

All-Island Resource Adequacy Assessment

Consultation Summary for Ireland,
Northern Ireland and All-Island
Single Electricity Market

2026-2035



1. Introduction

EirGrid and SONI, as the Transmission System Operators (TSO) for Ireland and Northern Ireland respectively, have a responsibility to operate the electricity transmission system every minute of every day, whilst also planning the future of the transmission grids in their relevant jurisdictions.

EirGrid, the TSO in Ireland, is required to publish forecast information about the power system, as set out in Section 38 of the Electricity Regulation Act 1999¹ and Part 10 of S.I. No. 60 of 2005 European Communities (Internal Market in Electricity) Regulations². The forecast statement is a requirement of Condition 7 of EirGrid's Transmission System Operator licence, which also states that the methodologies on which the forecast statement is based shall be subject to the approval of the Commission for Regulation of Utilities in Ireland.

SONI, the TSO in Northern Ireland, is required to produce an annual Generation Capacity Statement (GCS), in accordance with Condition 35 of the Licence³ 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.

The 'Clean Energy for all Europeans' package adopted in 2019 sets out a new framework for the transition away from fossil fuels to cleaner sources of energy which included the Regulation on the internal market for electricity (EU/2019/943) herein referred to as 'the Regulation'. Chapter IV (Articles 20-27) of the Regulation are focussed on resource adequacy.

Article 23 of the Regulation mandates the European Network for Transmission System Operators for Electricity (ENTSO-E) to conduct annual resource adequacy assessments based on projected supply and demand for electricity across the EU to identify resource adequacy concerns for Member States. ENTSO-E's obligations under Article 23 of the Regulation are fulfilled through the European Resource Adequacy Assessment⁴ (ERAA), which was approved by the European Union Agency for Cooperation of Energy Regulators (ACER) on 2nd October 2020. ACER also has a responsibility for approving the annual implementation of the ERAA methodology conducted by ENTSO-E and issuing opinions where national assessments indicate adequacy concerns which are not identified in the ERAA assessment.

Article 20(1) of the Regulation states that Member States may also carry out national resource adequacy assessments where necessary. Article 24 of the Regulation states that the national adequacy assessment should be based on the ERAA methodology, and capture market specific characteristics or risks that the European assessment may not capture in detail. Effectively, the national adequacy assessment provides the scope to run studies that are relevant on a national level but may not be relevant at a pan-EU level.

The All-Island Resource Adequacy Assessment publication replaces the existing Generation Capacity Statement (GCS) methodology for adequacy modelling for Ireland and Northern Ireland, aligning with EU Regulation 2019/943⁵ Article 24. The All-Island Resource Adequacy Assessment publication will support signalling future system outlook and requirements to the energy market as well as to policy makers, regulators, industry, TSOs, Distribution System Operators (DSOs), electricity consumers, and the public.

1.1. Consultation

From 7th May 2025 to 18th June 2025, EirGrid and SONI consulted on the methodology for modelling of All-Island Resource Adequacy Assessment (AIRAA) for Ireland and Northern Ireland. The purpose of the consultation was to detail a methodology to evolve the existing AIRAA methodology to include an Economic Viability Assessment (EVA), to align with EU Regulation 2019/943 Articles 23 and 24 and to improve the overall approach to assessing the reliability of the evolving power system.

¹ <https://www.irishstatutebook.ie/eli/1999/act/23/section/38/enacted/en/html>

² <https://www.irishstatutebook.ie/eli/2005/si/60/made/en/print#partx-article28>

³ <https://www.uregni.gov.uk/files/uregni/media-files/SONI%20TSO%20Consolidated%20Feb%202019.pdf>

⁴ https://www.acer.europa.eu/sites/default/files/documents/Individual%20Decisions_annex/ACER%20Decision%2024-2020%20on%20ERAA%20-%20Annex%20I_1.pdf

⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0943&from=EN>

The consultation process consisted of a webinar and paper for stakeholders to provide input. The consultation itself received 9 responses, and EirGrid 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 EirGrid and SONI on how the feedback has been considered or will be considered in future.

2. Methodology Response Summary

Q1. Do you have any comments on the modelling approach or factors related to demand forecasting, adequacy resource forecasting or adequacy modelling?

Theme	Feedback	EirGrid/SONI Response
Generation Forecast Assumptions	Stakeholders believe the assumption of timely capacity delivery through Capacity Renumeration Mechanism (CRM) may be unrealistic, given frequent delays across the Single Electricity Market (SEM). They seek clarity on whether all generation units are assumed to be delivered within the assessment period. Concerns also exist about Offshore Renewable Energy Support Scheme (ORESS) rollout timeline, as their delays could lead to overestimation of capacity adequacy.	<p>Timely capacity delivery through the CRM is a credible concern which is incorporated in the generation forecast. The new gas capacity forecast is adjusted based on the best available deliverability information from enhanced monitoring programme analysis.</p> <p>For the AIRAA 2026-2035 in Ireland, the offshore wind forecast is based on the Sustainable Energy Authority of Ireland's (SEAI's) Decarbonised Electricity Study - Forecasts of plausible rate of generation technology deployment 2024-2040.</p> <p>In Northern Ireland, offshore wind forecasts are constructed using a bottom-up approach assessing connection pipelines and extrapolating across the study horizon assuming a consistent rollout of renewable technologies.</p>
Generation Forecast Assumptions	Stakeholders seek clarity on plant availability, particularly, the relationship between older and new plant.	Plant availability is assessed using historic plant performance data. The statistics are derived on an all-island basis and calculated at a technology class level using 5-year capacity weighted averages of forced and scheduled outage rates for separate technology classes. Plant availability is applied equally to older and newer plant as statistics are calculated across the technology class.
Generation Forecast Assumptions	Stakeholders suggest that de-rating factors should reflect impacts of plant age.	De-rating factors are out of the scope of the AIRAA. De-rating factors are calculated as part of the Capacity Auction process, which is a separate process from AIRAA.
Generation Forecast Assumptions (NI)	Stakeholders noted that assumptions for variable generation in Northern Ireland are overly ambitious, and recommended targets should reflect capacity supported under Renewable Energy Support Scheme (RESS).	In September 2025 the Department for Economy published the Final Scheme Design for a renewable electricity support scheme, namely the Renewable Electricity Price Guarantee (REPG). Until such time as contracts are awarded through the REPG, renewable forecasts are constructed using a bottom-up approach assessing connections pipelines and

		extrapolating across the study horizon assuming a consistent rollout of renewable technologies.
Modelling Interconnection and Congestion	Stakeholders seek more detail on adequacy sensitivities for interconnection, including limited imports and low generation in neighbouring regions such as reliability of French nuclear availability. Interconnectors, especially Celtic, are critical to SEM supply mix, but congestion risks from insufficient grid infrastructure must be reflected in secure scenarios. There is also concern over limited information on post-modelling adjustments for network constraints.	<p>Sensitivity analysis related to limited imports and low generation in neighbouring regions is conducted included in the assessment. The scope of this analysis may be expanded in future AIRAA studies.</p> <p>The AIRAA is a generation adequacy assessment and therefore does not assess network constraints such as congestion risks and insufficient grid infrastructure.</p> <p>Some network constraints which directly impact system adequacy are included in the assessment including the North-South interconnector constraint between Ireland and Northern Ireland and a Transmission Outage Planning adjustment in Ireland.</p>
Modelling Interconnector Flows	Further assessment needed on - over-reliance on interconnectors during tight periods, increased curtailment due to interconnector imports which may not be zero-carbon.	<p>Sensitivities, conducted as part of the Additional Security Analysis used to inform development of the Secure assessment, test the impact and likelihood of risks related to interconnector reliance.</p> <p>Curtailment analysis is outside the scope of AIRAA which focuses on generation adequacy. However, Enduring Connection Policy Constraint reports assess considerations related to oversupply, network constraints and curtailment.</p>
Network Constraints Treatment	Noted that network constraints have caused system-driven dispatches, and there's concern that post-model adjustments may undervalue local demand reduction and Demand Side Units (DSUs); further interest in how these adjustments will be applied.	The AIRAA is a generation adequacy assessment which utilises zonal topology and therefore does not assess locational benefits of resources.
Modelling Run Hour Limits	Stakeholders noted the need for accurate modelling of Annual Run Hour Limits (ARHL). Current assumption to restrict run hours to 4-6 hours per day require further justification. ARHL constrain conventional plants, reducing their economic viability and risking premature retirement despite their role in system balancing. Also noted that, demand response faces fewer such limits and to be valued more.	<p>ARHL are an important component of the AIRAA model. The 4- and 6-hour per day restrictions reflect even distribution of 500- and 1500-hour per year across all simulated days during peak times, respectively. Without insight into the economic objectives of a particular asset owner, this approach reasonably represents the restrictions ARHL pose to the power system.</p> <p>ARHL are not explicitly modelled for DSUs in the AIRAA model. Instead, de-rating factors are applied to the DSU technology classes based on historic availability statistics.</p>
Reserves Treatment	Recommendation to model fast demand side reduction as it lowers cost and enhances reliability. Also, asked to review current derating practices for larger units.	The AIRAA is a generation adequacy assessment assessed at an hourly timescale. Ancillary services provided by fast demand side reduction are best assessed in operational studies.
North-South Interconnector	Recommendation to model scenarios assuming non-delivery of the new North South	The Ireland and Northern Ireland jurisdictional results presented in the AIRAA 2026-2035 exclude the new North South Interconnector

	Interconnector (new NS) within the assessment period	and model the existing North South tie line only. The all-island assessment includes the impact of the new North South Interconnector from 2032.
Modelling Transparency	Changes to methodology should be clearly flagged, and real-world issues not modelled must be identified to allow reasonable post-model adjustments.	Following this feedback, the Methodology and Inputs & Assumptions documents to be published alongside the AIRAA 2026-2035 report include a summary of changes to highlight differences from the previously published documents.
Communicating Adequacy Results	Although Loss of Load Expectation (LOLE) and Expected Energy Not Served (EENS) are suitable, they cannot capture all stress dimensions; a multi-metric approach is recommended for better insight as non-synchronous generation, and extreme weather risks grow.	The Reliability Standards for Ireland, Northern Ireland and the SEM are all based on a LOLE metric, so the AIRAA will continue to use LOLE as its core reporting metric, supported by EENS and capacity surplus/deficit measured in Megawatts (MW). Other metrics may be considered in future iterations of the AIRAA.
Adequacy Modelling	Stakeholders believe the 70% import capacity in secure scenario is overestimated and needs revision.	For the Secure assessment, numerous sensitivities were assessed using an Additional Security Analysis in terms of likelihood and impact. The selection of sensitivities is informed through the consultation process with input from various key stakeholders across the electricity sector.

Q2. Do you have any general comments on the benefits or value that the Economic Viability Assessment can add to the overall assessment?

Theme	Feedback	EirGrid/SONI Response
EVA Caveats and Limitations	Stakeholders seek further insight on how Economic Viability Assessment (EVA) will impact adequacy assessment. Recommendations to clearly caveat EVA modelling limitations, assumptions and inputs; without CRM, the results can misrepresent future outcomes, adequacy and mislead policy decisions.	The first iteration of the EVA does not have direct impact on the adequacy results in the AIRAA 2026-235. Future iterations of the EVA will be incorporated into the adequacy assessment based on learnings from this first iteration and outcomes of further consultation. The EVA section of the report includes a discussion on considerations for interpretation of the EVA analysis and results.
EVA Market Context	EVA is viewed as a significant change to methodology. Its narrow scope and exclusion of CRM may distort capacity procurement signals. Industry engagement is advised due to possible limitations in Transmission System Operator's (TSO's) experience with generation investment.	The EVA conducted in the absence of a capacity market to understand the economic viability of resources in an energy-only market. The impact of the EVA on adequacy is not assessed in the first iteration of the EVA for the AIRAA 2026-2035. The EVA is a standalone piece of analysis looking at specific scenarios and has no influence or implications with respect to the SEM capacity auction processes.
Modelling Assumption	Concern over how modelling accounts for Balancing Market price cap which no longer reflect DSU costs.	The EVA in the AIRAA 2026-2035 includes scenarios which assess the impact of scarcity prices modelled with the ERAA 2024 price caps, or lack of scarcity pricing modelled at 500 €/MWh on viability results.
Modelling Assumption	Query on where Temporary Emergency Generation (TEG) is included in the model.	Temporary Emergency Generation (TEG) and Retained Existing Units (REU, Moneypoint) are out-of-market resources and are therefore

		excluded from the central adequacy analysis and the EVA. The impact of TEG and REU is captured in the assessment of mitigating measures.
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Q3. Do you have any comments on the proposed methodology for the Economic Viability Assessment? Of particular interest in commentary on the items listed below: Do you have any comments on the choice to conduct a revenue-based EVA?

a) *Do you have any comments on the choice to conduct a revenue-based EVA?*

Theme	Feedback	EirGrid/SONI Response
Revenue-based EVA	Stakeholders support the adoption of a revenue-based EVA as it better reflects market dynamics and investor behaviour compared to a cost-minimisation approach. However, concerns remain that it may overestimate revenues due to exclusions like network congestion, interconnector effects, and simplification of actual revenue streams.	The EVA adopts a simplified view of costs and revenues which do not take into account all considerations taken as part of a financial assessment for a project. This is required to provide the top level view as to capacity viability as opposed to conduct detailed investment modelling. Where possible, aspects such as interconnector effects and market prices are reflected as best as reasonably possible within the modelling approach.

b) *Do you have any comments on the approach to modelling climate years in the EVA?*

Theme	Feedback	EirGrid/SONI Response
Modelling Climate Years in EVA	Stakeholders generally support using a subset of representative climate years to balance modelling complexity and accuracy. They recommend that this simplification to be clearly stated, and caution that rare events (dunkelflaute) may be underestimated.	One weather scenario was used to reduce the computation requirements of modelling in the AIRAA 2026-2035 for the first implementation of the EVA. Assumptions around weather scenario selection are described in detail in the methodology and main report.

c) *Do you have any comments on the modelling assumption within the EVA that no future capacity market auctions should be assumed?*

Theme	Feedback	EirGrid/SONI Response
Exclusion of Capacity Auctions in EVA	Stakeholders believe that assuming no future Capacity Market (CM) auctions in the EVA is unrealistic and creates an artificial picture of system tightness, leading to overstated scarcity pricing and asset viability. They emphasize that CMs are essential for investment in new thermal capacity and security of supply. This omission must be clearly flagged as a major limitation of EVA.	<p>The Economic Viability Assessment (EVA) is used to assess the viability of capacity resources in the energy-only electricity market, providing analysis as to whether units may be economically viable or whether they may observe missing money, and as such could signal a need for additional revenue streams such as through capacity mechanisms.</p> <p>The assumption that the EVA does not include future capacity market auctions is to provide a perspective on viability without capacity market support and is not a comment on the likelihood of future capacity auctions or capacity requirements.</p>

Capacity Data Treatment	Questions on whether EVA uses installed or derated MW, as contracts are based on derated values. Stakeholders also expressed concerns about declining derating factors and whether contracted volumes offset demand in the modelling.	Units are modelled based on their installed capacity for both the adequacy and EVA simulations. Further, derating factors and volumes are components of the Capacity Market auctions and volume setting processes which is a separate process to AIRAA.
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d) Do you have any comments on using the price caps from ERAA 2024?

Theme	Feedback	EirGrid/SONI Response
Price Cap in EVA	Stakeholders are concerned about using European Resource Adequacy Assessment (ERAA) 2024 Price Caps; it ignores the Reliability Option Strike Price (a soft cap in SEM). This omission may overstate scarcity revenues, leading to inaccurate EVA results on asset viability, missing money, and Cost of New Entrant (CONE), while disadvantaging DSUs and distorting cross-border flows.	The EVA in the AIRAA 2026-2035 includes scenarios which assess the impact of scarcity prices modelled with the ERAA 2024 price caps, or lack of scarcity pricing modelled at 500 €/MWh on viability results.

e) Do you have any comments on the proposed assumption to not include Annual Run Hour Limits in the EVA?

Theme	Feedback	EirGrid/SONI Response
Annual Run Hour Limit in EVA	Stakeholders are concerned about the exclusion of ARHL from EVA, as it misrepresents the realistic operation. Ignoring ARHL risks overstating revenues, exaggerating contributions to security of supply, and potentially deeming new units viable under unrealistic running assumptions. ARHL directly impacts CRM revenues, system adequacy, and TSO access to capacity, and will likely become more stringent toward net zero. Therefore, ARHL should be incorporated into modelling, or the EVA must be clearly caveated to reflect this limitation.	Following this feedback, the EVA methodology was revised to account for the ARHL whereby units can earn revenue up to the limit of their applicable ARHL.

Q4. Which methodology options (hurdle premium, discounting low probability high revenue periods, no random outage samples, or another option) to reflect risk aversion is most appropriate for the EVA methodology?

Theme	Feedback	EirGrid/SONI Response
Adopt Hurdle Premium	Hurdle premium approach is preferred as it aligns with standard investment metrics and transparently accounts for technology-specific risks and project delays. Combining this with 'no random outage sampling' option was also suggested; further detail and worked examples on its long-term application are needed.	The EVA in the AIRAA 2026-2035 includes several scenarios to assess how the model responds to different risk assessment approaches. Hurdle premiums, scarcity pricing and discounted revenues are all included in the assessment.
Discounting Revenues	Stakeholders recommend a combination of discounting for the various revenue elements.	The EVA in the AIRAA 2026-2035 includes several scenarios to assess how the model

	<p>a) Discount merchant revenue to reflect absence of CRM, b) Discount tail-end revenues to account for declining infra-marginal rents and lower run hours due to high SNSP levels, c) Discount scarcity revenue as financiers prioritise predictable income.</p>	<p>responds to different risk assessment approaches. Hurdle premiums, scarcity pricing and discounted revenues are all included in the assessment.</p>
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3. Inputs and Assumptions Response Summary

Q1. Do you have any comments on the inputs and assumptions related to demand forecasting, adequacy resource forecasting or adequacy modelling?

Theme	Feedback	EirGrid/SONI Response	Applicability [IE/NI/AI]
Plant Performance	Recommendations to revise plant performance assumptions; shorter outage duration and ignoring performance decline with age will overstate system adequacy.	This feedback has been noted as an area for development in future AIRAA cycles.	AI
Input Demand	Stakeholders are concerned that Electric Vehicle (EV) and Heat Pump (HP) targets in the National Climate Action Plan (CAP) may be unrealistic.	The assumptions in demand forecast median scenario in Ireland for the AIRAA 2026-2035 have been revised to reflect the SEAI's With Existing Measures scenario for EVs and retrofit HPs to more accurately reflect current pace of electrification. New build HP assumptions are extrapolated from government housing targets.	IE
BESS Inputs and Characteristics	Highlighted that storage capacity is underestimated in current adequacy modelling. In addition, current assumptions of Maximum Import Capacity (MIC) at 50% Maximum Export Capacity (MEC) and grouping all batteries >2hr mask their system value. Recommended more granular modelling and alignment with Department of Climate, Energy and the Environment (DCEE) forecasts for planning and policy consistency.	Battery storage capacity forecasts were updated to reflect the results of the capacity market auctions at the time of the data freeze (30 June 2025). The MIC at 50% MEC restriction is only attributed to existing batteries, new batteries are not subject to this limitation. Battery storage has been aggregated into 1hr, 2hr, 3hr, 4hr and 6hr durations.	AI
Demand Forecast	Highlighted the need for balance between realistic uptake of EVs & Air Source Heat Pumps (ASHPs) and aspirational government targets. Modelling to include industrial electrification trends and establish more realistic high and low scenarios for Northern Ireland.	Following this feedback SONI will engage with DfI on the possibility of obtaining a high and low scenario for EVs to replace the existing +/-20% assumption from median. SONI uses NIE Networks forecasts for ASHPs which are updated once every two years but do not include a high and low scenario.	NI
EVs	Further clarification needed on EV charging assumptions: Alignment of 90% smart charging target with no smart metering rollout, and the consideration of public charging infrastructure in Northern Ireland within the modelling.	We would refer the 90% charging arrangement to off peak charging as opposed to smart charging since there are already tariffs in place to encourage off peak charging. Our EV assumptions are provided by DFI using their modelling. Not clear if DFI take account of public charging infrastructure	NI
Data Centres	Noted that Data Centre growth should not be underestimated.	Data centre growth is an important component of demand forecasting for the AIRAA 2026-2035. In Ireland, a	AI

		sensitivity is assessed to observe the impacts of further data centre growth.	
Flexibility	Demand-side flexibility should be treated as an active resource, with assumptions made more transparent and impact of flexibility levels clearly shown as separate scenarios. Expand the scope to include other sources like industrial processes and smart appliances.	This is an area of growing interest and importance for the distribution and transmission system operators. We acknowledge this constructive feedback as we work towards improving how flexibility is included in our modelling.	AI

Q2. Do you have any comments on the proposed inputs and assumptions for the Economic Viability Assessment?

Theme	Feedback	EirGrid/SONI Response	Applicability [IE/NI/AI]
Ancillary Services Assumptions for EVA	Concerns over outdated assumptions on ancillary services, resulting in overstating DS3 revenues and project viability.	A scenario was assessed which excluded the benefit of DS3 revenue in the EVA to determine sensitivity of the model to ancillary revenues. Further consultation will be conducted to help refine ancillary service revenues for the EVA in future AIRAA cycles.	AI
Best New Entrant (EVA)	Recommendations to revise assumptions on Best New Entrant (BNE) (to adopt dynamic methodology with multiple BNE profiles and revised price caps). Current methodology is outdated and overstates revenues, failing to incentivize low-carbon investment. Even with a 1.5x Net CONE multiplier, auctions attracted no new capacity.	The BNE publication is deemed to be the best data source for use in the EVA. We continue to seek more robust and/or up-to-date datasets where available and would welcome feedback on any recommended datasets.	AI