Qualification Trial Process (QTP)

Call for Information

21/12/2021

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Background to QTP

The Qualification Trial Process (QTP) is a key activity under the Operations pillar of EirGrid and SONI's Shaping Our Electricity Future Roadmap[1]. The Shaping Our Electricity Future Roadmap provides an outline of the key developments from a networks, engagement, operations and market perspective needed to support a secure transition to at least 70% renewables on the electricity grid by 2030 – an important step on the journey to 80% and to net zero by 2050.

The purpose of the QTP is to enable new technologies to prove their system services capabilities and to enable participation in the Central Procurement Process for the DS3 System Services Regulated Arrangements. It also assists the TSOs in the development of new codes and standards for new technology classes, and new processes and procedures for the commissioning and testing of new technologies.

Through our QTP, we research and develop innovative solutions that help us manage and integrate new and existing technologies. In doing so, EirGrid and SONI can develop a deep understanding of the operational complexities and suggest solutions on how best to integrate these technologies at scale on the power system. A high-level overview of the process is presented in Figure 1.

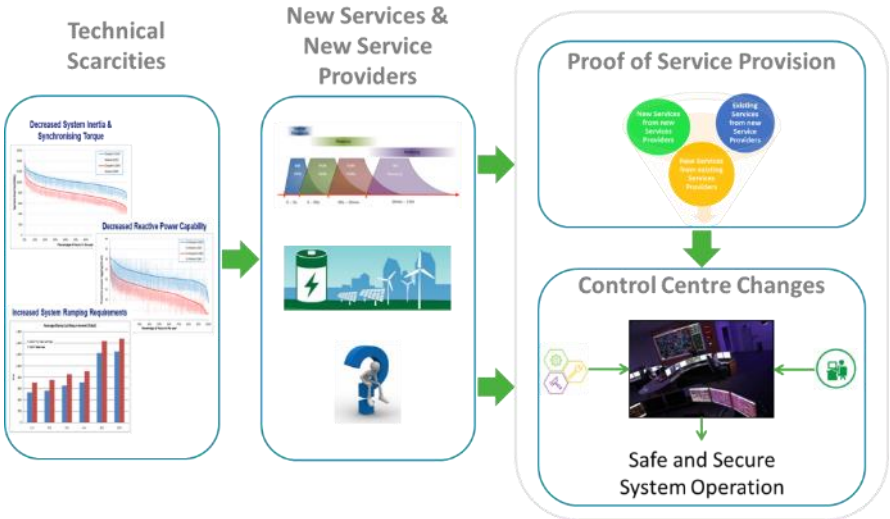

Figure 1 – How QTP facilitates changes in system operation

[1] Shaping Our Electricity Future – A Roadmap to Achieve our Renewable Ambition (here)

QTP principles

There are several key principles which underpin the QTP:

1. The trials are run at small scale allowing participants to demonstrate provision of system services in small volumes. This demonstrates provision of services under real system operational conditions, but the small-scale nature of the trials also ensures security of the power system.
2. Outcomes of a technology trial will inform whether EirGrid and SONI consider a technology's ability to provide several system services within a service category as proven. An example of this is that successful participation in a primary operating reserve trial may be considered as proof of the capability to also provide secondary operating reserve.
3. The trials will inform whether the TSOs consider the capabilities of a technology class or sub-class as proven to provide a system service, and not a specific service provider or original equipment manufacturers. An example of this is that if a wind farm has been deemed to be proven under the wind category of trial for a service, this means that wind as a technology class has been deemed to be proven.
4. The failure of specific participant in the QTP does not necessarily exclude its technology class from provision of the service forever. Depending on the reasoning for the failure of a trial, EirGrid and SONI may elect to run a future trial with a separate service provider or alternatively consider other ways that may inform whether the TSOs consider the capabilities of a technology class or sub-class as proven.
5. Successful participation in a QTP does not guarantee that a service provider will obtain a contract in the Central Procurement Process for the DS3 System Services Regulated Arrangements. This will be subject to the technical requirements set out as part of the procurement process.

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In order to deliver the 2030 renewable ambitions in Ireland and Northern Ireland, it will be necessary to accommodate unprecedented levels of variable non-synchronous renewable generation on the power system in real time whilst maintaining security of supply. This will require a significant evolution of power system operations and the existing generation portfolio.

By 2030, we are planning to operate at System Non-Synchronous Penetration (SNSP) levels up to 95%; to have a reduced inertia floor; to have implemented a secure Rate of Change of Frequency (RoCoF) limit of 1Hz/s (an operational trial is currently underway); and to have a significantly reduced minimum number of large synchronous units requirement.

As we increase the current operational limits, we will have to increasingly rely on new technologies to provide the system resilience. In previous QTP trials, we have proven several technology categories.

However, there are still technologies that cannot participate in the Central Procurement Process for the DS3 System Services Regulated Arrangements, as they are not deemed to be proven from a service provision perspective or they do not adhere to the current standards and compliance requirements, as outlined within the System Services protocol document.

Earlier this year, we concluded a QTP procurement exercise but, unfortunately, we did not receive any tender submissions. The TSOs consider that there remain potential trials that could be undertaken covering areas such as hydrogen-based technology, hybrids, and grid forming technology. It should be noted any potential trial involving participation of distribution-connected parties in Ireland or Northern Ireland would only be progressed with the approval of the relevant Distribution System Operator (ESB Networks in Ireland, NIE Networks in Northern Ireland).

In designing the next set of trials, in order to ensure that we can facilitate active participation by industry stakeholders, we are now seeking stakeholder views on the current QTP process and areas the TSOs should focus on.

In that context, in the following section, we pose two questions for stakeholders.

Questions for stakeholders

Q1. Have you any comments on the current QTP process? Are there any changes you would suggest that would enhance the effectiveness of the QTP process or of the trials undertaken?

Q2. Are there particular technology areas that you think the TSOs should focus on for future QTP trials?

In addition to the above questions, respondents are invited to submit high-level information on potential projects to help inform the design of the next QTP.

Next Steps

We welcome feedback on the questions posed above. Responses should be submitted to QTP@Eirgrid.com by 31st of January 2022. All responses will be kept strictly private and confidential.