any meaningful spend towards the goal of energy transition/decarbonization**.

Without the longer term visibility of secure work, companies will be **less willing to invest in developing greener technologies if they have cheaper alternatives**; as an unintended behaviour these determinations lead to maintaining old equipment or replacing it cheaply where other options may be more beneficial (i.e. investing in increased efficiency or sustainability).

Finally, reliance on openers might not trigger investment and innovation as expected if the reopeners are not set at the right time or take too long to complete.

Potential impacts on maintaining a secure & reliable network:

The transmission network is becoming increasingly complex due to the energy supply mix and consumer demands; if the network does not adapt unplanned outages will become more frequent – **investment in network stability and inertia is urgently required**; under-investment will lead to unreliability.

Example: Ageing rotating equipment fleet:

Controls and cybersecurity of the equipment are an additional area of concern. Recent issues have shown that the network operator is susceptible to attacks due to outdated controls, which could greatly impact safe and reliable network availability. A limited budget will likely not leave room for upgrades and modifications required to bring the equipment up to modern standards.

Potential impacts on jobs & skills:

A contraction in funding for the electricity network sector will have a **direct impact on jobs throughout the supply chain**.

As a major employer in this sector who supports the industry in a sustainable way through both our supply chain partners and development of our next generation of engineers, **uncertainty of the market size will impact decisions on what we can support and invest in as an individual company** on key sustainability topics.

There is a real danger that **a lot of experience from the market could move to other segments** (e.g. offshore renewables, mobility) or simply not be replaced as older employees enter retirement without a sufficient new intake of apprentices and graduates.

The transmission network consists of a broad range of maturity regarding its technology and relies upon an equal range of experience to maintain it. When unexpected network-wide issues occur, **considerable expertise is required to understand and resolve the situation**.

Concerns regarding increased post-event assessment

Delivering projects efficiently and with the greatest value to customers is of course imperative. As such, we understand the need for reviews and assessments. We are concerned, however, about the level of post-event assessments proposed.

- Added cost during tendering due to **unduly focus on monitoring and overly detailed governance** to anticipate regulatory assessment
- The potential penalties could lead **suppliers to be overly risk-averse** (i.e. not investing in innovative solutions if their cost could end up not being covered after the project).
- **Suppliers could choose not to participate in tenders** if they deem the effort on documentation to be too much to make the work worthwhile; this would lead to reduced competitiveness and higher cost

Conclusion

For us as a member of the Energy industry, as well as for our entire supply chain, clear understanding of direction is of critical importance. If increased funding does not fit with Ofgem's strategy, then we ask for enough transparency to allow us to make efficient business investment decisions and plan our resources so we can respond to the demands of the market and deliver value for customers.

In this light, we see the idea of flexibility and reopeners as positive if Ofgem and the transmission operators can make the process sufficiently fast and with transparency of the outcome so that the supply chain can support as required.

We would therefore very much welcome Ofgem including the supply chain in its stakeholder engagement and setting out the principles that will apply with regards to topics such as uncertainty measures and post-event assessment.

We strive to be an enabler and leader in the energy transition and hope that Ofgem and the energy system and network operators can reach a successful conclusion in the interest of customers and the supply chain.

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