Constraint Forecast Analysis Reports for Electricity Connection Policy Generation and System Services (ECP-GSS-1)

Assumptions Document

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Contents

Revision History						
Revision	Date	Description	Originator	Reviewer	Checker	Approver
RO	17/04/2026	Release of draft assumption for ECP-GSS-1	ECP Team	ECP Lead	ECP Senior Lead	Economic Analysis Manager

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ABBREVIATIONS AND DEFINITIONS

BES	Battery Energy Storage
CRU	Commission for Regulation of Utilities
ECP	Electricity Connection Policy
ECP - GSS	Generation and System Services
GW	Giga watt
IC	Interconnector
IE	Ireland
NI	Northern Ireland
NDP	Network Delivery Portfolio
NRAA	National Resource Adequacy Assessment
NS	North South
ORESS	Offshore Renewable Energy Support Scheme
PD	Priority Dispatch
RE-HUB	Renewable Hubs
RES	Renewable Energy Sources
SEM	Single Electricity Market
SOEF	Shaping Our Electricity Future
TDD	Total Dispatch Down
TER	Total Electricity Requirement
TSO	Transmission System Operator
System Non-Synchronous Generation	There is a requirement to limit the instantaneous penetration of asynchronous generation connected to the All-Island system.
Operational Limit for Inertia	There is a requirement to have a minimum level of inertia on the All-Island system.
Minimum Sets	There is a requirement to have a minimum number of conventional generators in Ireland and Northern Ireland.
Reserve	The amount of spare capacity in the system to manage any system disturbance.

1 Executive Summary

This is the assumptions document for Constraints Forecast ECP-GSS-1, the first batch of connection offers planned under the Electricity Connection Policy – Generation and System Services. ECP-GSS was announced by CRU in a Decision Paper (CRU/20241011) and will support the delivery of Ireland's renewable electricity targets and support Ireland in achieving compliance with the Renewable Energy Directive III (RED III). As part of the ECP, the System Operators are required to prepare Constraints Analysis to forecast dispatch down levels for wind and solar projects. Upon completion of this constraint forecast analysis, EirGrid will publish results to the ECP webpage on the EirGrid website2, which provide developers with information on forecasted dispatch down levels in each region.

For more information on the methodology and process for Constraints Forecasts for ECP, please see the Plain English Summary and the Methodology published on the ECP webpage on the EirGrid website.

1.1 Total Dispatch Down

Total Dispatch Down (TDD) is the sum of Surplus, Curtailment, and Constraints, where:

- Surplus represents dispatch down applied for energy balancing when the available generation exceeds demand plus interconnector export.
- Curtailment represents dispatch down applied to ensure operational limits are met.
- Constraints represent dispatch down applied to manage localised congestion on the grid, whereby variable generator output is constrained to stay within overload limits of the transmission lines. This is applied at a nodal level.

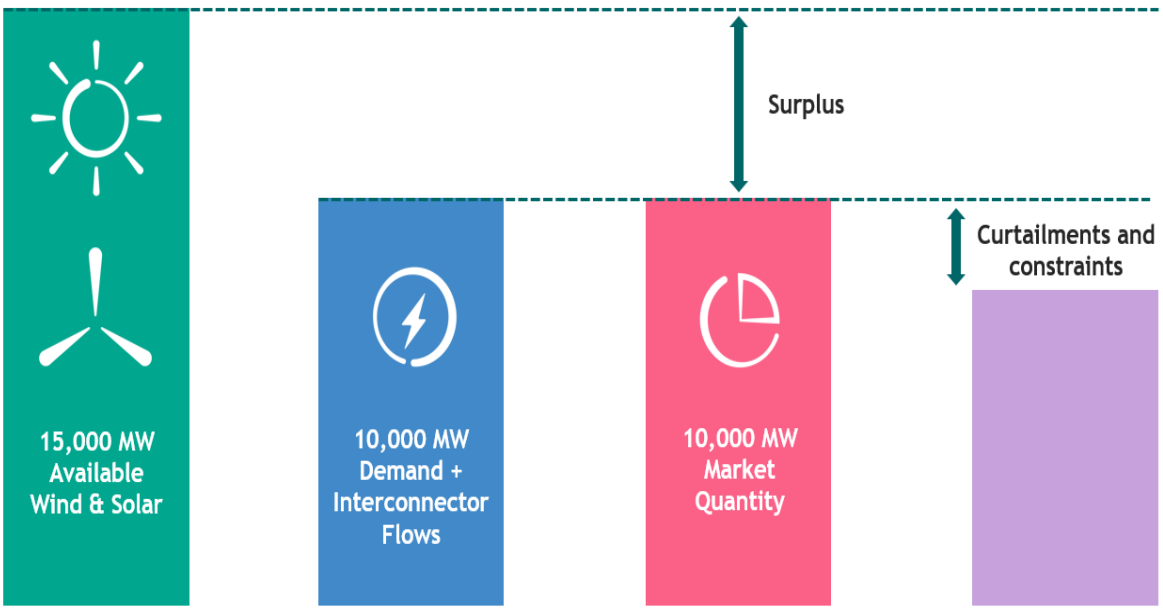

Figure 1 Illustration of Surplus, Curtailment and Constraints in the SEM

[1] CRU2024101_Electricity_Connection_Policy_Generation__System_Services_Decision_Paper.pdf
[2] https://www.eirgrid.ie/industry/customer-information/ecp-constraint-forecast-reports

1.2 Analysis Process

The constraint forecast modelling will use PLEXOS software to model the generation, loads, transmission lines and operational constraints. Three studies will be run sequentially, as shown in the Figure 2, to simulate the dispatch down of RES generation at each stage. A post calculation methodology will be employed in the final stage to process the results according to the assumptions.

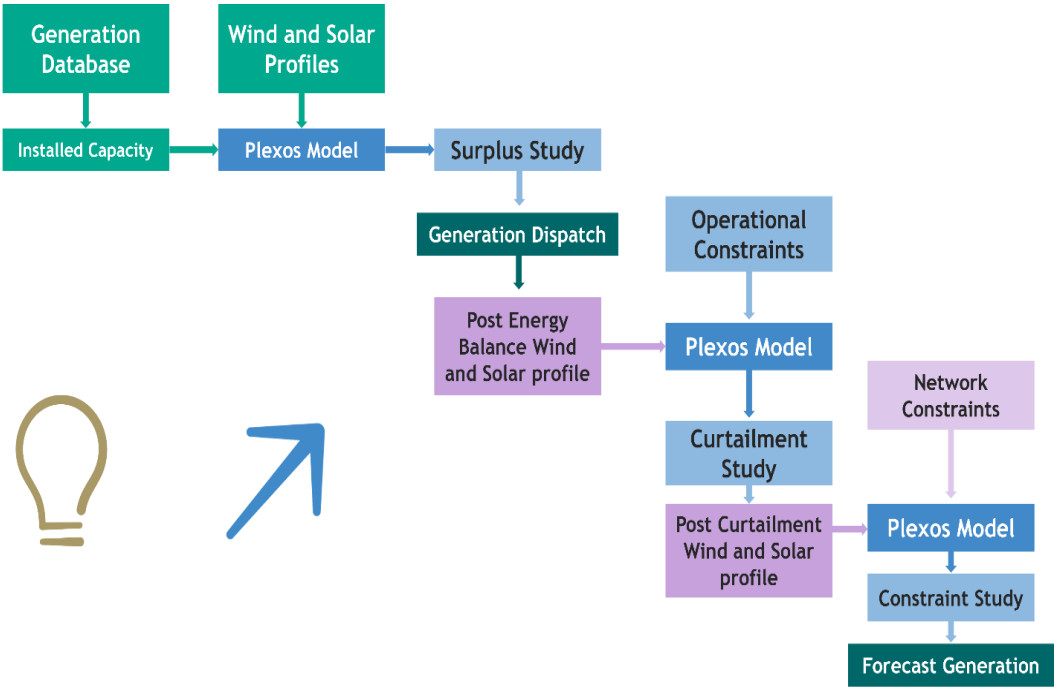

Figure 2 Process Flow Chart

1.3 Study Scenario Matrix

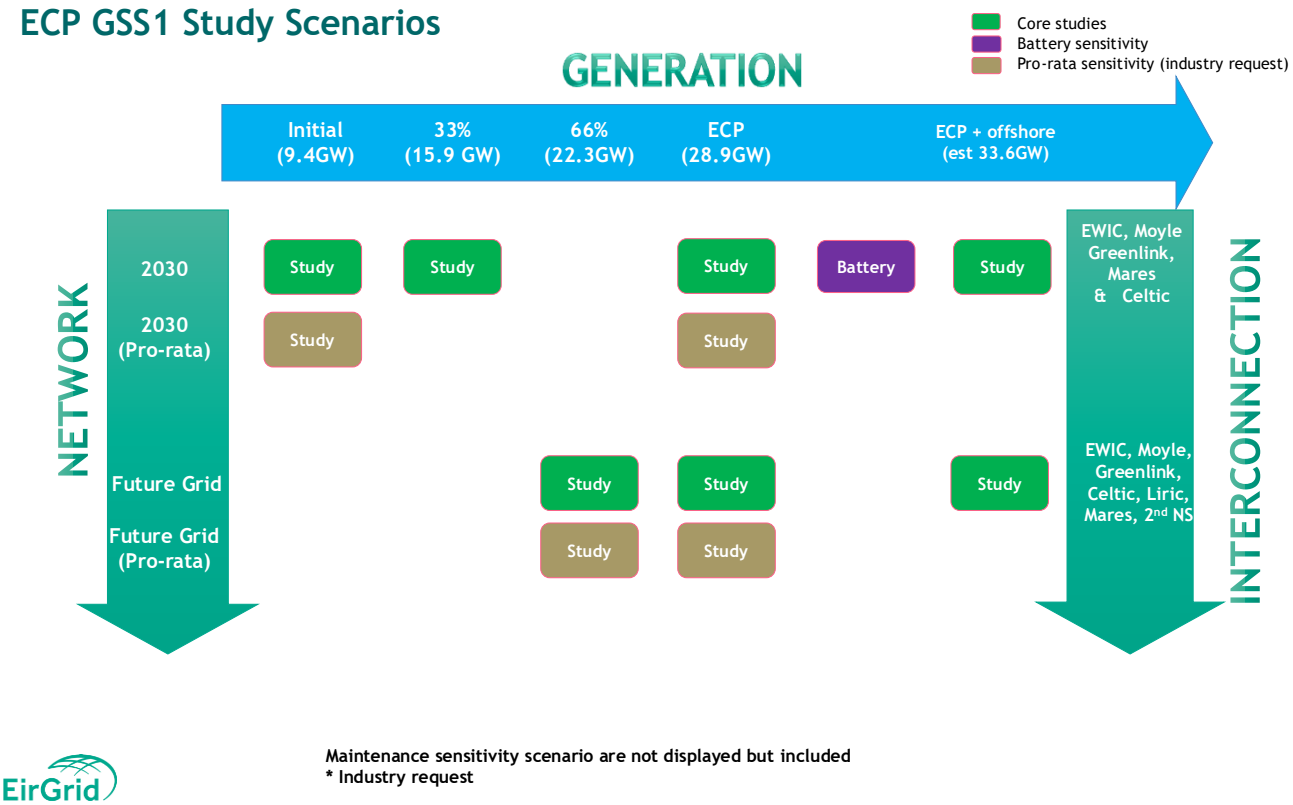

Figure 3: ECP-GSS-1 Study Scenarios

- The core ECP-GSS-1 study horizons are 2030 and Future Grid.
- The Initial generation scenario includes all renewable generation currently connected, plus all renewable generation expected to connect before the end of 2029.
- The 33% generation scenario involves scaling the capacity of any generation not included in the Initial generation scenario but included in the ECP generation scenario by 33% and adding to the Initial scenario.
- The 66% generation scenario involves scaling the capacity of any generation not included in the Initial generation scenario but included in the ECP generation scenario by 66% and adding to the Initial scenario.
- The ECP generation scenario includes all the RES generation in the pipeline up to and including ECP-GSS-1 applicants (including ECP-GSS-1 applicants) (some of whom may not have received offers at this point in time but are still considered within these studies).
- The ECP + offshore sensitivity studies include the ECP generation portfolio with additional offshore wind generation considered on 2030 network Future Grid.
- An ECP Battery sensitivity will also be studied. The assumptions for this scenario are currently being finalised.
- All studies will include a representative maintenance schedule. The maintenance sensitivity removes the representative maintenance schedule from the model and compares the results to the core ECP study (which includes the representative maintenance schedule).

2 Assumption Inputs

2.1 Criteria Overview

Assumption for ECP-GSS-1	Draft	Interim	Final
Study period	2030		
	Future Grid (2035)		
ECP-GSS-1 scenarios	2030 – Initial, 33%, ECP, and ECP + offshore scenarios. An additional battery sensitivity.		
	Future Grid – 66%, ECP, and ECP + offshore scenario.		
Northern Ireland	NI generation and network data to be added		
Demand	AIRAA 2026-2035 Median Forecast[3]		
Conventional Generation	AIRAA 2026-2035		
RES generation and batteries (Ireland)	The total generation capacity to be studied under ECP-GSS-1 application batch is **6.9 GW:** - 2.0 GW battery 3.7 GW solar and 1.2 GW onshore wind		
	The list of Priority and Non-priority units are to be updated with recent updates.		
Solar Profile	The solar profile for the three solar regions in Ireland – North, Middle and South – will use 2020 data procured from an external vendor.		
Onshore Wind Profile	Profiles from 2020. Each node using a representative profile from that area. More information can be found in the ECP methodology statement.		
Offshore Profile	Synthesised 2020 offshore profile (procured from an external vendor).		
Installed Interconnection	2030 – EWIC, Greenlink, Moyle, Celtic.		
	Future Grid – EWIC, Greenlink, Moyle, LirIC, Celtic, Mares, 2nd NS		

Table 1: Installed capacity, generation and demand assumptions

[3] All-Island Resource Adequacy Assessment

Assumption for ECP-GSS-1	Draft	Interim	Final
Operational Constraints	Inertia 2030 – 23,000 MWs Future Grid – 23,000 MWs		
	Minimum Sets (IE, NI) 2030 – 2,1 Future Grid – 0,0		
	Reserve (IE, NI) POR /SOR/TOR I/TOR II		
	Non-Synchronous Generation 2030 – 95% Future Grid – 100%		
	Dublin Constraints (voltage control): 2030 – 2 units required to run in Dublin Future Grid – 1 unit required to run in Dublin (note: this is a modelling assumption not based on a roadmap for reducing the existing constraint).		

Table 2: Operation constraint assumptions

Assumption for ECP-GSS-1	Draft	Interim	Final
Outage assumptions (Transmission)	12-month transmission outage programme		
Network developments	Transmission Infrastructure Delivery. Link to be added once TID is published.		
RE-HUB	NA		
DLR (Dynamic Line Rating)	Up to 30% additional loading on transmission line.		

Table 3: Network assumptions

Assumption for ECP-GSS-1	Draft	Interim	Final
Interconnector Model	The price model for the IC's will be updated to reflect the regional price differentials currently observed in the SEM, GB and France Markets. The flows will be fixed from the Surplus model for additional runs.		
Battery Energy Storage	All BESS are limited to 2 cycles per day. Batteries <= 1 hour duration primarily contribute to POR, SOR, TOR. Batteries > 1 hour duration contribute to replacement reserve.		
LCIS (Low Carbon Inertia Service)	Sync comp: 7,000MWs for IE and 4,000MWs for NI		
LDES (Long Duration Energy Storage)	TBC		
Hybrid Connections	No sharing of MEC. No behind the meter charging.		
Fuel and Carbon Data	National Grid ESO Future Energy Scenarios 2025		

Table 4: Other modelling assumptions

2.1.1 Generation

Please note that the generation capacities are still being analysed and are likely to be updated.

ECP-GSS-1 Breakdown of IE Generation Capacity (MW)					
Type	Initial Study	33% Study	66% Study	ECP All Study	ECP + offshore
Battery	1,238	2,968	4,698	6,481	6,481
Solar	2,500	5,976	9,452	13,034	13,034
Wind	5,678	6,882	8,085	9,325	9,325
Wind Offshore	25	25	25	25	4,724
Totals	**9,441**	**15,851**	**22,261**	**28,864**	**33,564**

Table 2: Generation Capacities for Ireland (IE)

2.1.2 Interconnector Capacities

Interconnector Capacity (MW) Import & Export	2030	Future Grid
Moyle/ EWIC/Greenlink	500	500
Celtic	700	700
LirIC	-	700
MARES	-	750

Table 5: Interconnector Export/Import Capacities

2.1.3 Network Reinforcements and Network Outages

TBC

3 Timelines

Live document will be updated throughout ECP-GSS-1 cycle as per timeline below.

3.1 Overview

3.2 Details

- Industry stakeholder engagement meeting – 19.03.2026
- Industry representative engagement meeting –26.03.2026
- Data freeze date - 27.03.2026
- Assumption and scenario matrix finalised - 02.04.2026
- Draft results webinar – 23.06.2026
- Publication of Results – 03.07.2026
- Closing date to submit queries – 31.07.2026
- Closing date to respond to queries – 07.08.2026

4 Appendix

4.1 Draft Assumption Industry Webinar engagement 19.03.2026

https://cms.eirgrid.ie/sites/default/files/publications/ECP-GSS-1-Industry-Assumptions-Presentation-Slides.pdf