

# Ireland & Northern Ireland Demos:

## The Qualifier Trial Process (QTP)

The Qualifier Trial Process (QTP) acts as a gateway, providing a technical platform to trial resilience services from new technology providers, and providing a route to an enduring market.

The QTP provides the missing link that facilitates the transition from fossil fuel dominance to a sustainable renewable power system. It is a central piece of a much broader programme of work led by the EirGrid Group to meet medium and long-term RES-E objectives in Ireland and Northern Ireland.

Today, the Ireland and Northern Ireland power system is the first in the world capable of delivering 70% of instantaneous electricity demand from non-synchronous sources, including wind and solar.

Partners : EirGrid, SONI

## Implementation Approach

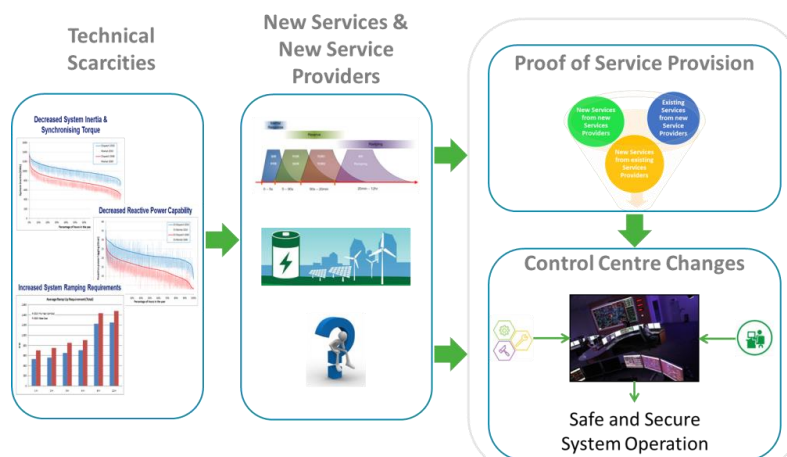
QTP is the mechanism through which the TSOs in Ireland and Northern Ireland are managing the transition to a wider portfolio of system service providers. The aim is to identify operational complexities that may be associated with new technologies, or delivery of new System Services. In doing so, EirGrid and SONI can develop a deep understanding of these complexities and suggest solutions on how to best integrate these technologies at scale, on the power system on the Island of Ireland and Europe.



### Key Features

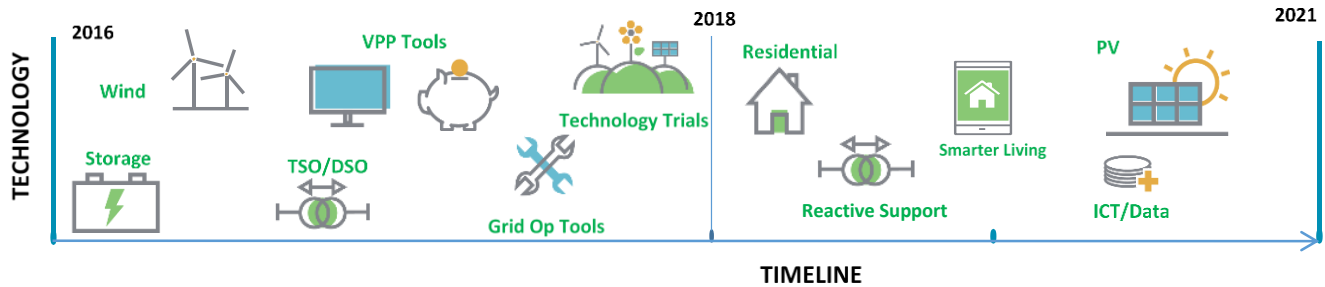
Three phases of the Qualifier Trial Process were carried out:

- **2017:** Wind, Demand Side Management, Synchronous Compensator/Flywheel, Centrally Dispatched Generating Unit & HVDC Interconnectors
- **2018:** Residential Service Provision (Power Off & Save), Steady State Reactive Power (SSRP) & Control and Signals
- **2019/2020:** Solar, Residential Services & Telecommunications
- **Service Provision:** Fast Frequency Response, Reserve, Fast Post-Fault Active Power Recovery and Dynamic Reactive Response Across various technology classes





## Qualification Trial Process Timeline



### Key Achievements



- Array of technology classes participating across the 2017, 2018 & 2019/2020 QTPs for FFR, POR, SOR & TOR services considered as proven and added to the EirGrid DS3 System Services Proven Technologies List (publicly available)
- Where a technology class was not proven to provide a system service, key learnings developed with the consideration of a potential future trial
- The “FlexTech Initiative” provided the platform for stakeholder engagement (TSOs, DSOs, Industry and Regulators) for identifying opportunities and removing barriers to renewable integration.

### Findings

#### A Pathway for New Technologies to Provide the Services Modern Systems Require

As the System Non-Synchronous Penetration (SNSP) is increased in Ireland and Northern Ireland beyond the current level of 70% (75% under trial), we have to increasingly rely on new technologies to provide the resilience of the system.

QTP is the mechanism through which the TSOs in Ireland and Northern Ireland are managing the transition to a wider portfolio of system service providers. The aim is to identify operational complexities that may be associated with new technologies or services. In doing so, the TSOs can develop a deep understanding of these, and suggest solutions on how to best integrate these technologies at scale, on the power system on the Island of Ireland and Europe.

## Recommendations and Lessons

- Key principles include running trials at small-scale to mitigate risk, assessment on a technology class basis rather than service provider, participant failure viewed as learning rather than permanent exclusion, and that QTP success does not guarantee a service provider will obtain a contract in the main procurement process
- As system reliance on non-synchronous VRES generation increases, new services/technologies are required to maintain a reliable and secure system at steadily growing SNSP levels. QTP has provided a necessary platform to prove these technology classes
- The FlexTech Technology Integration initiative has provided SOs, regulatory bodies and industry with the capability to engage with the objective of maximising the opportunity to make effective use of new and existing technologies to meet the needs of the future power system.

