

30/07/2026

Constraints Forecast Studies for ECP-GSS-1

Summary of Initial Draft Results



Process Updates

- Updates to ECP-Webpage.
- New format reporting in Excel. Customisable tables and graphs available in Excel.
- Summary report covering 12 areas.
- Providing pro-rata and grandfather data of constraints in all studies.
- Email inbox:
ecp_constraintsanalysis@Eirgrid.com

On this page

ECP-GSS-1 Constraint Reports

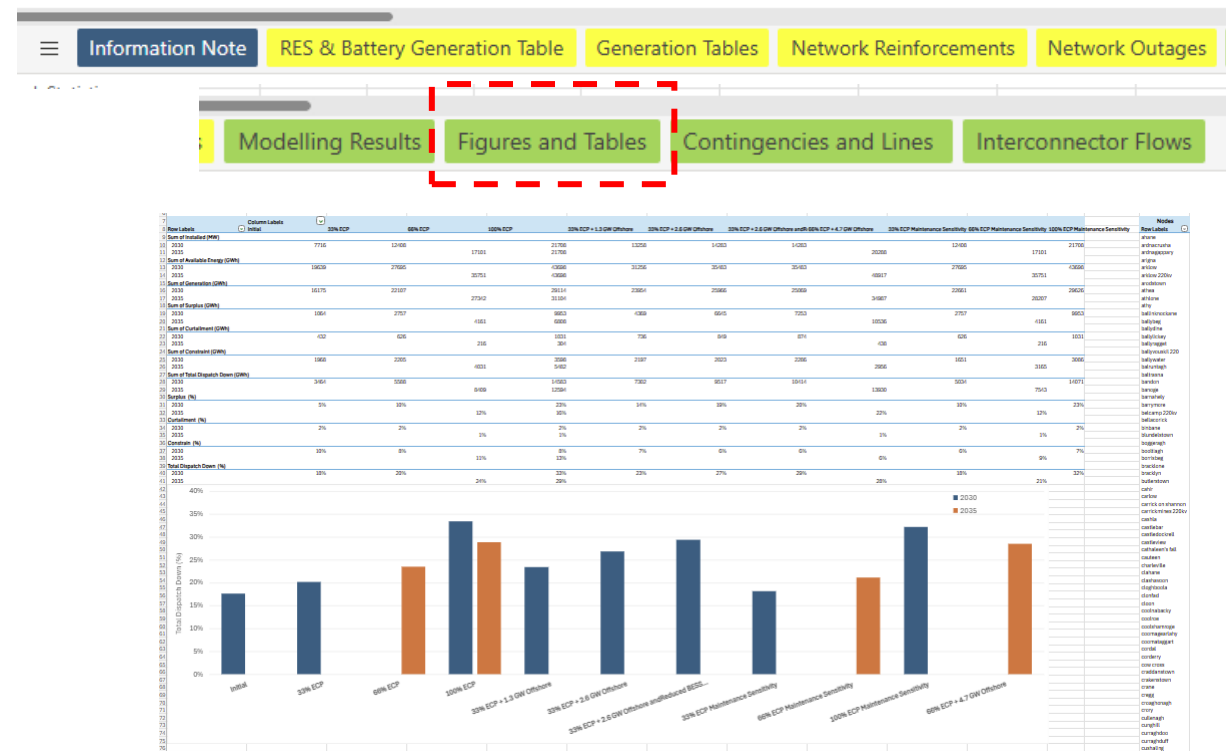
- ECP-GSS-1 Industry Assumptions Presentation Slides
- ECP GSS 1 FAQ
- ECP GSS 1 Assumptions Document
- ECP GSS 1 IE Generation List
- ECP GSS 1 Industry Survey Recommendations
- Mock-up Excel Constraint Analysis Report

ECP-2.5 Constraint Reports

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ECP-2.4 Constraint Reports

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Explanation of new reporting

- Slicers at the top allow users to tailor the contents of the two tables and four charts by Area, Subgroup, Node, Modelling Approach, Generation Type, and Generation Scenario.
- A large table summarises the generation (GWh) and Dispatch Down (GWh & %) broken down by Surplus, Curtailment, and Constraint.
- A smaller table lists the nodes included by the current slicer selections.
- The upper two charts show Total Dispatch Down by year and generation scenario in terms of either GWh or %.
- The lower two charts show Dispatch Down for each generation scenario and year in stacked columns divided into Surplus, Curtailment, and Constraint in terms of either GWh or %.
- Grandfathering and Pro-rata options should not be selected simultaneously.

Selections for an all-Area, all-Generation Type comparison of all Generation Scenarios using Grandfathering allocation

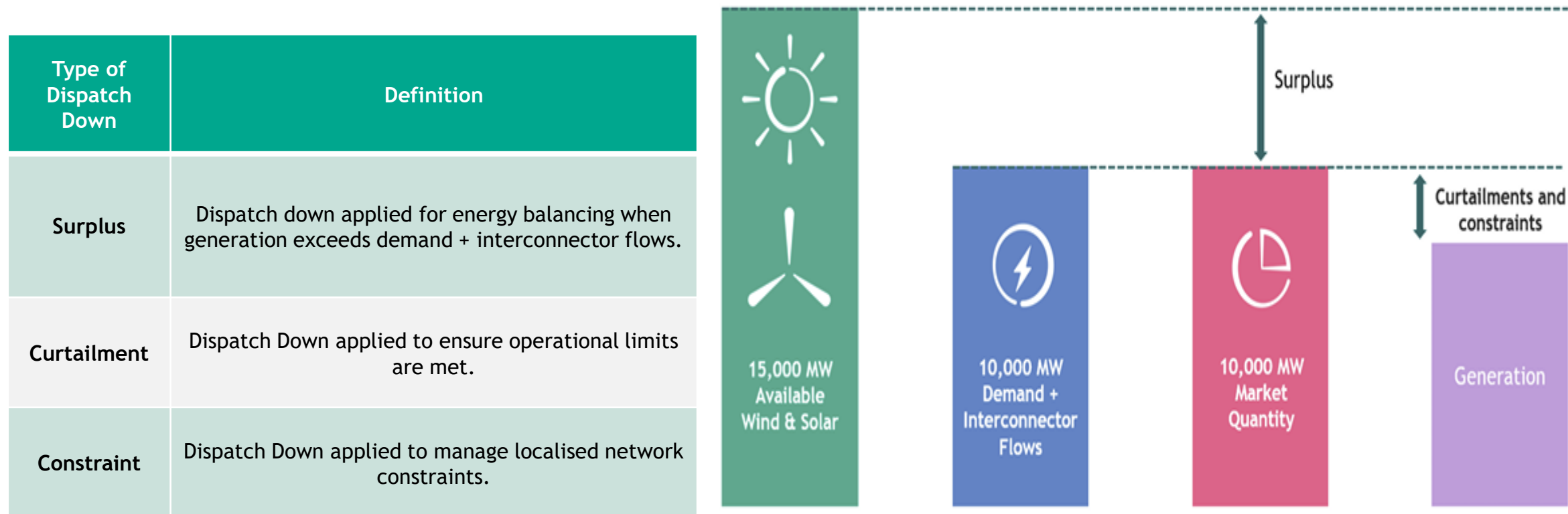
Area	Subgroup	Node	Grandfatherin...	Generation Type	Generation S...
A	A, B North	ahane	Grandfathering	IE Solar not priority	33% ECP + 1.3 GW ...
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D	D and E North	arigna			33% ECP Maintena...
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F	G North	arklow 220kv			66% ECP + 4.7 GW ...
G	H1	arodstown			66% ECP Maintena...
H1	H2 & K	athea			Initial

Selections for an Area J, IE wind non-priority comparison of all 33% ECP Generation Scenarios using Pro-rata allocation

Area	Subgroup	Node	Grandfatherin...	Generation Type	Generation S...
D	J City, G South	belcamp 220kv	Grandfathering	IE Solar not priority	100% ECP Maintena...
E	J Country	bracklone	Pro-rata	IE wind not priority	33% ECP
F		bracklyn		IE wind priority	33% ECP + 1.3 GW ...
G		craddanstown			33% ECP + 2.6 GW ...
H1		cushaling			33% ECP + 2.6 GW ...
H2		derryiron			33% ECP Maintena...
J		mount lucas			66% ECP
K		mulgeeth			66% ECP + 4.7 GW ...

What is Dispatch Down

Total Dispatch Down (TDD): Sum of Surplus, Curtailment & Constraint

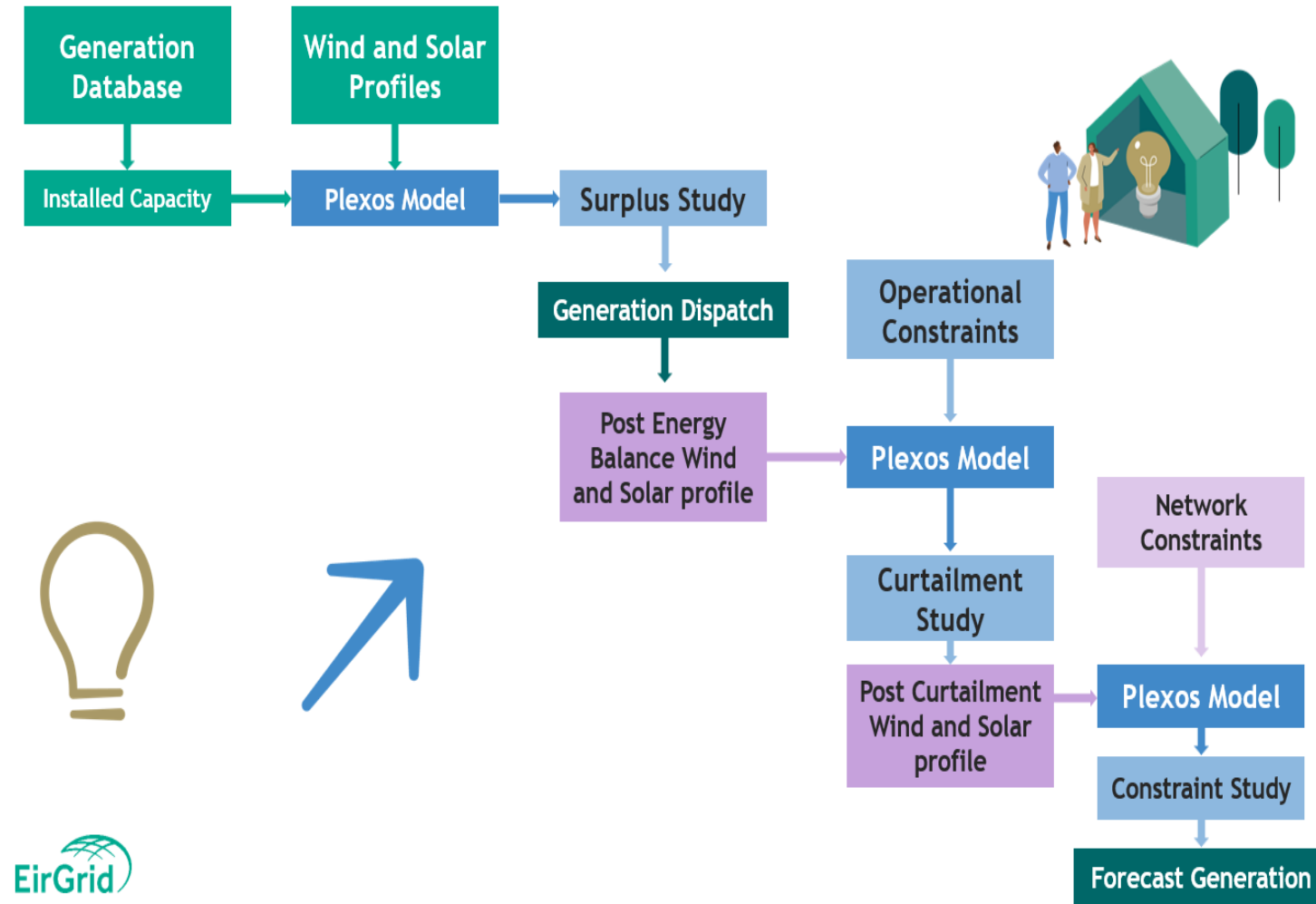


Note: Reported TDD figure is as a percentage of controllable IE wind and solar available energy

Illustration purposes only

Modelling Process

1. Plexos based model
2. Each scenario has 3 runs - surplus, curtail and constraint
3. Models are run sequentially to calculate surplus, curtailment and constraints
4. The output from the Surplus Study feeds into the Curtailment Study which feeds into the Constraint Study
5. Operational limits and network constraints are added in to successive models
6. Except interconnectors, all capacity can redispatch between runs



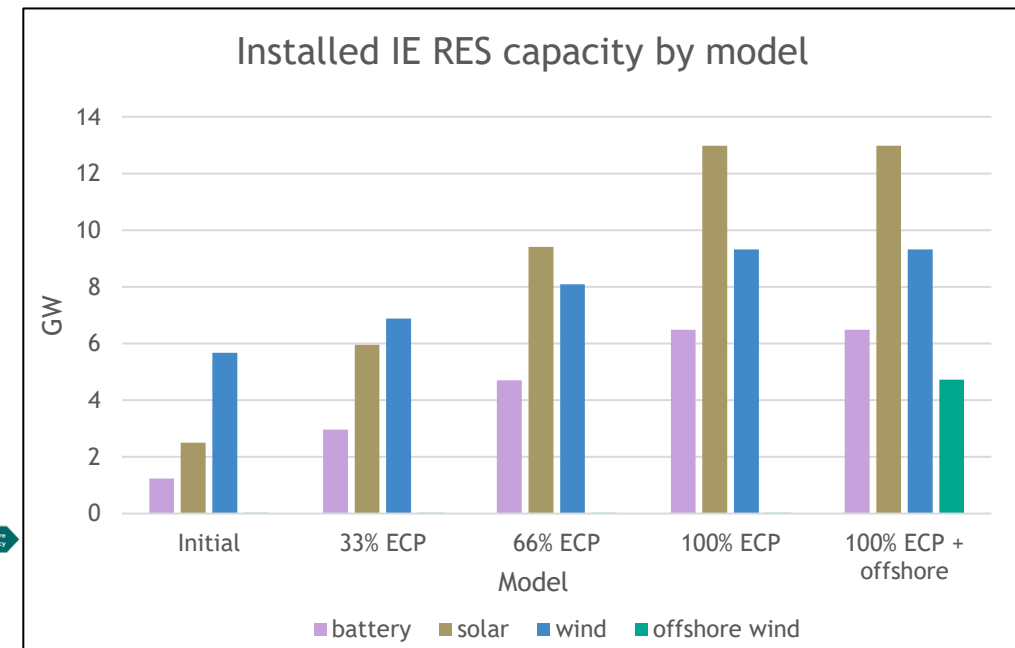
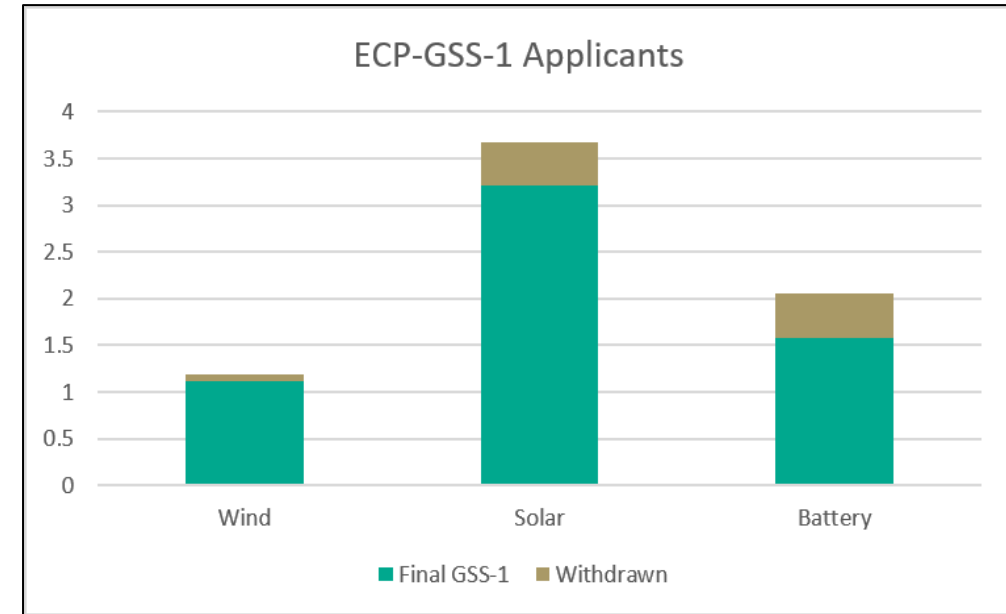
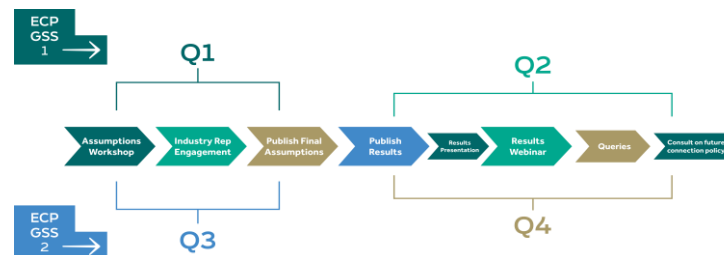
ECP-GSS1 Overview

Key updates

- Forecasting moves to twice per year.
- Reduced timelines mean less information is available on GSS-1 applicants (e.g. battery MWh, connection point etc.)
- Ongoing work continues to streamline inputs and strengthen industry engagement.

Inputs & assumptions

- Study years: 2030 and 2035.
- 36.6 GW of RES + batteries considered across the island.
- Network reinforcement based on TID and ITP. Significant change in delivery dates.
- Operational constraints based on the Operation Roadmap 2025-2035.
- Interconnectors aligned with TYNDP and TID.
- LDES & Hybrid in the ECP pipeline is modelled without an operational envelope or shared MEC.

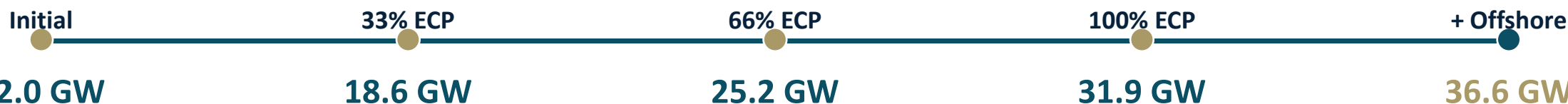


Our Portfolios

ECP-GSS-1 breakdown of IE & NI generation capacity (MW)

Type	Initial Study	33% ECP Study	66% ECP Study	100% ECP Study	100% ECP + Offshore
IE Battery	1,238	2,968	4,698	6,481	6,481
IE Solar	2,500	5,991	9,483	12,974	12,974
IE Wind	5,678	6,894	8,109	9,325	9,325
IE Wind Offshore	0	0	0	0	4,724
IE Total	9,416	15,853	22,290	28,779	33,504
NI Total	2,567	2,755	2,943	3,135	3,135
Total	11,983	18,608	25,233	31,914	36,639

Scenario build-up: total capacity



Connected + expected renewables by end-2029.

Scale all capacity included in the 100% ECP portfolio but not in initial portfolio by 33% and add it to the initial.

Scale all capacity included in the 100% ECP portfolio but not in initial portfolio by 66% and add it to the initial.

All ECP pipeline RES & batteries (some of whom may not have received offers but are still considered within these studies).

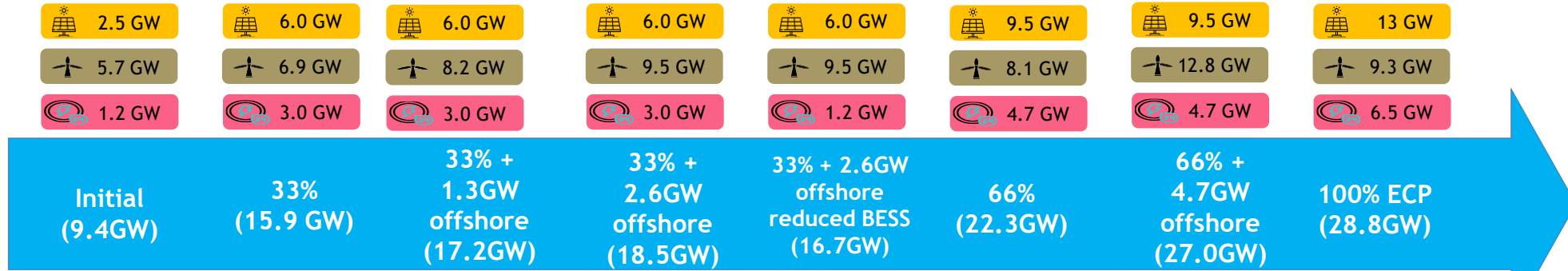
Add offshore inputs for the max modelled case. (Additional reduced offshore cases are also modelled)

8 ECP GSS1 Study Scenarios

*All capacities are IE only

Core studies
Battery sensitivity

GENERATION



NETWORK

2030

Future
Grid

TDD -
18%

TDD -
20%

TDD -
24%

TDD -
27%

TDD -
30%

TDD -
33%

EWIC, Moyle
Greenlink
& Celtic

TDD -
23%

TDD -
29%

TDD -
29%

EWIC, Moyle,
Greenlink,
Celtic, Liric,
Mares, 2nd NS

INTERCONNECTION

Maintenance sensitivity scenario are not displayed but included

Input Assumptions

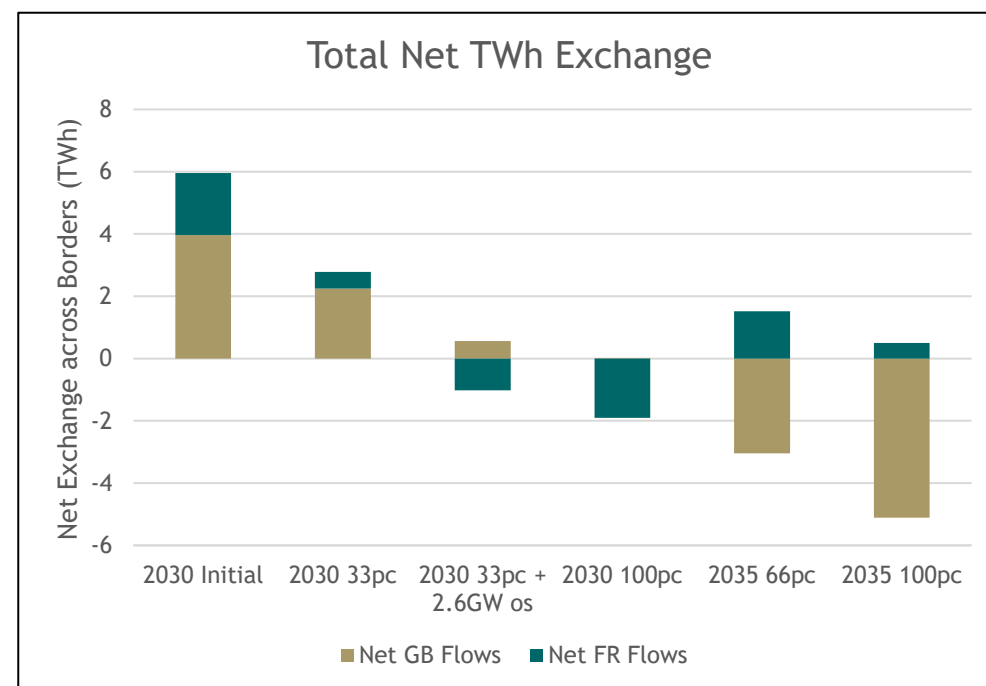
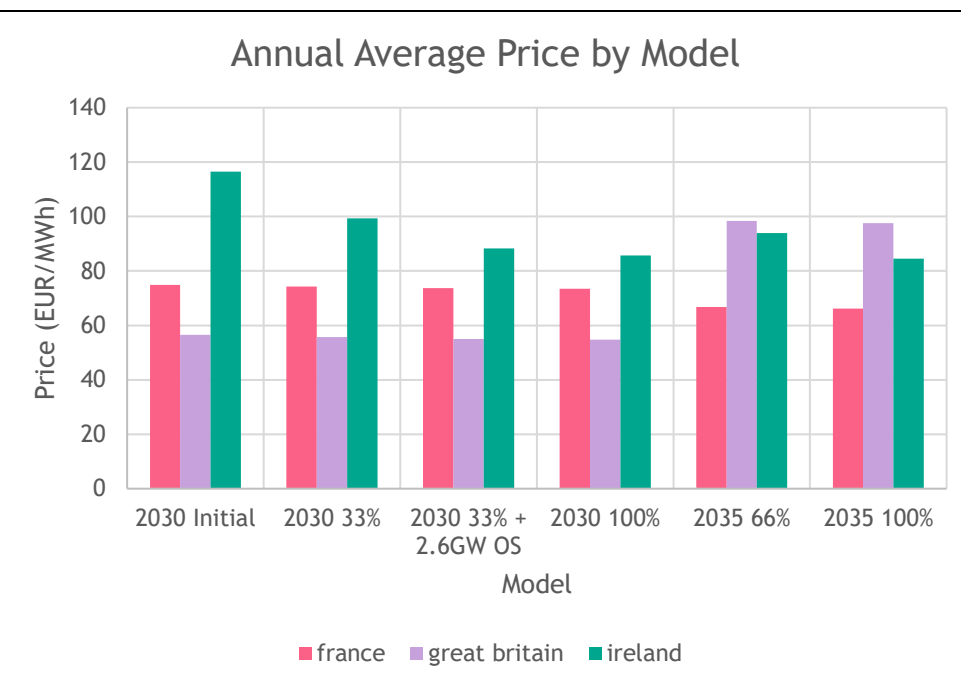
Assumption	ECP-GSS1	Comment
Article 12 & 13	Providing pro-rata and grandfathering of constraints	
Demand, conventional gen and interconnection	Based of latest AIRAA and TYNDP	
Batteries, LDES and Hybrid	Based on current offers and applications. 2 cycles per day. Batteries ≤ 1 hour duration primarily contribute to POR, SOR, TOR. Batteries > 1 hour duration contribute to replacement reserve. Batteries can engage in energy arbitrage. No minimum profit to dispatch. Dispatch optimised by Plexos to minimise system cost.	No sharing of MEC for hybrid. No operational envelope for LDES.
Fuel Costs	Based on National Grid's Future Energy Scenarios	Used the latest data workbook FES: Data Workbook 2025 published in 2025.
Network Reinforcements	Based on the TID	Transmission Infrastructure Delivery (TID) Update
SNSP, Inertia, Min Units	All per the Operational Policy Roadmap	EirGrid-SONI-Operational-Policy-Roadmap-2025-2035.pdf
Dublin TCGs	Voltage Control: Minimum of 2 units in 2030 and 1 unit in 2035 Load Flow Control: No minimum requirement	There is no available roadmap for reducing this constraint. This is a modelling assumption only. Wk31_2026_Weekly_Operational_Constraints_Update_0.pdf

For a full list of assumptions please see:

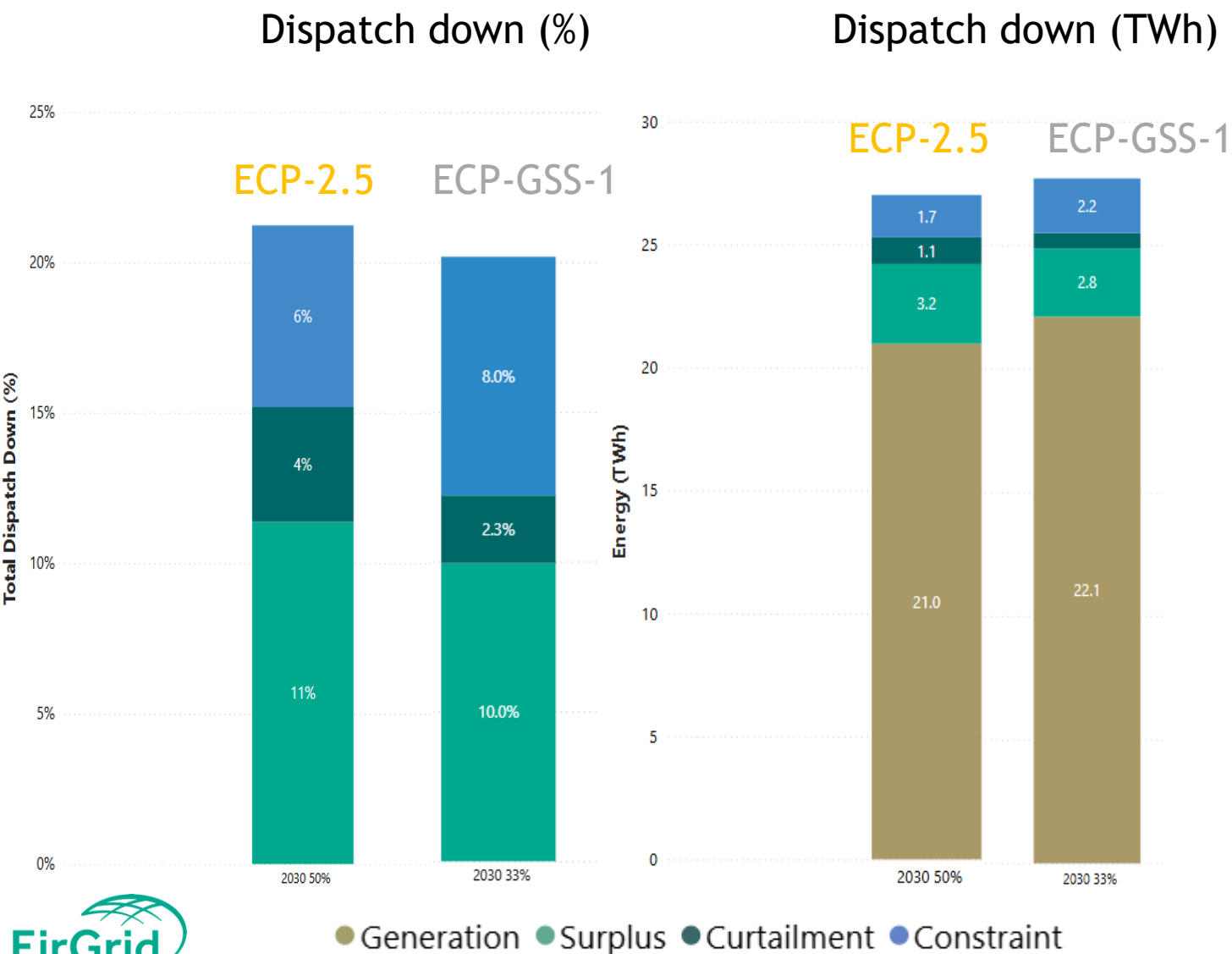
<https://cms.eirgrid.ie/sites/default/files/publications/ECP-GSS-1-Assumptions-Document.pdf>

Interconnector Summary

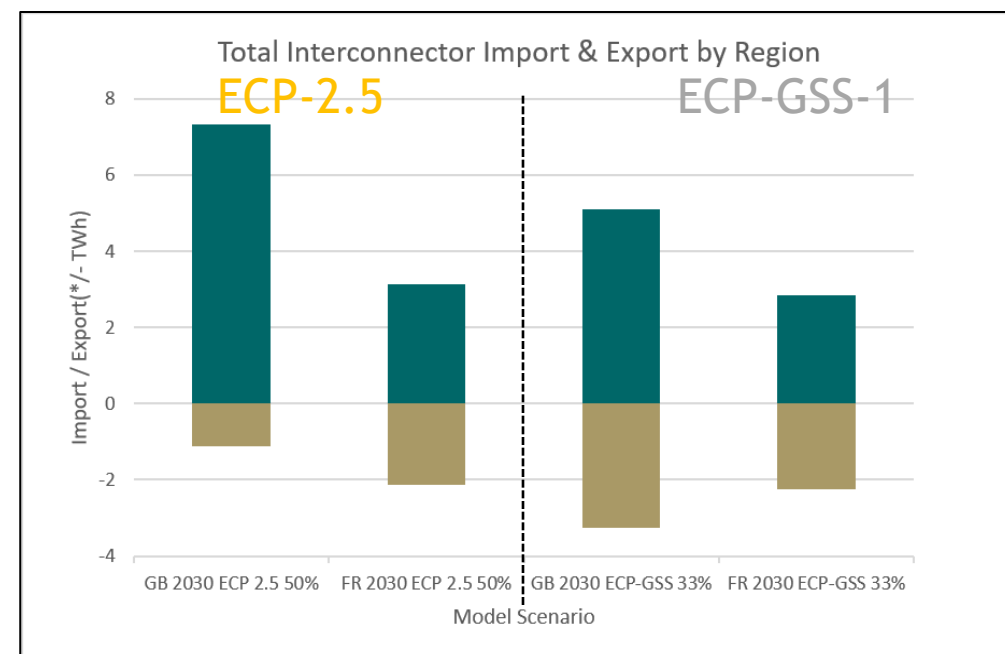
- Inputs & assumptions
 - ECP 2035 has additional 1200MW compared to ECP 2030 .
 - France and GB
 - Wind profiles updated.
 - Thermal Unit Price Setting updated to reflect current prices.
 - RES buildout per European Resource Adequacy Assessment
 - France has a much lower RES buildout by 2030 and high demand growth
 - GB has an exceptional high-RES buildout by 2030 and moderate demand growth
 - By 2035 both regions flip and with Nuclear fleet helps France to maintain a lower price



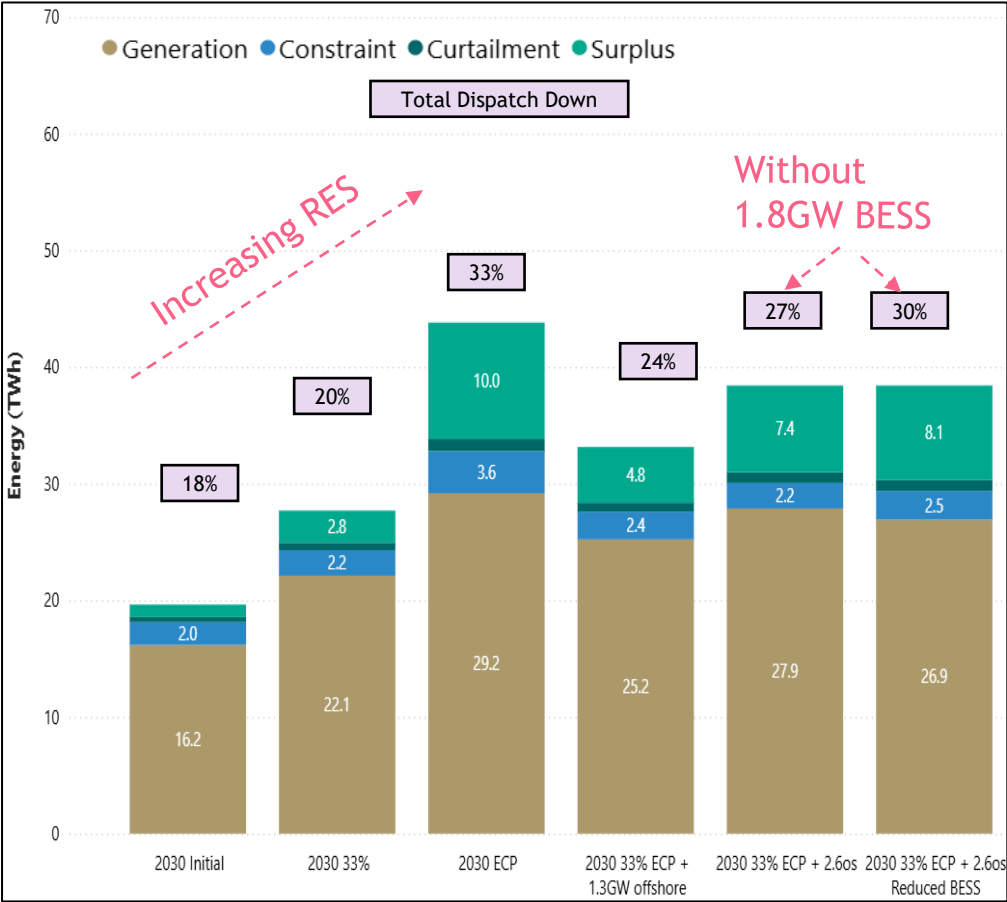
ECP-2.5 vs GSS-1



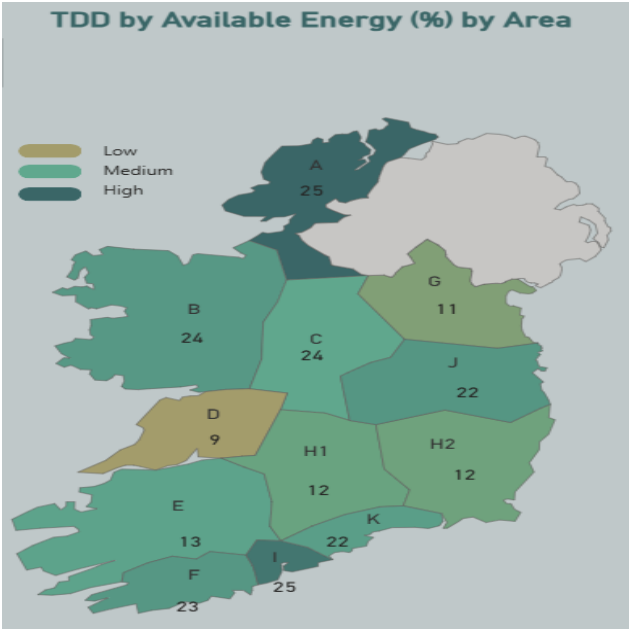
- For a similar installed portfolio, TDD is slightly reduced.
- Increased exports in GSS-1 lead to lower surplus dispatch down.
- Curtailment dispatch down reduced.
- Additional energy available in constraint study and TID delivery dates lead to higher constraints.



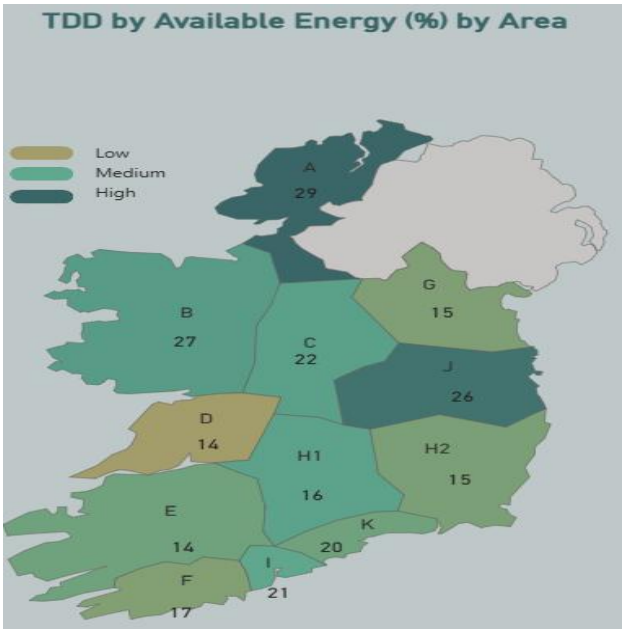
2030 - Dispatch down % by area



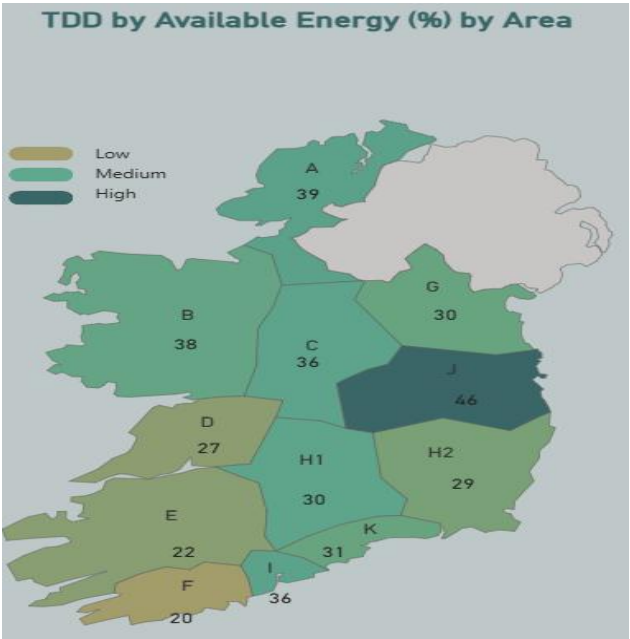
2030 Initial



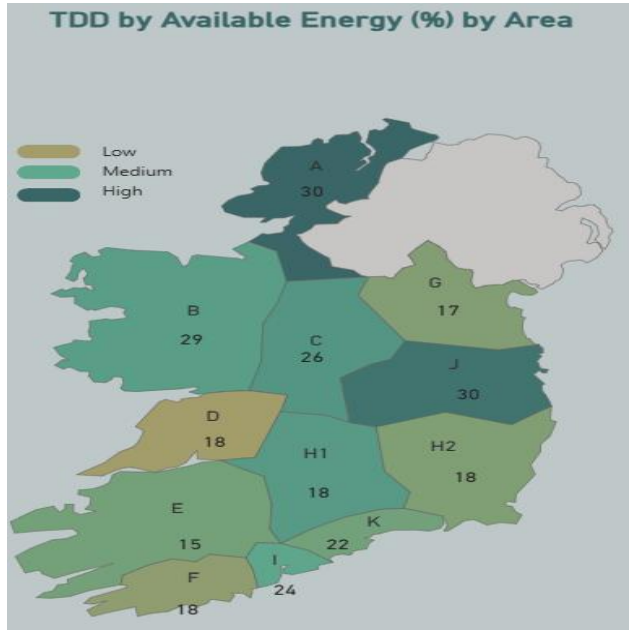
2030 33%



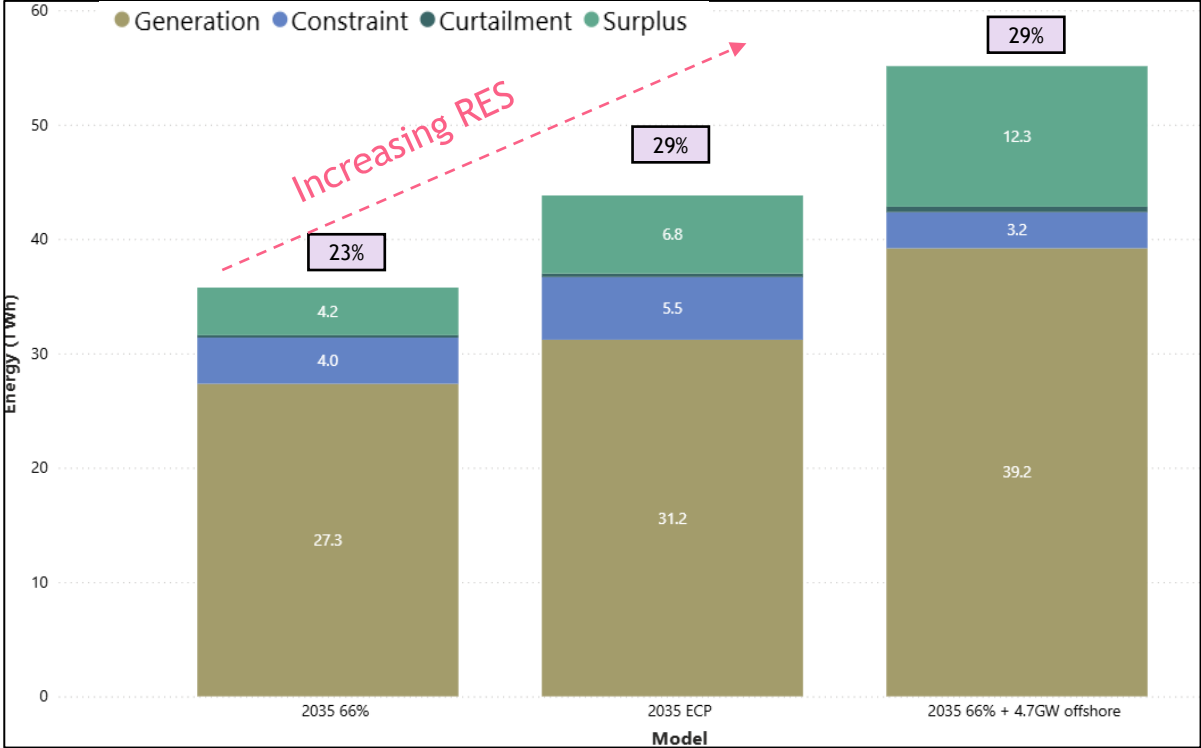
2030 100% ECP



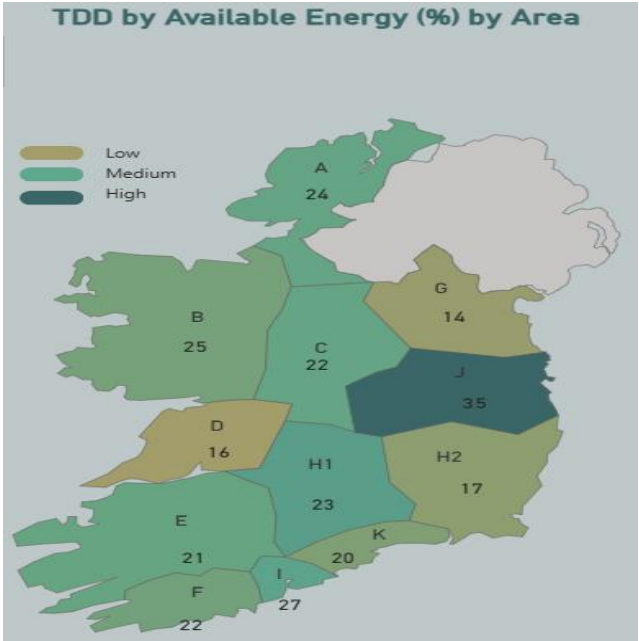
2030 33% + 1.3GW OSW



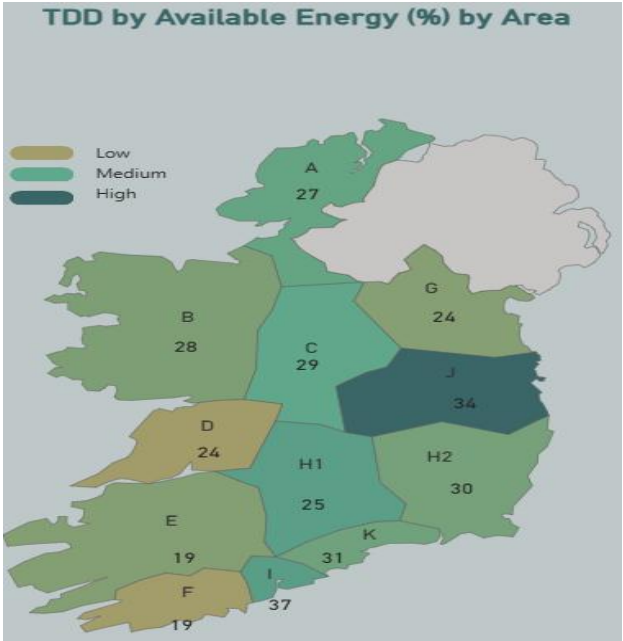
2035 - Dispatch down % by area



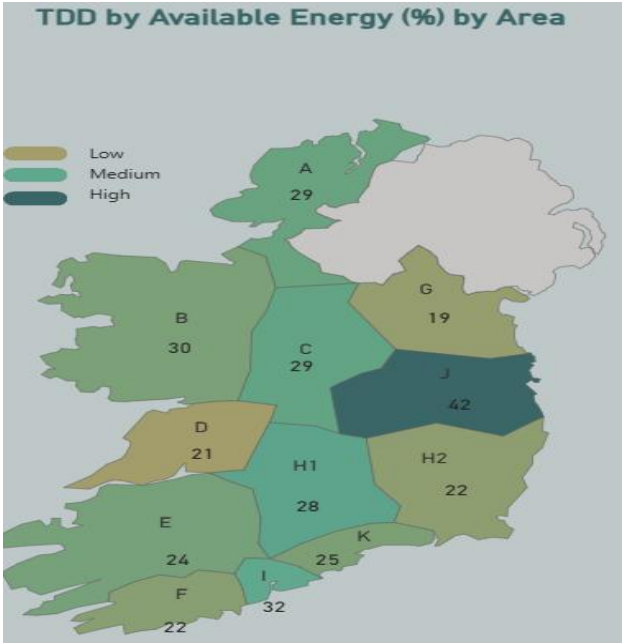
2035 66%



2035 66% + 4.7GW OSW

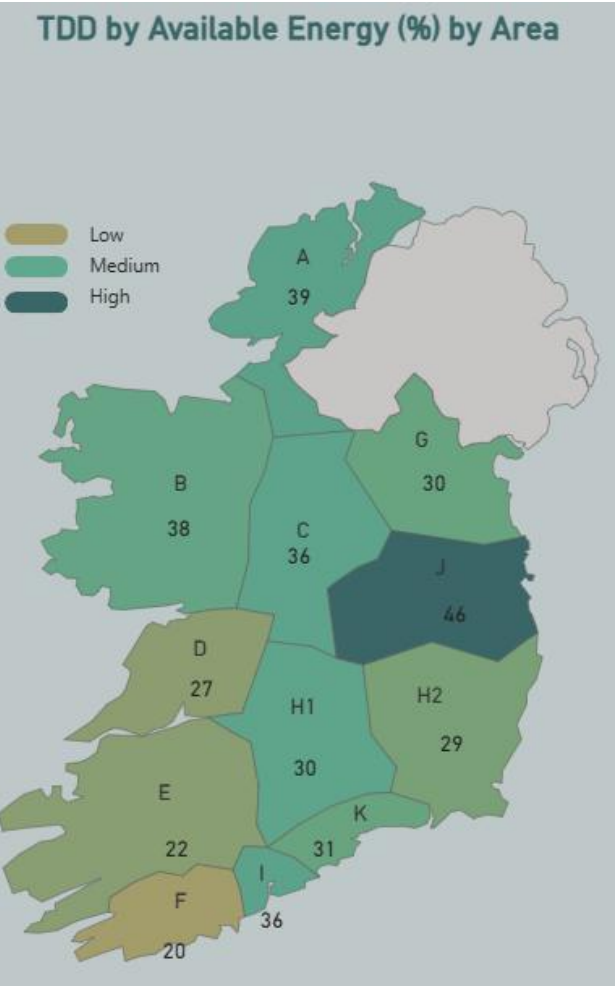


2035 100% ECP

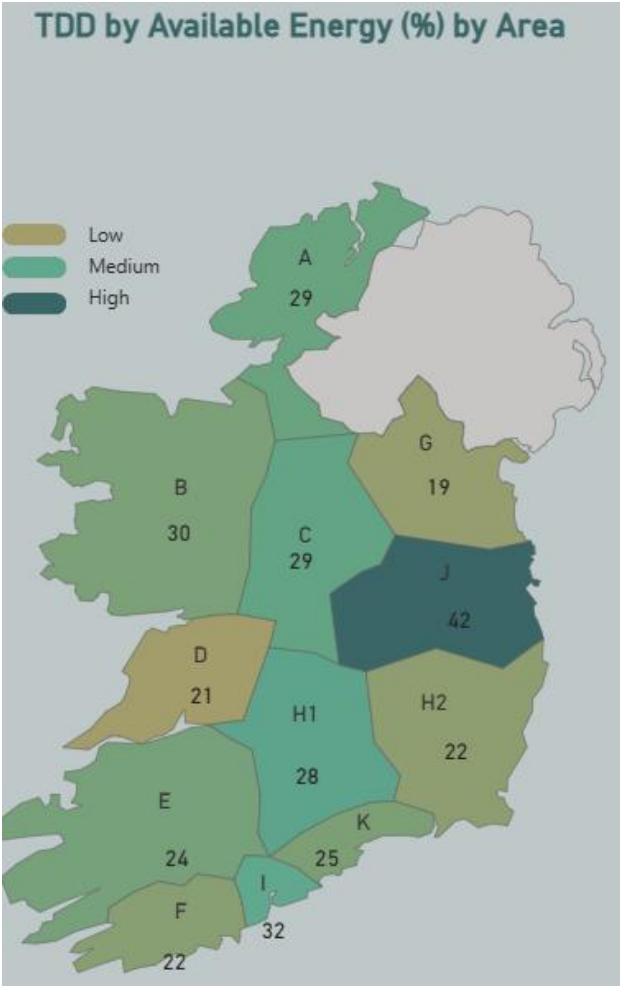


2030 vs 2035 100% ECP

2030 100% ECP

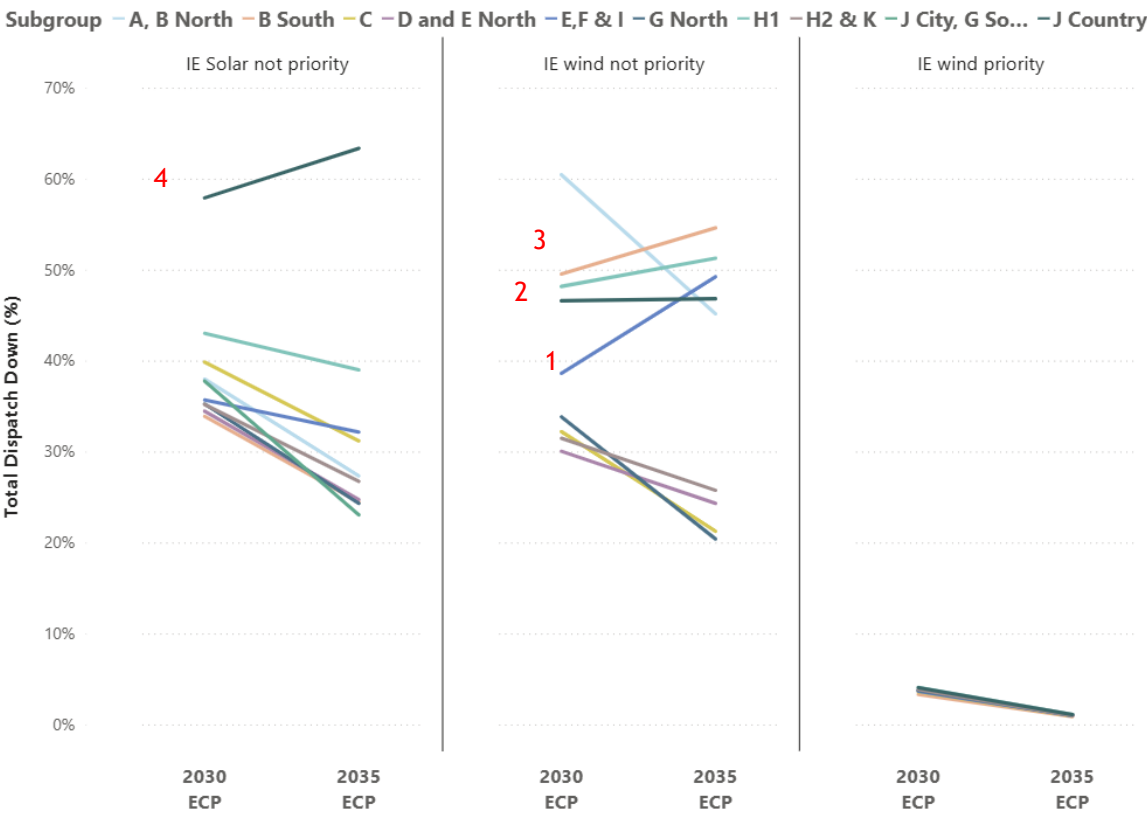


2035 100% ECP



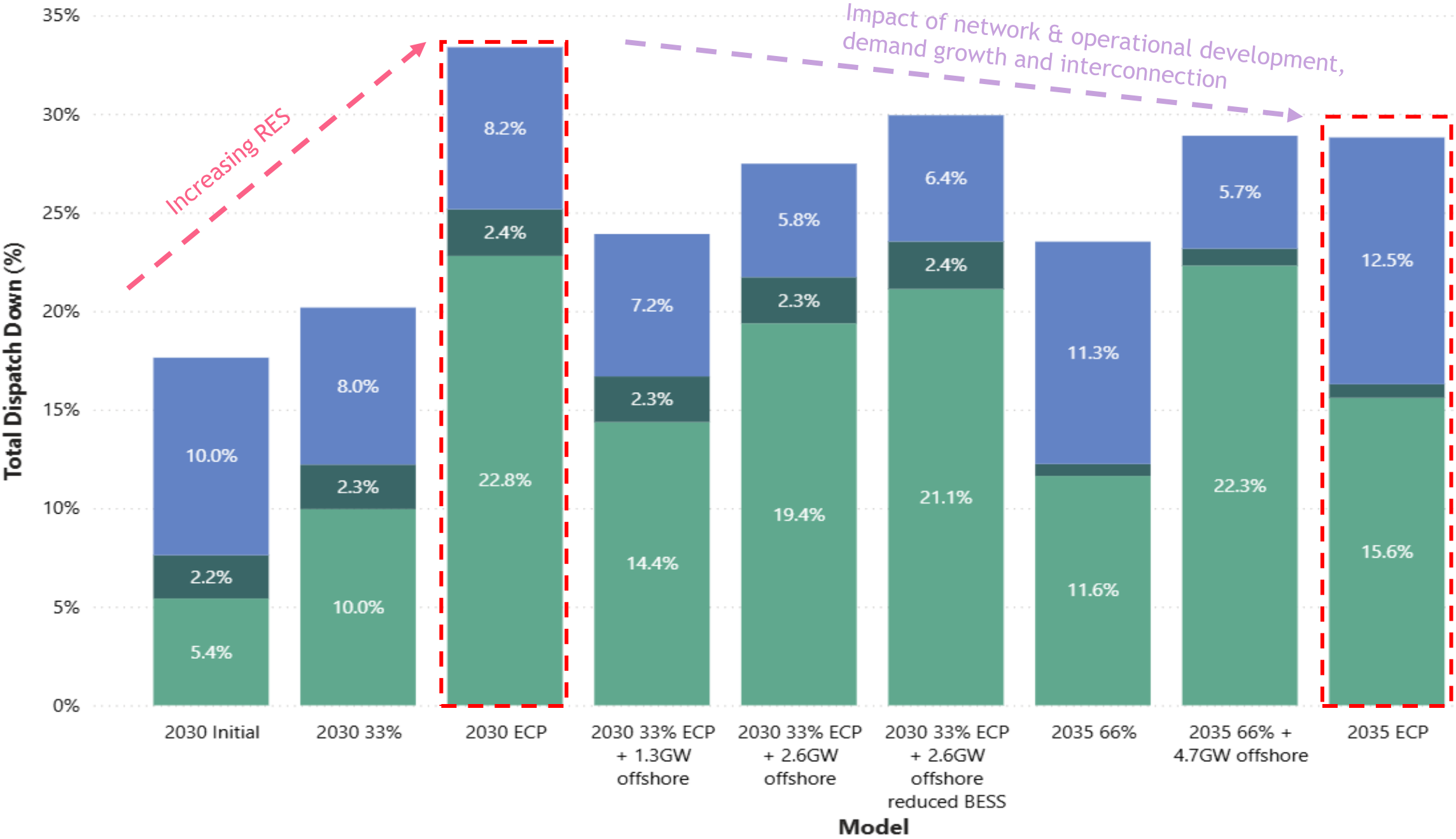
- 1: E,F,I: Celtic sees higher imports in 2035 increasing dispatch down in this subgroup.
- 2: H1: Change in network flows and large increase in solar generation increase wind DD.
- 3: B South: Large increase in A, B North generation shifts constraints to B South.
- 4: J Country: Large increase in power flows into J Country

Dispatch Down by Subgroup



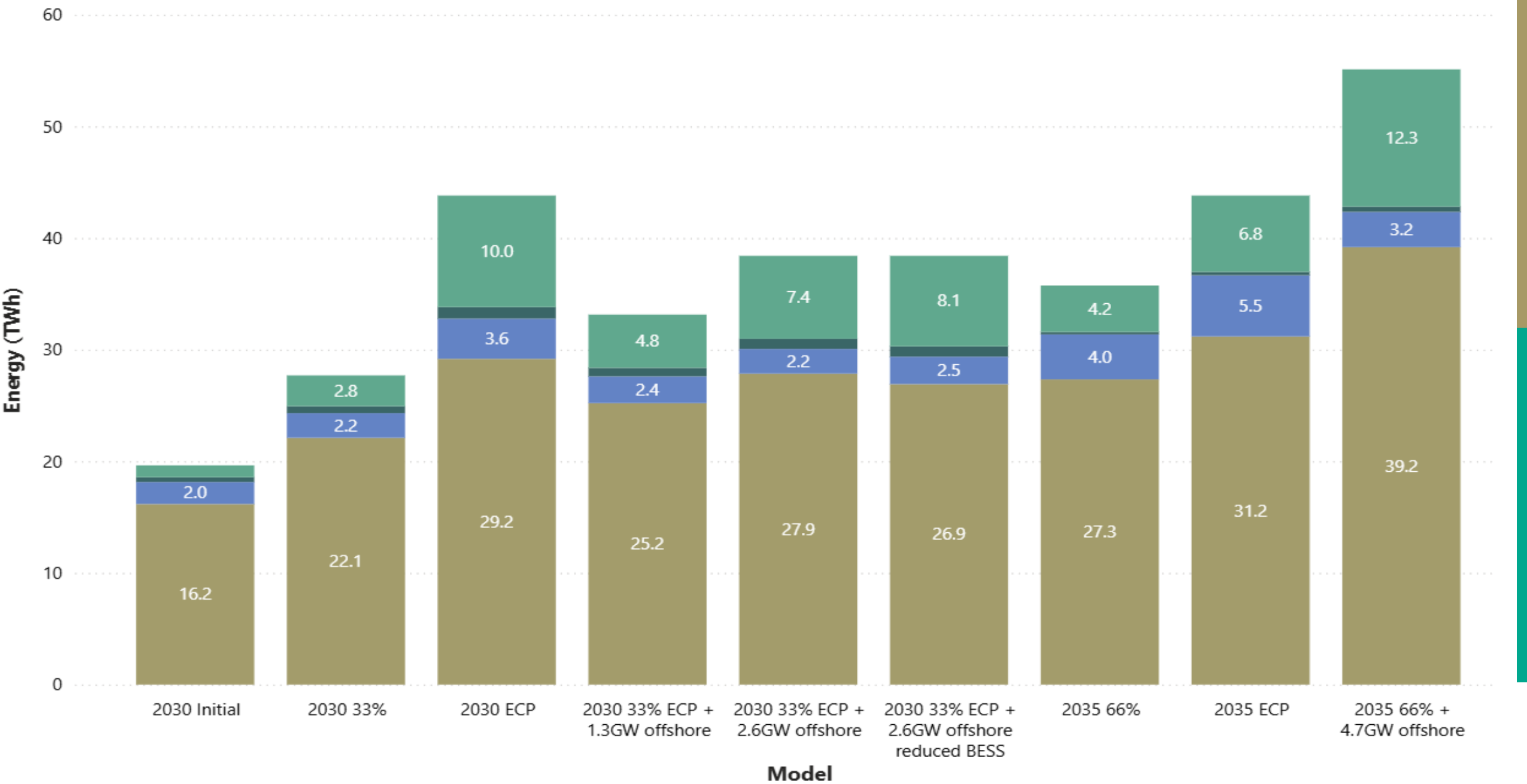
Ireland Forecast Dispatch Down (%)

● Surplus ● Curtailment ● Constraint

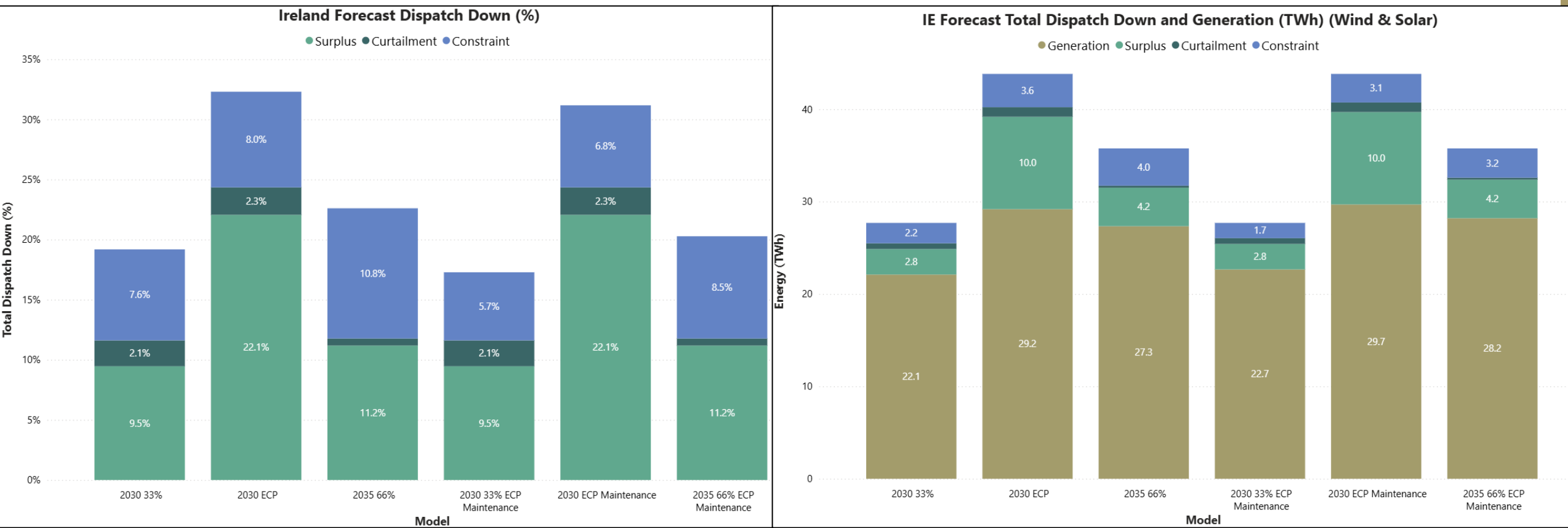


IE Forecast Total Dispatch Down and Generation (TWh) (Wind & Solar)

● Generation ● Constraint ● Curtailment ● Surplus

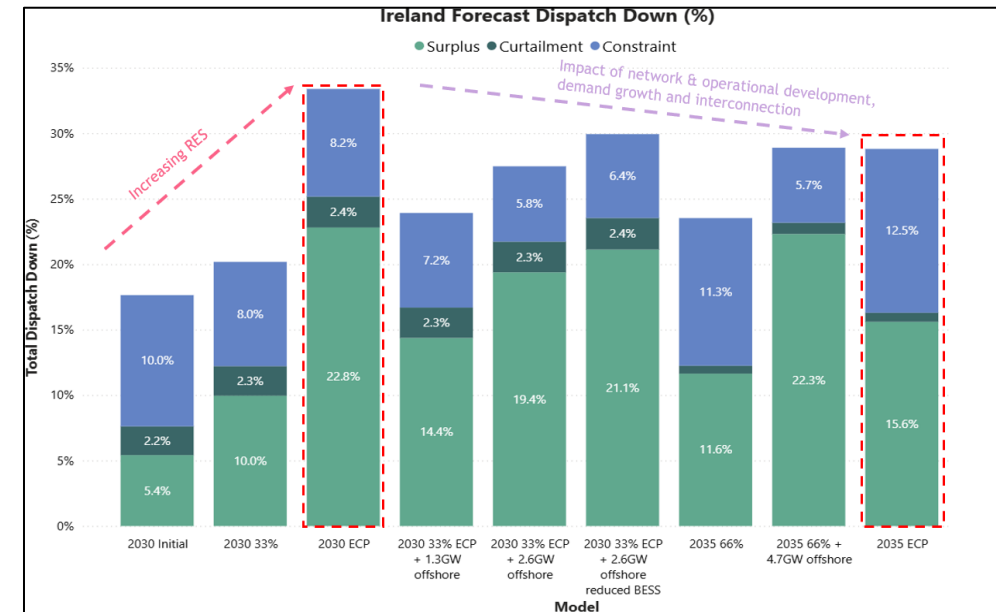
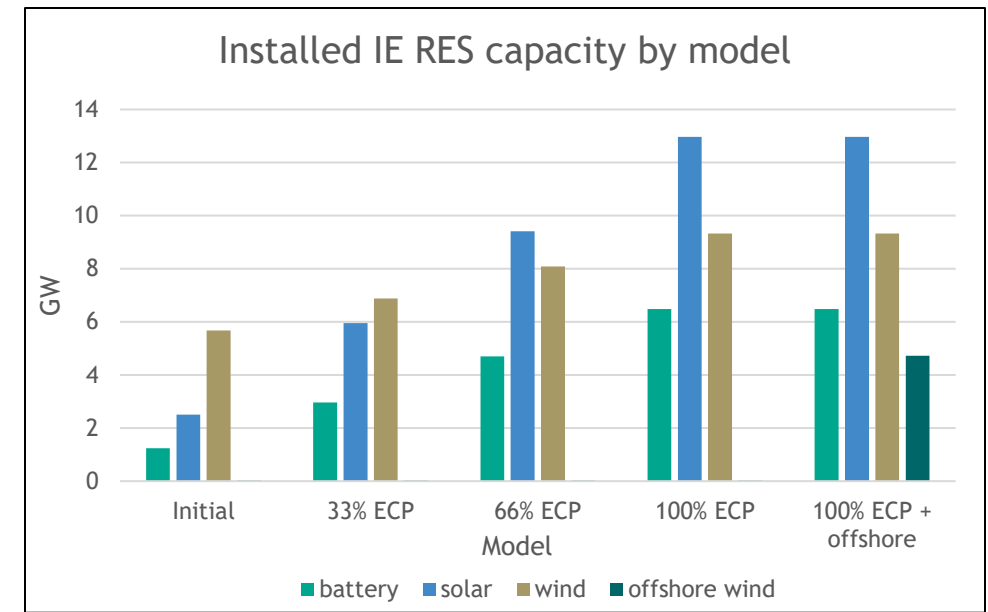


Impact of network outages



18 Key Messages

- Portfolio size continues to grow which increases the dispatch down forecast :
 - Similar sized portfolios show similar TDD level to ECP-2.5.
 - Solar generation is the largest technology type in the ECP pipeline.
- Surplus becomes the driving factor of dispatch down as installed capacity levels increase.
- Interconnector flows are dependent on market dynamics between SEM adjoining markets. Differences in interconnector flows will have an impact on dispatch down and the breakdown of it.
- Forecast renewable generation is higher than recent historical levels and is heavily dependent on installed capacity levels.



Next Steps

- ECP GSS1 Engagement Plan
 - Publish final results - 6th August
 - Final date to submit queries - 3rd September
 - Final date to respond to queries - 17th September
- ECP GSS2 Engagement Plan
 - Kick off industry engagement
 - Updating renewable energy profiles
 - Portfolio setting
 - Allocation of constraints

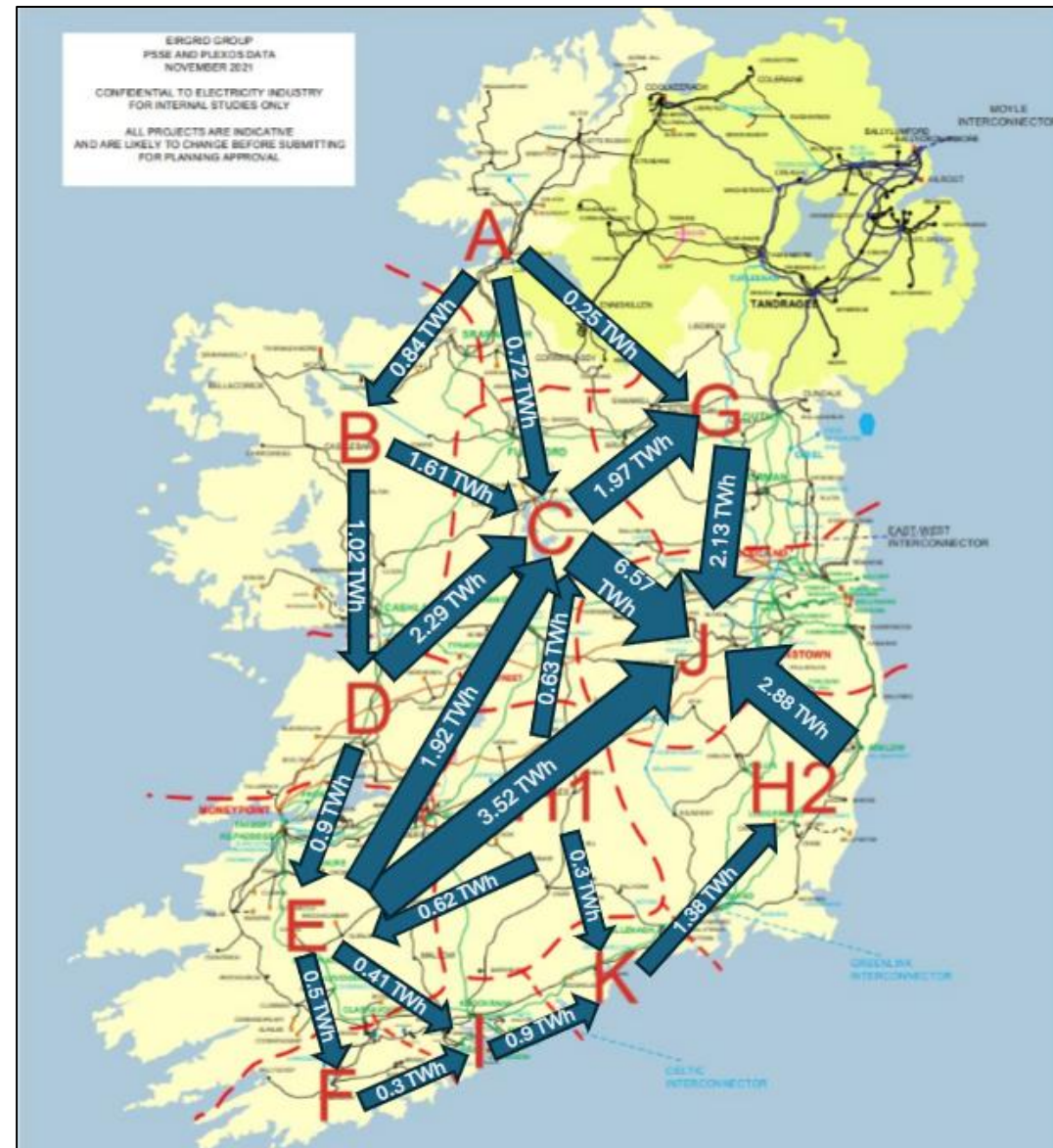


Representative net flows between areas (TWh)

2030 100% ECP



2035 100% ECP



Thank You

Appendix

Slicer Selection Example - Tables

Selections for an all-Area, all-Generation Type comparison of all Generation Scenarios using Grandfathering allocation

Area	Subgroup	Node	Grandfatherin...	Generation Type	Generation S...
A	A, B North	ahane	Grandfathering	IE Solar not priority	33% ECP + 1.3 GW ...
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J		mount lucas			66% ECP
K		mulgeeth			66% ECP + 4.7 GW ...

Broad Slicer Selection

Row Labels	Initial	33% ECP	66% ECP	100% ECP	33% ECP + 1.3 GW Offshore	33% ECP + 2.6 GW Offshore	33% ECP + 2.6 GW Offshore and Re 66% ECP + 4.7 GW Offshore	33% ECP Maintenance Sensitivity	66% ECP Maintenance Sensitivity	100% ECP Maintenance Sensitivity
Sum of Installed (MW)										
2030		7716	12408		21708	13258	14283	14283	12408	21708
2035				17101	21708			20288	17101	
Sum of Available Energy (GWh)										
2030		19639	27695		43698	31256	35483	35483	27695	43698
2035				35751	43698			48917	35751	
Sum of Generation (GWh)										
2030		16175	22107		29114	23954	25966	25966	22661	29626
2035				27342	31104			34967	28207	
Sum of Surplus (GWh)										
2030		1064	2757		9953	4369	6645	7253	2757	9953
2035				4161	6808			10536	4161	
Sum of Curtailment (GWh)										
2030		432	626		1031	736	849	874	626	1031
2035				216	304			438	216	
Sum of Constraint (GWh)										
2030		1968	2205		3598	2197	2023	2286	1651	3086
2035				4031	5482			2956	3165	
Sum of Total Dispatch Down (GWh)										
2030		3464	5588		14583	7302	9517	10414	5034	14071
2035				8409	12594			13930	7543	
Surplus (%)										
2030		5%	10%		23%	14%	19%	20%	10%	23%
2035				12%	16%			22%	12%	
Curtailment (%)										
2030		2%	2%		2%	2%	2%	2%	2%	2%
2035				1%	1%			1%	1%	
Constrain (%)										
2030		10%	8%		8%	7%	6%	6%	6%	7%
2035				11%	13%			6%	9%	
Total Dispatch Down (%)										
2030		18%	20%		33%	23%	27%	29%	18%	32%
2035				24%	29%			28%	21%	

Limited Slicer Selection

Row Labels	33% ECP	33% ECP + 1.3 GW Offshore	33% ECP + 2.6 GW Offshore	33% ECP + 2.6 GW Offshore and Re 33% ECP Maintenance Sensitivity
Sum of Installed (MW)				
2030		529	1379	1629
2035				1629
Sum of Available Energy (GWh)				
2030		1631	5192	6239
2035				6239
Sum of Generation (GWh)				
2030		1132	3481	3993
2035				3863
Sum of Surplus (GWh)				
2030		304	1156	1783
2035				1915
Sum of Curtailment (GWh)				
2030		31	93	112
2035				114
Sum of Constraint (GWh)				
2030		163	461	351
2035				347
Sum of Total Dispatch Down (GWh)				
2030		498	1711	2246
2035				2376
Surplus (%)				
2030		19%	22%	29%
2035				31%
Curtailment (%)				
2030		2%	2%	2%
2035				2%
Constrain (%)				
2030		10%	9%	6%
2035				6%
Total Dispatch Down (%)				
2030		31%	33%	36%
2035				38%

Slicer Selection Example - Total Dispatch Down (%)

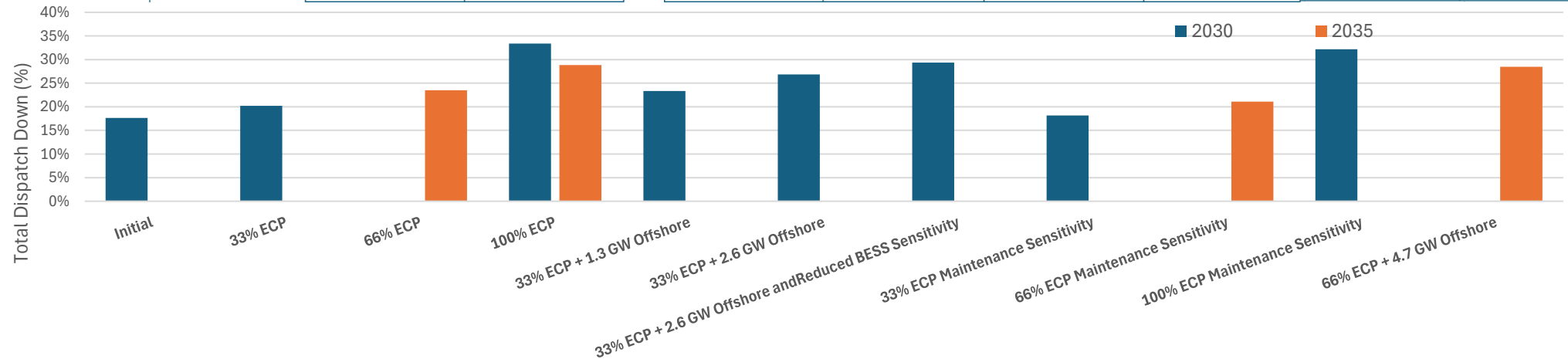
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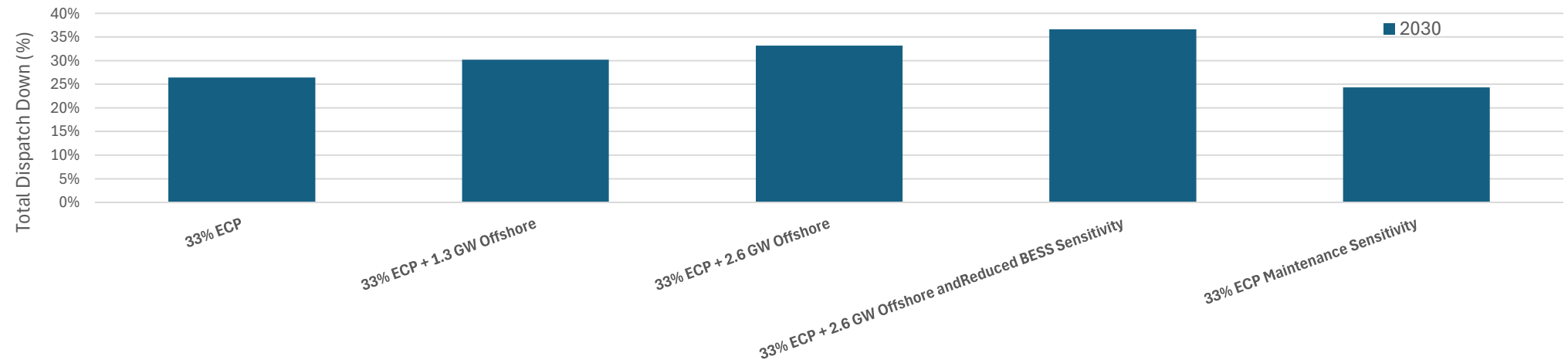
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Broad Slicer Selection



Limited Slicer Selection



Slicer Selection Example - Total Dispatch Down (GWh)

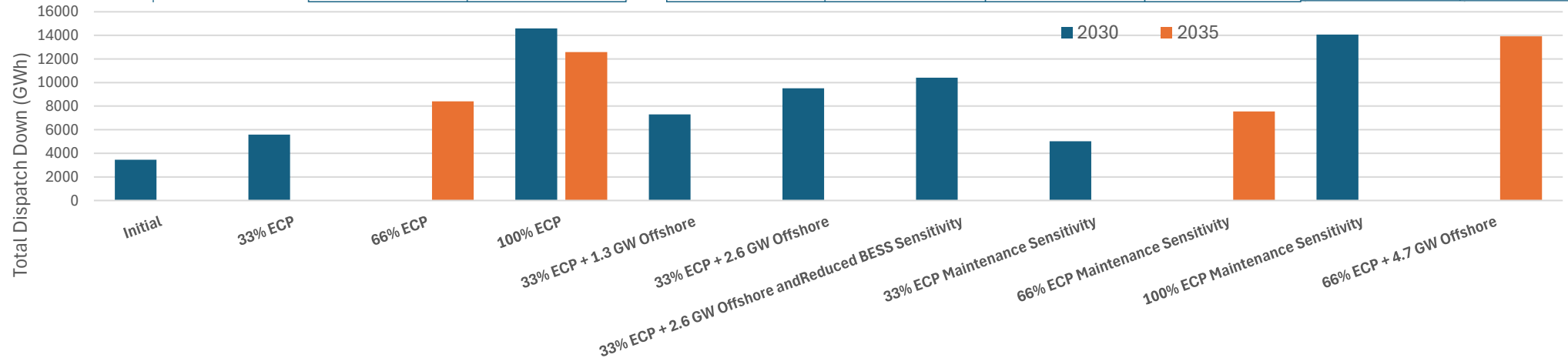
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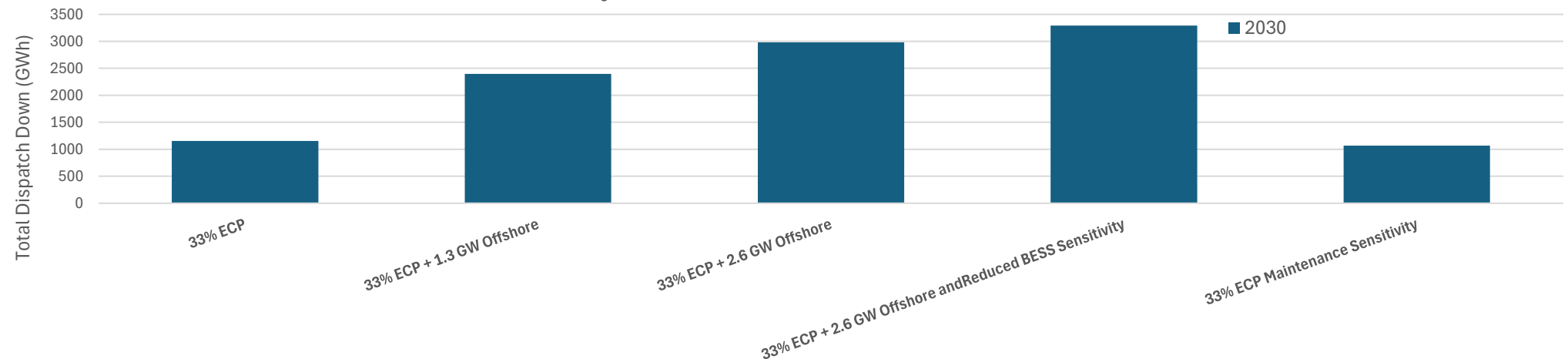
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E	E, F & I	arklow			66% ECP
F	G North	arklow 220kv			66% ECP + 4.7 GW ...
G	H1	arodstown			66% ECP Maintena...
H1	H2 & K	athea			Initial

Area	Subgroup	Node	Grandfatherin...	Generation Type	Generation S...
D	J City, G South	belcamp 220kv	Grandfathering	IE Solar not priority	100% ECP Mainte...
E	J Country	bracklone	Pro-rata	IE wind not priority	33% ECP
F		bracklyn		IE wind priority	33% ECP + 1.3 GW ...
G		craddanstown			33% ECP + 2.6 GW ...
H1		cushaling			33% ECP + 2.6 GW ...
H2		derryiron			33% ECP Maintena...
J		mount lucas			66% ECP
K		mulgeeth			66% ECP + 4.7 GW ...

Broad Slicer Selection



Limited Slicer Selection



Slicer Selection Example - Dispatch Down (%)

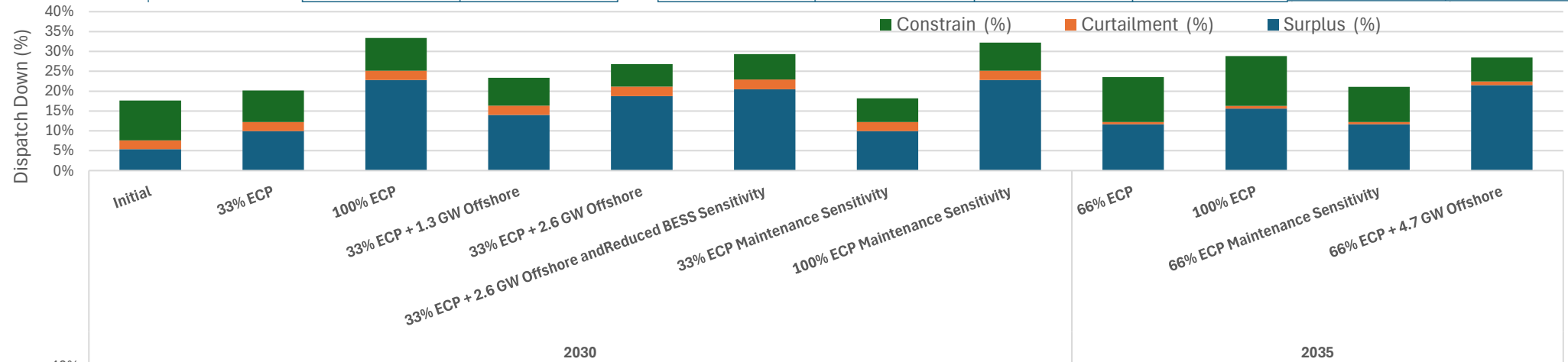
Selections for an all-Area, all-Generation Type comparison of all Generation Scenarios using Grandfathering allocation

Selections for an Area J, IE wind non-priority comparison of all 33% ECP Generation Scenarios using Pro-rata allocation

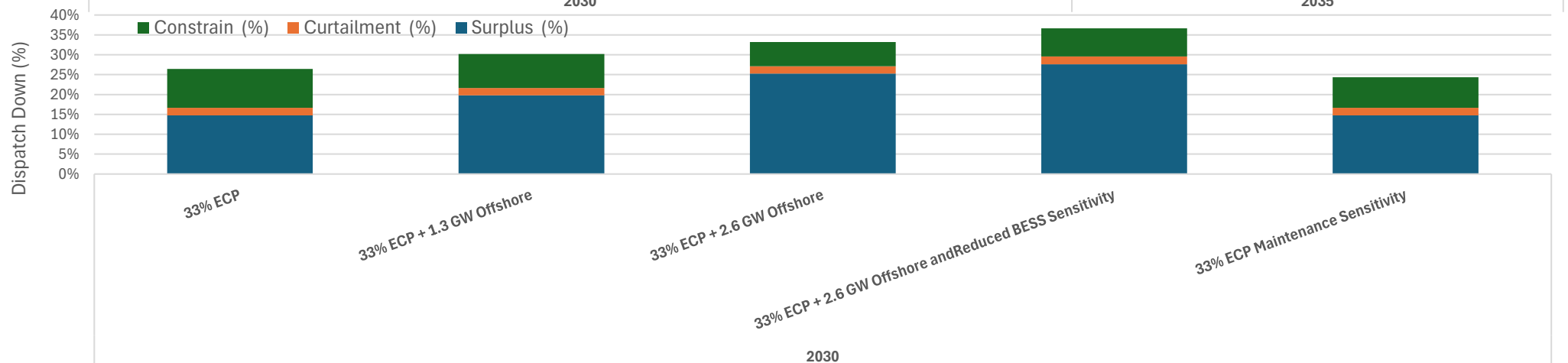
Area	Subgroup	Node	Grandfatherin...	Generation Type	Generation S...
A	A, B North	ahane	Grandfathering	IE Solar not priority	33% ECP + 1.3 GW ...
B	B South	ardnacrusa	Pro-rata	IE wind not priority	33% ECP + 2.6 GW ...
C	C	ardnagappary		IE wind priority	33% ECP + 2.6 GW ...
D	D and E North	arigna			33% ECP Maintena...
E	E, F & I	arklow			66% ECP
F	G North	arklow 220kv			66% ECP + 4.7 GW ...
G	H1	arodstown			66% ECP Maintena...
H1	H2 & K	athea			Initial

Area	Subgroup	Node	Grandfatherin...	Generation Type	Generation S...
D	J City, G South	belcamp 220kv	Grandfathering	IE Solar not priority	100% ECP Mainte...
E	J Country	bracklone	Pro-rata	IE wind not priority	33% ECP
F		bracklyn		IE wind priority	33% ECP + 1.3 GW ...
G		craddanstown			33% ECP + 2.6 GW ...
H1		cushaling			33% ECP + 2.6 GW ...
H2		derryiron			33% ECP Maintena...
J		mount lucas			66% ECP
K		mulgeeth			66% ECP + 4.7 GW ...

Broad Slicer Selection



Limited Slicer Selection



Slicer Selection Example - Dispatch Down (GWh)

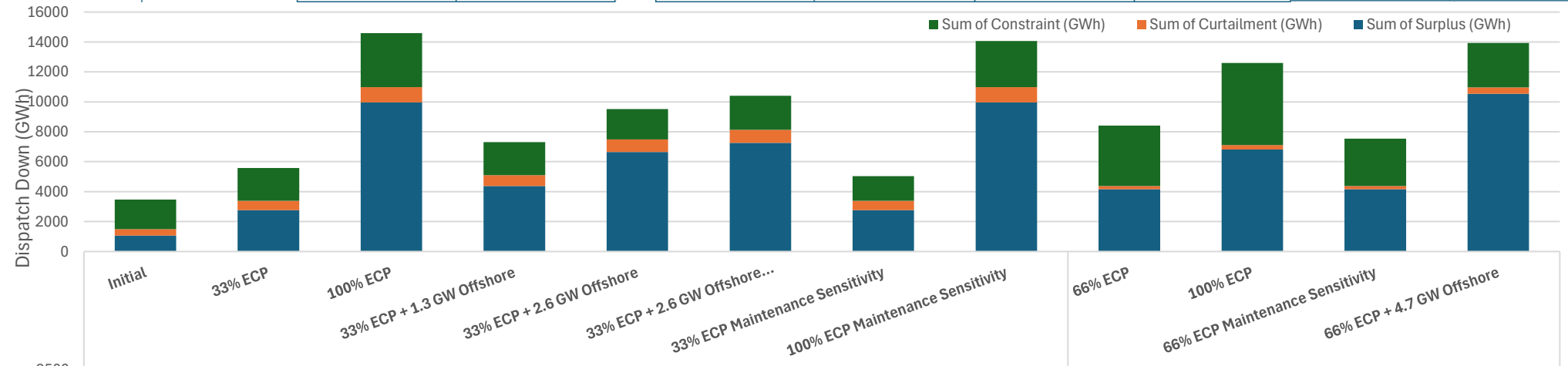
Selections for an all-Area, all-Generation Type comparison of all Generation Scenarios using Grandfathering allocation

Selections for an Area J, IE wind non-priority comparison of all 33% ECP Generation Scenarios using Pro-rata allocation

Area	Subgroup	Node	Grandfatherin...	Generation Type	Generation S...
A	A, B North	ahane	Grandfathering	IE Solar not priority	33% ECP + 1.3 GW ...
B	B South	ardnacrusa	Pro-rata	IE wind not priority	33% ECP + 2.6 GW ...
C	C	ardnagappary		IE wind priority	33% ECP + 2.6 GW ...
D	D and E North	arigna			33% ECP Maintena...
E	E, F & I	arklow			66% ECP
F	G North	arklow 220kv			66% ECP + 4.7 GW ...
G	H1	arodstown			66% ECP Maintena...
H1	H2 & K	athea			Initial

Area	Subgroup	Node	Grandfatherin...	Generation Type	Generation S...
D	J City, G South	belcamp 220kv	Grandfathering	IE Solar not priority	100% ECP Mainte...
E	J Country	bracklone	Pro-rata	IE wind not priority	33% ECP
F		bracklyn		IE wind priority	33% ECP + 1.3 GW ...
G		craddanstown			33% ECP + 2.6 GW ...
H1		cushaling			33% ECP + 2.6 GW ...
H2		derryiron			33% ECP Maintena...
J		mount lucas			66% ECP
K		mulgeeth			66% ECP + 4.7 GW ...

Broad Slicer Selection



Limited Slicer Selection

