



Low Carbon Inertia Services

Our plan to procure Low Carbon Inertia Services (LCIS)

Webinar | 15 December 2021



Objective

To provide an introduction to, and overview of, our proposed Low Carbon Inertia Service consultations and procurement plans.

Agenda

10:00 Welcome and Introduction

10:05 Background and Operational Policy

10:10 Presentation of LCIS plan

10:30 Q&A session

10:55 Concluding Comments

11:00 Close





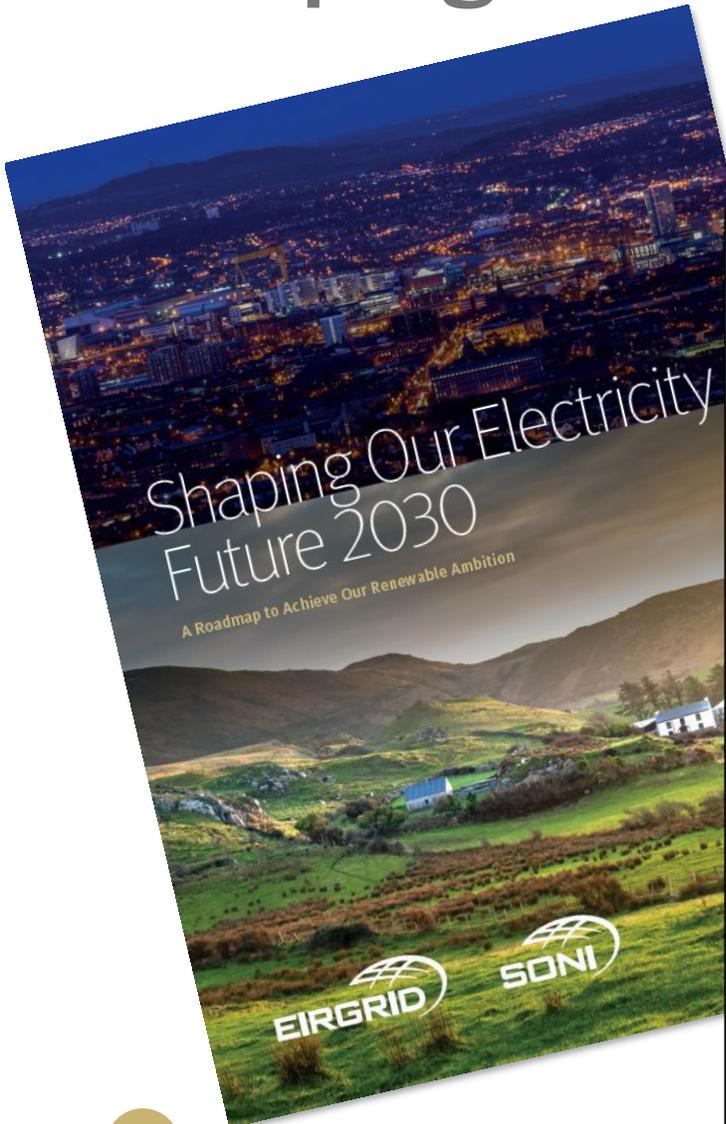
Background and Operational Policy

SEMC Request

- SEMC has requested that the TSOs carry out an assessment and bring forward proposals for a fixed term procurement in relation to low carbon inertia services (LCIS).
- The motivation for this request is to support the integration of technologies which can facilitate a reduction in the quantity of carbon intensive conventional generation required on the all-island power system.



Shaping Our Electricity Future



Operational Policy

- Includes:
- Operational policy roadmap to 2030
 - Studies & analysis
 - Reduction in min gen
 - SNSP 75%→85%→95%
 - Probabilistic operations
 - New interconnector operational protocols

Standards & Services

- Includes:
- Procurement of low carbon inertia services
 - Future Arrangements for System Services
 - Grid Code evolution
 - Enhanced performance monitoring

Operational Tools

- Includes:
- Control Centre of the Future planning
 - Enhanced scheduling & dispatch
 - Integration of new grid technologies
 - Interconnector integration
 - European integration

Technology Enablement

- Includes:
- Demand Side strategy
 - Residential demand response trial
 - Treatment of hybrid connections
 - Code modifications
 - Qualification Trial Process (QTP)
 - I&R strategy

TSO-DSO Partnership

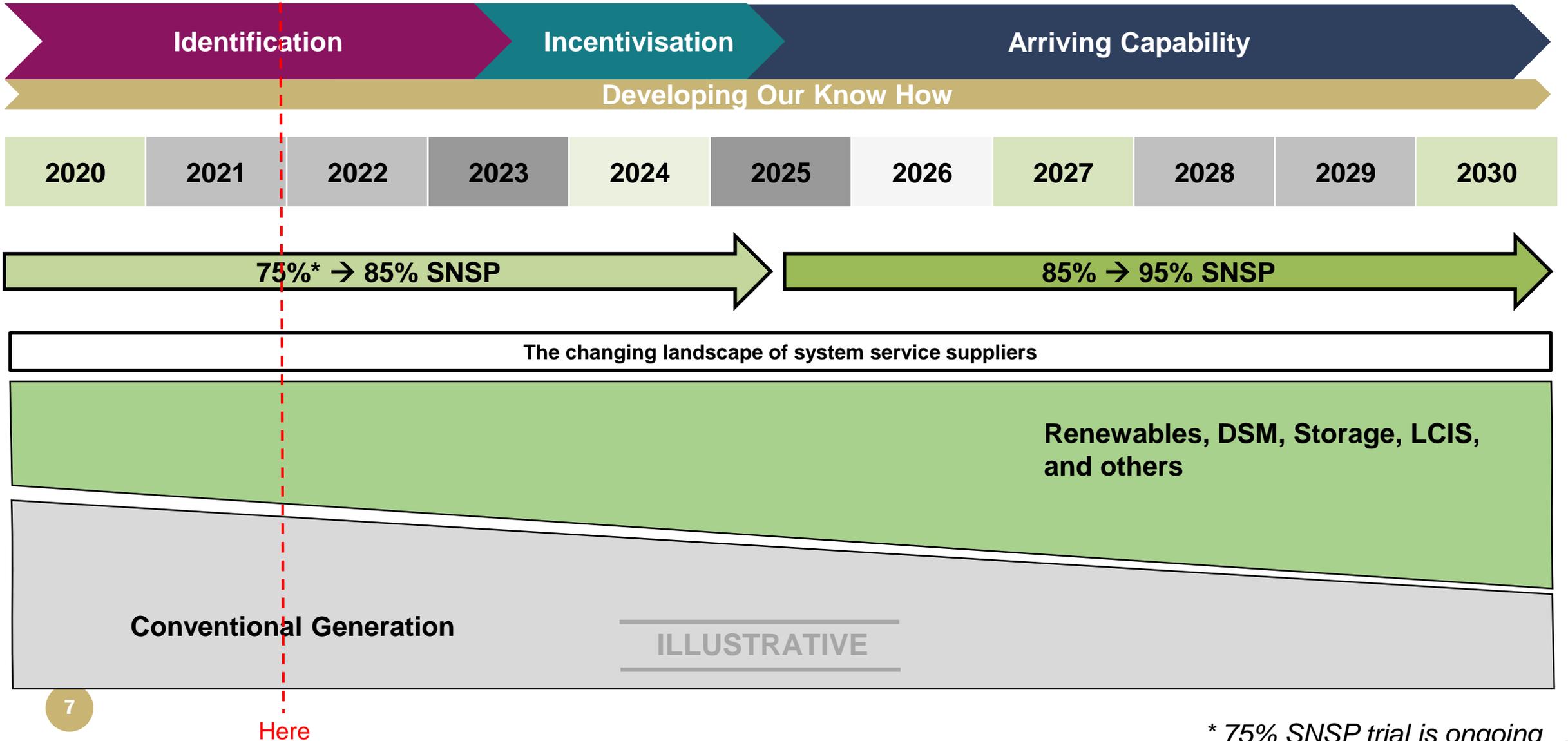


LCIS Plan

Table 35: System Operations - Standards and Services workstream

Project Name	Description	Parties	Start Date	Finish Date
Low Carbon Inertia Services	Share a plan for the identification of requirements and procurement of Low Carbon Inertia Services with stakeholders	TSOs	Q4 2021	Q4 2021
	Undertake studies to identify the technical and locational requirements considering inertia, reactive power and short circuit level	TSOs	Q3 2021	Q1 2022
	Undertake a public consultation on the technical and locational requirements, develop a proposed decision paper and submit it to the Regulatory Authorities for approval	TSOs	Q1 2022	Q2 2022
	Undertake a public consultation on the fixed term contracts, develop a proposed decision paper and submit it to the Regulatory Authorities for approval	TSOs	Q3 2022	Q4 2022
	Undertake a procurement process leading to award of contract(s) Note: Commencing this process is dependent on a decision by the Regulatory Authorities.	TSOs	Q4 2022	Q2 2023
	Review and modify Grid Codes Note: This development is dependent on regulatory approval of Code modifications (by CRU and UR).	TSOs	Q4 2021	Q2 2023

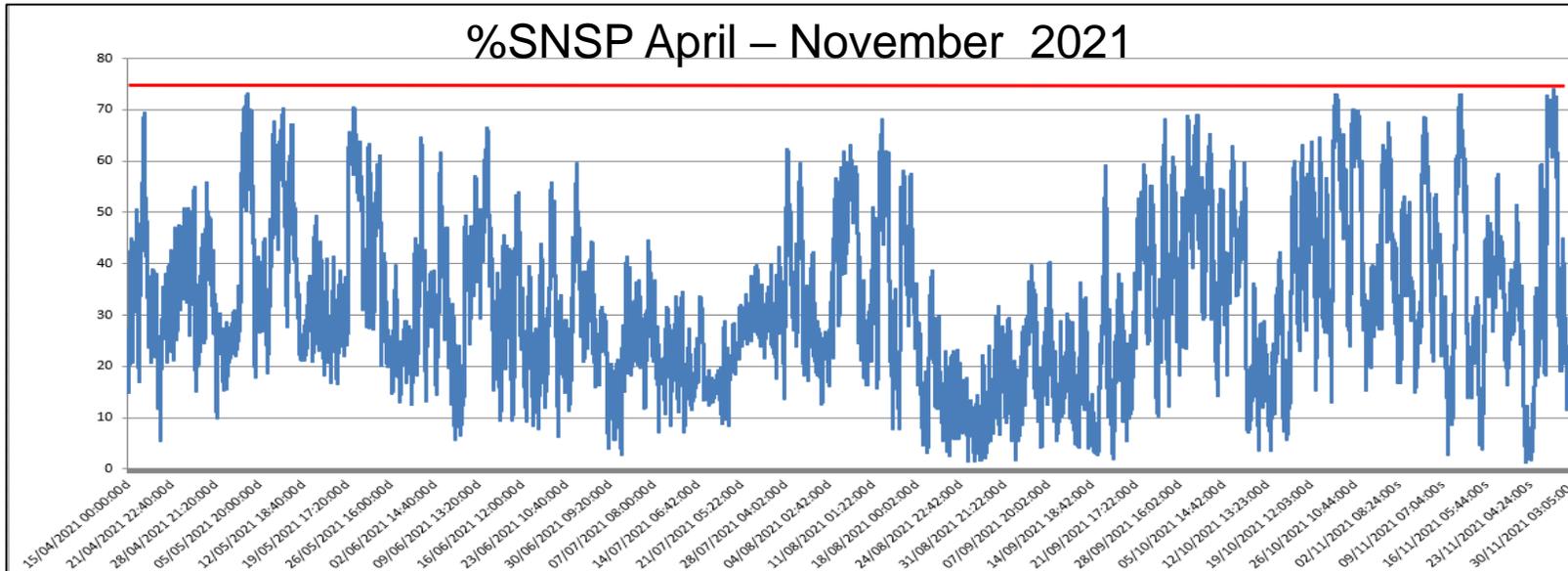
Operational Transition To 2030



Operational Policy Evolution

Operational Limits	2021	2022 Target	2030 Target
Rate of Change of Frequency (RoCoF)	1.0 Hz/s*	1.0 Hz/s	1.0 Hz/s
System Non-Synchronous Penetration (SNSP) Limit	75 %*	75 %	95 %
Minimum Number of Large Thermal Generating Units	8	7	4 or less
System Inertia Floor	23,000 MWs	20,000 MWs	17,500 MWs

* Limit currently under trial



$$\text{SNSP} = \frac{\text{Wind} + \text{Solar} + \text{Imports}}{\text{System Demand} + \text{Exports}}$$



Plan to procure Low Carbon Inertia Services

Procurement Plan

- A project plan has been developed which will ultimately provide fixed term contracts for LCIS (plus reactive power capability and short circuit contribution capability). The target delivery date for the procurement outcomes is June 2023.
- Our plan is mainly based on the process used in 2018-2019 for System Services Volume Capped Fixed Contracts for the reserve services

Task	Q4 2021			Q1 2022			Q2 2022			Q3 2022			Q4 2022			Q1 2023			Q2 2023		
	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23
Plan publication and engagement	█	█	█																		
Technical Studies to inform consultation	█	█	█	█	█	█															
Consultation on requirements, review and decision						█	█	█	█												
Development of contractual arrangements to inform consultation							█	█	█	█	█										
Consultation on contractual arrangements, review and decision												█	█	█	█						
OJEU procurement process launch, tender and evaluation period																█	█	█	█	█	█
Award of Contract(s)																					█

Technical studies

- Determine power system needs for inertia, reactive power and short circuit current.
- Will identify the technical characteristic of the required solutions and their regional spread.
- Study scope /assumptions under development, targeting completion March 2022
- We request industry support in obtaining dynamic models / response characteristics of LCIS providers.

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Requirements Consultation

- Proposals on principles, approach, rules and requirements to run the procurement competition (including characteristics of the services / requirements, overall procurement approach and timeline, mechanism by which applications will be assessed, ...)
- 6 week consultation commencing end of March 2022, to include an industry workshop.
- Review of outcome, recommendations and SEMC decision in June 2022.

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Contractual Arrangements Consultation

- Proposals on structure of contracts (including standard contractual provisions, requirements, payment mechanism in relation to performance, ...)
- 6 week consultation commencing September 2022, to include an industry workshop.
- Review of outcome, recommendations and SEMC decision in November 2022.

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Procurement

- OJEU procurement notice published December 2022.
- Tender, evaluate and award contract(s) June 2023.

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Other Key Tasks

- **Grid Code** mods to define technical standards for new technologies - interim arrangements required pending code modifications.
- **Scheduling and dispatch and settlement** arrangements to be developed to accommodate LCIS – initial workarounds may be required before an enduring solution can be delivered.



Grid Code Implementation Note

Provide clarity as to how the Grid Code may be applied for LCIS
Q1 2022: V1 will be shared with Industry



LCIS Guidance Note

Cover how LCIS will be treated from offer process through to settlement
Q2 2022: V1 will be shared with Industry

Thank You Questions?

Feedback to DS3@soni.ltd.uk or DS3@eirgrid.com

