



# All-Island Resource Adequacy Assessment

2025-2034 Inputs and  
Assumptions for  
Northern Ireland  
Consultation Summary



# Contents

1	Introduction	2
1.1	Consultation	2
2	Consultation Responses	3
2.1	Demand	3
2.2	Generation	5
2.3	Adequacy	6
2.4	General	6

# 1 Introduction

SONI, as the Transmission System Operator (TSO) for Northern Ireland, has a responsibility to operate the electricity transmission system every minute of every day, whilst also planning the future of the transmission grid. To achieve this, SONI must balance supply and demand now and forecast how to do so in the future.

SONI is required to produce an annual Generation Capacity Statement (GCS), in accordance with Condition 35 of the Licence<sup>1</sup> to participate in the Transmission of Electricity granted to SONI by the Department for the Economy (DfE). Condition 35 also states that the statement shall be based on methodologies approved by the Utility Regulator for Northern Ireland.

Under these reporting requirements, SONI forecasts the projected level of electricity demand and the expected resources available to supply this demand. The demand and generation forecasts for Northern Ireland are modelled along with relevant operational requirements to evaluate power system reliability in reference to the relevant reliability standard. This process is referred to as a resource adequacy assessment where the reliability standard is specified on a jurisdictional basis for Northern Ireland using Loss of Load Expectation (LOLE).

As European policy direction and regulations have evolved, the approach for assessing resource adequacy has also evolved to appropriately represent the transforming power system i.e. transitioning away from aging fossil fuelled conventional generation plant and towards a power system increasingly dependent on variable renewables, interconnection, demand side response, long duration energy storage and other renewable gas ready dispatch power plants. Through the Shaping Our Electricity Future Roadmap<sup>2</sup>, SONI identified the need to enhance our reliability assessments to suitably dimension the possible risks to resource adequacy and align with European regulation.

## 1.1 Consultation

From 20<sup>th</sup> March to 24<sup>th</sup> April 2024, SONI consulted on inputs and assumptions for modelling resource adequacy for Northern Ireland in the 2025-2034 assessment.

The consultation process consisted of a webinar and consultation paper for stakeholders to provide input. The consultation itself received 2 responses, and SONI would like to thank our stakeholders for their time in responding to the consultation.

This consultation summary provides an overview of the responses received for the consultation, along with a comment from SONI on how the feedback has been considered or will be considered in future.

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<sup>1</sup> <https://www.uregni.gov.uk/files/uregni/media-files/SONI%20TSO%20Consolidated%20Feb%202019.pdf>

<sup>2</sup> [https://www.soni.ltd.uk/media/documents/Shaping-Our-Electricity-Future-Roadmap\\_Version-1.1\\_07.23.pdf](https://www.soni.ltd.uk/media/documents/Shaping-Our-Electricity-Future-Roadmap_Version-1.1_07.23.pdf)

## 2 Consultation Responses

The responses are categorised into four areas, listed below, this section of the report covers main comments received:

- Demand
- Generation
- Adequacy
- General

### 2.1 Demand

Theme	Feedback	SONI Response
<b>Efficiency</b>	A stakeholder asked to clarify how efficiency gains are incorporated when future demand is calculated based on historical trends.	Future demand projections utilise a regression model which takes into account historical demand. The historical demand trend in Northern Ireland will inherently capture the effect of efficiency gains over recent years.
<b>Electric vehicles</b>	We received comments regarding roll-out of electric vehicles with key point being using historic data and developing a trendline would indicate that there would need to be a significant change in consumer behaviour for the trajectory to be in line what's being assumed.	We expect a significant uptake of electric vehicles by the end of the study horizon, this will require a change in consumer behaviour. As EVs are a relatively new demand, historic trends are not necessarily representative of future growth. The roll-out of electric vehicles is in line with NIE Networks assumptions for consistency. EV growth and policy development is an area we are monitoring and will be reviewed for each assessment.

Theme	Feedback	SONI Response
<b>Heat pumps</b>	We received a comment highlighting that the estimated peak electricity demand from heat pumps may be underestimated using the referenced Loughborough University paper. The basis being that the study is heavily influenced by the early adopters who may be more technologically savvy than future users, thus future demand may be higher as future users would be focused less on efficient heat pump use.	This study was deemed to be a comprehensive representation of heat pump usage. We acknowledge that behaviour assumptions may change over time as new data becomes available and new studies inform future heat pump assumptions. For now, we believe this study is reasonable to benchmark heat pump demand. These assumptions will be reviewed for each assessment.
<b>Smart meters</b>	We received comments regarding smart meter roll-out in Northern Ireland. The overall comment is that the assumption of smart meter roll out may be too high in the report.	It is recognised there is uncertainty regarding the rollout of smart meters in Northern Ireland however the presence of off-peak tariffs still play a significant role in flexible electrification of transport even if smart meter roll-out is not as high as assumed.
<b>Transmission system losses</b>	We received a request to explain the reduction in transmission system losses from 8.0% in GCS23 to 7.5%.	Updated data for this year's calculation revealed lower transmission system losses recently, leading to an overall decrease when averaged over the past decade.

## 2.2 Generation

Theme	Feedback	SONI Response
<b>Moyle interconnector</b>	We received a comment recommending increasing the capacity of the Moyle Interconnector to 500 MW from 2028 as the necessary works to remove the current limitation are expected to be completed by that time.	This has been implemented in the model from 2028 aligned with SONI's Transmission Development Plan.
<b>North-South interconnector</b>	We received a recommendation to run a sensitivity analysis without the additional 950 MW that is anticipated to be provided by the new North-South interconnector.	This has been implemented in the adequacy modelling, jurisdictional studies make use of the existing North South tie line, and the All-Island assessments assume delivery of the second North South.
<b>Renewable trajectory</b>	We received a few comments asking SONI to consider different trajectories for renewable energy generation.	This has been implemented, and three renewable trajectories have been analysed.

## 2.3 Adequacy

Theme	Feedback	SONI Response
Efficiency	We had a request to clarify that while the GCS is to be calculated based on a median scenario, the capacity requirement is calculated on a least-worst regrets basis for security of supply reasons.	The All-Island Resource Adequacy Assessment (previously GCS) and capacity market process are two separate processes.
Constraints	We had a comment regarding constraints outside of Northern Ireland and Ireland are not modelled even though they are important real-world factors when it comes to adequacy.	Regions outside of Northern Ireland are modelled consistent with the latest ERAA process. The impact of possible external market related constraints and external uncertainties has been incorporated into the model and accounts for risk of low import availability.

## 2.4 General

Theme	Feedback	SONI Response
Forecasts	We received a recommendation for us (SONI) to rely less on third party forecasts and consider carrying out the forecasts ourselves.	Through SONI developing the demand forecast, a wide range of inputs are required and therefore in cases we rely on external expertise to provide some key inputs e.g. economic forecasts. This ensures the best quality information and consistent data is used across the energy sector.