Constraint Forecast Analysis Reports for Enduring Connection Policy (ECP) 2.5

Results Summary for Ireland

Version 1.0

11/02/2026

EirGrid

The Oval, 160 Shelbourne Road, Ballsbridge, Dublin D04 FW28
Telephone: +353 1 677 1700 | www.eirgrid.ie

Revision	Date	Description
R0	11/02/2026	

Disclaimer

EirGrid has followed accepted industry practice in the collection and analysis of data available. While all reasonable care has been taken in the preparation of this data, EirGrid is not responsible for any loss that may be attributed to the use of this information. Prior to taking business decisions, interested parties are advised to seek separate and independent opinion in relation to the matters covered by this report and should not rely solely upon data and information contained herein. Information in this document does not amount to a recommendation in respect of any possible investment. This document does not purport to contain all the information that a prospective investor or participant in the Single Electricity Market may need.

For queries relating to the document or to request a copy contact:

info@eirgrid.com

Copyright Notice

The Oval, 160 Shelbourne Road, Ballsbridge, Dublin 4, D04 FW28, Ireland

1 Table of Contents

List of Figures & Tables

1.1 Figures

1.2 Tables

Important Note

This constraints forecast studies report for ECP presents an estimate of the reduction in available solar and wind generation based on the study assumptions described. The reduction in available generation has been split into three categories for the purposes of this study: surplus, curtailment, and constraint.

Following the Judicial decision on the SEM-22-009 Decision Paper on Dispatch, Redispatch and Compensation Pursuant to Regulation EU 2019/943, the detailed design for implementing Articles 12 and 13 is yet to be determined and may differ from the implementation for Total Dispatch Down used in this study. Therefore, an assumed interpretation will be used for ECP-2.5 Constraint Analysis that applies a grandfathering[1] approach to resolving Surplus and Constraint conditions. However, in addition to the Core ECP 2.5 constraint forecast studies a set of sensitivity studies are also included in the study scenarios which employs pro-rata allocation of constraints.

This report uses the term "Total Dispatch Down" to refer to the total reduction in available solar and wind generation i.e., the sum of surplus, curtailment, and constraint, and is considered the key indicator for the results. However, it is important to note that the term "dispatch down" is more correctly applicable only to TSO instructions to reduce generation output from a market position, as is the case for curtailment and constraint, and is not necessarily applicable to a generator reducing its own output from its availability to a market position so that supply and demand are balanced, as is the case for surplus.

The results presented in this report are based on the simulation and modelling assumptions described. The findings are indicative only and this report should in no way be read as a guarantee as to future levels of surplus, curtailment, and constraint.

[1] 'Grandfathering' is where an old rule continues to apply to some existing situations while a new rule will apply to future cases. In the context of Article 12 and Article 13, grandfathering refers to the distinction between how priority dispatch renewable generators (those installed prior to 4th July 2019) and non-priority dispatch renewable generators (those installed on and after 4th July 2019) are treated in the SEM.

1 Results Summary for Ireland

This section provides the surplus, curtailment and constraint results for Ireland (IE) that are estimated by this analysis. There are a total of six core ECP-2.5 studies and eight sensitivity studies presented in this report. The study scenarios and the associated assumptions can be found in the Assumptions document and Methodology report. The results discussed below are for IE only.

The below figures provide an overview of:

- System Total Dispatch Down percentage levels; broken down by surplus, curtailment, and constraint.
- System Total Dispatch Down and wind and solar generated energy levels in TWh; broken down by surplus, curtailment, constraint, and generation.
- Total Dispatch Down percentage levels per area; broken down by solar non-priority, wind non-priority and wind priority.

In general, a reduction in Total Dispatch Down levels is seen in later study years, for the same generation portfolio, due to the benefits of network reinforcements, future interconnection, relaxation of operational constraints and increased demand levels.

For a given forecast year, Total Dispatch Down tends to increase as the generation portfolio increases due to increased available energy. For the same reason, Total Dispatch Down increases when additional offshore capacity is added. The majority of the additional Total Dispatch Down is due to surplus dispatch down.

The battery sensitivity, which is the 2030 model with the ECP portfolio with approx. 3.4GW of future battery capacity removed from the model has higher Total Dispatch Down than the 2030 ECP model, implying that installing additional battery capacity can reduce dispatch down.

The 2035 ECP + 5GW Offshore IC flow sensitivity model is the same forecast year and installed portfolio as the 2035 ECP + 5 GW Offshore model but with the ECP-2.4 interconnector modelling methodology. Using the ECP-2.5 interconnector modelling methodology has higher levels of renewable dispatch down than using the ECP-2.4 methodology.

The 2035 ECP + 5 GW Offshore less ICs model is again the same portfolio and methodology as 2035 ECP + 5 GW Offshore but with Mares, LirIC and a second France interconnector removed. This model shows higher Total Dispatch Down than the 2035 ECP + 5 GW Offshore model. This implies that additional interconnection is beneficial in reducing dispatch down, even if not as beneficial as with interconnector modelling used in the previous constraint forecasts.

More detailed results for each area can be seen in the corresponding area reports.

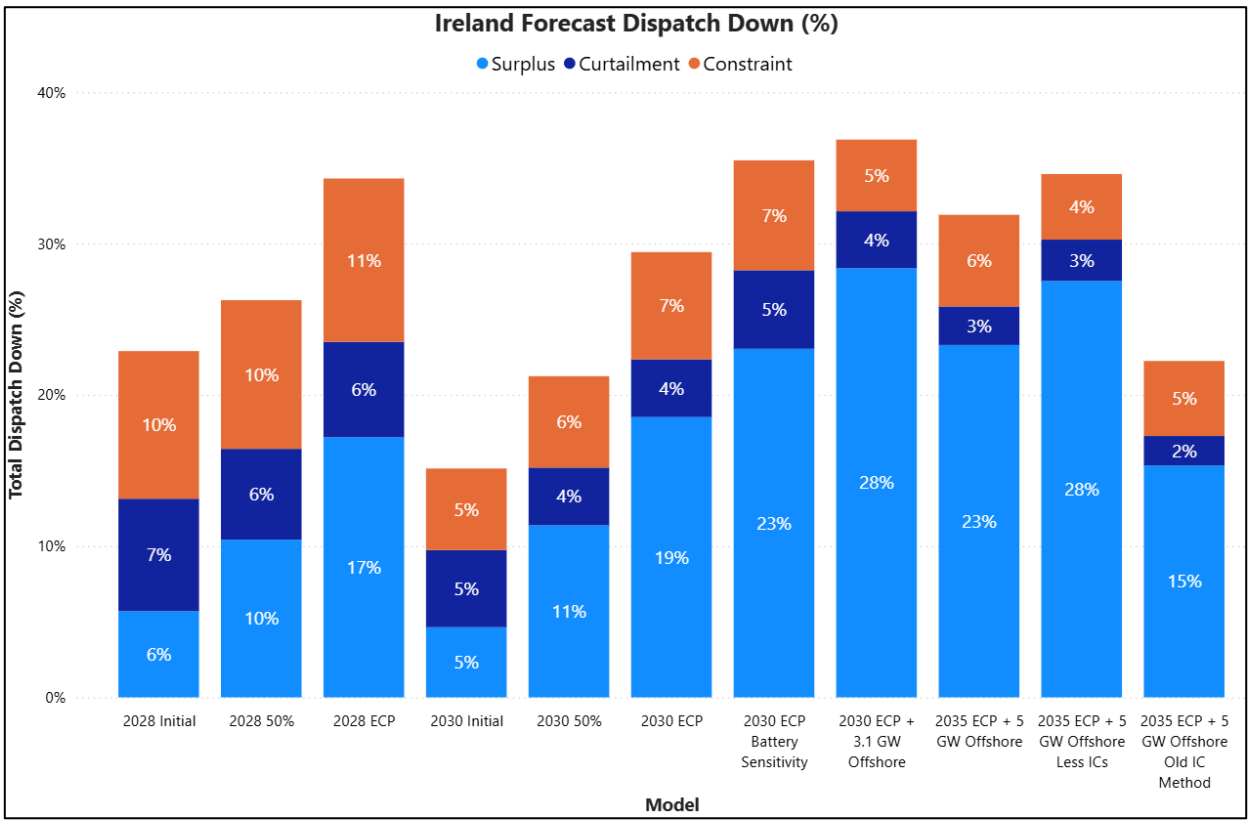

Figure 1 - Ireland Total Dispatch Down Percentage

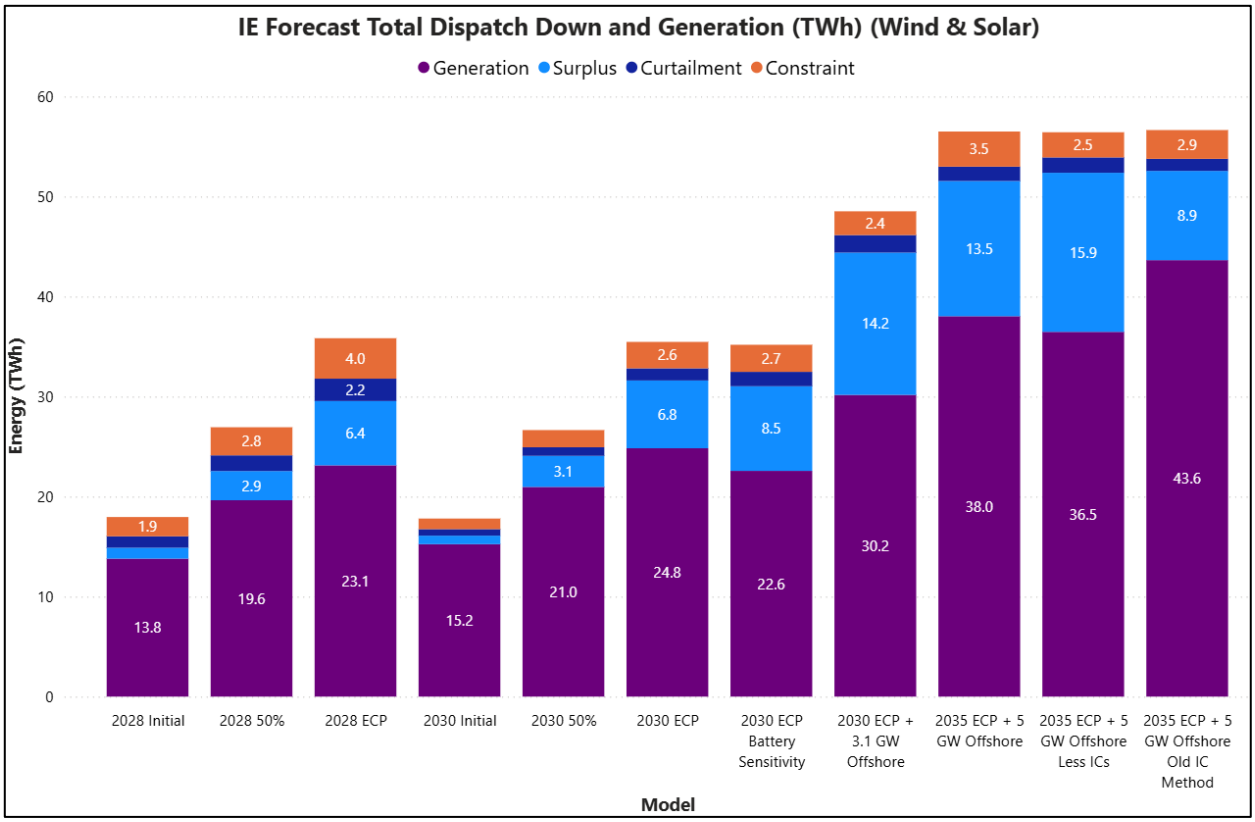

Figure 2: Ireland Generation and Dispatch Down in TWh

Note: The same weather profiles are used for all forecast years and portfolios. As a result, the available energy increases as the generation portfolio increases and remains constant for different models with the same generation portfolio.

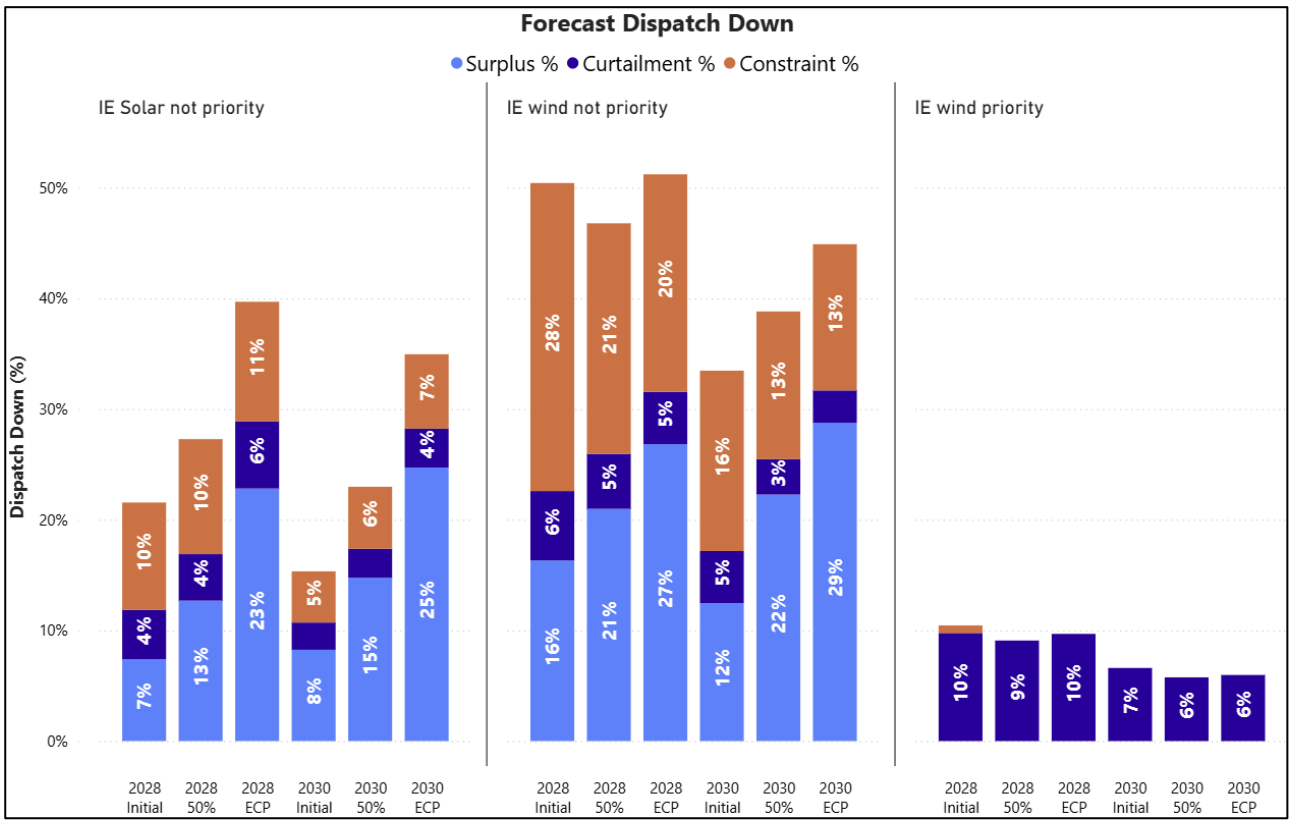

Figure 3: Ireland dispatch down by technology class - core studies

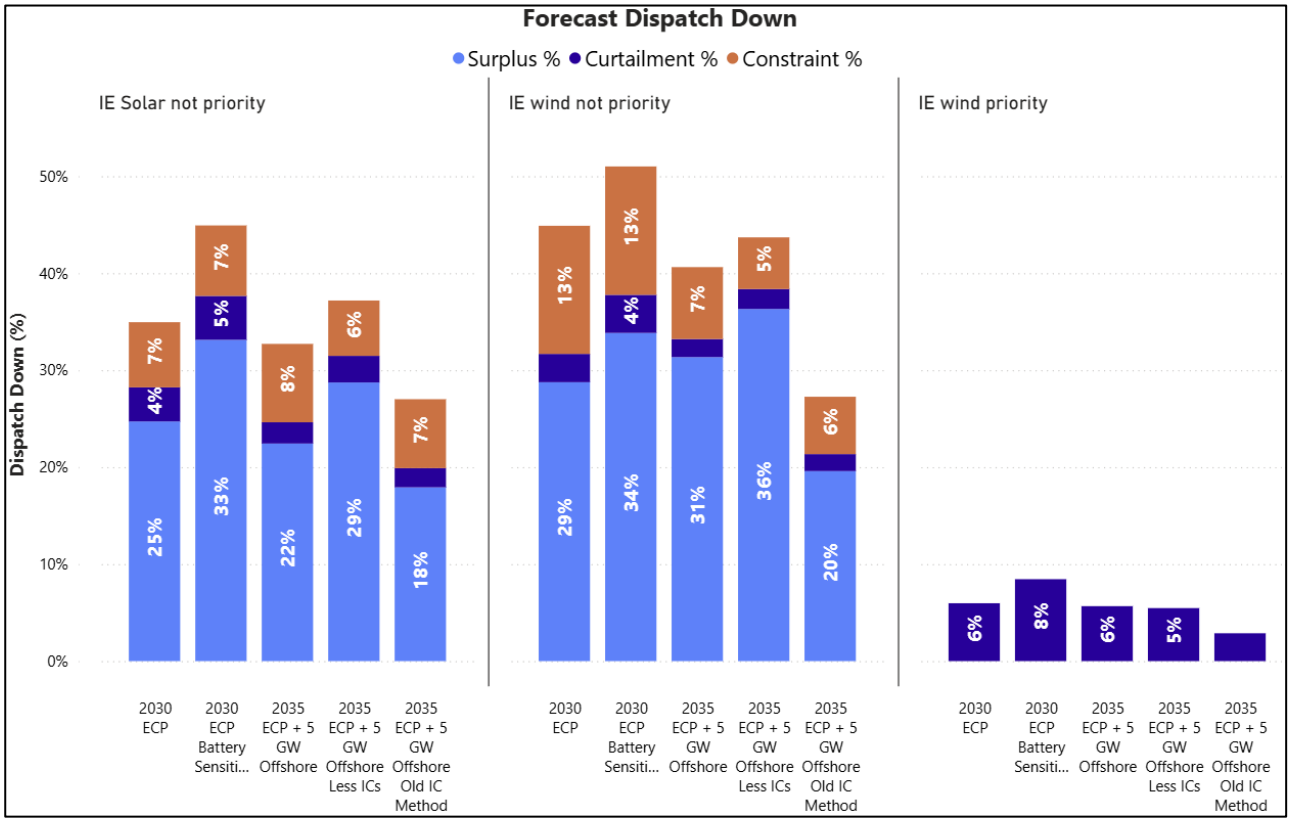

Figure 4: Ireland dispatch down by technology class - sensitivities

Area A

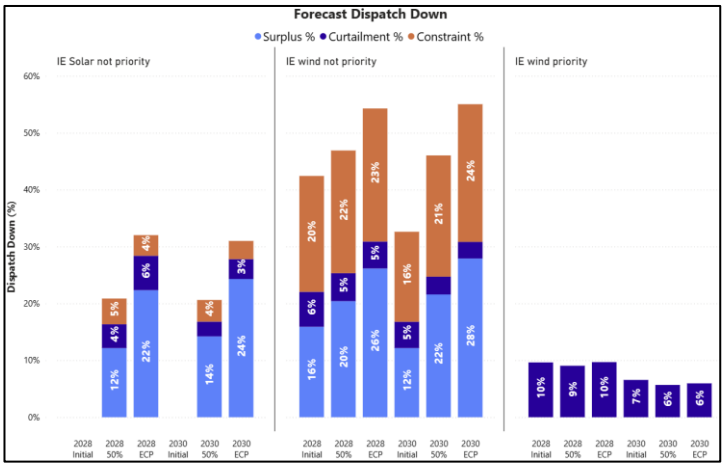

Figure 5: Area A dispatch down

Area B

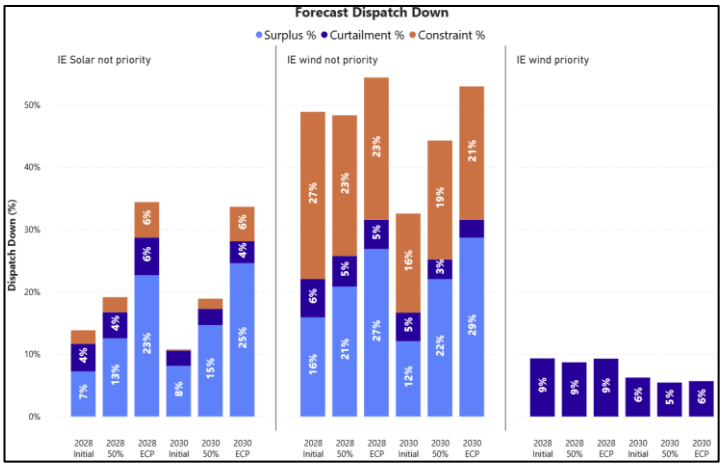

Figure 6: Area B dispatch down

Area C

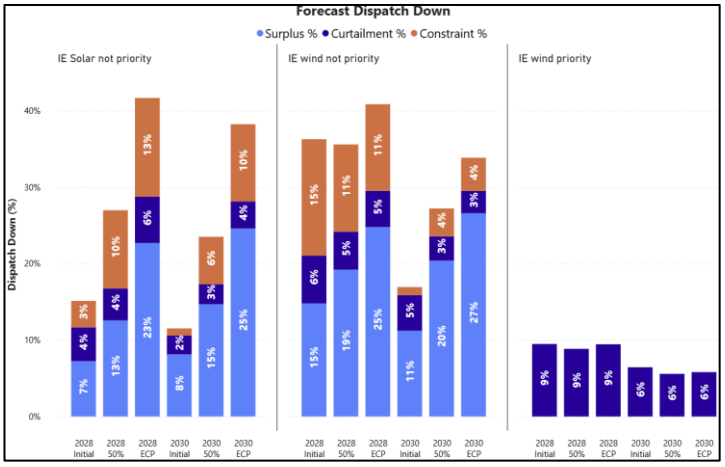

Figure 7: Area C dispatch down

Area D

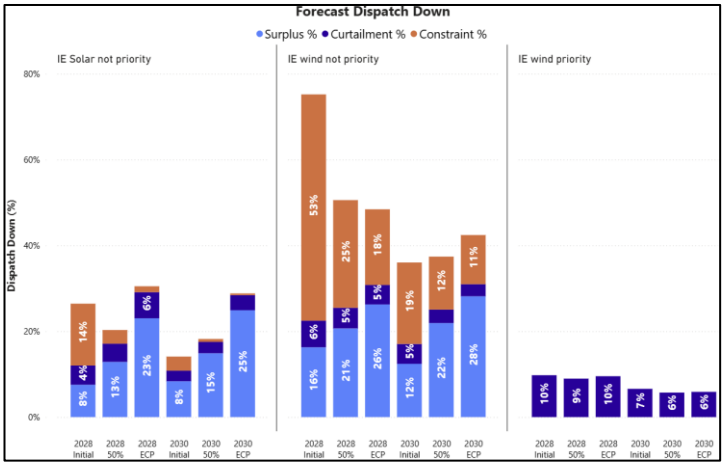

Figure 8: Area D dispatch down

Area E

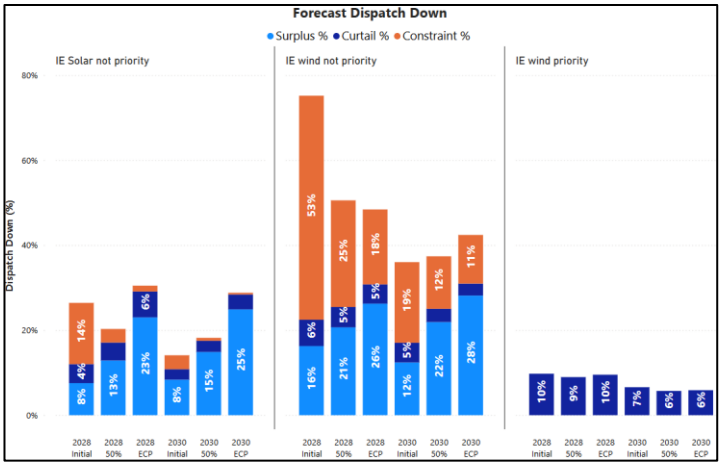

Figure 9: Area E dispatch down

Area F

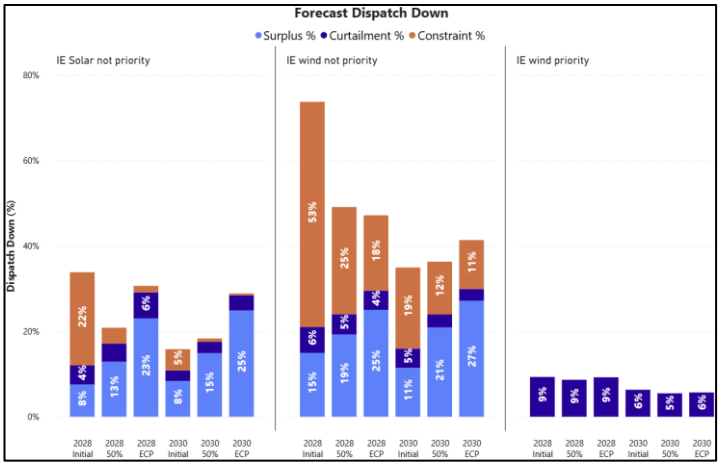

Figure 10: Area F dispatch down

Area G

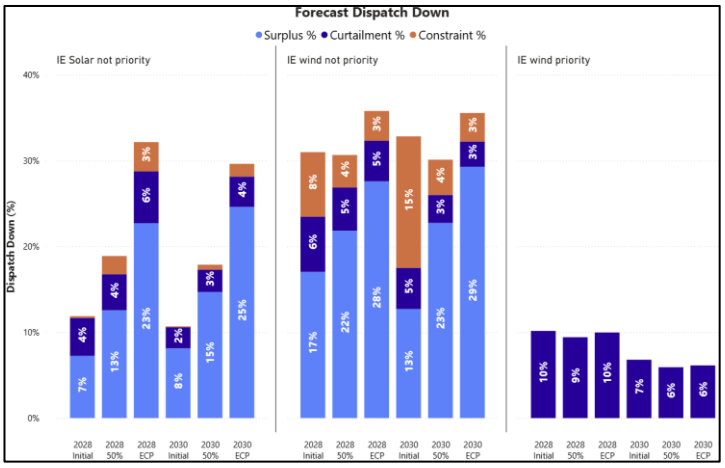

Figure 11: Area G dispatch down

Area H1

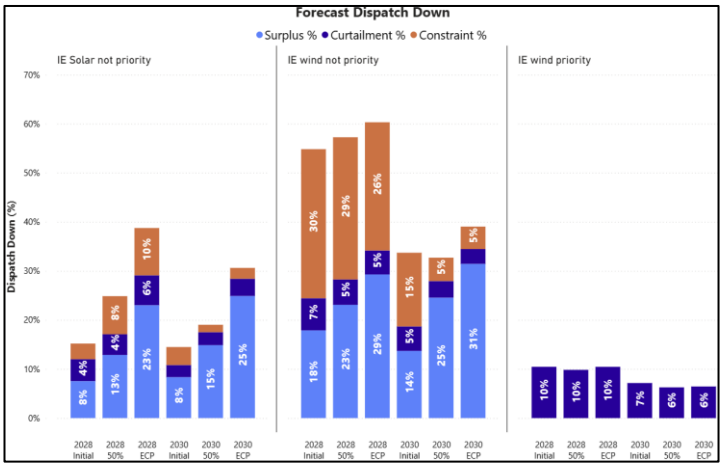

Figure 12: Area H2 dispatch down

Area H2

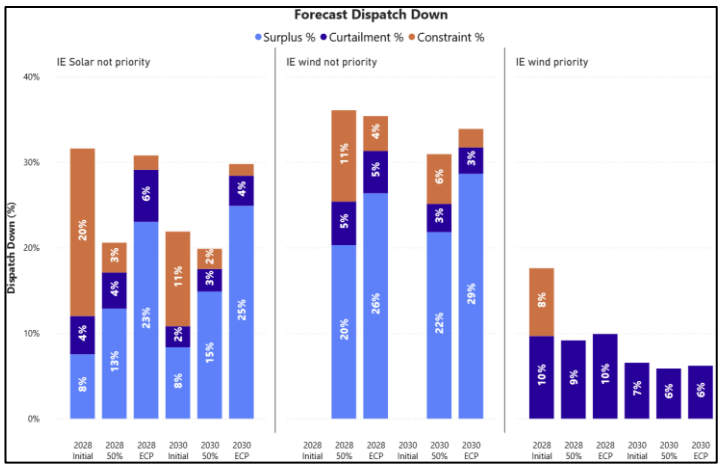

Figure 13: Area H2 dispatch down

Area I

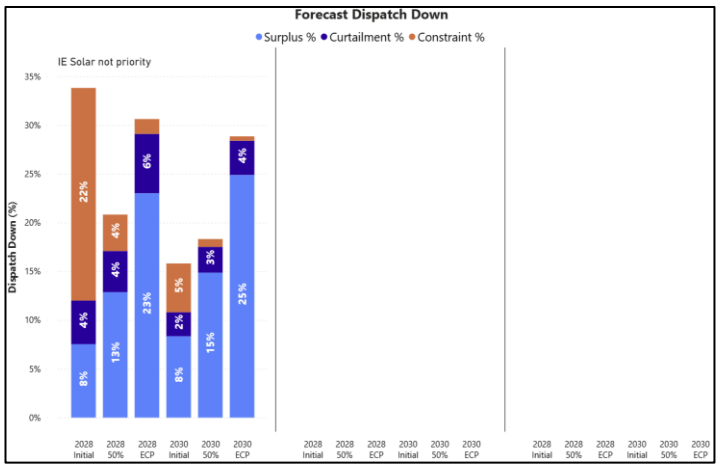

Figure 14: Area I dispatch down

Area J

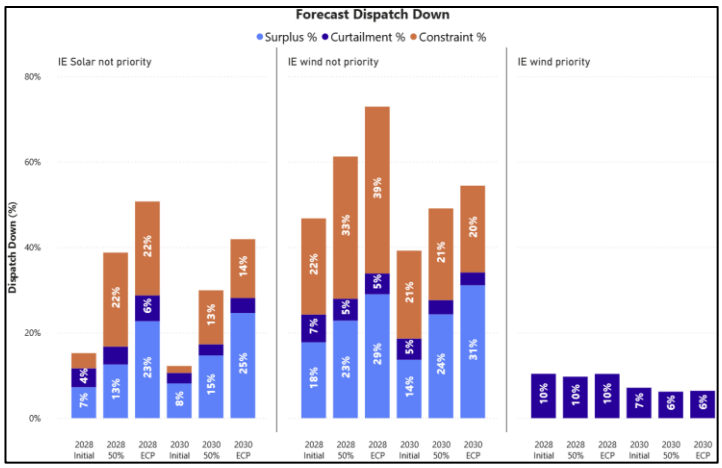

Figure 15: Area J dispatch down

Area K

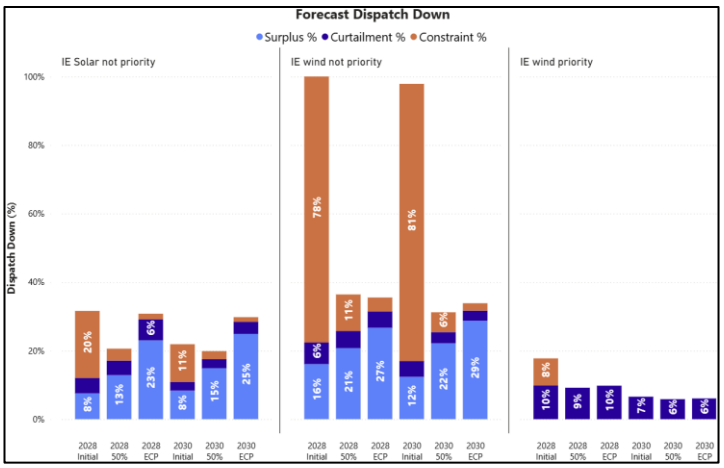

Figure 16: Area K dispatch down

Please note: if there is no data shown for a forecast year and portfolio, it is because there is no installed capacity of that technology class in that area in that portfolio. Area-wise results for core scenarios are shown above. For additional information including sensitivity results, please see the Area Reports.

Breaking the results down by area, forecast year, installed capacity, technology type and priority status, we can see that dispatch down is heavily dependent on all these inputs.

It is important to note here that dispatch down due to constraints are applied using a grandfathering methodology. This approach applies constraints pro-rata to all generators of the same priority status within a subgroup (for more information see the methodology document on the ECP section of the Eirgrid website[2]). Results using a pro-rata methodology are available in the area reports.

In subgroups with very low installed non-priority generation, a small number of non-priority units absorb most or all of the constraint dispatch down and show distorted results. Area K in the initial portfolio is a good example:

- There is only one wind not-priority generator.
- The ratio of priority wind is relatively high.

Since non-priority wind is constrained down before priority wind, the single generator experiences a high level of dispatch down under this methodology. This represents a small amount of constrained energy and may not reflect actual outcomes. This is a result of the agreed dispatch down calculation methodology and may be reviewed in future iterations. In the 50% and ECP scenarios, additional non-priority wind generators are installed in the subgroup and lower levels of dispatch down are observed.

[2] ECP Constraint Reports | Customer Information | EirGrid

2 Maintenance Sensitivity Study Report

Following ECP-1.0, industry feedback suggested that including a maintenance outage programme would be beneficial. Hence, as part of ECP-2.1 a representative maintenance programme was included in the baseline models and a further addendum was published which included a sensitivity to show the impact of this maintenance outage programme.

ECP-2.5 follows this same methodology (as in ECP-2.1, ECP-2.2, ECP-2.3 and ECP-2.4) with a representative maintenance programme (given in the assumptions document on the ECP section of the Eirgrid website). The maintenance program included in ECP-2.5 has been updated to reflect changes in transmission outages. The representative programme now includes outages in all 12 calendar months. The maintenance schedule was discussed with our internal operations team, and it provides a reasonable representative outage programme for the network. However, every maintenance and outage season is different, and the results need to be interpreted with this in mind.

This section provides results of a sensitivity study performed to quantify the impact of the maintenance schedule used in the ECP-2.5 constraints analysis. The study selected for the sensitivity is the 2028 ECP, 2030 ECP, and Future Grid i.e. 2035 ECP + 5 GW offshore scenario. All other study assumptions have remained the same, however, the maintenance schedule has been removed.

The area-wise/subgroup results are presented for the above-mentioned study scenarios. The differences in constraints are reported as the difference between the study with maintenance and the study without maintenance (Maintenance Study Constraints – No Maintenance Study Constraints = Difference). The constraints calculated are pro-rata distributed amongst non-priority generators, and then priority generators should the constraint not be resolved by dispatching down non-priority generators, in their respective area/subgroup. The details of the subgroups selected in each area are given in each area specific report.

The percentage difference is given in Table 1 and Figure 17 for all maintenance sensitivities. This is followed by the GWh difference tables (Table 2, Table 3, and Table 4) for each maintenance sensitivity scenario.

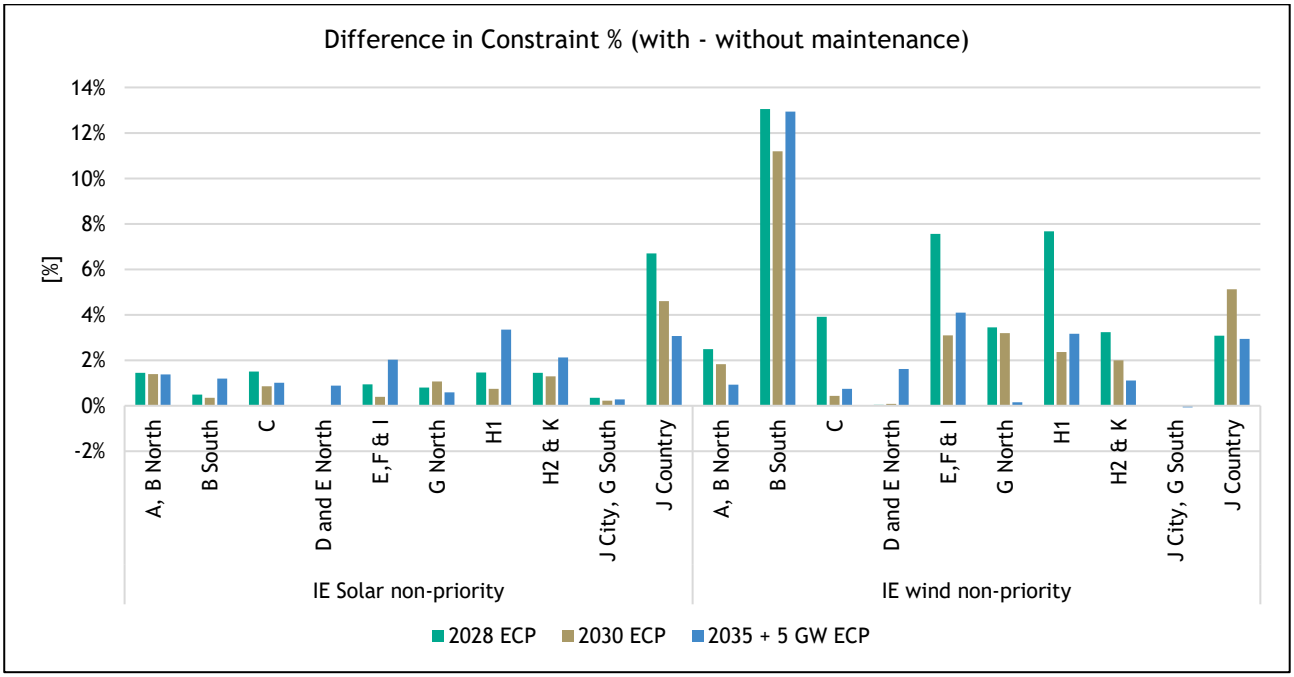

Figure 17: Difference in constraint dispatch down with and without maintenance

Generation Category	Subgroup	2028 ECP	2030 ECP	Future Grid ECP + 5 GW Offshore
IE Solar non-priority	A, B North	1%	1%	1%
	B South	0%	0%	1%
	C	1%	1%	1%
	D and E North	0%	0%	1%
	E,F & I	1%	0%	2%
	G North	1%	1%	1%
	H1	1%	1%	3%
	H2 & K	1%	1%	2%
	J City, G South	0%	0%	0%
	J Country	7%	5%	3%
IE wind non-priority	A, B North	2%	2%	1%
	B South	13%	11%	13%
	C	4%	0%	1%
	D and E North	0%	0%	2%
	E,F & I	8%	3%	4%
	G North	3%	3%	0%
	H1	8%	2%	3%
	H2 & K	3%	2%	1%
	J City, G South	0%	0%	0%
	J Country	3%	5%	3%
IE wind priority	A, B North	0%	0%	0%
	B South	0%	0%	0%
	C	0%	0%	0%
	D and E North	0%	0%	0%
	E,F & I	0%	0%	0%
	G North	0%	0%	0%
	H1	0%	0%	0%
	H2 & K	0%	0%	0%
	J Country	0%	0%	0%

Table 1: Difference in Constraint Percentage (with - without maintenance)

Generation Category	Subgroup	Surplus + Curtailment (GWh)	Constraint without Maintenance (GWh)	Difference in Constraint with and without Maintenance (GWh)
IE Solar non-priority	A, B North	10	2	1
	B South	0	0	0
	C	553	71	24
	D and E North	86	0	0
	E,F & I	273	7	12
	G North	122	4	4
	H1	255	82	15
	H2 & K	693	4	28
	J City, G South	706	125	9
	J Country	836	715	136
IE wind non-priority	A, B North	1189	796	94
	B South	250	63	91
	C	442	19	57
	D and E North	171	0	1
	E,F & I	556	140	252
	G North	119	0	18
	H1	324	180	75
	H2 & K	355	11	44
	J City, G South	0	0	0
	J Country	977	886	76
IE wind priority	A, B North	125	0	0
	B South	170	0	0
	C	5	0	0
	D and E North	11	0	0
	E,F & I	273	0	0
	G North	39	0	0
	H1	66	0	0
	H2 & K	56	0	0
	J Country	3	0	0

Table 2: Area subgroup GWh difference in constraint for 2028 ECP

Generation Category	Subgroup	Surplus + Curtailment (GWh)	Constraint without Maintenance (GWh)	Difference in Constraint with and without Maintenance (GWh)
IE Solar non-priority	A, B North	16	1	1
	B South	0	0	0
	C	458	80	14
	D and E North	75	0	0
	E,F & I	222	1	5
	G North	154	1	6
	H1	186	15	7
	H2 & K	626	1	25
	J City, G South	821	40	6
	J Country	846	473	93
IE wind non-priority	A, B North	1198	847	69
	B South	202	25	77
	C	402	5	6
	D and E North	160	0	1
	E,F & I	419	150	103
	G North	175	1	17
	H1	266	21	23
	H2 & K	392	2	27
	J City, G South	0	0	0
	J Country	992	372	125
IE wind priority	A, B North	42	0	0
	B South	90	0	0
	C	2	0	0
	D and E North	7	0	0
	E,F & I	158	0	0
	G North	31	0	0
	H1	16	0	0
	H2 & K	26	0	0
	J Country	7	0	0

Table 3: Area subgroup GWh difference in constraint for 2030 ECP

Generation Category	Subgroup	Surplus + Curtailment (GWh)	Constraint without Maintenance (GWh)	Difference in Constraint with and without Maintenance (GWh)
IE Solar non-priority	A, B North	13	0	1
	B South	0	0	0
	C	463	109	17
	D and E North	92	0	4
	E,F & I	295	9	25
	G North	111	5	3
	H1	257	38	34
	H2 & K	592	30	40
	J City, G South	535	7	7
	J Country	636	533	62
IE wind non-priority	A, B North	1344	484	35
	B South	265	56	90
	C	469	10	11
	D and E North	768	98	44
	E,F & I	1226	390	156
	G North	692	1	3
	H1	410	32	31
	H2 & K	2256	105	67
	J City, G South	2998	776	-8
	J Country	1008	135	72
IE wind priority	A, B North	47	0	0
	B South	104	0	0
	C	4	0	0
	D and E North	9	0	0
	E,F & I	215	0	0
	G North	27	0	0
	H1	52	0	0
	H2 & K	57	0	0
	J Country	7	0	0

Table 4: Area subgroup GWh difference in constraint for Future Grid + 5 GW Offshore

Appendix A RES Percentage

Renewable Energy Source (RES) percentage** is calculated as the ratio of renewable energy generation to the total system load. This metric reflects the maximum utilisation of RES to meet the demand in Ireland. The RES calculated below considers the wind, solar, hydro and wave generation and is given in the table and figure below. Small scale wind and solar generation (less than 1 MW) is not considered in this calculation.

$$RES^{**}\ \% = \frac{RES\ Generation\ (GWh)}{Total\ Load\ (GWh)}\ X\ 100$$

Year	Initial	50%	ECP	ECP + 3.1 GW Offshore	ECP + 5 GW Offshore
2028	39%	54%	63%		
2030	41%	55%	64%	77%	
Future Grid					88%

*Table 5: Ireland RES** Percentage in ECP-2.5 studies* (wind and solar)*

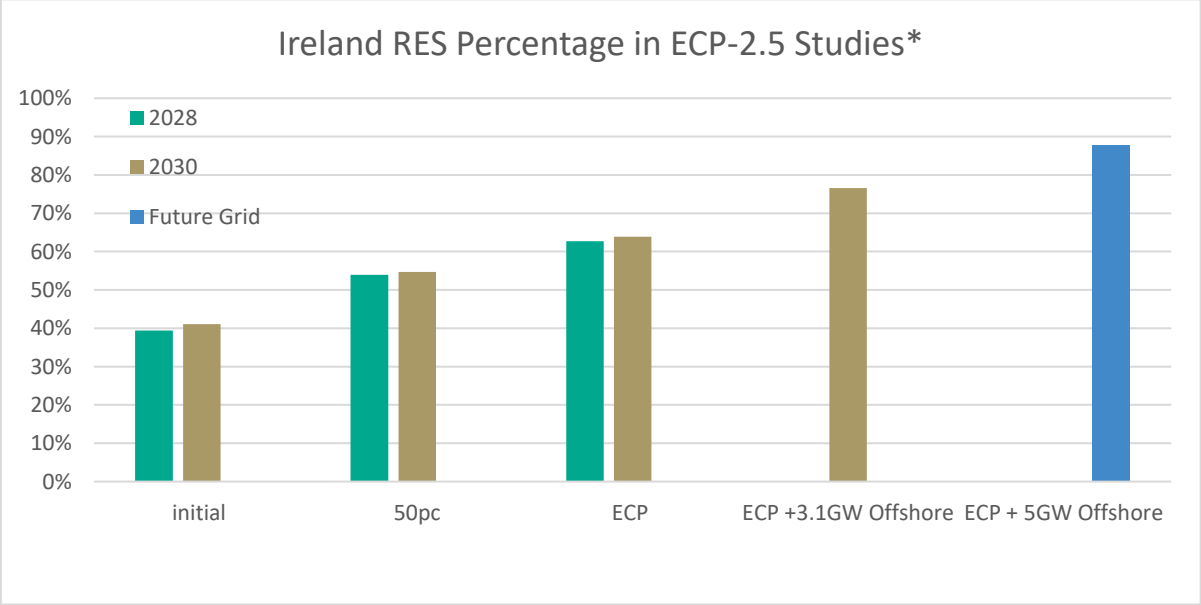

Figure 18: Ireland RES Percentage in ECP-2.5 Studies (wind and solar)*

*Small scale generation, storage, peat and waste plants are not included in this calculation.

**The calculation of RES % presented here is not same as the RES % calculation used in SOEF 1.1.

Appendix B - Contingencies and Lines Overloading

For different study scenarios, there were several transmissions boundaries that limit the power flow. Some of the main overload and contingency pairs binding for more than 200 hours for the three study years (2028 ECP (All), 2030 ECP (All)) and Future Grid ECP (All) + 5GW offshore can be seen below.

B.1 Year 2028

Line	Contingency	Hours Range
Line (Maynooth - Timahoe_110_1)	Loss of Derryiron Kinnegad 110	3500-3750
Line (Maynooth - Blake-T_110_1)	Loss of Castlebagot Maynooth 220 1	3250-3500
Interface (IE to NI NTC)	Base	2500-3000
Line (Blundelstown - Corduff_110_1)	Loss of Clonfad to Kinnegad 110	2250-2500
Line (Letterkenny - Golagh-T_110_1)	Loss of Binbane - Cath Fall 110	2250-2500
Line (Knockraha - Barrymore-T_110_1)	Loss of Killonan Knockraha 220	2000-2250
Line (Maynooth - Rinawade_110_1)	Loss of Corduff Blundelstown 110	2000-2250
Line (Rinawade - Dunfirth-T_110_1)	Loss of Corduff Blundelstown 110	2000-2250
Line (Finglas - Mooretown_220_1)	Loss of Corduff Mooretown 220 1	2000-2250
Line (Carrick on Shannon - Arigna-T_110_1)	Loss of Flagford-Srananagh 220 circuit 1	1750-2000
Line (Maynooth - Blake-T_110_1)	Loss of Oldstreet Woodland 400	1750-2000
Line (Rinawade - Dunfirth-T_110_1)	Loss of Craddanstown Curraghdoo 110	1750-2000
Line (Lanesboro coupler_110_1)	Loss of Flagford Louth 220	1750-2000
Line (Galway - Salthill_110_1)	Loss of cashla salthill 110	1750-2000
Line (Knockraha - Barrymore-T_110_1)	Loss of Cahir Doon 110	1500-1750
Line (Bellacorick - Castlebar_110_1)	Loss of Cunghill Sligo 110	1250-1500
Line (Arodstown - Maynooth_220_1)	Loss of Crakenstown Woodland 220 1	1250-1500
Line (Clahane - Trien_110_1)	Loss of Kilpaddoge Knockanure 110	1250-1500
Line (Knockraha - Barrymore-T_110_1)	Loss of Cullenagh-Knockraha 220	1250-1500
Line (Clashavoon - Macroom_110_1)	Loss of Clashavoon Knockraha 220	1000-1250
Line (Rinawade - Dunfirth-T_110_1)	Loss of Blundlestown Curraghdoo 110	1000-1250
Line (Knockraha - Barrymore-T_110_1)	Loss of Cullenagh to Ballydine 110	1000-1250
Line (Cahir - Barrymore-T_110_1)	Loss of Killonan Knockraha 220	1000-1250
Line (Derryiron - Timahoe_110_1)	Loss of Derryiron Kinnegad 110	1000-1250
Line (Derryiron - Kinnegad_110_1)	Loss of Maynooth - Timahoe 110	1000-1250
Line (Arklow T2101)	Loss of Arklow 220-110 2	1000-1250
Line (Maynooth - Timahoe_110_1)	Loss of Cushaling Newbridge 110	1000-1250
Line (Clonee - Woodland_220_1)	Loss of Corduff Woodland 220 1	750-1000
Line (Maynooth - Timahoe_110_1)	Loss of Derryiron Thornsberry 110	750-1000
Line (Arklow T2101)	Loss of Lodgewood 220-110 1	750-1000
Line (Cahir - Barrymore-T_110_1)	Loss of Cullenagh-Knockraha 220	750-1000
Line (Castlebar - Dalton_110_1)	Loss of Castlebar Cloon 110	750-1000
Line (Dunstown T4202)	Loss of Oldstreet Woodland 400	750-1000
Line (Drybridge - Louth_110_1)	Loss of Crakenstown Woodland 220 1	750-1000
Line (Cahir - Barrymore-T_110_1)	Loss of Cahir Doon 110	750-1000

Line (Knockraha - Barrymore-T_110_1)	Loss of Cahir-Rathkeevin 110	500-750
Line (Cunghill - Sligo_110_1)	Loss of Bellacorick-Castlebar 110	500-750
Line (Blundelstown - Corduff_110_1)	Loss of Oldstreet Woodland 400	500-750
Line (Knockraha - Barrymore-T_110_1)	Loss of Cauteen Killonan 110	500-750
Line (Cahir - Barrymore-T_110_1)	Loss of Cullenagh to Ballydine 110	500-750
Line (Clonkeen - Garrow_110_1)	Loss of Ballyvouskil Clashavoon 220	500-750
Line (Corduff - Woodland_220_1)	Loss of Clonee Woodland 220	500-750
Line (Killoteran - Waterford_110_1)	Loss of Cullenagh-Waterford 110	500-750
Line (Shannonbridge - Dallow-T_110_1)	Loss of Derrycarney Portlaoise 110	500-750
Line (Inchicore - Irishtown_220_1)	Loss of Kellystown - Woodland 220	500-750
Line (Castlebagot - Maynooth 220_1)	Loss of Oldstreet Woodland 400	500-750
Line (Maynooth - Rinawade_110_1)	Loss of Maynooth - Timahoe 110	500-750
Line (Blundelstown - Corduff_110_1)	Loss of Kinnegad Harristown to Dunfi T 110	500-750
Line (Great Island T2102)	Loss of Great Island - Lodgewood 220	500-750
Line (Clashavoon - Clonkeen_110_1)	Loss of Ballyvouskil Clashavoon 220	500-750
Line (Maynooth - Blake-T_110_1)	Loss of Derryiron Kinnegad 110	500-750
Line (Killoteran - Waterford_110_1)	Loss of Cullenagh-Great Island 220	250-500
Line (Cahir - Barrymore-T_110_1)	Loss of Cahir-Rathkeevin 110	250-500
Line (Lanesboro coupler_110_1)	Loss of Cashla-Flagford 220	250-500
Line (Maynooth - Rinawade_110_1)	Loss of Blundlestown Curraghdoo 110	250-500
Line (Cathaleens Fall - Srananagh_110_2)	Loss of CF-Srananagh 110 1	250-500
Line (Clahane - Tralee_110_1)	Loss of Kilpaddoge Knockanure 110	250-500
Line (Carlow - Kellis_110_2)	Loss of Dunstown-Kellis 220	250-500
Line (Cahir - Barrymore-T_110_1)	Loss of Cauteen Killonan 110	250-500
Line (Cathaleens Fall - Srananagh_110_1)	Loss of CF-Srananagh 110 2	250-500
Line (Great Island T2102)	Loss of Cullenagh-Great Island 220	250-500
Line (Knockraha - Barrymore-T_110_1)	Loss of Ballynahulla Knockanure 220	250-500
Line (Crakenstown - Woodland_220_1)	Loss of Oldstreet Woodland 400	250-500
Line (Cullenagh - Waterford_110_1)	Loss of Cullenagh-Great Island 220	250-500
Line (Maynooth - Rinawade_110_1)	Loss of Craddanstown Curraghdoo 110	250-500
Line (Arklow T2101)	Loss of Arklow to Lodgewood 220	250-500
Line (Cushaling - Newbridge_110_1)	Loss of Derryiron Thornsberry 110	250-500
Line (Carrickmines - Poolbeg_220_1)	Loss of Oldstreet Woodland 400	250-500
Line (Dunstown - Maynooth_b_220_1)	Loss of Oldstreet Woodland 400	250-500
Line (Great Island - Kellis_220_1)	Loss of Great Island - Lodgewood 220	250-500
Line (Great Island - Kellis_220_1)	Loss of Arklow Carrickmines 220 1	250-500
Line (Knockraha - Barrymore-T_110_1)	Loss of gen AD2	250-500
Line (Cathaleens Fall - Clogher_110_2)	Loss of Binbane - Cath Fall 110	250-500
Line (Rinawade - Dunfirth-T_110_1)	Loss of Craddanstown Mullingar 110 1	250-500
Line (Moy - Tawnaghmore_110_1)	Base	250-500
Line (Drybridge - Louth_110_1)	Loss of Gorman Louth 220	250-500
Line (Athy - Carlow_110_1)	Loss of Dunstown-Kellis 220	250-500
Line (Flagford - Sligo_110_1)	Loss of Carrick on Shannon - Arigna T 110	250-500
Line (Cathaleens Fall - Srananagh_110_2)	Loss of CF-Corraclassy 110	250-500
Line (Maynooth - Rinawade_110_1)	Loss of Craddanstown Mullingar 110 1	250-500
Line (Lisdrum - Lislea 110 1)	Loss of Louth - Ratrussan 110	250-500
Line (Cauteen - Killonan_110_1)	Loss of Cauteen Tipperary 110	250-500

Line (Cushaling - Newbridge_110_1)	Loss of Derryiron Maynooth 110	250-500
Line (Finglas - Mooretown_220_1)	Loss of Kellystown - Woodland 220	250-500
Line (Corduff - Mooretown_220_1)	Loss of Finglas Mooretown 220 1	250-500
Line (Clonkeen - Garrow_110_1)	Loss of Ballynahulla Knockanure 220	250-500
Line (Castlebar - Dalton_110_1)	Loss of Cunghill Sligo 110	250-500
Line (Clonee - Woodland_220_1)	Loss of Kellystown - Woodland 220	250-500
Line (Maynooth - Blake-T_110_1)	Loss of Baroda Newbridge 110	250-500
Line (Carlow - Kellis_110_2)	Loss of Carlow Kellis 110 1	250-500
Line (Maynooth - Blake-T_110_1)	Loss of coolnabacky dunstown 400	250-500
Line (Derrycarney - Portlaoise_110_1)	Loss of Dallow Stonestown 110	250-500
Line (Cahir - Barrymore-T_110_1)	Loss of Ballynahulla Knockanure 220	250-500
Line (Flagford - Tonroe_110_1)	Loss of Cunghill Sligo 110	250-500
Line (Maynooth - Blake-T_110_1)	Loss of Kinnegad Harristown to Dunfi T 110	250-500
Line (Dallow-T - Stonestown_110_1)	Loss of Derrycarney Portlaoise 110	250-500
Line (Knockraha - Barrymore-T_110_1)	Loss of Ballydine Curraghduff 110	250-500
Line (Great Island - Rosspile_110_1)	Loss of Arklow Carrickmines 220 1	250-500
Line (Great Island T2102)	Loss of Great Island - Kellis 220	250-500
Line (Cushaling - Newbridge_110_1)	Loss of Mount Lucas - Thornsberry 110	250-500
Line (North Wall - Poolbeg_220_1)	Loss of Oldstreet Woodland 400	250-500
Line (Ballyvouskil - Coomataggart_110_1)	Base	<250
Line (Athy - Carlow_110_1)	Loss of Arklow Carrickmines 220 1	<250
Line (Cahir - Barrymore-T_110_1)	Loss of gen AD2	<250
Line (Dunstown T4201)	Loss of Oldstreet Woodland 400	<250
Line (Drybridge - Louth_110_1)	Loss of Louth Woodland 220	<250
Line (Clashavoon - Macroom_110_2)	Loss of Clashavoon Knockraha 220	<250
Line (Cushaling - Newbridge_110_1)	Loss of Derryiron Kinnegad 110	<250
Line (Derryiron - Kinnegad_110_1)	Loss of Derryiron Maynooth 110	<250
Line (Drybridge - Louth_110_1)	Loss of Balruntagh Navan 110	<250
Line (Ballyadam - Whitegate_110_1)	Loss of Knockraha to Midleton 110	<250
Line (Philipstown - Portlaoise_110_1)	Loss of Mount Lucas - Thornsberry 110	<250

Table 6 - Binding contingency and overloading lines in 2028 ECP (All) study

B.2 Year 2030

Line	Contingency	Hours Range
Line (Derryiron - Kinnegad_110_1)	Loss of Maynooth - Timahoe 110	3250-3500
Interface (IE to NI NTC)	Base	3250-3500
Line (Maynooth - Blake-T_110_1)	Loss of Kinnegad Harristown to Dunfi T 110	2500-3000
Line (Carrick on Shannon - Arigna-T_110_1)	Loss of Flagford-Srananagh 220 circuit 1	2250-2500
Line (Letterkenny - Golagh-T_110_1)	Loss of Binbane - Cath Fall 110	2250-2500
Line (Clashavoon - Macroom_110_1)	Loss of Clashavoon Knockraha 220	1500-1750
Line (Clonkeen - Garrow_110_1)	Loss of Ballynahulla Knockanure 220	1500-1750
Line (Harristown - Mulgeeth_110_1)	Loss of Corduff Blundelstown 110	1500-1750
Line (Clahane - Trien_110_1)	Loss of Kilpaddoge Knockanure 110	1500-1750
Line (Cunghill - Sligo_110_1)	Loss of Bellacorick-Castlebar 110	1250-1500
Line (Finglas - Mooretown_220_1)	Loss of Corduff Mooretown 220 1	1250-1500
Line (Maynooth - Blake-T_110_1)	Loss of Castlebagot Maynooth 220 1	1250-1500
Line (Derryiron - Kinnegad_110_1)	Loss of Derryiron Maynooth 110	1000-1250
Line (Blundelstown - Corduff_110_1)	Loss of Clonfad to Kinnegad 110	1000-1250
Line (Galway - Salthill_110_1)	Loss of cashla salthill 110	1000-1250
Line (Maynooth - Blake-T_110_1)	Loss of coolnabacky dunstown 400	750-1000
Line (Bellacorick - Castlebar_110_1)	Loss of Cunghill Sligo 110	750-1000
Line (Maynooth - Blake-T_110_1)	Loss of Rinawade Dunfirth T 110	750-1000
Line (Bellacorick - Moy_110_1)	Loss of Bellacorick-Castlebar 110	750-1000
Line (Killoteran - Waterford_110_1)	Loss of Cullenagh-Waterford 110	750-1000
Line (Knockraha - Barrymore-T_110_1)	Loss of Killonan Knockraha 220	500-750
Line (Craddanstown - Curraghdoo_110_1)	Loss of Kinnegad Harristown to Dunfi T 110	500-750
Line (Maynooth - Blake-T_110_1)	Loss of Derryiron Kinnegad 110	500-750
Line (Arklow T2101)	Loss of Arklow 220-110 2	500-750
Line (Arklow T2101)	Loss of Lodgewood 220-110 1	500-750
Line (Shannonbridge - Dallow-T_110_1)	Loss of Derrycarney Portlaoise 110	500-750
Line (Knockraha - Barrymore-T_110_1)	Loss of Cullenagh to Ballydine 110	500-750
Line (Arodstown - Maynooth_220_1)	Loss of Crakenstown Woodland 220 1	500-750
Line (Killoteran - Waterford_110_1)	Loss of Cullenagh-Great Island 220	500-750
Line (Harristown - Mulgeeth_110_1)	Loss of Maynooth - Timahoe 110	500-750
Line (Drybridge - Louth_110_1)	Loss of Gorman Louth 220	500-750
Line (Knockraha - Barrymore-T_110_1)	Loss of Cullenagh-Knockraha 220	500-750
Line (Drybridge - Louth_110_1)	Loss of Crakenstown Woodland 220 1	500-750
Line (Blundelstown - Corduff_110_1)	Loss of Kinnegad Harristown to Dunfi T 110	500-750
Line (Clahane - Tralee_110_1)	Loss of Kilpaddoge Knockanure 110	500-750
Line (Bellacorick - Castlebar_110_1)	Loss of Bellacorick-Moy 110	500-750
Line (Knockraha - Barrymore-T_110_1)	Loss of Cauteen Killonan 110	500-750
Line (Inchicore - Irishtown_220_1)	Loss of Kellystown - Woodland 220	500-750
Line (Knockraha - Barrymore-T_110_1)	Loss of Cahir Doon 110	500-750
Line (Cauteen - Killonan_110_1)	Loss of Cauteen Tipperary 110	500-750
Line (Kilkenny - Kilvinoge_110_1)	Loss of Great Island - Kellis 220	250-500
Line (Clonkeen - Garrow_110_1)	Loss of Ballyvouskil Clashavoon 220	250-500
Line (Mount Lucas - Thornsberry_110_1)	Loss of Philipstown - Portlaoise 110	250-500
Line (Cathaleens Fall - Srananagh_110_1)	Loss of CF-Srananagh 110 2	250-500

Line (Maynooth - Timahoe_110_1)	Loss of Derryiron Thornsberry 110	250-500
Line (Cullenagh - Waterford_110_1)	Loss of Cullenagh-Great Island 220	250-500
Line (Kilbarry - Marina_110_1)	Loss of kilbarry marina 110 2	250-500
Line (Inchicore - Irishtown_220_1)	Loss of Castlebagot Maynooth 220 1	250-500
Line (Blundelstown - Corduff_110_1)	Loss of Rinawade Dunfirth T 110	250-500
Line (Cathaleens Fall - Srananagh_110_2)	Loss of CF-Srananagh 110 1	250-500
Line (Cathaleens Fall - Clogher_110_2)	Loss of Cathaleens Fall - Clogher_110_3	250-500
Line (Blundelstown - Curraghdoo_110_1)	Loss of Kinnegad Harristown to Dunfi T 110	250-500
Line (Cahir - Barrymore-T_110_1)	Loss of Cullenagh to Ballydine 110	250-500
Line (Kilbarry - Knockraha_110_2)	Loss of Kilbarry Knockraha 110 1	250-500
Line (Flagford - Sligo_110_1)	Loss of Carrick on Shannon - Arigna T 110	250-500
Line (Maynooth - Blake-T_110_1)	Loss of Maynooth - Timahoe 110	250-500
Line (Clashavoon - Clonkeen_110_1)	Loss of Ballyvouskil Clashavoon 220	250-500
Line (Cunghill - Glenree_110_1)	Loss of Bellacorick-Castlebar 110	250-500
Line (Carlow - Kellis_110_2)	Loss of Dunstown-Kellis 220	250-500
Line (Cushaling - Mount Lucas_110_1)	Loss of Maynooth - Timahoe 110	250-500
Line (Moy - Tawnaghmore_110_1)	Base	250-500
Line (Letterkenny - Golagh-T_110_1)	Loss of Clogher-Drumkeen 110	250-500
Line (Cathaleens Fall - Srananagh_110_2)	Loss of CF-Corraclassy 110	250-500
Line (Ballyvouskil - Coomataggart_110_1)	Base	250-500
Line (Carlow - Kellis_110_2)	Loss of Carlow Kellis 110 1	250-500
Line (Drybridge - Louth_110_1)	Loss of Balruntagh Navan 110	250-500
Line (Corduff - Mooretown_220_1)	Loss of Finglas Mooretown 220 1	250-500
Line (Craddanstown - Curraghdoo_110_1)	Loss of Clonfad to Kinnegad 110	250-500
Line (Dallow-T - Stonestown_110_1)	Loss of Derrycarney Portlaoise 110	250-500
Line (Maynooth - Blake-T_110_1)	Loss of Baroda Newbridge 110	250-500
Line (Harristown - Mulgeeth_110_1)	Loss of Blundlestown Curraghdoo 110	250-500
Line (Great Island - Rosspile_110_1)	Loss of Arklow Carrickmines 220 1	<250
Line (Mount Lucas - Thornsberry_110_1)	Loss of Cushaling Newbridge 110	<250
Line (Derrycarney - Portlaoise_110_1)	Loss of Dallow Stonestown 110	<250
Line (Harristown - Mulgeeth_110_1)	Loss of Craddanstown Curraghdoo 110	<250
Line (Clonee - Woodland_220_1)	Loss of Corduff Woodland 220 1	<250
Line (Bellacorick - Castlebar_110_1)	Loss of Cunghill Glenree 110	<250
Line (Clashavoon - Macroom_110_1)	Loss of Ballynahulla Knockanure 220	<250
Line (Clahane - Trien_110_1)	Loss of Ballynahulla Knockanure 220	<250
Line (Arklow T2101)	Loss of Arklow to Lodgewood 220	<250
Line (Kilkenny - Kilvinoge_110_1)	Loss of Arklow Carrickmines 220 1	<250
Line (Inchicore - Irishtown_220_1)	Loss of Castlebagot Maynooth 220 2	<250
Line (Arklow T2101)	Loss of Glenart Lodgewood 220	<250
Line (Lisdrum - Lislea 110 1)	Loss of Louth - Ratrussan 110	<250
Line (Clashavoon - Macroom_110_2)	Loss of Clashavoon Knockraha 220	<250
Line (Cahir - Barrymore-T_110_1)	Loss of Cullenagh-Knockraha 220	<250
Line (Dunstown - Kellis_220_1)	Loss of Great Island - Lodgewood 220	<250
Line (Dunstown - Turlough Hill 220_1)	Loss of gen GI4	<250
Line (Cunghill - Sligo_110_1)	Loss of Flagford Tonroe 110	<250
Line (Dunstown - Kellis_220_1)	Loss of Arklow Carrickmines 220 1	<250
Line (Derryiron - Kinnegad_110_1)	Loss of Cushaling Newbridge 110	<250

Line (Baroda - Newbridge_110_1)	Loss of Coolnabacky Portlaoise 110	<250

Table 7 - Binding contingency and overloading lines in 2030 ECP (All) study

B.3 Future Grid + 5 Offshore Study

Line	Contingency	Hours Range
Line (Derryiron - Kinnegad_110_1)	Loss of Maynooth - Timahoe 110	5250-5500
Line (Derryiron - Kinnegad_110_1)	Loss of Derryiron Maynooth 110	2250-2500
Line (Clahane - Trien_110_1)	Loss of Kilpaddoge Knockanure 110	2000-2250
Line (Belcamp - Finglas_220_1)	Loss of Eastpoint Shellybanks 220	1750-2000
Line (Finglas - Mooretown_220_1)	Loss of Corduff Mooretown 220 1	1750-2000
Line (Arklow T2101)	Loss of Arklow 220-110 2	1750-2000
Line (Clogher - Golagh-T_110_1)	Loss of Binbane - Cath Fall 110	1500-1750
Line (Harristown - Mulgeeth_110_1)	Loss of Corduff Blundelstown 110	1500-1750
Line (Killoteran - Waterford_110_1)	Loss of Cullenagh-Great Island 220	1250-1500
Line (Killoteran - Waterford_110_1)	Loss of Cullenagh-Waterford 110	1250-1500
Line (Finglas - North Wall_220_1)	Loss of Eastpoint Shellybanks 220	1250-1500
Line (Irishtown - Shellybanks_220_1)	Loss of Dunstown Woodland 400	1000-1250
Line (Cunghill - Sligo_110_1)	Loss of Bellacorick-Castlebar 110	1000-1250
Line (Clashavoon - Macroom_110_1)	Loss of Clashavoon Knockraha 220	1000-1250
Line (Belcamp - Finglas_220_1)	Loss of Finglas - North Wall 220	1000-1250
Line (Bellacorick - Castlebar_110_1)	Loss of Cunghill Sligo 110	1000-1250
Line (Clahane - Tralee_110_1)	Loss of Kilpaddoge Knockanure 110	1000-1250
Line (Craddanstown - Curraghdoo_110_1)	Loss of Kinnegad Harristown to Dunfi T 110	750-1000
Line (Galway - Salthill_110_1)	Loss of cashla salthill 110	750-1000
Line (Knockraha - Barrymore-T_110_1)	Loss of Cullenagh-Knockraha 220	750-1000
Line (Cullenagh - Waterford_110_1)	Loss of Cullenagh-Great Island 220	750-1000
Line (Belcamp - Finglas_220_1)	Loss of North Wall - Poolbeg 220	750-1000
Line (Blundelstown - Corduff_110_1)	Loss of Clonfad to Kinnegad 110	750-1000
Line (Carrick on Shannon - Arigna-T_110_1)	Loss of Srananagh 220-110 2	750-1000
Line (Arklow T2101)	Loss of Lodgewood 220-110 1	750-1000
Line (Blundelstown - Corduff_110_1)	Loss of Kinnegad Harristown to Dunfi T 110	750-1000
Line (Shannonbridge - Dallow-T_110_1)	Loss of Derrycarney Portlaoise 110	500-750
Line (Blundelstown - Corduff_110_1)	Loss of Rinawade Dunfirth T 110	500-750
Line (Cauteen - Killonan_110_1)	Loss of Cauteen Tipperary 110	500-750
Line (Cushaling - Newbridge_110_1)	Loss of Philipstown - Portlaoise 110	500-750
Line (Letterkenny - Golagh-T_110_1)	Loss of Binbane - Cath Fall 110	500-750
Line (Knockraha - Barrymore-T_110_1)	Loss of Cahir Doon 110	500-750
Line (Barnahely - Raffeen_110_1)	Base	500-750
Line (Coolnabacky - Dunstown_400)	Loss of Oldstreet Woodland 400	500-750
Line (Bellacorick - Moy_110_1)	Loss of Bellacorick-Castlebar 110	500-750
Line (Arklow - Ballybeg_220_1)	Loss of Arklow Carrickmines 220 1	500-750
Line (Moy - Tawnaghmore_110_1)	Base	500-750
Line (Arklow T2101)	Loss of Banoge to Tullabeg 110	500-750
Line (Mount Lucas - Thornsberry_110_1)	Loss of Cushaling Newbridge 110	500-750
Line (Knockraha - Barrymore-T_110_1)	Loss of Cauteen Killonan 110	500-750
Line (Harristown - Mulgeeth_110_1)	Loss of Maynooth - Timahoe 110	500-750
Line (Cushaling - Newbridge_110_1)	Loss of Maynooth - Timahoe 110	500-750
Line (Knockraha - Barrymore-T_110_1)	Loss of Cullenagh to Ballydine 110	500-750
Interface (IE to NI NTC)	Base	500-750

Line (Mount Lucas - Thornsberry_110_1)	Loss of Philipstown - Portlaoise 110	500-750
Line (Blundelstown - Curraghdoo_110_1)	Loss of Kinnegad Harristown to Dunfi T 110	500-750
Line (Bellacorick - Castlebar_110_1)	Loss of Bellacorick-Moy 110	250-500
Line (Cushaling - Newbridge_110_1)	Loss of Derryiron Thornsberry 110	250-500
Line (Belcamp - Finglas_220_1)	Loss of gen HNC	250-500
Line (Cushaling - Newbridge_110_1)	Loss of Mount Lucas - Thornsberry 110	250-500
Line (Newbridge - Blake-T_110_1)	Loss of coolnabacky dunstown 400	250-500
Line (Corduff - Mooretown_220_1)	Loss of Finglas Mooretown 220 1	250-500
Line (Knockraha - Barrymore-T_110_1)	Loss of gen GI4	250-500
Line (Cushaling - Mount Lucas_110_1)	Loss of Maynooth - Timahoe 110	250-500
Line (Carrick on Shannon - Arigna-T_110_1)	Loss of Clogher Srananagh 220	250-500
Line (Belcamp - Finglas_220_1)	Loss of gen HN2	250-500
Line (Newbridge - Blake-T_110_1)	Loss of Coolnabacky Portlaoise 110	250-500
Line (Clonkeen - Garrow_110_1)	Loss of Ballyvouskil Clashavoon 220	250-500
Line (Cahir - Barrymore-T_110_1)	Loss of Cullenagh-Knockraha 220	250-500
Line (Athy - Coolnabacky_110_1)	Loss of coolnabacky dunstown 400	250-500
Line (Clonkeen - Garrow_110_1)	Loss of Ballynahulla Knockanure 220	250-500
Line (Mullingar Shanonagh_110_1)	Loss of Flagford-Sliabh Bawn 110	250-500
Line (Derryiron - Kinnegad_110_1)	Loss of Cushaling Newbridge 110	250-500
Line (Inchicore - Irishtown_220_1)	Loss of Carrickmines Irishtown 220	250-500
Line (Kilpaddoge - Moneypoint_220_2)	Loss of Kilpaddoge Moneypoint 220 1	250-500
Line (Killonan - Shannonbridge_220_1)	Loss of Moneypoint Oldstreet 400	250-500
Line (North Wall - Poolbeg_220_1)	Loss of Eastpoint Shellybanks 220	250-500
Line (Louth AT1 300 MVA)	Loss of Louth AT2	250-500
Line (Banoge - Oaklands_110_1)	Loss of Lodgewood 220-110 1	250-500
Line (Ballyadam - Whitegate_110_1)	Loss of Knockraha to Midleton 110	250-500
Line (Arklow T2101)	Loss of Arklow Banoge 110 1	250-500
Line (Kilbarry - Knockraha_110_2)	Loss of Kilbarry Knockraha 110 1	250-500
Line (Ballyvouskil - Coomataggart_110_1)	Base	250-500
Line (Cauteen - Killonan_110_1)	Loss of Cahir Tipperary 110 1	250-500
Line (Oldstreet - Tynagh_220_1)	Loss of Flagford Louth 220	250-500
Line (Carlow - Kellis_110_2)	Loss of Carlow Kellis 110 1	250-500
Line (Dallow-T - Stonestown_110_1)	Loss of Derrycarney Portlaoise 110	250-500
Line (Lanesboro - Sliabh Bawn_110_1)	Loss of Flagford Louth 220	250-500
Line (Kilbarry - Marina_110_1)	Loss of kilbarry marina 110 2	250-500
Line (Cow Cross - Jamesbrook_110_1)	Loss of Knockraha to Midleton 110	250-500
Line (Knockraha - Barrymore-T_110_1)	Loss of gen Dublin Bay	250-500
Line (Belcamp - Finglas_220_1)	Loss of Clonee Woodland 220	250-500
Line (Mullingar Shanonagh_110_1)	Loss of Flagford Louth 220	250-500
Line (Baroda - Newbridge_110_1)	Loss of Coolnabacky Portlaoise 110	250-500
Line (Knockraha - Barrymore-T_110_1)	Loss of Killonan Knockraha 220	<250
Line (Lisdrum - Lislea 110 1)	Loss of Louth - Ratrussan 110	<250
Line (Cahir - Barrymore-T_110_1)	Loss of Cullenagh to Ballydine 110	<250
Line (Cullenagh - Waterford_110_1)	Loss of gen GI4	<250
Line (Cashla - Shantallow_110_1)	Loss of Derrycarney Portlaoise 110	<250
Line (Derrycarney - Portlaoise_110_1)	Loss of Dallow Stonestown 110	<250
Line (Cahir - Kill Hill_110_1)	Loss of Rath - Timoney 110 1	<250

Line (Harristown - Mulgeeth_110_1)	Loss of Blundlestown Curraghdoo 110	<250
Line (Clahane - Trien_110_1)	Loss of Ballynahulla Knockanure 220	<250
Line (Carrickmines - Irishtown_220_1)	Loss of Carrickmines Steelstown 220 1	<250
Line (Irishtown - Shellybanks_220_1)	Loss of Poolbeg Shellybanks 220 1	<250
Line (Cushaling - Newbridge_110_1)	Loss of Derryiron Maynooth 110	<250
Line (Cathaleens Fall - Srananagh_110_2)	Loss of Clogher Srananagh 220	<250
Line (Moneypoint T4201)	Loss of kilpaddoge moneypoint 400	<250
Line (Cunghill - Sligo_110_1)	Loss of Flagford Tonroe 110	<250
Line (Athy - Coolnabacky_110_1)	Loss of Dunstown-Kellis 220	<250
Line (Drumkeen - Letterkenny_110_1)	Loss of Clogher-Golagh T 110 1	<250
Line (Cahir - Barrymore-T_110_1)	Loss of Cauteen Killonan 110	<250
Line (Kilkenny - Kellymount_110_1)	Loss of coolnabacky dunstown 400	<250
Line (Rathkeevin - Doon_110_1)	Loss of Cullenagh-Knockraha 220	<250
Line (Gorman - Ricetown_110_1)	Loss of Gorman Louth 220	<250
Line (Lenalea - Letterkenny 110)	Loss of Binbane - Cath Fall 110	<250

Table 8 Binding contingency and overloading lines in Future Grid ECP (All) + 5GW Offshore study