

# Enduring Connection Policy 2.3

## Solar and Wind Constraints Report: Results for Area A

Version 1.0

24/01/24



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Revision	Date	Description	Originator	Reviewer	Checker	Approver

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# Document Structure

This document is for customers wishing to see the estimated Total Dispatch Down for Area A. For information on the study assumptions, methodology, abbreviations and terms used for the Constraint Analysis reports, please see the area non-specific Assumptions and Methodology report found on the ECP-2.3 webpage<sup>1</sup>.

This document contains two main sections:

**Section 1: Results for Area A:** outlines the area covered by this report. This section provides a network diagram of Area A and an overview of the results for Area A.

**Section 2: Area A Node Results:** provides a table of results for every node in the area. This table documents the installed capacity, available energy, surplus, curtailment and constraint for every node in Area A.

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<sup>1</sup> <https://www.eirgridgroup.com/customer-and-industry/general-customer-information/ecp-2.3-constraint-report/index.xml>

# Important Note

This ECP-2.3 constraints report 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.

The treatment of renewable generation under these three categories of generation reduction will be determined by the implementation of Articles 12 and 13 of the EU Regulation 2019/943<sup>2</sup>.

The SEMC decision on the 22<sup>nd</sup> of March 2022<sup>3</sup> (SEM-22-009 Decision Paper on Dispatch, Redispatch and Compensation Pursuant to Regulation EU 2019/943) has been successfully challenged in the High Court ([2023] IEHC 629). Therefore, the detailed design of the implementation of Articles 12 and 13 has yet to be finalised, and may differ from the implementation for constraints used in this study. Therefore, an assumed interpretation has been included in this study, as detailed in this report.

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 term “non-priority” and “not-priority” generators are used synonymously in the report.

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.

For wind and solar generation, values of Total Dispatch Down that are less than 5% are rounded up to 5% by adjusting the constraints for that generator. This is consistent with the approach used in the ECP-2.1 and ECP-2.2 constraints reports. However, in the ECP-2.3 constraints report, this adjustment to constraints is applied only to non-priority generation and not to priority generation.

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<sup>2</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0943&from=NL>

<sup>3</sup> <https://www.semcommittee.com/publications/sem-22-009-decision-paper-dispatch-redispatch-and-compensation-pursuant-regulation-eu>

# 1 Results for Area A

## 1.1 Introduction

This section provides the surplus, curtailment and constraint results for Area A that are estimated by this analysis. There is a total of eight core ECP-2.3 studies and seven sensitivity studies (including without maintenance) presented in this report. The study scenarios and the associated assumptions can be found in the Assumptions and Methodology report. An overview and discussion of the results is provided in this Section. The surplus, curtailment and constraint results for each node in Area A are provided in Section 2 of this report.

## 1.2 Study Notes

A list of the major study assumptions is provided in the Assumptions and Methodology report. For Area A, there are a number of key assumptions which drive the results, including network outages and capacity factors. These are thus reiterated here. Similarly, it is worth highlighting again the differences between the various components of Total Dispatch Down.

### 1.2.1 Network Outages

The scenarios in this report are intended to give a view of average long-term levels of surplus, curtailment and constraint, subject to installed generation, demand, interconnection, operational constraints and reinforcement delivery.

The ECP-2.3 constraints forecast analysis applies a similar transmission outage schedule to the ECP-2.2 constraints analysis. This was kept consistent with last year's schedule following positive feedback from industry. This schedule allows a representation of outage impact in each geographical area to be included in the studies.

This representative transmission outage schedule is given in Appendix A of the Assumptions and Methodology report. However, at times, longer duration outages may be required for certain connections, reinforcement works or forced outages, these are not considered in this analysis and may result in higher wind and solar constraints.

### 1.2.2 Benefit of Capacity Factor

In practice, a specific windfarm may be located at a site with higher wind speeds or may have a better performing type of wind turbine; the result is a higher capacity factor than neighbouring windfarms. This report does not reflect this localised diversity between windfarm sites. In reality, a windfarm with a higher capacity factor may see lower percentage surplus, curtailment or constraint levels than an adjacent windfarm with a lower capacity factor. This is because at times of medium or low wind speed, the high-capacity factor windfarm can generate power when the low-capacity factor windfarm cannot.

### 1.2.3 Notes on Surplus, Curtailment and Constraint Modelling

#### 1.2.3.1 Surplus

During generation reduction for surplus, a distinction is made between the treatment of priority and non-priority renewable generators, with non-priority generators being dispatched down ahead of priority generators. Within these two categories of generation, surplus is applied pro-rata across the all-island system for all renewable generators in the category.



For any hour of the study, the surplus level will depend on system demand and interconnector flow capacity. In general, surplus is expected to increase with increasing installed renewable capacity.

It is expected that the further interconnection of the all-Ireland network with mainland UK and Europe will decrease the frequency of surplus conditions occurring.

In general, increased interconnector capacity with mainland UK through the EWIC & LiriC projects will not necessarily eliminate surplus generation as solar and wind profiles in mainland UK will largely be in line with those in Ireland. In the Future Grid study year however, when both the Celtic and 2<sup>nd</sup> Ireland-France interconnectors are connected, there will be a greater export capacity during times of abundant renewable generation to mainland Europe where similar wind and solar generation in Ireland and mainland Europe is not expected.

Therefore, dispatch down due to surplus generation is not expected to occur as frequently once both the Celtic and 2<sup>nd</sup> Ireland-France interconnectors are connected.

#### 1.2.3.2 Curtailment

In this report, for each hour of the study, the curtailment is shared pro-rata on a system-wide basis with no distinction made between priority and non-priority generators. This means that both curtailment reductions and curtailment increases are shared system wide.

Solar generation has different reported levels of curtailment compared to wind due to different capacity factors and annual profile shapes.

The applied curtailment is broadly constant across the system. However, due to differences in wind and solar profiles and capacity factors between areas, the percentage of average curtailment differs between areas.

#### 1.2.3.3 Constraints

During the constraint of renewable generation, a distinction is made between priority and non-priority generators, with non-priority generators being dispatched down ahead of priority generators across the relevant transmission nodes within the subgroup. More details on the approach assumed in this study for the application of constraints on priority and non-priority renewable generation can be found in the main ECP 2.3 Assumptions and Methodology report.

In general, there is a tendency for renewable bulk power to flow towards the demand in Dublin and the interconnectors. These flow patterns are relevant when seeking to understand constraint apportionment in the simulation.

When presented as percentage values, the constraint results look different for solar and wind, as they have a low correlation due to different profile shapes driven by weather patterns.

## 1.3 Generation Overview

A detailed system-level overview of the renewable generation scenarios used in these studies is given in Section 2 of the area non-specific Assumptions and Methodology report. The distribution of generation in each scenario based on technology, area and node is given in Appendix B of the Assumptions and Methodology report. The node-level installed wind and solar generation for Area A in the “ECP” scenario is given in Table 1-1.

Node	SO	Status	Solar	Wind
<b>Ardnagappary</b>	DSO	connected		18
<b>Ardnagappary</b>	DSO	connected		5
<b>Arigna</b>	DSO	connected		16
<b>Binbane</b>	DSO	connected		20
<b>Binbane</b>	DSO	due to connect		31
<b>Binbane</b>	DSO	connected		36
<b>Binbane</b>	DSO	connected		5
<b>Binbane</b>	DSO	due to connect		2
<b>Cathaleen's Fall</b>	DSO	connected		18
<b>Cathaleen's Fall</b>	DSO	connected		5
<b>Corderry</b>	TSO	due to connect	40	
<b>Corderry</b>	DSO	due to connect		16
<b>Corderry</b>	DSO	connected		46
<b>Corderry</b>	DSO	connected		17
<b>Croaghonagh</b>	TSO	due to connect		138
<b>Garvagh</b>	DSO	connected		34
<b>Garvagh</b>	TSO	connected		48
<b>Golagh</b>	TSO	due to connect		63
<b>Golagh</b>	TSO	connected		15
<b>Gortawee</b>	DSO	due to connect		8
<b>Gortawee</b>	DSO	connected		3
<b>Lenalea</b>	TSO	due to connect		102
<b>Letterkenny</b>	DSO	due to connect		20
<b>Letterkenny</b>	DSO	connected		40
<b>Meentycat</b>	TSO	connected		85
<b>Mulreavy</b>	TSO	connected		87
<b>Mulreavy</b>	TSO	connected		8
<b>Sorne Hill</b>	DSO	connected		48
<b>Sorne Hill</b>	DSO	connected		14
<b>Tievebrack</b>	TSO	due to connect		30
<b>Trillick</b>	DSO	due to connect	15	
<b>Trillick</b>	DSO	due to connect		5
<b>Trillick</b>	DSO	connected		31
<b>Trillick</b>	DSO	connected		14
<b>Total</b>			55	1028

Table 1-1 Wind and Solar Generation Summary in Area A for Generation Scenario “ECP”

Table 1-2 and Table 1-3 show installed solar and wind generation for Ireland and Area A, and the available solar and wind generation for Area A for each generation scenario.

Solar	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
<b>Installed Ireland (MW)</b>	3052	4542	6031	6031	6031
<b>Installed Area A (MW)</b>	18	37	55	55	55
<b>Installed Controllable Area A (MW)</b>	18	37	55	55	55
<b>Available Controllable Area A (GWh)</b>	19	39	58	58	58

*Table 1-2 Installed MW and Available GWh for Area A - Solar*

Wind	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
<b>Installed Ireland (MW)</b>	5104	5678	6253	6827	9901	11827
<b>Installed Area A (MW)</b>	794	872	951	1029	1029	1029
<b>Installed Controllable Area A (MW)</b>	651	729	807	884	884	884
<b>Available Controllable Area A (GWh)</b>	1895	2121	2347	2558	2558	2558

*Table 1-3 Installed MW and Available GWh for Area A - Wind*

## 1.4 Network Overview

Area A, in the northwest of the country includes a mix of wind and solar generation. A summary of this generation is given in Table 1.1.

The transmission network in Area A and the surrounding area is shown in Figure 1-1. The 220 kV circuits are shown in green and the 110 kV circuits in black. Possible future transmission stations and lines for the connection of new generation are also shown on the map below.



Figure 1-1 Network Map for Area A

At times of high renewable generation, there is a net export of power from Area A, and the dominant power flows tend to be from Area A towards the load centres on the east coast and the interconnectors. These flow patterns are relevant when seeking to understand constraint apportionment in the simulation.

Constraints in Area A can be caused both by local and wider system issues. Constraints in the model are optimised on a system-wide basis so, in theory, an increase in the installed generation in another area can increase constraints in Area A.

Also, the power flowing out of Area A meets and joins with power flows from other areas, as the power flows towards the demand centres and interconnectors. A transmission bottleneck between Area A and the east is shared with power flows coming from other areas.

## 1.5 Future Grid Sensitivity Scenario

In line with the ECP-2.1 and ECP-2.2 studies, and in response to feedback from industry, the Future Grid scenario is included in the analysis. All reasonable efforts have been made to align the network assumptions in the Future Grid scenario to the Shaping Our Electricity Future (SOEF) 1.1 Roadmap. The network projects included in the study are given in Appendix A of the Assumptions and Methodology report found on the ECP-2.3 webpage. Additionally, any project that has progressed to stage three of the six stage project planning process after the publication of the SOEF 1.1 Roadmap are also included in the Future Grid studies. Note however, that the wind and solar generation portfolio in the ECP-2.3 Future Grid scenario differs from the wind and solar portfolio considered in the SOEF 1.1 Roadmap. This is done to maintain alignment with the ECP-2.3 process. The ECP study scenario includes all wind and solar projects which have applied through connection processes, whereas the SOEF 1.1 study includes generators up to and including ECP-2.3 applicants and then scaled renewable generation capacity to achieve the capacity volumes stated in the Climate Action Plan 23.

The Future Grid study includes a base renewable generation scenario (ECP), along with three sensitivity generation scenarios (ECP + 3.1 GW offshore, ECP + 5 GW offshore and a maintenance sensitivity study). The scenarios with additional offshore wind have been included to show the potential impact of increasing offshore wind on Total Dispatch Down levels.

The demand modelled for the Future Grid scenario is based on the medium demand scenario for 2030 as published in the All-Island Generation Capacity Statement 2023-2032.

The purpose of the Future Grid scenario is to provide insights on the potential impact of the SOEF 1.1 Roadmap network reinforcement portfolio on the dispatch down of wind and solar generators. This study is not intended to be exhaustive; it is not intended to remove all transmission constraints and it does not give individual generators guarantee that their Total Dispatch Down will change to the estimated levels.

## 1.6 Area A - Average Results

The Total Dispatch Down results for Area A are provided below in Table 1-5 to Table 1-8 and Figure 1-3 to Figure 1-6. These include the breakdown between surplus, curtailment and constraint. The Total Dispatch Down percentages are based on the total available energy. The Total Dispatch Down is the sum of surplus, curtailment and constraint. The node level breakdown of surplus, curtailment and constraint are given in Section 2. The results show that the system level Total Dispatch Down increases with additional installed capacity due to a significant increase in surplus. However, the Total Dispatch Down reduces when the 2028 studies are compared with 2026 and there is a further reduction in the Future Grid scenario owing to increased demand, network reinforcement, interconnection and relaxed system level operational limits.

For each generation type in Area A (solar non-priority, wind non-priority and wind priority), the total installed capacity in MW and total available generation in GWh are given in Table 1-5, Table 1-6, Table 1-7 and Table 1-8. The total generation in GWh after dispatch down and the corresponding percentage Total Dispatch Down are also included in the tables for each scenario. Details on the generation and network scenarios are given in Section 2 of the Assumptions and Methodology report.

### 1.6.1 Offshore Wind Sensitivity Studies

Results for the offshore wind-based sensitivity studies are included, along with results for the core scenarios. The general trend is that with increasing levels of offshore wind, Total Dispatch Down increases due to significant increases in the available wind energy, which in turn leads to increased levels of surplus.

### 1.6.2 Impact of Article 12 and 13

Higher Total Dispatch Down is observed for non-priority generators due to the impact of the implementation of Article 12 and 13 in the studies, which results in non-priority generators being reduced ahead of priority generators for surplus and constraint reasons. More detail on the Article 12 clause is available in Section 3.6 of the Assumptions and Methodology report.

Another factor that contributes to the higher total dispatch down for non-priority wind and solar units is the proportion of priority to non-priority units within a subgroup. If a subgroup has a high volume of priority wind/solar units to non-priority wind/solar units, this can result in the constraints that would usually be allocated to the priority units only allocated to the non-priority units (due to the grandfathering of constraints). This can result in high constraints for non-priority units within a subgroup.

### 1.6.3 Future Grid Sensitivity Study

The results of the Future Grid scenario show a notable reduction in Total Dispatch Down over the core study years (2026 and 2028) due to the impact of the SOEF 1.1 Roadmap network reinforcements, increased demand levels, increased interconnection, and the relaxation of operational constraints. However, increases in installed wind and solar generation, as seen in the offshore wind scenarios, result in rising surplus levels, causing an increase in Total Dispatch Down levels. A detailed breakdown of the Total Dispatch Down components for Area A under the Future Grid scenarios and associated sensitivity case is given in Table 1-5 to Table 1-8. Further node level details can be viewed in Section 2.

### 1.6.4 Area Subgroups

The constraint forecast study, which is performed using PLEXOS software, applies mathematical optimisation to find the lowest cost generator dispatch schedule to meet demand, subject to several system and transmission level constraints. To ensure the model is impartial, the assumptions on the cost of renewable generators remain the same, irrespective of technology or location, and are always lower than that of conventional plants. This ensures renewable generators are given priority in the PLEXOS optimisation. However, due to network congestion caused by line limits and N-1 contingency security checks, the power flows in certain lines are limited, causing dispatch down in RES generators which may affect one generator or multiple generators chosen by PLEXOS' internal logic. During various initial studies, it was observed that PLEXOS may repeatedly choose the same generator(s) to dispatch down to manage an issue in a region shared by multiple generators.

There is often a post-processing step between the PLEXOS simulation and this report to ensure an appropriate allocation of constraints among generators sharing the bottlenecks. This is done by creating constraint subgroups within an area or spanning multiple different areas. The subgroups are selected based on an assessment of the raw PLEXOS results and based on TSO experience of dispatch down on the real system. The subgroups are chosen to group those generators into a constraint group that are expected to experience similar constraint levels. The subgroups are selected on the basis that they share a common transmission bottleneck, or they are electrically close to a congested area within the network.

In Area A, there are 2.5 GW of wind installed. During high wind scenario, a major portion of the power flowing through Area A flows into the Srananagh 220 kV station in Area B. This is additional to the power flow from the Area B circuits. The lines overloading in these areas cause generators to be dispatched down in Area A, north of B and the Flagford Srananagh corridor depending on the contingency in the area. During the high-RES scenarios, the power from each of these areas tends to flow onto the 220 kV circuits, and then towards the load centres in Dublin.

Additionally, any loss of the 220 kV circuits will put additional stress on the supporting 110 kV circuits, causing dispatch down of RES generators in the area. The 110 kV parallel paths are critical transmission infrastructure in these areas during times of high wind. Any loss of these 110 kV parallel lines results in additional dispatch down.

The generation from north of Area B is also pooled into the Srananagh and Flagford stations. Hence the bottleneck around Flagford and Srananagh is effectively shared between the generators in Area A and in north of Area B.

It was observed that the PLEXOS internal logic was constantly choosing the same set of generators to dispatch down with respect to multiple contingencies in the area, thus identifying a need to share the constraints.

The contingencies and overloaded lines associated with the area are included in Appendix C of the Assumptions and Methodology report.

Analysis of Area A identified a constraint subgroup for solar and wind generation to include Area A and the north of Area B, which is a path following the general power flow. The Gortawee node is included in the G North subgroup. The subgroup nodes are given in Table 1-4. However, in this report, the constraints are shared on a pro-rata basis amongst the non-priority generators in the subgroup ahead of priority generators. The individual node level dispatch down is given in Section 2.

This subgroup arrangement represents a significant difference from the ECP-2.2 constraint forecast study where the whole of Area A, B North, C North and G North all formed the one subgroup.

Subgroup	Nodes
A, B North	Ardnagappary
	Binbane
	Cathaleen's Fall
	Corderry
	Croaghonagh
	Garvagh
	Golagh
	Lenalea
	Letterkenny
	Meentycat
	Mulreavy
	Sorne Hill
	Tievebrack
Trillick	
G North	Gortawee

*Table 1-4 Area A generators nodes and their subgroups*



Figure 1-2 Subgroups A & B North and G North (subgroups outlined by blue dashed line)



The solar non-priority data is given in the following table.

Area A (A, B North)	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		18	37	55		
Installed Capacity (MW)	2028		18	37	55	55	
Installed Capacity (MW)	2030				55	55	55
Available Energy (GWh)	2026		19	39	58		
Available Energy (GWh)	2028		19	39	58	58	
Available Energy (GWh)	2030				58	58	58
Generation (GWh)	2026		17	32	46		
Generation (GWh)	2028		17	32	46	44	
Generation (GWh)	2030				53	52	50
Surplus (%)	2026		2%	5%	9%		
Surplus (%)	2028		<1%	2%	5%	11%	
Surplus (%)	2030				2%	6%	10%
Curtailement (%)	2026		1%	2%	4%		
Curtailement (%)	2028		1%	1%	2%	3%	
Curtailement (%)	2030				1%	1%	1%
Constraint (%)	2026		10%	10%	9%		
Constraint (%)	2028		12%	14%	14%	9%	
Constraint (%)	2030				6%	4%	3%
Total Dispatch Down (%)	2026		14%	17%	21%		
Total Dispatch Down (%)	2028		13%	17%	20%	23%	
Total Dispatch Down (%)	2030				9%	11%	14%

Table 1-5 Surplus, Curtailment and Constraint for Solar Non-Priority in Area A (A, B North)

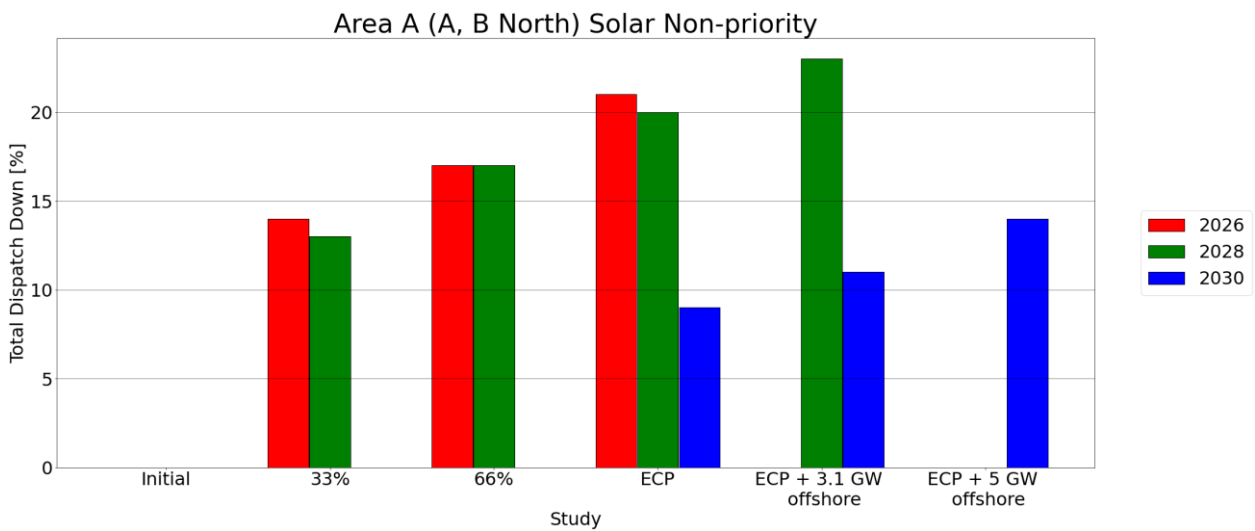


Figure 1-3 Results Solar Non-Priority Area A (A, B North)

The wind non-priority data is given in the following table.

Area A (A, B North)	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	250	326	402	478		
Installed Capacity (MW)	2028	250	326	402	478	478	
Installed Capacity (MW)	2030				478	478	478
Available Energy (GWh)	2026	723	943	1163	1383		
Available Energy (GWh)	2028	727	948	1169	1390	1390	
Available Energy (GWh)	2030				1383	1383	1383
Generation (GWh)	2026	326	462	557	623		
Generation (GWh)	2028	319	467	589	664	628	
Generation (GWh)	2030				1005	995	922
Surplus (%)	2026	2%	5%	9%	13%		
Surplus (%)	2028	<1%	1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026	2%	3%	4%	5%		
Curtailement (%)	2028	<1%	1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026	51%	43%	40%	37%		
Constraint (%)	2028	56%	49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026	55%	51%	52%	55%		
Total Dispatch Down (%)	2028	56%	51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 1-6 Surplus, Curtailment and Constraint for Wind Non-Priority in Area A (A, B North)

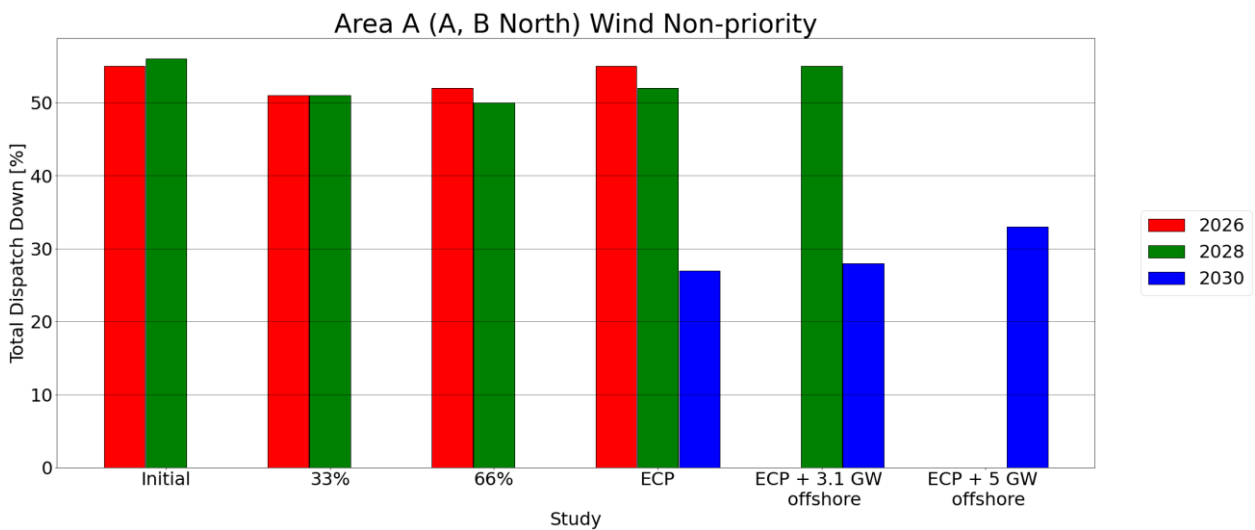


Figure 1-4 Results Wind Non-Priority in Area A (A, B North)

The wind priority data is given in the following table.

Area A (A, B North)	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	398	398	398	398		
Installed Capacity (MW)	2028	398	398	398	398	398	
Installed Capacity (MW)	2030				398	398	398
Available Energy (GWh)	2026	1151	1151	1151	1151		
Available Energy (GWh)	2028	1158	1158	1158	1158	1158	
Available Energy (GWh)	2030				1151	1151	1151
Generation (GWh)	2026	1126	1109	1090	1074		
Generation (GWh)	2028	1155	1145	1133	1118	1076	
Generation (GWh)	2030				1145	1090	1113
Surplus (%)	2026	<1%	<1%	<1%	<1%		
Surplus (%)	2028	<1%	<1%	<1%	<1%	<1%	
Surplus (%)	2030				<1%	<1%	<1%
Curtailement (%)	2026	2%	4%	5%	7%		
Curtailement (%)	2028	<1%	1%	2%	3%	7%	
Curtailement (%)	2030				1%	5%	3%
Constraint (%)	2026	<1%	<1%	<1%	<1%		
Constraint (%)	2028	<1%	<1%	<1%	<1%	<1%	
Constraint (%)	2030				<1%	<1%	<1%
Total Dispatch Down (%)	2026	2%	4%	5%	7%		
Total Dispatch Down (%)	2028	<1%	1%	2%	3%	7%	
Total Dispatch Down (%)	2030				1%	5%	3%

Table 1-7 Surplus, Curtailment and Constraint for Wind Priority in Area A (A, B North)

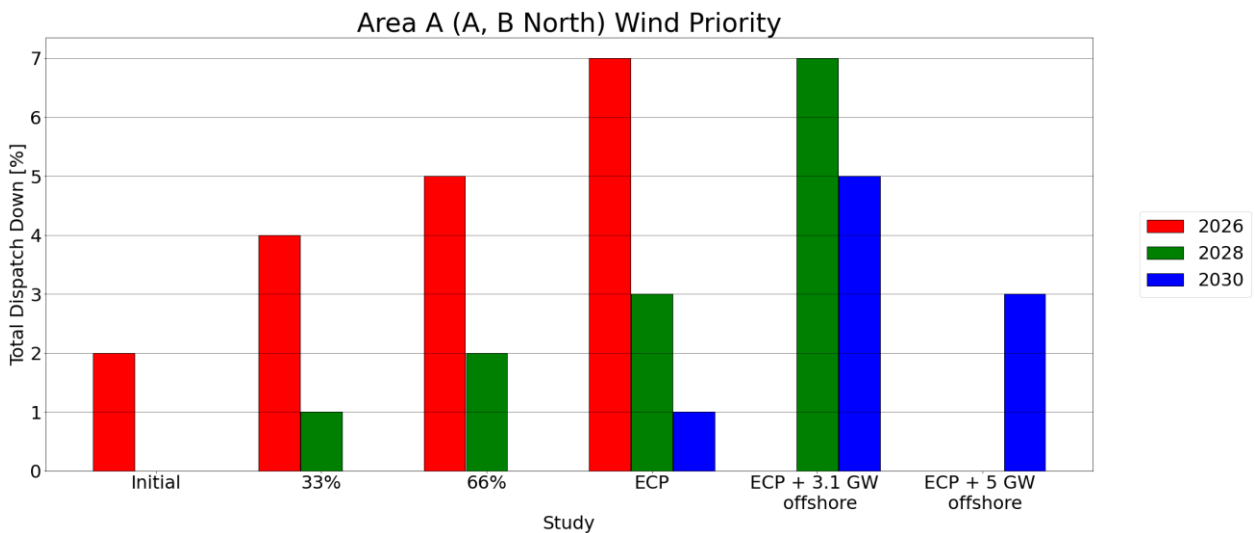


Figure 1-5 Results Wind Priority Area A (A, B North)

The wind non-priority data is given in the following table.

Area A (G North)	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	3	5	7	8		
Installed Capacity (MW)	2028	3	5	7	8	8	
Installed Capacity (MW)	2030				8	8	8
Available Energy (GWh)	2026	10	15	19	24		
Available Energy (GWh)	2028	10	15	19	24	24	
Available Energy (GWh)	2030				24	24	24
Generation (GWh)	2026	9	13	16	18		
Generation (GWh)	2028	9	14	18	22	18	
Generation (GWh)	2030				21	21	19
Surplus (%)	2026	2%	5%	9%	13%		
Surplus (%)	2028	<1%	1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026	2%	3%	4%	5%		
Curtailement (%)	2028	<1%	1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026	5%	5%	7%	8%		
Constraint (%)	2028	5%	3%	3%	3%	1%	
Constraint (%)	2030				9%	3%	1%
Total Dispatch Down (%)	2026	9%	13%	19%	26%		
Total Dispatch Down (%)	2028	5%	5%	7%	10%	26%	
Total Dispatch Down (%)	2030				11%	14%	23%

Table 1-8 - Surplus, Curtailment and Constraint for Wind Non-priority in Area A (G North)

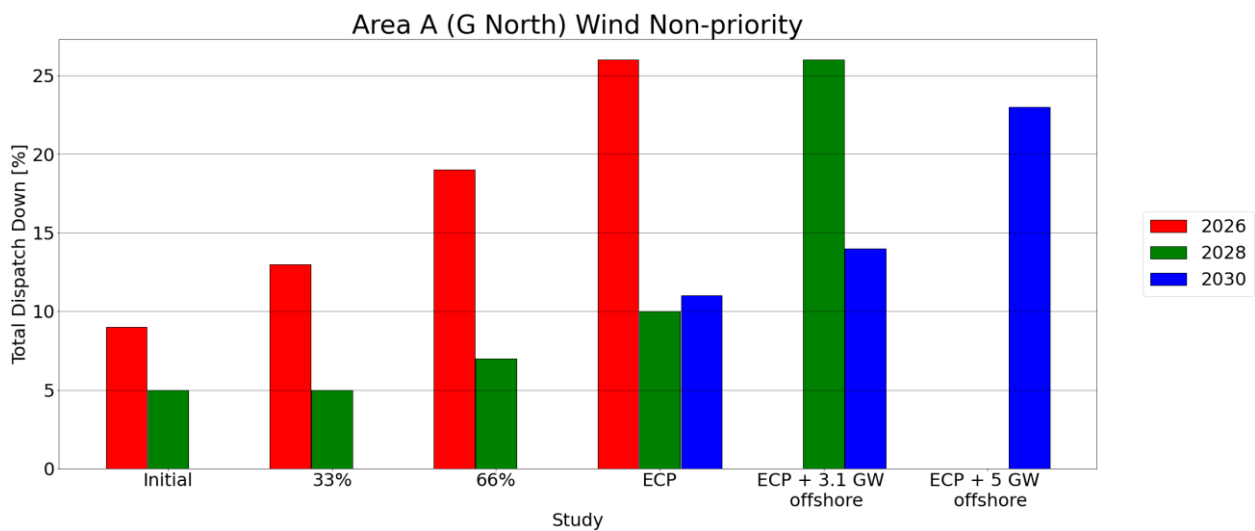


Figure 1-6 - Results Wind Non-priority Area A (G North)

## 1.7 Conclusion - Results for Area A

This section provides an overview of the estimated surplus, curtailment and constraint values for Area A for a range of scenarios based on a number of installed generation assumptions (generation scenarios) and the study year (network and demand assumptions). The results highly depend on the study assumptions, which are described in the Assumptions and Methodology report.

Section 2 contains the detailed results consisting of available energy (GWh) and percentage surplus, curtailment, and constraint values for each node for both solar and wind in Area A.

## 2 Area A Node Results

This section presents the results of the modelling analysis for Area A. The levels of surplus, curtailment and constraint that controllable solar and wind generators in Area A might expect to experience are reported on a nodal basis for the study scenarios. Details on the generation capacity at each node are also provided along with the assumed amount of controllable generation.

This section also presents a list of the generators at each node that are included in the study.



Figure 2-0 Area A

## 2.1 Ardnagappary

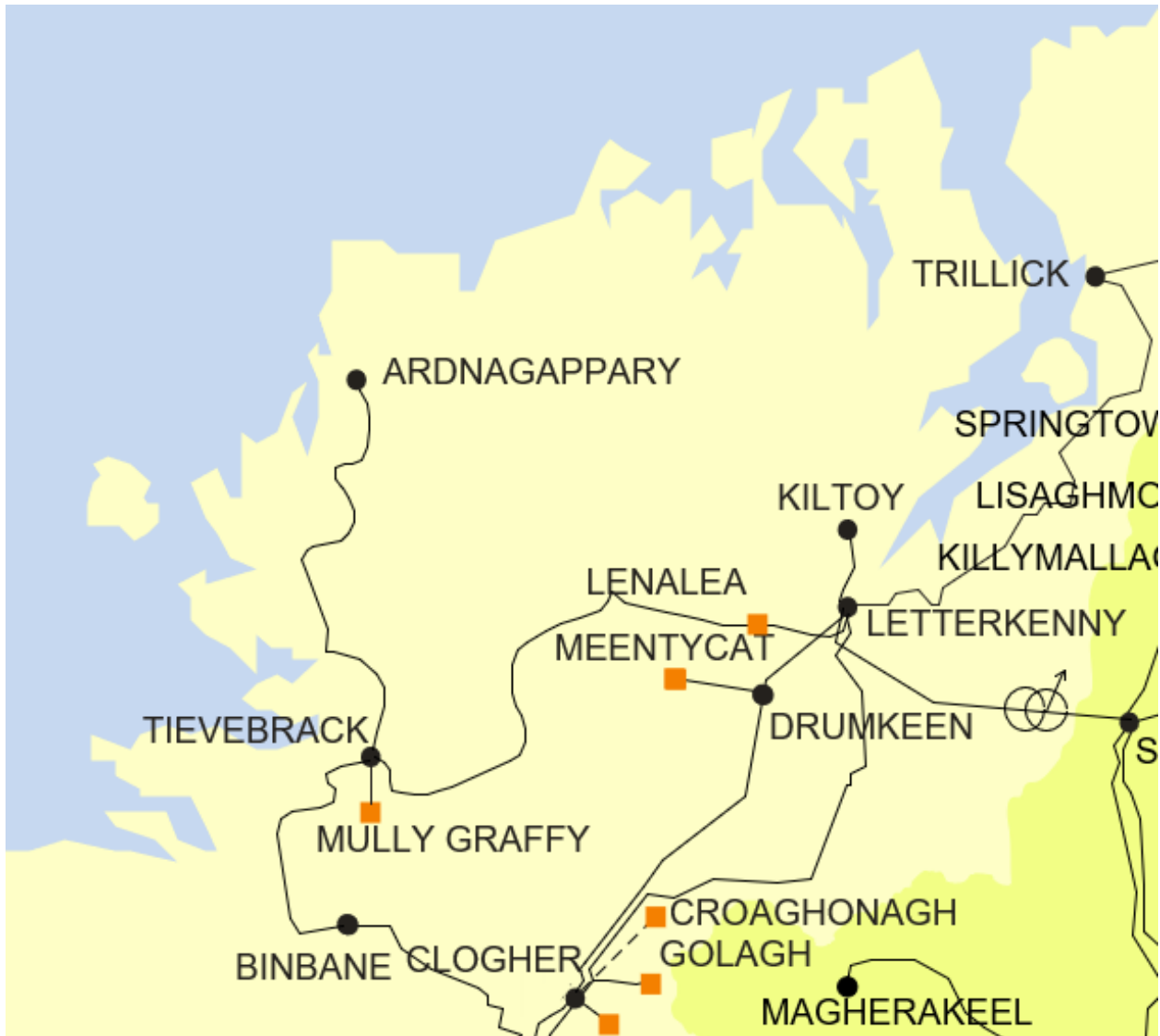


Figure 2-1 - Location of node Ardnagappary

Generator	SO	Capacity	Type	Status
<b>Cronalaght (1)</b>	DSO	4.98	wind uncontrolled	connected
<b>Cronalaght (2)</b>	DSO	17.96	wind non-priority	connected

Table 2-1 - Generation Included in Study for Node Ardnagappary

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	18	18	18	18		
Installed Capacity (MW)	2028	18	18	18	18	18	
Installed Capacity (MW)	2030				18	18	18
Available Energy (GWh)	2026	52	52	52	52		
Available Energy (GWh)	2028	52	52	52	52	52	
Available Energy (GWh)	2030				52	52	52
Generation (GWh)	2026	23	25	25	23		
Generation (GWh)	2028	23	26	26	25	24	
Generation (GWh)	2030				38	37	35
Surplus (%)	2026	2%	5%	9%	13%		
Surplus (%)	2028	<1%	1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026	2%	3%	4%	5%		
Curtailement (%)	2028	<1%	1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026	51%	43%	40%	37%		
Constraint (%)	2028	56%	49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026	55%	51%	52%	55%		
Total Dispatch Down (%)	2028	56%	51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-2 - Surplus, Curtailement and Constraint for Wind non-priority in Area A

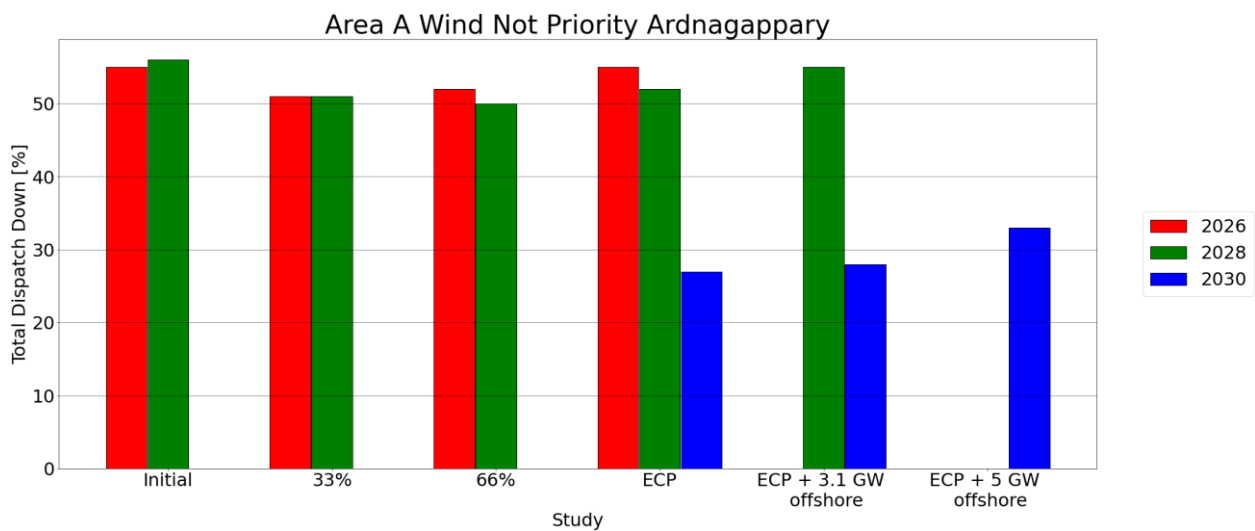


Figure 2-2 - Total Dispatch Down for Wind non-priority for Node Ardnagappary



## 2.2 Binbane

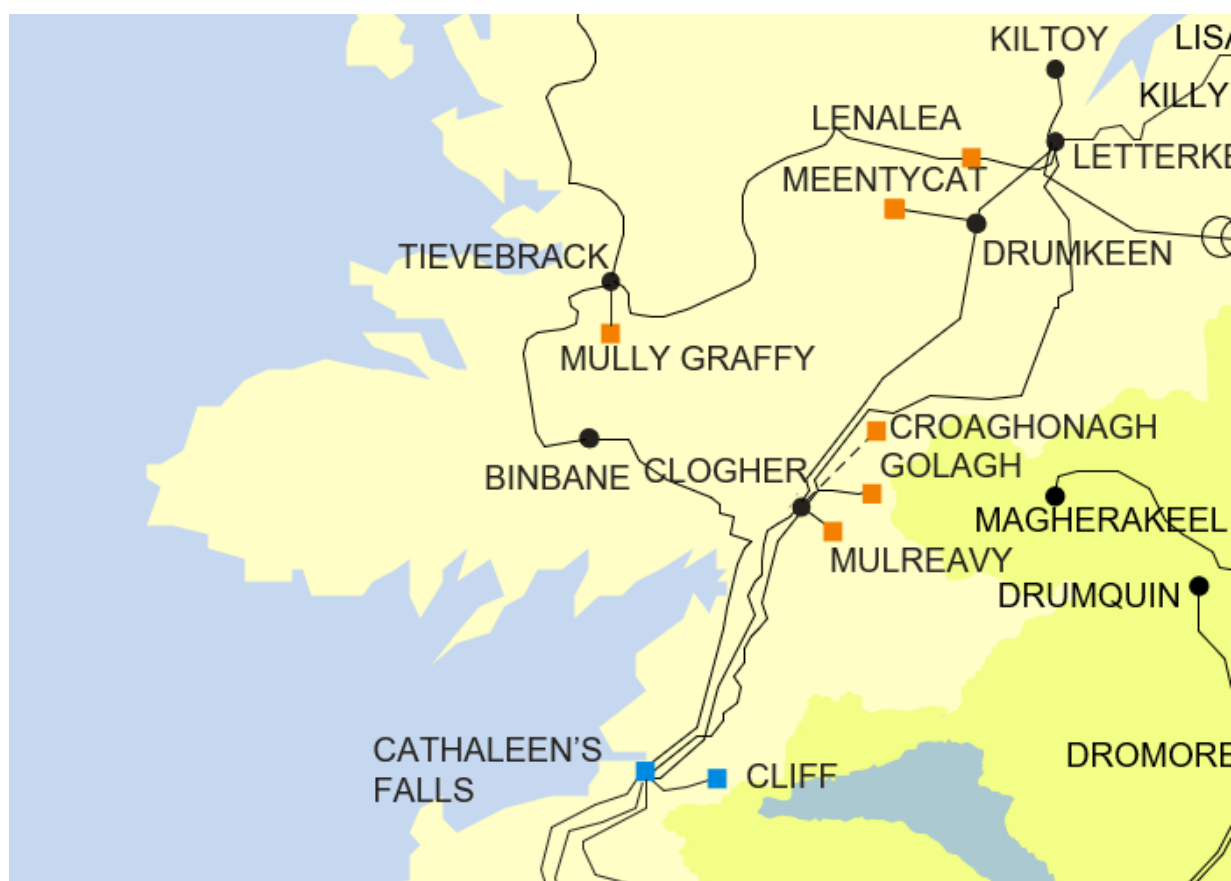


Figure 2-3 - Location of node Binbane

Generator	SO	Capacity	Type	Status
Bradán Wind Farm (Killybegs Community Wind Turbine)	DSO	4.2	wind non-priority	due to connect
Clogheravaddy Wind Farm (Phase 1)	DSO	9.2	wind non-priority	connected
Clogheravaddy Wind Farm (Phase 2)	DSO	10.8	wind non-priority	connected
Clogheravaddy Wind Farm (Phase 3)	DSO	3.6	wind non-priority	due to connect
Corkermore (1)	DSO	9.99	wind priority	connected
Corkermore (2)	DSO	9.4	wind non-priority	due to connect
Killin Hill (1)	DSO	6.0	wind priority	connected
Killybegs (1)	DSO	2.55	wind uncontrolled	connected
Loughderryduff (1)	DSO	7.65	wind priority	connected
Meenachullalan (1)	DSO	11.9	wind priority	connected
Meenachullalan (2)	DSO	1.9	wind uncontrolled	due to connect
Shannagh (1) previously Kilcar	DSO	2.55	wind uncontrolled	connected
Kilcar Community Wind Turbine	DSO	3.0	wind non-priority	due to connect
Altcor Wind Farm	DSO	9.0	wind non-priority	due to connect
Coguish Wind Turbine	DSO	2.0	wind non-priority	due to connect

Table 2-3 - Generation Included in Study for Node Binbane

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	24	33	42	51		
Installed Capacity (MW)	2028	24	33	42	51	51	
Installed Capacity (MW)	2030				51	51	51
Available Energy (GWh)	2026	68	95	121	148		
Available Energy (GWh)	2028	69	95	122	149	149	
Available Energy (GWh)	2030				148	148	148
Generation (GWh)	2026	31	47	58	67		
Generation (GWh)	2028	30	47	62	71	67	
Generation (GWh)	2030				108	107	99
Surplus (%)	2026	2%	5%	9%	13%		
Surplus (%)	2028	<1%	1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026	2%	3%	4%	5%		
Curtailement (%)	2028	<1%	1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026	51%	43%	40%	37%		
Constraint (%)	2028	56%	49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026	55%	51%	52%	55%		
Total Dispatch Down (%)	2028	56%	51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-4 - Surplus, Curtailement and Constraint for Wind non-priority in Area A

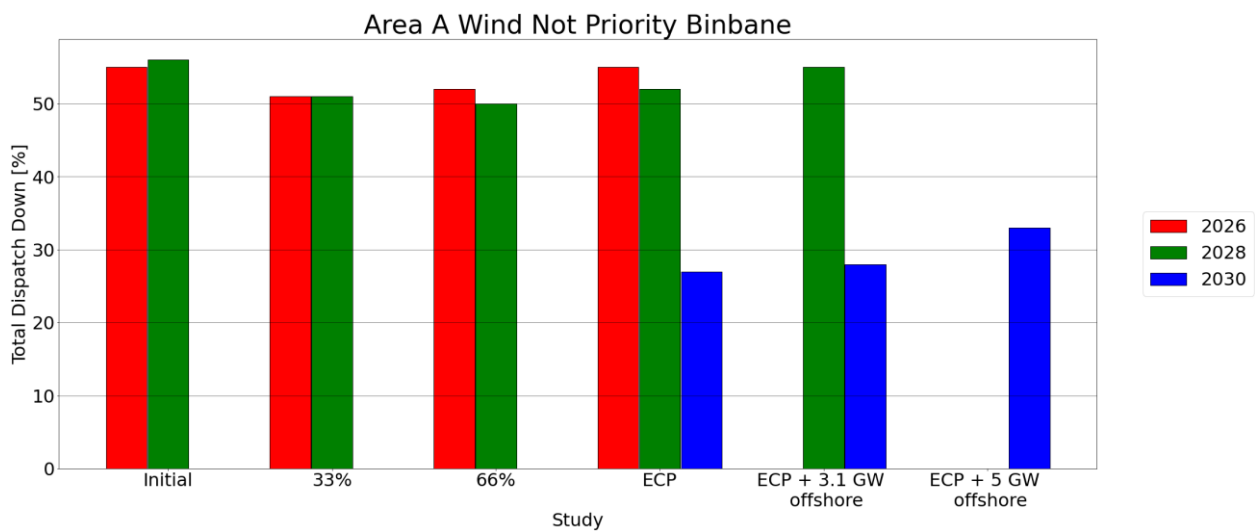


Figure 2-4 - Total Dispatch Down for Wind non-priority for Node Binbane

The wind priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	36	36	36	36		
Installed Capacity (MW)	2028	36	36	36	36	36	
Installed Capacity (MW)	2030				36	36	36
Available Energy (GWh)	2026	103	103	103	103		
Available Energy (GWh)	2028	103	103	103	103	103	
Available Energy (GWh)	2030				103	103	103
Generation (GWh)	2026	101	99	97	96		
Generation (GWh)	2028	103	102	101	100	96	
Generation (GWh)	2030				102	97	99
Surplus (%)	2026	<1%	<1%	<1%	<1%		
Surplus (%)	2028	<1%	<1%	<1%	<1%	<1%	
Surplus (%)	2030				<1%	<1%	<1%
Curtailement (%)	2026	2%	4%	5%	7%		
Curtailement (%)	2028	<1%	1%	2%	3%	7%	
Curtailement (%)	2030				1%	5%	3%
Constraint (%)	2026	<1%	<1%	<1%	<1%		
Constraint (%)	2028	<1%	<1%	<1%	<1%	<1%	
Constraint (%)	2030				<1%	<1%	<1%
Total Dispatch Down (%)	2026	2%	4%	5%	7%		
Total Dispatch Down (%)	2028	<1%	1%	2%	3%	7%	
Total Dispatch Down (%)	2030				1%	5%	3%

Table 2-5 - Surplus, Curtailement and Constraint for Wind priority in Area A

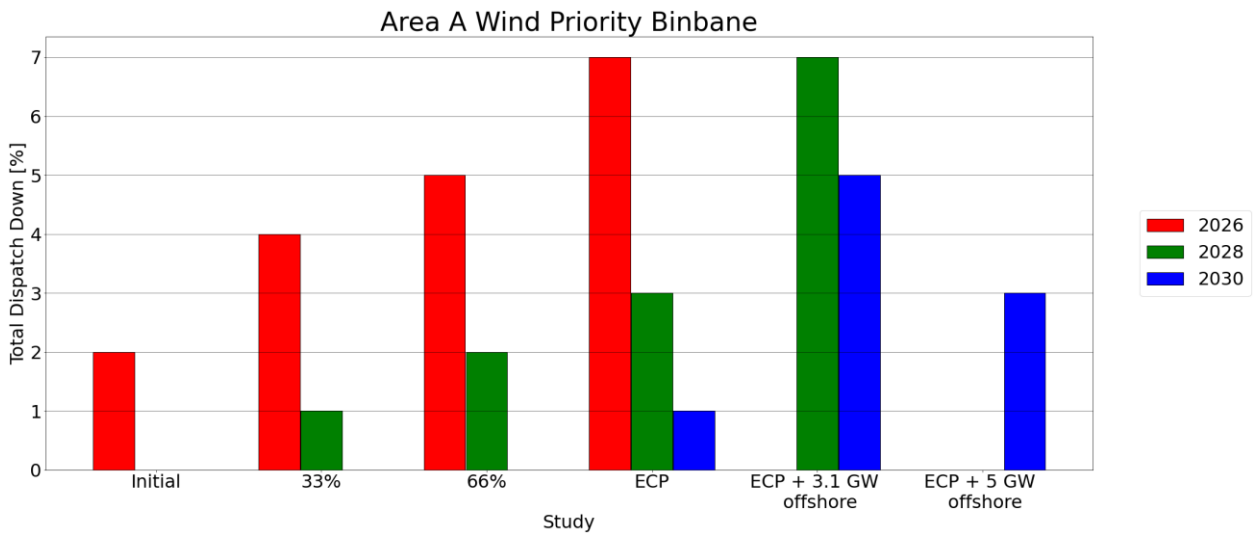


Figure 2-5 - Total Dispatch Down for Wind priority for Node Binbane

## 2.3 Cathaleen's Fall



Figure 2-6 - Location of node Cathaleen's Fall

Generator	SO	Capacity	Type	Status
<b>Anarget (1)</b>	DSO	1.98	wind uncontrolled	connected
<b>Meenadreen (1)</b>	DSO	3.4	wind uncontrolled	connected
<b>Spaddan (1)</b>	DSO	17.5	wind priority	connected

Table 2-6 - Generation Included in Study for Node Cathaleen's Fall

The wind priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	18	18	18	18		
Installed Capacity (MW)	2028	18	18	18	18	18	
Installed Capacity (MW)	2030				18	18	18
Available Energy (GWh)	2026	51	51	51	51		
Available Energy (GWh)	2028	51	51	51	51	51	
Available Energy (GWh)	2030				51	51	51
Generation (GWh)	2026	50	49	48	47		
Generation (GWh)	2028	51	50	50	49	47	
Generation (GWh)	2030				50	48	49
Surplus (%)	2026	<1%	<1%	<1%	<1%		
Surplus (%)	2028	<1%	<1%	<1%	<1%	<1%	
Surplus (%)	2030				<1%	<1%	<1%
Curtailed (%)	2026	2%	4%	5%	7%		
Curtailed (%)	2028	<1%	1%	2%	3%	7%	
Curtailed (%)	2030				1%	5%	3%
Constraint (%)	2026	<1%	<1%	<1%	<1%		
Constraint (%)	2028	<1%	<1%	<1%	<1%	<1%	
Constraint (%)	2030				<1%	<1%	<1%
Total Dispatch Down (%)	2026	2%	4%	5%	7%		
Total Dispatch Down (%)	2028	<1%	1%	2%	3%	7%	
Total Dispatch Down (%)	2030				1%	5%	3%

Table 2-7 - Surplus, Curtailment and Constraint for Wind priority in Area A

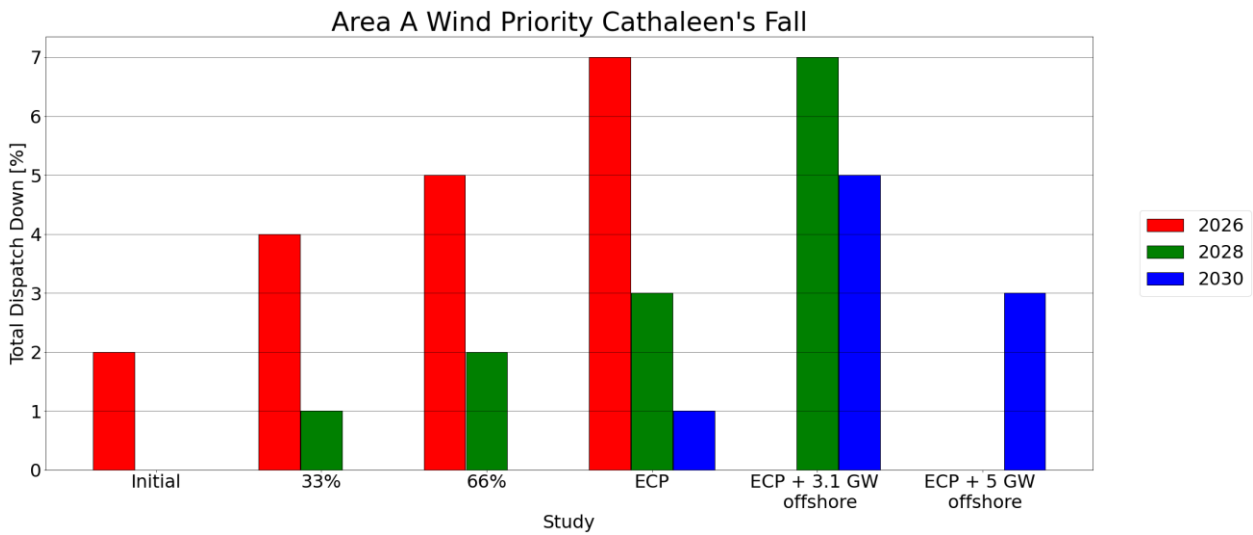


Figure 2-7 - Total Dispatch Down for Wind priority for Node Cathaleen's Fall

## 2.4 Corderry

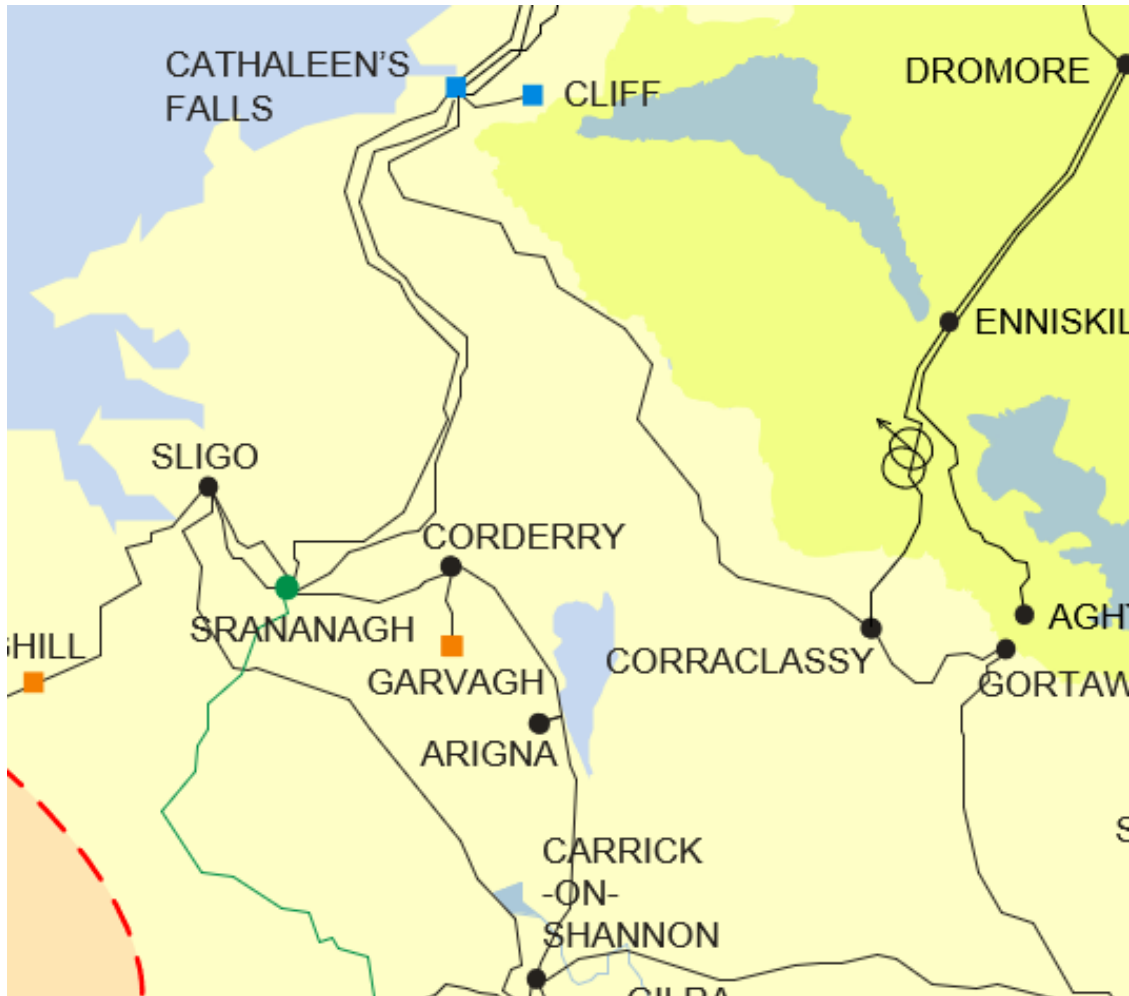


Figure 2-8 - Location of node Corderry

Generator	SO	Capacity	Type	Status
Altagowlan (1)	DSO	7.65	wind priority	connected
Black Banks (1)	DSO	3.4	wind uncontrolled	connected
Black Banks (2)	DSO	6.8	wind priority	connected
Carrane Hill (1)	DSO	3.4	wind uncontrolled	connected
Geevagh (1)	DSO	4.95	wind uncontrolled	connected
Moneenatieve (1)	DSO	3.96	wind uncontrolled	connected
Tullynamoyle (1)	DSO	9.0	wind priority	connected
Tullynamoyle 2 Wind Farm	DSO	10.225	wind priority	connected
Tullynamoyle 3 (Carrane Hill merged capacity)	DSO	1.598	wind uncontrolled	connected
Tullynamoyle Wind Farm 3 (Formerly Geevagh 2)	DSO	11.98	wind priority	connected
Tullynamoyle Wind Farm 5	DSO	16.35	wind non-priority	due to connect
Glen Solar	TSO	40.0	solar non-priority	due to connect

Table 2-8 - Generation Included in Study for Node Corderry

The solar non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		13	27	40		
Installed Capacity (MW)	2028		13	27	40	40	
Installed Capacity (MW)	2030				40	40	40
Available Energy (GWh)	2026		14	28	42		
Available Energy (GWh)	2028		14	28	42	42	
Available Energy (GWh)	2030				42	42	42
Generation (GWh)	2026		12	23	33		
Generation (GWh)	2028		12	23	34	32	
Generation (GWh)	2030				38	38	36
Surplus (%)	2026		2%	5%	9%		
Surplus (%)	2028		<1%	2%	5%	11%	
Surplus (%)	2030				2%	6%	10%
Curtailement (%)	2026		1%	2%	4%		
Curtailement (%)	2028		1%	1%	2%	3%	
Curtailement (%)	2030				1%	1%	1%
Constraint (%)	2026		10%	10%	9%		
Constraint (%)	2028		12%	14%	14%	9%	
Constraint (%)	2030				6%	4%	3%
Total Dispatch Down (%)	2026		14%	17%	21%		
Total Dispatch Down (%)	2028		13%	17%	20%	23%	
Total Dispatch Down (%)	2030				9%	11%	14%

Table 2-9 - Surplus, Curtailement and Constraint for Solar non-priority in Area A

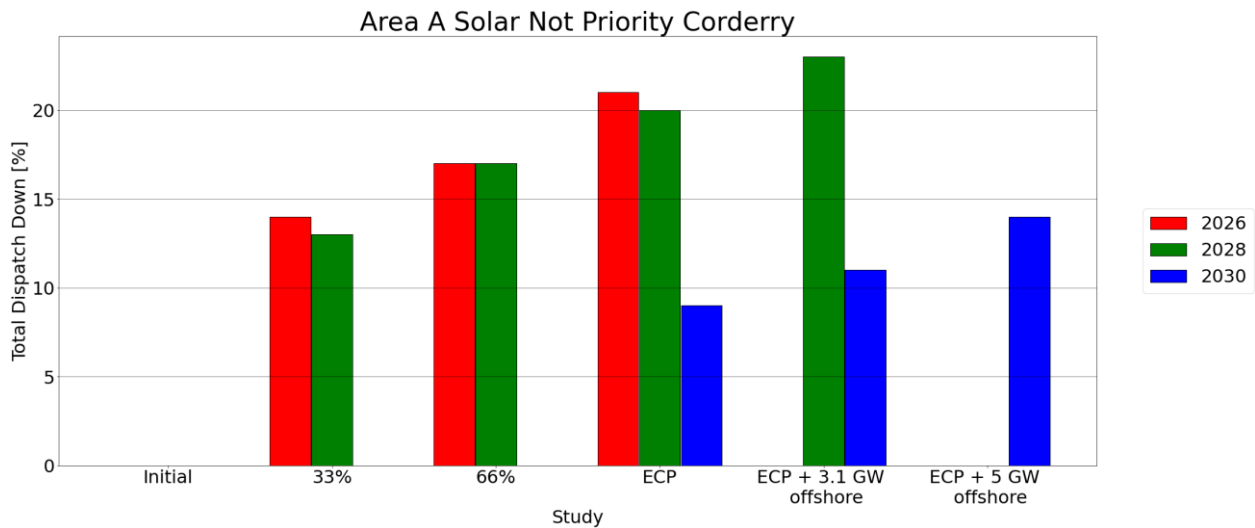


Figure 2-9 - Total Dispatch Down for Solar non-priority for Node Corderry

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	16	16	16	16		
Installed Capacity (MW)	2028	16	16	16	16	16	
Installed Capacity (MW)	2030				16	16	16
Available Energy (GWh)	2026	47	47	47	47		
Available Energy (GWh)	2028	48	48	48	48	48	
Available Energy (GWh)	2030				47	47	47
Generation (GWh)	2026	21	23	23	21		
Generation (GWh)	2028	21	23	24	23	21	
Generation (GWh)	2030				34	34	32
Surplus (%)	2026	2%	5%	9%	13%		
Surplus (%)	2028	<1%	1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026	2%	3%	4%	5%		
Curtailement (%)	2028	<1%	1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026	51%	43%	40%	37%		
Constraint (%)	2028	56%	49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026	55%	51%	52%	55%		
Total Dispatch Down (%)	2028	56%	51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-10 - Surplus, Curtailment and Constraint for Wind non-priority in Area A

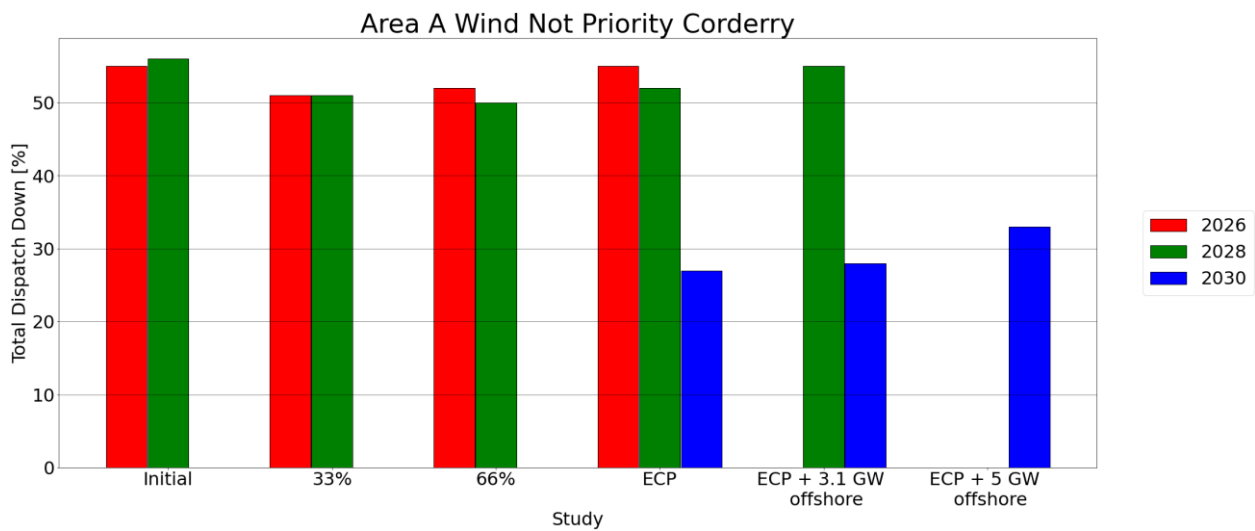


Figure 2-10 - Total Dispatch Down for Wind non-priority for Node Corderry



The wind priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	46	46	46	46		
Installed Capacity (MW)	2028	46	46	46	46	46	
Installed Capacity (MW)	2030				46	46	46
Available Energy (GWh)	2026	132	132	132	132		
Available Energy (GWh)	2028	133	133	133	133	133	
Available Energy (GWh)	2030				132	132	132
Generation (GWh)	2026	129	127	125	123		
Generation (GWh)	2028	132	131	130	128	123	
Generation (GWh)	2030				131	125	128
Surplus (%)	2026	<1%	<1%	<1%	<1%		
Surplus (%)	2028	<1%	<1%	<1%	<1%	<1%	
Surplus (%)	2030				<1%	<1%	<1%
Curtailement (%)	2026	2%	4%	5%	7%		
Curtailement (%)	2028	<1%	1%	2%	3%	7%	
Curtailement (%)	2030				1%	5%	3%
Constraint (%)	2026	<1%	<1%	<1%	<1%		
Constraint (%)	2028	<1%	<1%	<1%	<1%	<1%	
Constraint (%)	2030				<1%	<1%	<1%
Total Dispatch Down (%)	2026	2%	4%	5%	7%		
Total Dispatch Down (%)	2028	<1%	1%	2%	3%	7%	
Total Dispatch Down (%)	2030				1%	5%	3%

Table 2-11 - Surplus, Curtailement and Constraint for Wind priority in Area A

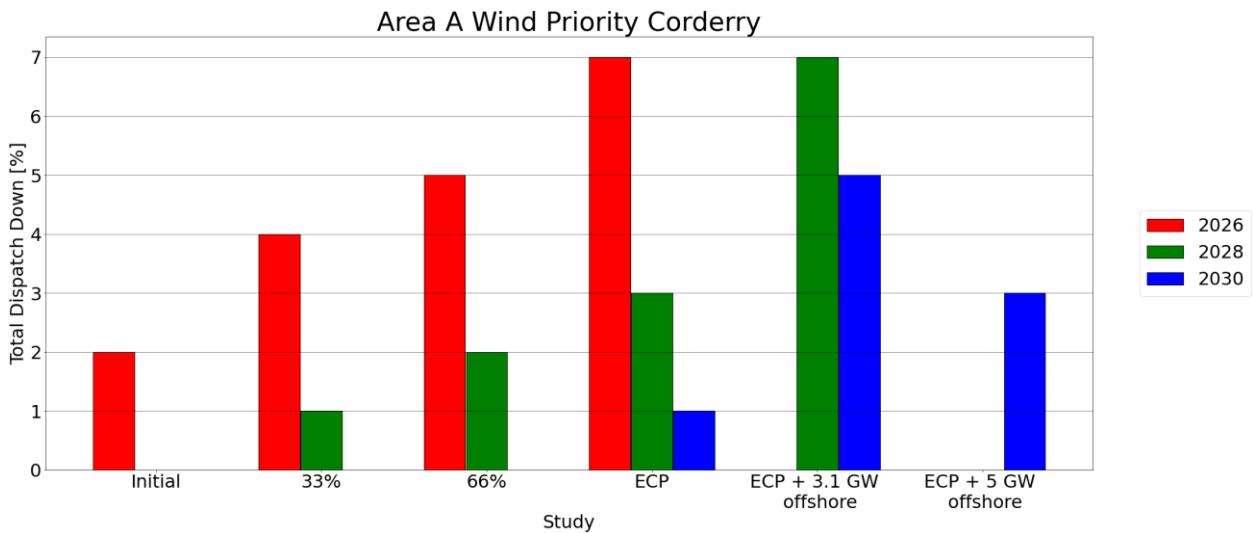


Figure 2-11 - Total Dispatch Down for Wind priority for Node Corderry

## 2.5 Croaghonagh



Figure 2-12 - Location of node Croaghonagh

Generator	SO	Capacity	Type	Status
<b>Croaghonagh 1 Windfarm (Merged with Carrickalangan)</b>	TSO	138.1	wind non- priority	due to connect

Table 2-12 - Generation Included in Study for Node Croaghonagh

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	138	138	138	138		
Installed Capacity (MW)	2028	138	138	138	138	138	
Installed Capacity (MW)	2030				138	138	138
Available Energy (GWh)	2026	399	399	399	399		
Available Energy (GWh)	2028	402	402	402	402	402	
Available Energy (GWh)	2030				399	399	399
Generation (GWh)	2026	180	196	192	180		
Generation (GWh)	2028	176	198	202	192	181	
Generation (GWh)	2030				290	287	266
Surplus (%)	2026	2%	5%	9%	13%		
Surplus (%)	2028	<1%	1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026	2%	3%	4%	5%		
Curtailement (%)	2028	<1%	1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026	51%	43%	40%	37%		
Constraint (%)	2028	56%	49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026	55%	51%	52%	55%		
Total Dispatch Down (%)	2028	56%	51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-13 - Surplus, Curtailment and Constraint for Wind non-priority in Area A

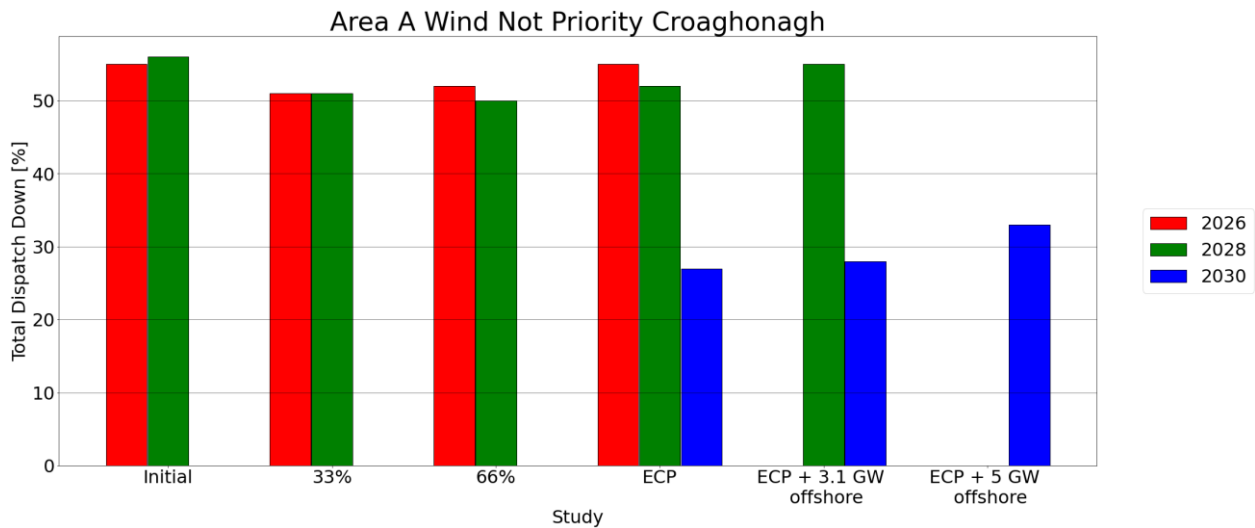


Figure 2-13 - Total Dispatch Down for Wind non-priority for Node Croaghonagh

## 2.6 Garvagh

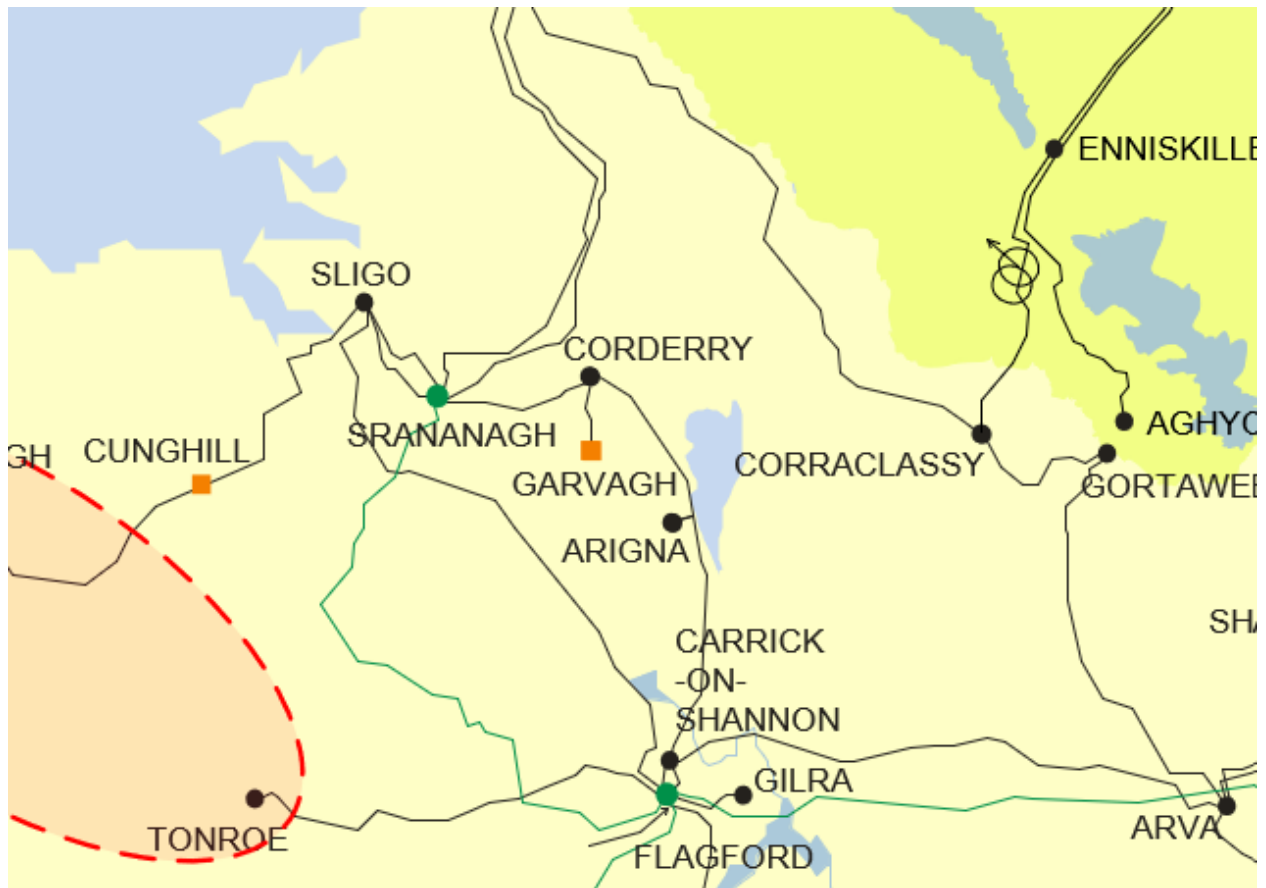


Figure 2-14 - Location of node Garvagh

Generator	SO	Capacity	Type	Status
Derrysallagh Wind Farm (Formerly Kilronan 2)	DSO	34.0	wind non-priority	connected
Garvagh - Glebe (1a)	TSO	26.0	wind priority	connected
Garvagh - Tullynahaw (1c)	TSO	22.0	wind priority	connected

Table 2-14 - Generation Included in Study for Node Garvagh

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	34	34	34	34		
Installed Capacity (MW)	2028	34	34	34	34	34	
Installed Capacity (MW)	2030				34	34	34
Available Energy (GWh)	2026	98	98	98	98		
Available Energy (GWh)	2028	99	99	99	99	99	
Available Energy (GWh)	2030				98	98	98
Generation (GWh)	2026	44	48	47	44		
Generation (GWh)	2028	43	49	50	47	45	
Generation (GWh)	2030				71	71	66
Surplus (%)	2026	2%	5%	9%	13%		
Surplus (%)	2028	<1%	1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026	2%	3%	4%	5%		
Curtailement (%)	2028	<1%	1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026	51%	43%	40%	37%		
Constraint (%)	2028	56%	49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026	55%	51%	52%	55%		
Total Dispatch Down (%)	2028	56%	51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-15 - Surplus, Curtailment and Constraint for Wind non-priority in Area A

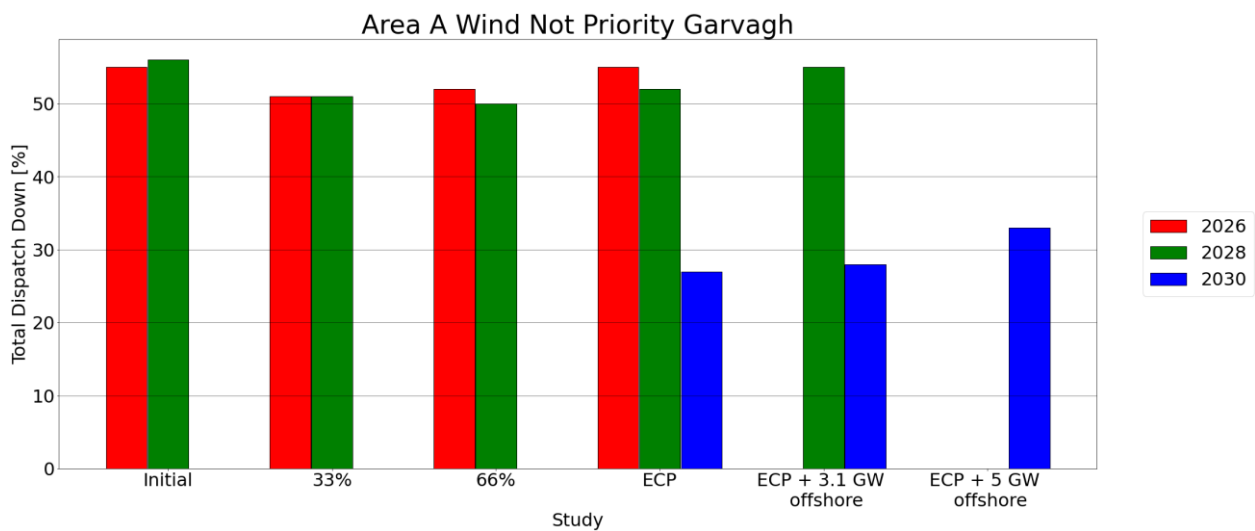


Figure 2-15 - Total Dispatch Down for Wind non-priority for Node Garvagh

The wind priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	48	48	48	48		
Installed Capacity (MW)	2028	48	48	48	48	48	
Installed Capacity (MW)	2030				48	48	48
Available Energy (GWh)	2026	139	139	139	139		
Available Energy (GWh)	2028	140	140	140	140	140	
Available Energy (GWh)	2030				139	139	139
Generation (GWh)	2026	136	134	131	130		
Generation (GWh)	2028	139	138	137	135	130	
Generation (GWh)	2030				138	131	134
Surplus (%)	2026	<1%	<1%	<1%	<1%		
Surplus (%)	2028	<1%	<1%	<1%	<1%	<1%	
Surplus (%)	2030				<1%	<1%	<1%
Curtailement (%)	2026	2%	4%	5%	7%		
Curtailement (%)	2028	<1%	1%	2%	3%	7%	
Curtailement (%)	2030				1%	5%	3%
Constraint (%)	2026	<1%	<1%	<1%	<1%		
Constraint (%)	2028	<1%	<1%	<1%	<1%	<1%	
Constraint (%)	2030				<1%	<1%	<1%
Total Dispatch Down (%)	2026	2%	4%	5%	7%		
Total Dispatch Down (%)	2028	<1%	1%	2%	3%	7%	
Total Dispatch Down (%)	2030				1%	5%	3%

Table 2-16 - Surplus, Curtailement and Constraint for Wind priority in Area A

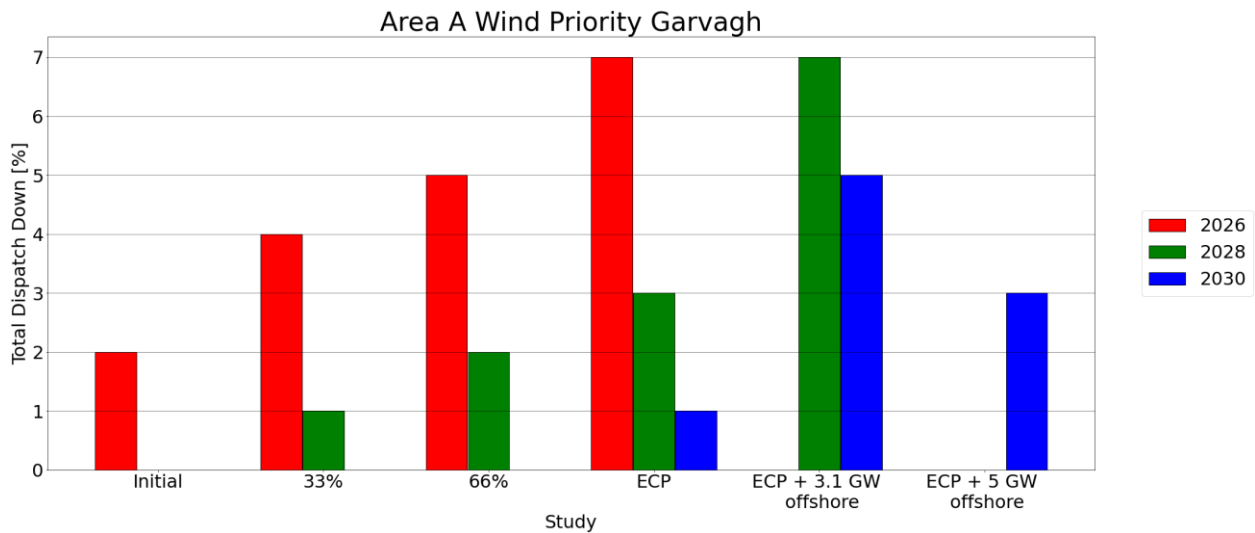


Figure 2-16 - Total Dispatch Down for Wind priority for Node Garvagh

## 2.7 Golagh

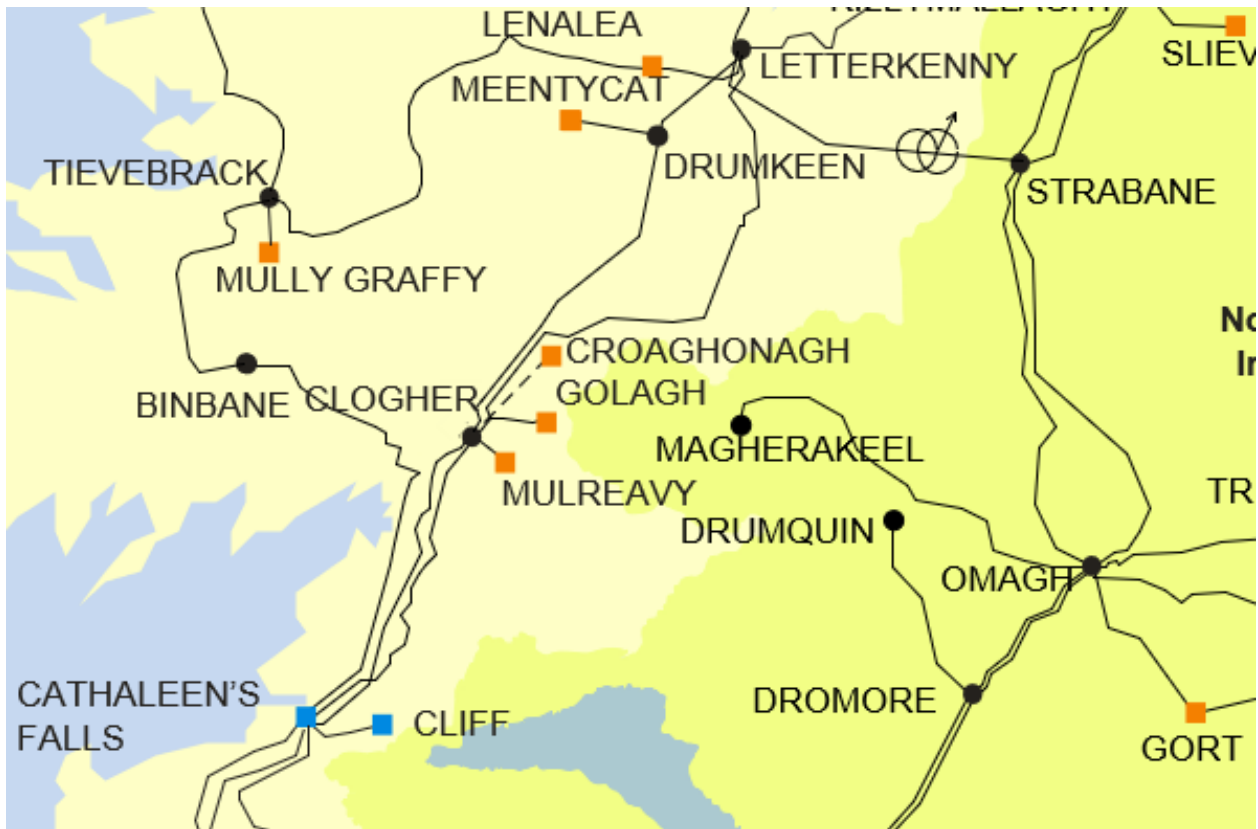


Figure 2-17 - Location of node Golagh

Generator	SO	Capacity	Type	Status
<b>Barnesmore Windfarm Repowering</b>	TSO	63.0	wind non-priority	due to connect
<b>Golagh (1)</b>	TSO	15.0	wind uncontrolled	connected

Table 2-17 - Generation Included in Study for Node Golagh

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		21	42	63		
Installed Capacity (MW)	2028		21	42	63	63	
Installed Capacity (MW)	2030				63	63	63
Available Energy (GWh)	2026		61	121	182		
Available Energy (GWh)	2028		61	122	183	183	
Available Energy (GWh)	2030				182	182	182
Generation (GWh)	2026		30	58	82		
Generation (GWh)	2028		30	62	88	83	
Generation (GWh)	2030				132	131	122
Surplus (%)	2026		5%	9%	13%		
Surplus (%)	2028		1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026		3%	4%	5%		
Curtailement (%)	2028		1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026		43%	40%	37%		
Constraint (%)	2028		49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026		51%	52%	55%		
Total Dispatch Down (%)	2028		51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-18 - Surplus, Curtailment and Constraint for Wind non-priority in Area A

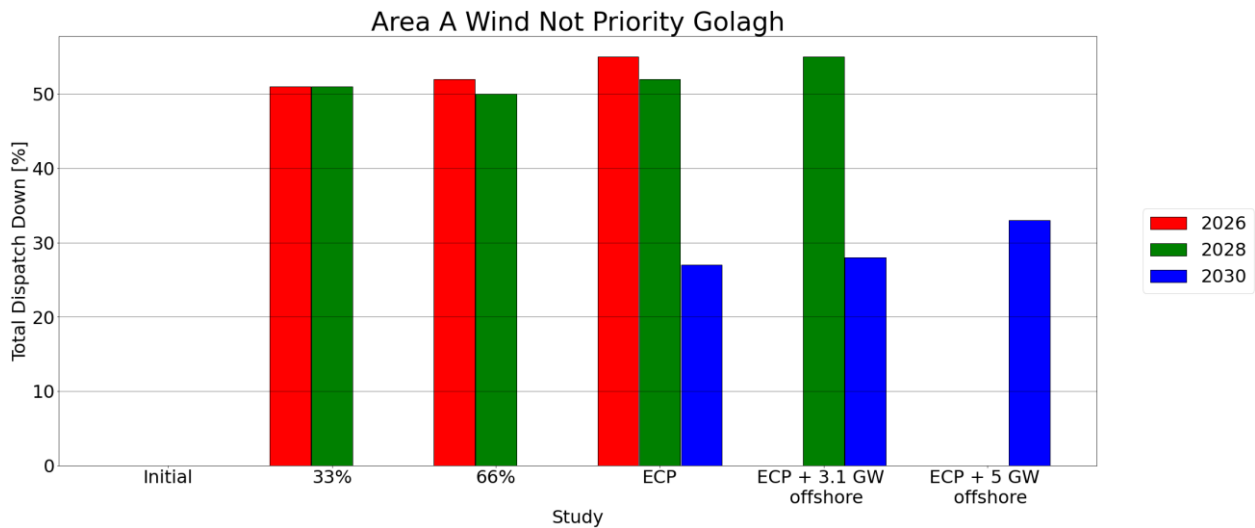


Figure 2-18 - Total Dispatch Down for Wind non-priority for Node Golagh



## 2.8 Gortawee



Figure 2-19 - Location of node Gortawee

Generator	SO	Capacity	Type	Status
Coreen (1)	DSO	3.0	wind uncontrolled	connected
Killegar Community Wind Turbine	DSO	4.99	wind non-priority	due to connect
Tullyhaw Community Wind Turbine	DSO	3.35	wind non-priority	due to connect

Table 2-19 - Generation Included in Study for Node Gortawee

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	3	5	7	8		
Installed Capacity (MW)	2028	3	5	7	8	8	
Installed Capacity (MW)	2030				8	8	8
Available Energy (GWh)	2026	10	15	19	24		
Available Energy (GWh)	2028	10	15	19	24	24	
Available Energy (GWh)	2030				24	24	24
Generation (GWh)	2026	9	13	16	18		
Generation (GWh)	2028	9	14	18	22	18	
Generation (GWh)	2030				21	21	19
Surplus (%)	2026	2%	5%	9%	13%		
Surplus (%)	2028	<1%	1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026	2%	3%	4%	5%		
Curtailement (%)	2028	<1%	1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026	5%	5%	7%	8%		
Constraint (%)	2028	5%	3%	3%	3%	1%	
Constraint (%)	2030				9%	3%	1%
Total Dispatch Down (%)	2026	9%	13%	19%	26%		
Total Dispatch Down (%)	2028	5%	5%	7%	10%	26%	
Total Dispatch Down (%)	2030				11%	14%	23%

Table 2-20 - Surplus, Curtailment and Constraint for Wind non-priority in Area A

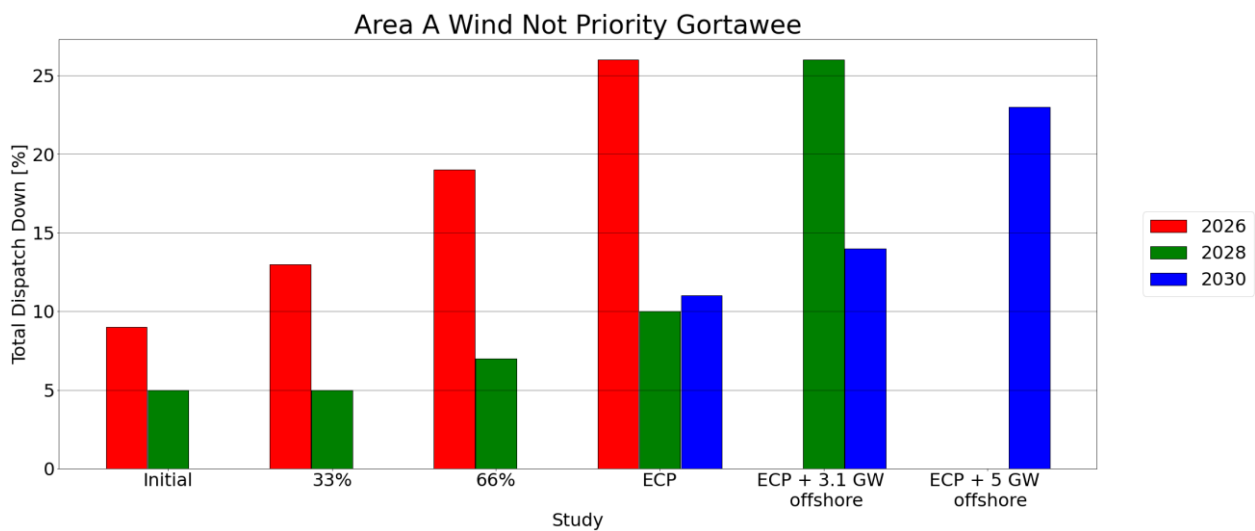


Figure 2-20 - Total Dispatch Down for Wind non-priority for Node Gortawee

## 2.9 Lenalea



Figure 2-21 - Location of node Lenalea

Generator	SO	Capacity	Type	Status
<b>Lenalea Wind Farm</b>	TSO	30.5	wind non-priority	due to connect
<b>Drumnahough Wind Farm</b>	TSO	72.0	wind non-priority	due to connect

Table 2-21 - Generation Included in Study for Node Lenalea

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		34	68	102		
Installed Capacity (MW)	2028		34	68	102	102	
Installed Capacity (MW)	2030				102	102	102
Available Energy (GWh)	2026		99	198	297		
Available Energy (GWh)	2028		99	199	298	298	
Available Energy (GWh)	2030				297	297	297
Generation (GWh)	2026		48	95	134		
Generation (GWh)	2028		49	100	142	135	
Generation (GWh)	2030				215	213	198
Surplus (%)	2026		5%	9%	13%		
Surplus (%)	2028		1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026		3%	4%	5%		
Curtailement (%)	2028		1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026		43%	40%	37%		
Constraint (%)	2028		49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026		51%	52%	55%		
Total Dispatch Down (%)	2028		51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-22 - Surplus, Curtailment and Constraint for Wind non-priority in Area A

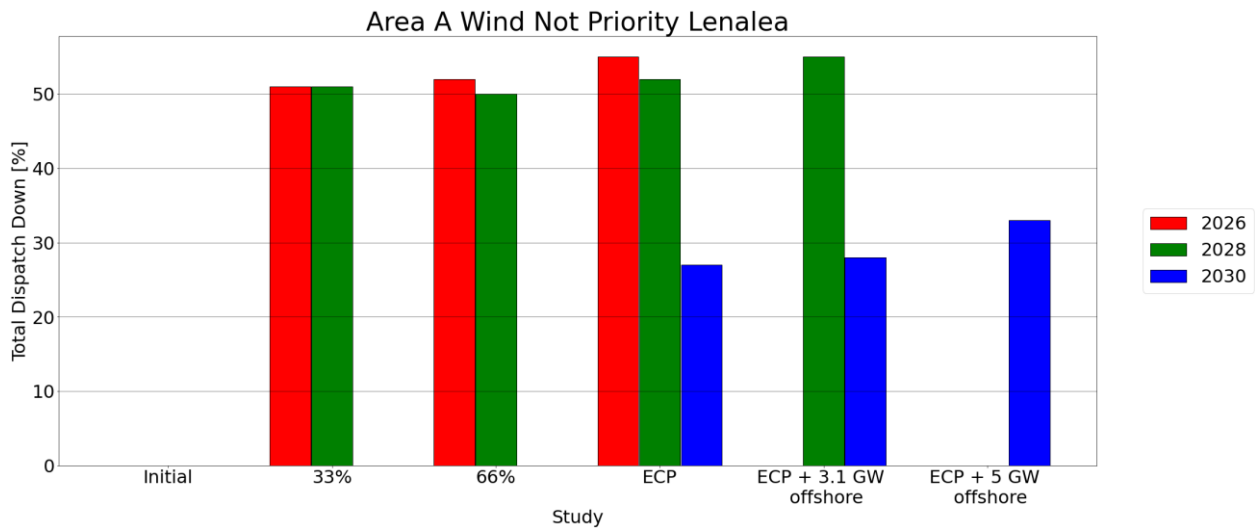


Figure 2-22 - Total Dispatch Down for Wind non-priority for Node Lenalea

## 2.10 Letterkenny



Figure 2-23 - Location of node Letterkenny

Generator	SO	Capacity	Type	Status
Cark (1)	DSO	15.0	wind uncontrolled	connected
Culliagh (1)	DSO	11.88	wind uncontrolled	connected
Lettergull (1)	DSO	20.0	wind non-priority	due to connect
Lurganboy (1)	DSO	4.99	wind uncontrolled	connected
Meenanilta (1)	DSO	2.55	wind uncontrolled	connected
Meenanilta (2)	DSO	2.45	wind uncontrolled	connected
Meenanilta (3)	DSO	3.4	wind uncontrolled	connected

Table 2-23 - Generation Included in Study for Node Letterkenny

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	20	20	20	20		
Installed Capacity (MW)	2028	20	20	20	20	20	
Installed Capacity (MW)	2030				20	20	20
Available Energy (GWh)	2026	58	58	58	58		
Available Energy (GWh)	2028	58	58	58	58	58	
Available Energy (GWh)	2030				58	58	58
Generation (GWh)	2026	26	28	28	26		
Generation (GWh)	2028	26	29	29	28	26	
Generation (GWh)	2030				42	42	39
Surplus (%)	2026	2%	5%	9%	13%		
Surplus (%)	2028	<1%	1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026	2%	3%	4%	5%		
Curtailement (%)	2028	<1%	1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026	51%	43%	40%	37%		
Constraint (%)	2028	56%	49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026	55%	51%	52%	55%		
Total Dispatch Down (%)	2028	56%	51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-24 - Surplus, Curtailment and Constraint for Wind non-priority in Area A

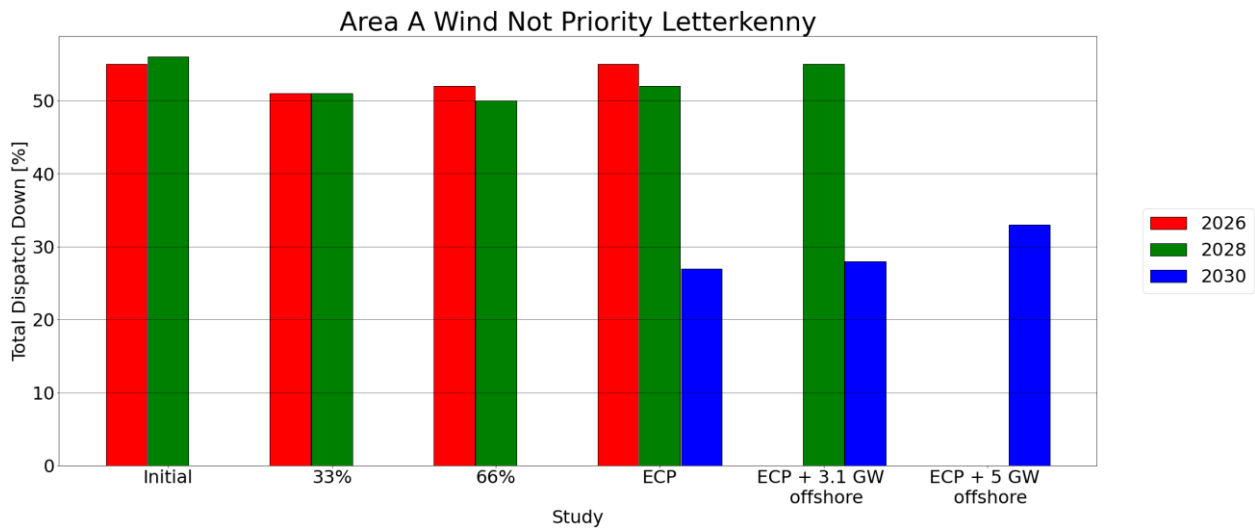


Figure 2-24 - Total Dispatch Down for Wind non-priority for Node Letterkenny

## 2.11 Meentycat

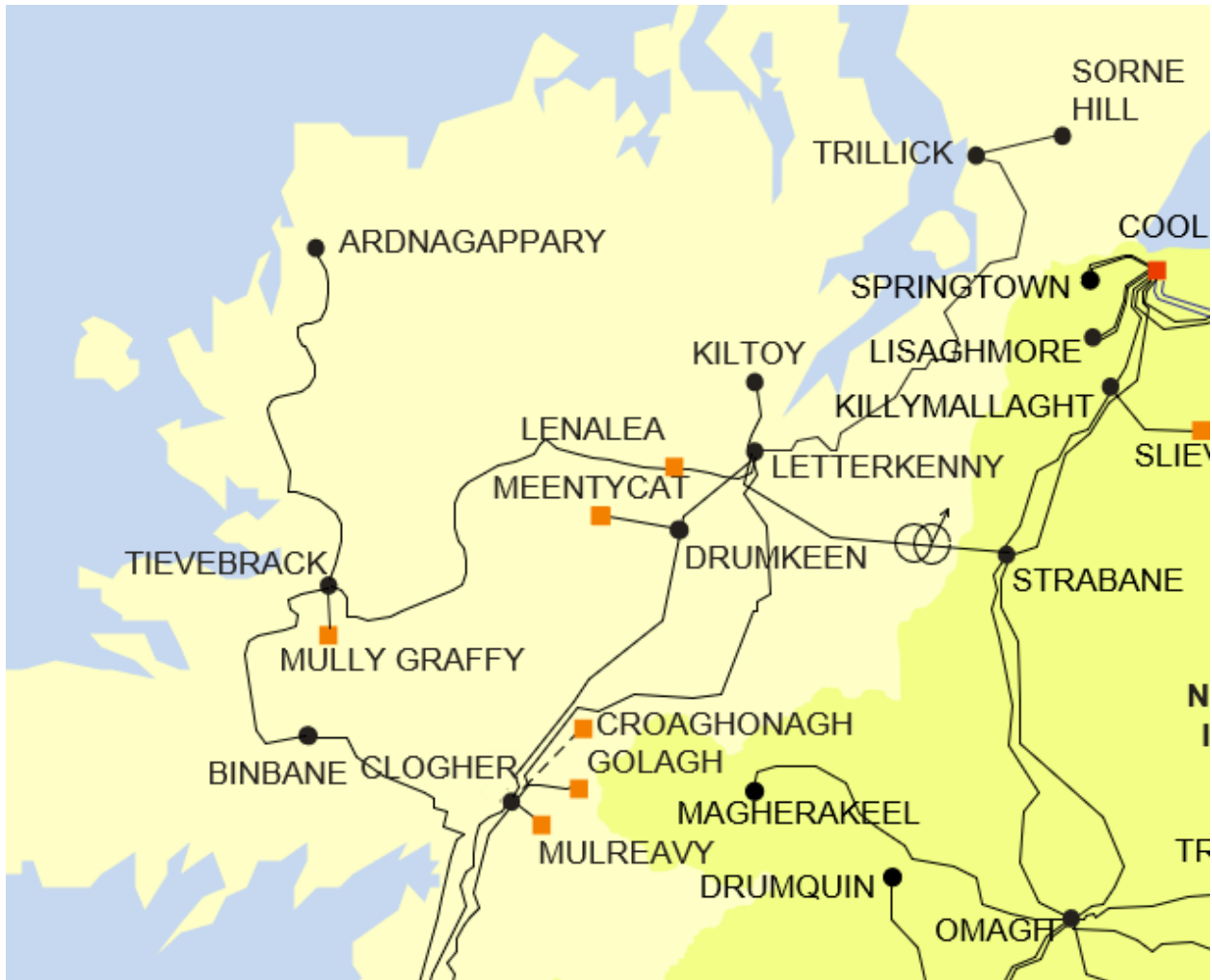


Figure 2-25 - Location of node Meentycat

Generator	SO	Capacity	Type	Status
<b>Meentycat (1)</b>	TSO	70.96	wind priority	connected
<b>Meentycat (2)</b>	TSO	14.0	wind priority	connected

Table 2-25 - Generation Included in Study for Node Meentycat

The wind priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	85	85	85	85		
Installed Capacity (MW)	2028	85	85	85	85	85	
Installed Capacity (MW)	2030				85	85	85
Available Energy (GWh)	2026	246	246	246	246		
Available Energy (GWh)	2028	247	247	247	247	247	
Available Energy (GWh)	2030				246	246	246
Generation (GWh)	2026	240	237	233	229		
Generation (GWh)	2028	246	244	242	239	230	
Generation (GWh)	2030				244	233	238
Surplus (%)	2026	<1%	<1%	<1%	<1%		
Surplus (%)	2028	<1%	<1%	<1%	<1%	<1%	
Surplus (%)	2030				<1%	<1%	<1%
Curtailement (%)	2026	2%	4%	5%	7%		
Curtailement (%)	2028	<1%	1%	2%	3%	7%	
Curtailement (%)	2030				1%	5%	3%
Constraint (%)	2026	<1%	<1%	<1%	<1%		
Constraint (%)	2028	<1%	<1%	<1%	<1%	<1%	
Constraint (%)	2030				<1%	<1%	<1%
Total Dispatch Down (%)	2026	2%	4%	5%	7%		
Total Dispatch Down (%)	2028	<1%	1%	2%	3%	7%	
Total Dispatch Down (%)	2030				1%	5%	3%

Table 2-26 - Surplus, Curtailement and Constraint for Wind priority in Area A

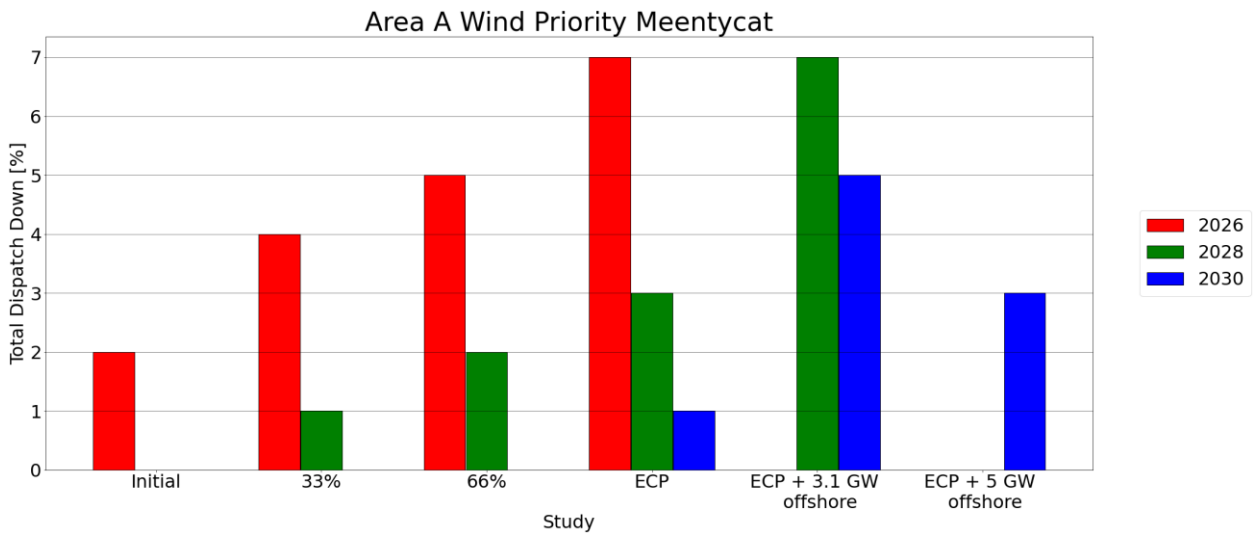


Figure 2-26 - Total Dispatch Down for Wind priority for Node Meentycat



## 2.12 Mulreavy

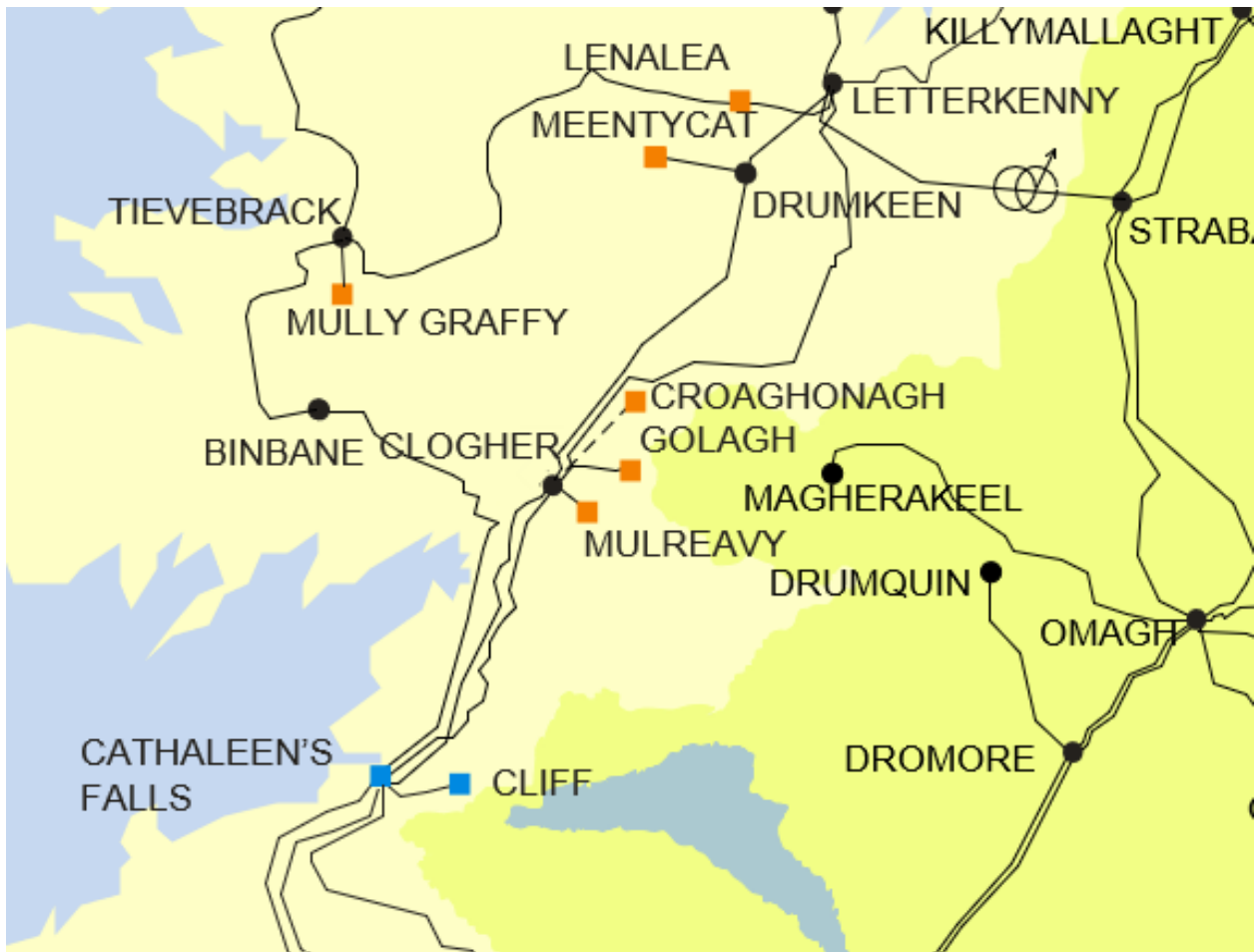


Figure 2-27 - Location of node Mulreavy

Generator	SO	Capacity	Type	Status
<b>Mulreavy (Mulreavy (1))</b>	TSO	82.0	wind priority	connected
<b>Mulreavy Ext (Croaghnameal (1))</b>	TSO	4.25	wind uncontrolled	connected
<b>Mulreavy Ext (Meenadreen South (1))</b>	TSO	3.6	wind uncontrolled	connected
<b>Mulreavy Ext (Meenadreen South (2))</b>	TSO	5.4	wind priority	connected

Table 2-27 - Generation Included in Study for Node Mulreavy

The wind priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	87	87	87	87		
Installed Capacity (MW)	2028	87	87	87	87	87	
Installed Capacity (MW)	2030				87	87	87
Available Energy (GWh)	2026	253	253	253	253		
Available Energy (GWh)	2028	254	254	254	254	254	
Available Energy (GWh)	2030				253	253	253
Generation (GWh)	2026	247	243	239	236		
Generation (GWh)	2028	254	251	249	246	236	
Generation (GWh)	2030				251	239	244
Surplus (%)	2026	<1%	<1%	<1%	<1%		
Surplus (%)	2028	<1%	<1%	<1%	<1%	<1%	
Surplus (%)	2030				<1%	<1%	<1%
Curtailed (%)	2026	2%	4%	5%	7%		
Curtailed (%)	2028	<1%	1%	2%	3%	7%	
Curtailed (%)	2030				1%	5%	3%
Constraint (%)	2026	<1%	<1%	<1%	<1%		
Constraint (%)	2028	<1%	<1%	<1%	<1%	<1%	
Constraint (%)	2030				<1%	<1%	<1%
Total Dispatch Down (%)	2026	2%	4%	5%	7%		
Total Dispatch Down (%)	2028	<1%	1%	2%	3%	7%	
Total Dispatch Down (%)	2030				1%	5%	3%

Table 2-28 - Surplus, Curtailment and Constraint for Wind priority in Area A

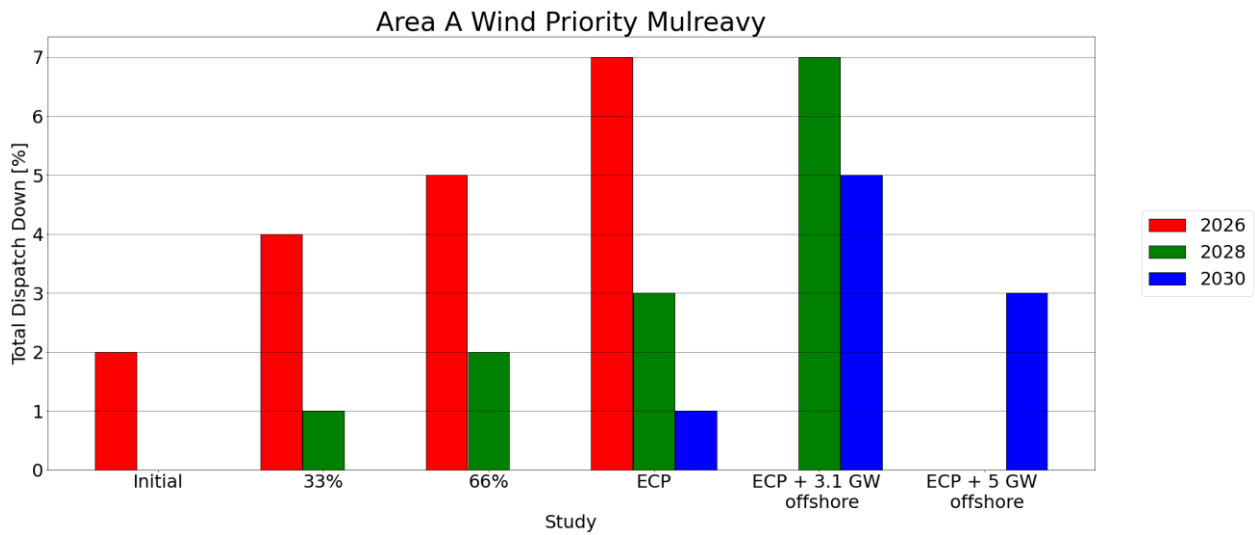


Figure 2-28 - Total Dispatch Down for Wind priority for Node Mulreavy

## 2.13 Sorne Hill



Figure 2-29 - Location of node Sorne Hill

Generator	SO	Capacity	Type	Status
Corvin Wind Turbine	DSO	2.1	wind uncontrolled	connected
Flughland (1)	DSO	9.2	wind priority	connected
Glackmore Hill (2)	DSO	1.4	wind uncontrolled	connected
Meenkeeragh (1)	DSO	4.2	wind uncontrolled	connected
Sorne Hill (1)	DSO	31.5	wind priority	connected
Sorne Hill (2)	DSO	7.4	wind priority	connected
Sorne Hill Single Turbine (Enros)	DSO	2.3	wind uncontrolled	connected
Three Trees (1)	DSO	4.25	wind uncontrolled	connected

Table 2-29 - Generation Included in Study for Node Sorne Hill

The wind priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	48	48	48	48		
Installed Capacity (MW)	2028	48	48	48	48	48	
Installed Capacity (MW)	2030				48	48	48
Available Energy (GWh)	2026	139	139	139	139		
Available Energy (GWh)	2028	140	140	140	140	140	
Available Energy (GWh)	2030				139	139	139
Generation (GWh)	2026	136	134	132	130		
Generation (GWh)	2028	140	138	137	135	130	
Generation (GWh)	2030				138	132	135
Surplus (%)	2026	<1%	<1%	<1%	<1%		
Surplus (%)	2028	<1%	<1%	<1%	<1%	<1%	
Surplus (%)	2030				<1%	<1%	<1%
Curtailement (%)	2026	2%	4%	5%	7%		
Curtailement (%)	2028	<1%	1%	2%	3%	7%	
Curtailement (%)	2030				1%	5%	3%
Constraint (%)	2026	<1%	<1%	<1%	<1%		
Constraint (%)	2028	<1%	<1%	<1%	<1%	<1%	
Constraint (%)	2030				<1%	<1%	<1%
Total Dispatch Down (%)	2026	2%	4%	5%	7%		
Total Dispatch Down (%)	2028	<1%	1%	2%	3%	7%	
Total Dispatch Down (%)	2030				1%	5%	3%

Table 2-30 - Surplus, Curtailement and Constraint for Wind priority in Area A

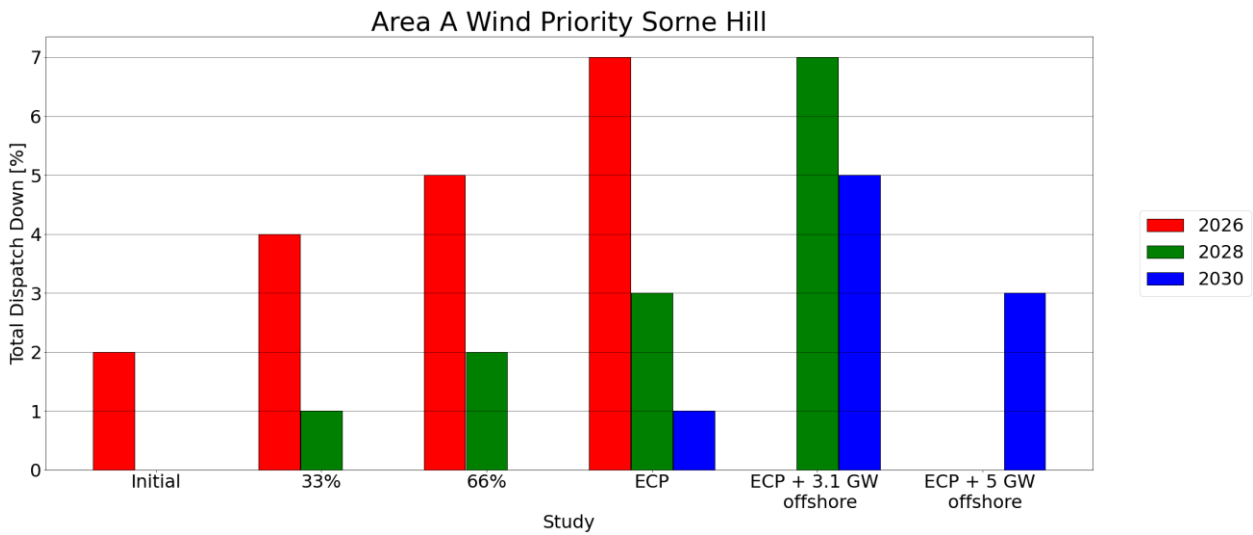


Figure 2-30 - Total Dispatch Down for Wind priority for Node Sorne Hill

## 2.14 Tievebrack

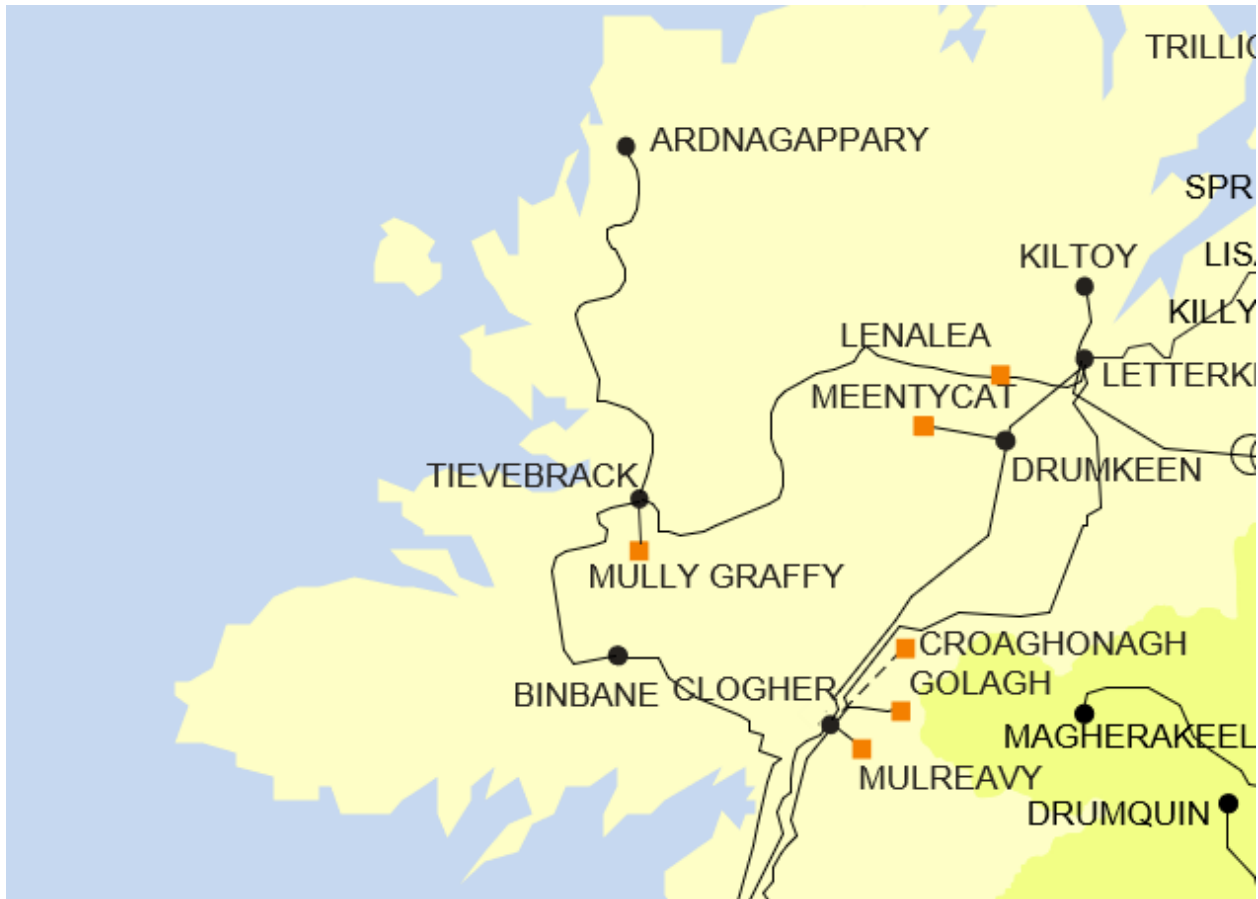


Figure 2-31 - Location of node Tievebrack

Generator	SO	Capacity	Type	Status
<b>Mully Graffy Windfarm (Kilgorman)</b>	TSO	29.9	wind non-priority	due to connect

Table 2-31 - Generation Included in Study for Node Tievebrack

The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		10	20	30		
Installed Capacity (MW)	2028		10	20	30	30	
Installed Capacity (MW)	2030				30	30	30
Available Energy (GWh)	2026		29	58	86		
Available Energy (GWh)	2028		29	58	87	87	
Available Energy (GWh)	2030				86	86	86
Generation (GWh)	2026		14	28	39		
Generation (GWh)	2028		14	29	42	39	
Generation (GWh)	2030				63	62	58
Surplus (%)	2026		5%	9%	13%		
Surplus (%)	2028		1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026		3%	4%	5%		
Curtailement (%)	2028		1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026		43%	40%	37%		
Constraint (%)	2028		49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026		51%	52%	55%		
Total Dispatch Down (%)	2028		51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-32 - Surplus, Curtailment and Constraint for Wind non-priority in Area A

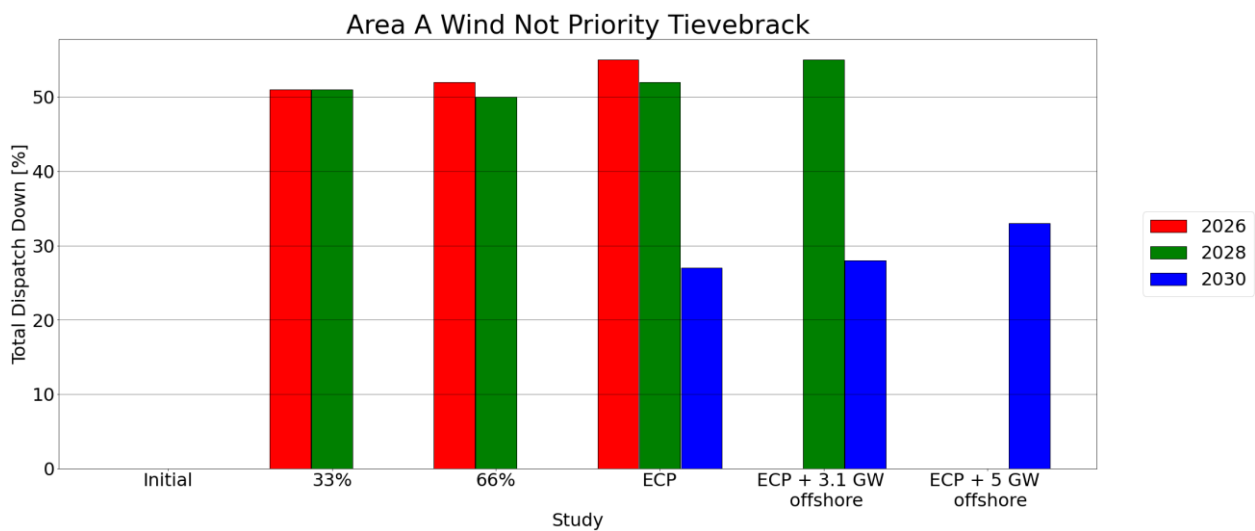


Figure 2-32 - Total Dispatch Down for Wind non-priority for Node Tievebrack

## 2.15 Trillick



Figure 2-33 - Location of node Trillick

Generator	SO	Capacity	Type	Status
Beam Hill (1)	DSO	14.0	wind priority	connected
Cooly (1)	DSO	4.0	wind uncontrolled	connected
Crockahenny (1)	DSO	5.0	wind uncontrolled	connected
Drumlough Hill (1)	DSO	4.8	wind uncontrolled	connected
Drumlough Hill (2)	DSO	9.99	wind priority	connected
Meenaward	DSO	6.9	wind priority	connected
Barrick Hill Solar Farm	DSO	4.99	solar non-priority	due to connect
Foden Solar Farm	DSO	4.99	solar non-priority	due to connect
Glentogher Solar Farm	DSO	4.99	solar non-priority	due to connect
Scalp Community WF	DSO	4.99	wind non-priority	due to connect

Table 2-33 - Generation Included in Study for Node Trillick

The solar non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		5	10	15		
Installed Capacity (MW)	2028		5	10	15	15	
Installed Capacity (MW)	2030				15	15	15
Available Energy (GWh)	2026		5	11	16		
Available Energy (GWh)	2028		5	11	16	16	
Available Energy (GWh)	2030				16	16	16
Generation (GWh)	2026		5	9	12		
Generation (GWh)	2028		5	9	13	12	
Generation (GWh)	2030				14	14	14
Surplus (%)	2026		2%	5%	9%		
Surplus (%)	2028		<1%	2%	5%	11%	
Surplus (%)	2030				2%	6%	10%
Curtailement (%)	2026		1%	2%	4%		
Curtailement (%)	2028		1%	1%	2%	3%	
Curtailement (%)	2030				1%	1%	1%
Constraint (%)	2026		10%	10%	9%		
Constraint (%)	2028		12%	14%	14%	9%	
Constraint (%)	2030				6%	4%	3%
Total Dispatch Down (%)	2026		14%	17%	21%		
Total Dispatch Down (%)	2028		13%	17%	20%	23%	
Total Dispatch Down (%)	2030				9%	11%	14%

Table 2-34 - Surplus, Curtailment and Constraint for Solar non-priority in Area A

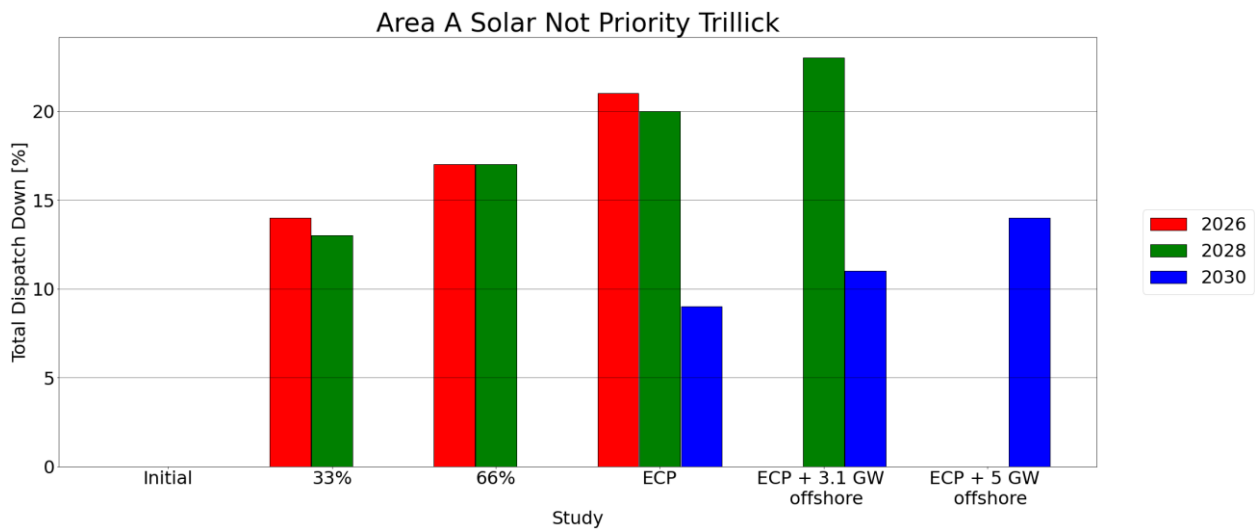


Figure 2-34 - Total Dispatch Down for Solar non-priority for Node Trillick



The wind non-priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		2	3	5		
Installed Capacity (MW)	2028		2	3	5	5	
Installed Capacity (MW)	2030				5	5	5
Available Energy (GWh)	2026		5	10	14		
Available Energy (GWh)	2028		5	10	15	15	
Available Energy (GWh)	2030				14	14	14
Generation (GWh)	2026		2	5	7		
Generation (GWh)	2028		2	5	7	7	
Generation (GWh)	2030				10	10	10
Surplus (%)	2026		5%	9%	13%		
Surplus (%)	2028		1%	2%	5%	20%	
Surplus (%)	2030				2%	10%	20%
Curtailement (%)	2026		3%	4%	5%		
Curtailement (%)	2028		1%	2%	3%	5%	
Curtailement (%)	2030				<1%	2%	2%
Constraint (%)	2026		43%	40%	37%		
Constraint (%)	2028		49%	45%	44%	30%	
Constraint (%)	2030				25%	16%	11%
Total Dispatch Down (%)	2026		51%	52%	55%		
Total Dispatch Down (%)	2028		51%	50%	52%	55%	
Total Dispatch Down (%)	2030				27%	28%	33%

Table 2-35 - Surplus, Curtailment and Constraint for Wind non-priority in Area A

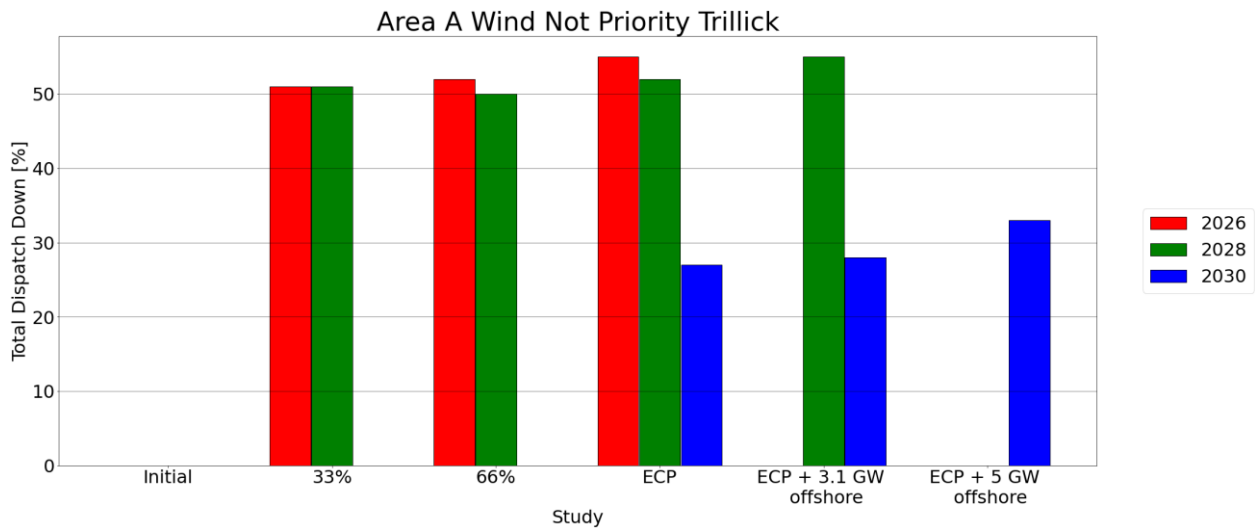


Figure 2-35 - Total Dispatch Down for Wind non-priority for Node Trillick

The wind priority data is given in the following table.

Area A	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	31	31	31	31		
Installed Capacity (MW)	2028	31	31	31	31	31	
Installed Capacity (MW)	2030				31	31	31
Available Energy (GWh)	2026	89	89	89	89		
Available Energy (GWh)	2028	90	90	90	90	90	
Available Energy (GWh)	2030				89	89	89
Generation (GWh)	2026	87	86	85	83		
Generation (GWh)	2028	90	89	88	87	84	
Generation (GWh)	2030				89	85	86
Surplus (%)	2026	<1%	<1%	<1%	<1%		
Surplus (%)	2028	<1%	<1%	<1%	<1%	<1%	
Surplus (%)	2030				<1%	<1%	<1%
Curtailement (%)	2026	2%	4%	5%	7%		
Curtailement (%)	2028	<1%	1%	2%	3%	7%	
Curtailement (%)	2030				1%	5%	3%
Constraint (%)	2026	<1%	<1%	<1%	<1%		
Constraint (%)	2028	<1%	<1%	<1%	<1%	<1%	
Constraint (%)	2030				<1%	<1%	<1%
Total Dispatch Down (%)	2026	2%	4%	5%	7%		
Total Dispatch Down (%)	2028	<1%	1%	2%	3%	7%	
Total Dispatch Down (%)	2030				1%	5%	3%

Table 2-36 - Surplus, Curtailement and Constraint for Wind priority in Area A

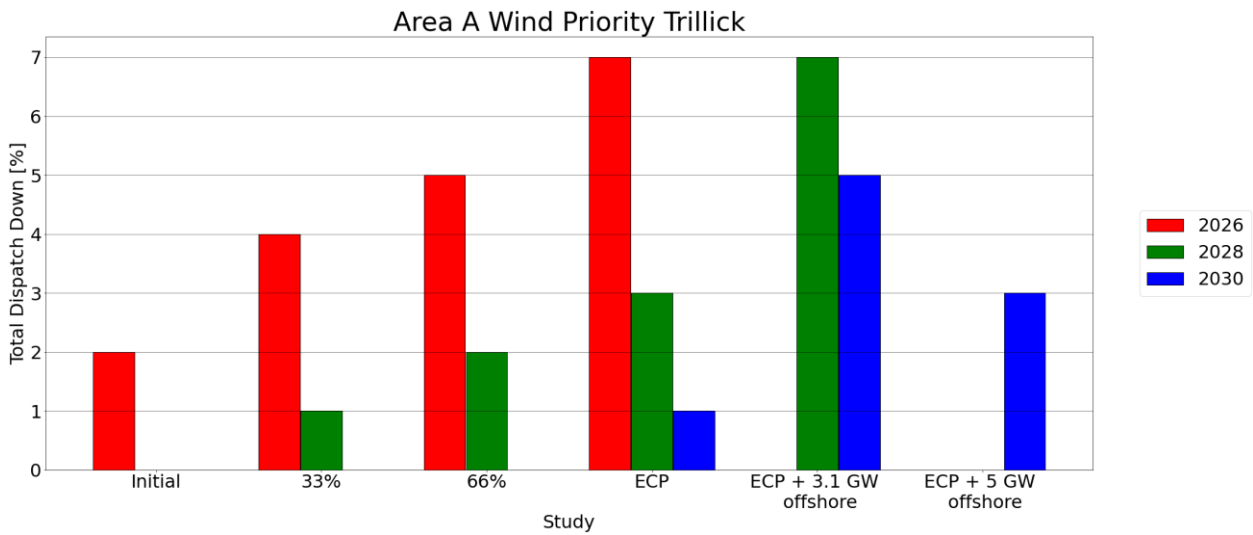


Figure 2-36 - Total Dispatch Down for Wind Priority for Node Trillick