

# Enduring Connection Policy 2.3

## Solar and Wind Constraints Report: Results for Area H2

Version 1.1

05/04/24



### Revision History

Revision	Date	Description
V1.1	05.04.2024	Results have been updated to reflect the modifications made to the installed capacity within the analysis.

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# Document Structure

This document is for customers wishing to see the estimated Total Dispatch Down for Area H2. 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 H2:** outlines the area covered by this report. This section provides a network diagram of Area H2 and an overview of the results for Area H2.

**Section 2: Area H2 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 H2.

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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 H2

## 1.1 Introduction

This section provides the surplus, curtailment and constraint results for Area H2 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 H2 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 H2, 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 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 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 H2 in the “ECP” scenario is given in Table 1-1.

Node	SO	Status	Solar	Wind
<b>Arklow 220Kv</b>	TSO	due to connect		400
<b>Arklow 220Kv</b>	TSO	due to connect		400
<b>Arklow</b>	DSO	due to connect	56	
<b>Arklow</b>	TSO	due to connect	47	
<b>Arklow</b>	DSO	due to connect		40
<b>Arklow</b>	DSO	connected		78
<b>Ballybeg</b>	DSO	connected	8	
<b>Ballybeg</b>	DSO	due to connect	8	
<b>Ballyragget</b>	DSO	due to connect	40	
<b>Ballyragget</b>	DSO	due to connect		45
<b>Ballyragget</b>	TSO	due to connect		50
<b>Ballywater</b>	TSO	connected		42
<b>Banoge</b>	DSO	due to connect	8	
<b>Carlow</b>	DSO	due to connect	35	
<b>Carlow</b>	DSO	due to connect		21
<b>Carlow</b>	DSO	connected		30
<b>Carlow</b>	DSO	connected		4
<b>Castledockrell</b>	TSO	connected		41
<b>Crane</b>	DSO	due to connect	18	
<b>Crane</b>	TSO	due to connect	50	
<b>Crane</b>	DSO	connected		2
<b>Crane</b>	DSO	connected		5
<b>Croy</b>	DSO	due to connect	20	
<b>Croy</b>	DSO	connected		44
<b>Croy</b>	DSO	connected		16
<b>Great Island 220Kv</b>	TSO	due to connect		378
<b>Great Island</b>	DSO	due to connect	17	
<b>Kellis</b>	TSO	due to connect	129	
<b>Kilkenny</b>	DSO	due to connect	62	
<b>Kilvinoge</b>	TSO	due to connect		139
<b>Lodgewood</b>	TSO	due to connect	50	
<b>Rosspile</b>	TSO	connected	95	
<b>Rosspile</b>	TSO	due to connect	49	
<b>Tullabeg</b>	TSO	due to connect	155	
<b>Waterford</b>	DSO	connected	4	
<b>Waterford</b>	DSO	due to connect	6	
<b>Waterford</b>	DSO	connected		14
<b>Waterford</b>	DSO	connected		4
<b>Wexford</b>	DSO	connected	8	
<b>Wexford</b>	DSO	due to connect	5	
<b>Wexford</b>	TSO	due to connect	156	
<b>Wexford</b>	DSO	connected		27
<b>Wexford</b>	DSO	connected		12
<b>Total</b>			1026	1792

*Table 1-1 Wind and Solar Generation Summary in Area H2 for Generation Scenario “ECP”*

Table 1-2 and Table 1-3 show installed solar and wind generation for Ireland and Area H2, and the available solar and wind generation for Area H2 for each generation scenario.

Solar	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
<b>Installed Ireland (MW)</b>	1563	3052	4542	6031	6031	6031
<b>Installed Area H2 (MW)</b>	296	540	783	1026	1026	1026
<b>Installed Controllable Area H2 (MW)</b>	296	540	783	1026	1026	1026
<b>Available Controllable Area H2 (GWh)</b>	349	634	919	1203	1203	1203

*Table 1-2- Installed MW and Available GWh for Area H2 - Solar*

Wind	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
<b>Installed Ireland (MW)</b>	5144	5734	6324	6913	9987	11913
<b>Installed Area H2 (MW)</b>	361	446	530	615	615	1793
<b>Installed Controllable Area H2 (MW)</b>	320	405	489	574	574	1752
<b>Available Controllable Area H2 (GWh)</b>	911	1152	1393	1624	1624	6361

*Table 1-3 - Installed MW and Available GWh for Area H2 - Wind*

## 1.4 Network Overview

Area H2, in the south-east 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 H2 and the surrounding area is shown in Figure 1-1. The 400 kV circuits are shown in red, the 220 kV circuits 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 H2

Area H2 includes the assumed connection point for the future Greenlink interconnector at Great Island. The area also receives connections at Arklow for future offshore wind in the offshore based scenarios. For Area H2, the dominant power flows tend to be 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 H2 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 may increase constraints in Area H2.

In addition to the power flowing out of Area H2, there are also power flows across or through Area H2. Renewable power from other areas will flow across the transmission network and at least some of this power will flow through Area H2.

The power flowing out of Area H2 meets and joins with power flows from other areas, as the power flows towards the demand centres and interconnectors.

## 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 H2 - Average Results

The Total Dispatch Down results for Area H2 are provided below in Table 1-5 to Table 1-7 and Figure 1-2 to Figure 1-4. 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 H2 (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 and Table 1-7. 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 H2 under the Future Grid scenarios and associated sensitivity case is given in Table 1-5 to Table 1-7. 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 a number of 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 the Area H2, the lower rating of the Arklow 220/110 kV transformer is a significant bottleneck in the area during the high-RES scenarios. Additionally, the loss of 220 kV circuits to Carrickmines or Dunstow creates additional stress to the network in this area. The 110 kV circuit connecting Knockraha to Great Island is also affected by the loss of 220 kV connecting the same. The Greenlink and Celtic interconnectors provide additional extraction points during high-RES scenarios. Thus, generation in Area K and H2 tries to push power towards the Dublin load centres and interconnectors through the 220 kV and 110 kV circuits. The contingencies and overloaded lines associated with the area are included in Appendix C of the ECP-2.3 Assumptions and Methodology report.

Analysis of Area H2 identified constraint subgroups for solar and wind generation combining Area H2 and Area K. The subgroup nodes are given in Table 1-4. 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.

Subgroup	Nodes
H2 & K	Arklow
	Arklow 220 kV
	Ballybeg
	Ballyragget
	Ballywater
	Banoge
	Carlow
	Castledockrell
	Crane
	Croy
	Great Island
	Great Island 220 kV
	Kellis
	Kilkenny
	Kilvinoge
	Lodgewood
	Rosspile
Tullabeg	
Waterford	
Wexford	

*Table 1-4 Area H2 generator nodes and their subgroups*



Figure 1-2 Subgroup H2 & K (subgroups outlined by blue dashed line)



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

Area H2 (H2 & K)	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	296	540	783	1026		
Installed Capacity (MW)	2028	296	540	783	1026	1026	
Installed Capacity (MW)	2030				1026	1026	1026
Available Energy (GWh)	2026	348	633	918	1203		
Available Energy (GWh)	2028	349	634	919	1204	1204	
Available Energy (GWh)	2030				1203	1203	1203
Generation (GWh)	2026	329	584	805	977		
Generation (GWh)	2028	331	602	859	1059	987	
Generation (GWh)	2030				1117	1079	1029
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 1-5 - Surplus, Curtailement and Constraint for Solar Non-priority in Area H2 (H2 & K)

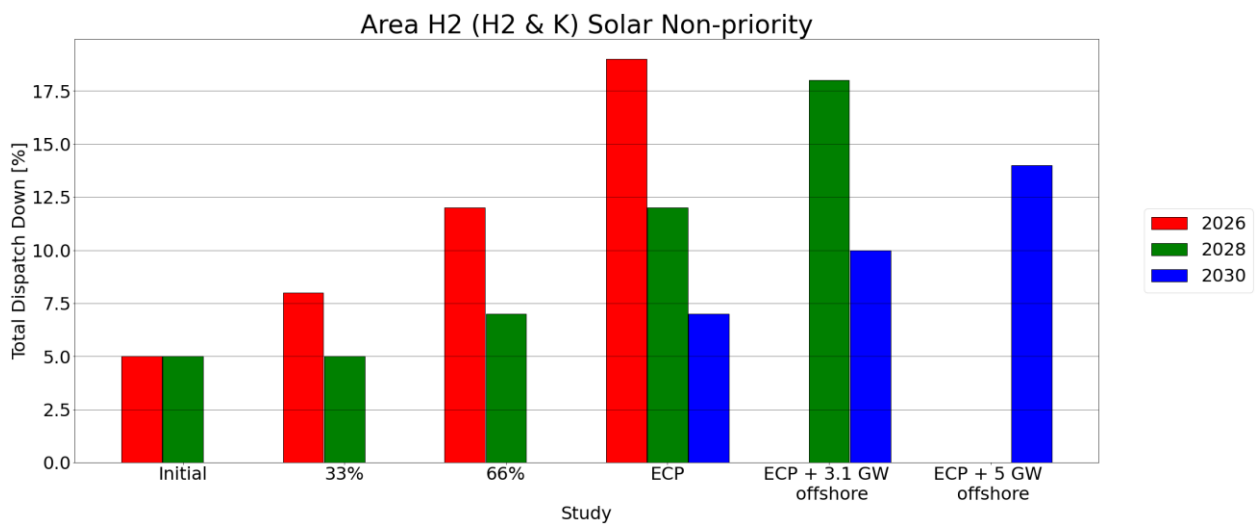


Figure 1-3 - Results Solar Non-priority Area H2 (H2 & K)

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

Area H2 (H2 & K)	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	40	125	209	294		
Installed Capacity (MW)	2028	40	125	209	294	294	
Installed Capacity (MW)	2030				294	294	1472
Available Energy (GWh)	2026	113	353	592	832		
Available Energy (GWh)	2028	114	355	596	837	837	
Available Energy (GWh)	2030				832	832	5569
Generation (GWh)	2026	90	295	481	645		
Generation (GWh)	2028	105	329	547	742	602	
Generation (GWh)	2030				783	719	4247
Surplus (%)	2026	2 %	5 %	9 %	13 %		
Surplus (%)	2028	<1 %	1 %	2 %	5 %	21 %	
Surplus (%)	2030				1 %	10 %	21 %
Curtailed (%)	2026	2 %	3 %	4 %	4 %		
Curtailed (%)	2028	<1 %	1 %	2 %	3 %	5 %	
Curtailed (%)	2030				<1 %	2 %	2 %
Constraint (%)	2026	17 %	9 %	6 %	5 %		
Constraint (%)	2028	8 %	6 %	4 %	4 %	2 %	
Constraint (%)	2030				4 %	2 %	2 %
Total Dispatch Down (%)	2026	20 %	16 %	19 %	22 %		
Total Dispatch Down (%)	2028	8 %	7 %	8 %	11 %	28 %	
Total Dispatch Down (%)	2030				6 %	14 %	25 %

Table 1-6 - Surplus, Curtailment and Constraint for Wind Non-priority in Area H2 (H2 & K)

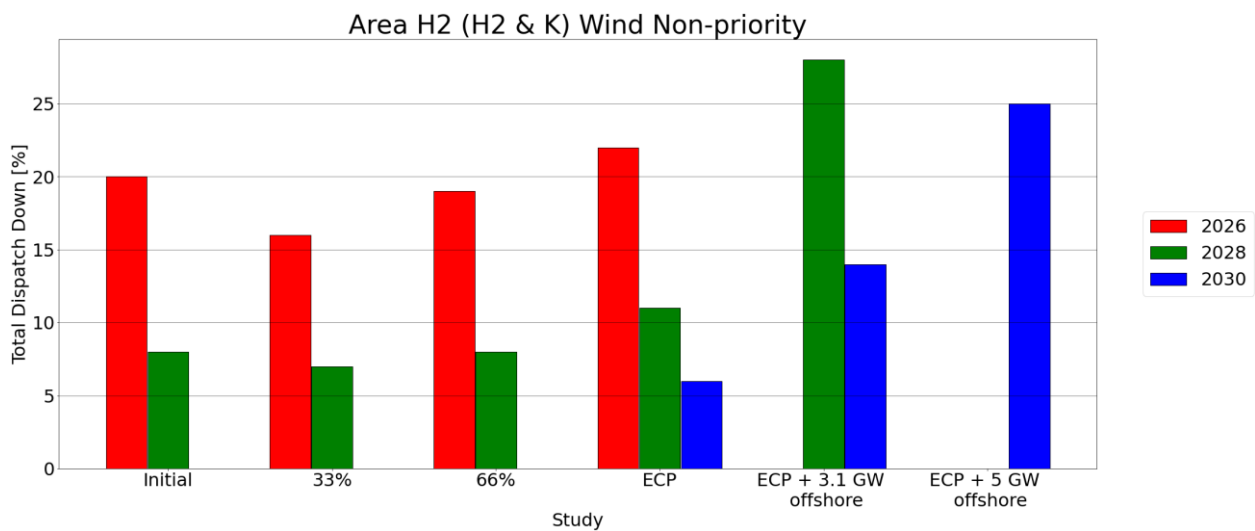


Figure 1-4 - Results Wind Non-priority Area H2 (H2 & K)

The wind priority data is given in the following table.

Area H2 (H2 & K)	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	280	280	280	280		
Installed Capacity (MW)	2028	280	280	280	280	280	
Installed Capacity (MW)	2030				280	280	280
Available Energy (GWh)	2026	792	792	792	792		
Available Energy (GWh)	2028	797	797	797	797	797	
Available Energy (GWh)	2030				792	792	792
Generation (GWh)	2026	776	765	752	740		
Generation (GWh)	2028	795	788	780	769	738	
Generation (GWh)	2030				788	749	764
Surplus (%)	2026	<1 %	<1 %	<1 %	<1 %		
Surplus (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Surplus (%)	2030				<1 %	<1 %	<1 %
Curtailed (%)	2026	2 %	3 %	5 %	7 %		
Curtailed (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Curtailed (%)	2030				1 %	5 %	4 %
Constraint (%)	2026	<1 %	<1 %	<1 %	<1 %		
Constraint (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Constraint (%)	2030				<1 %	<1 %	<1 %
Total Dispatch Down (%)	2026	2 %	3 %	5 %	7 %		
Total Dispatch Down (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Total Dispatch Down (%)	2030				1 %	5 %	4 %

Table 1-7 - Surplus, Curtailment and Constraint for Wind Priority in Area H2 (H2 & K)

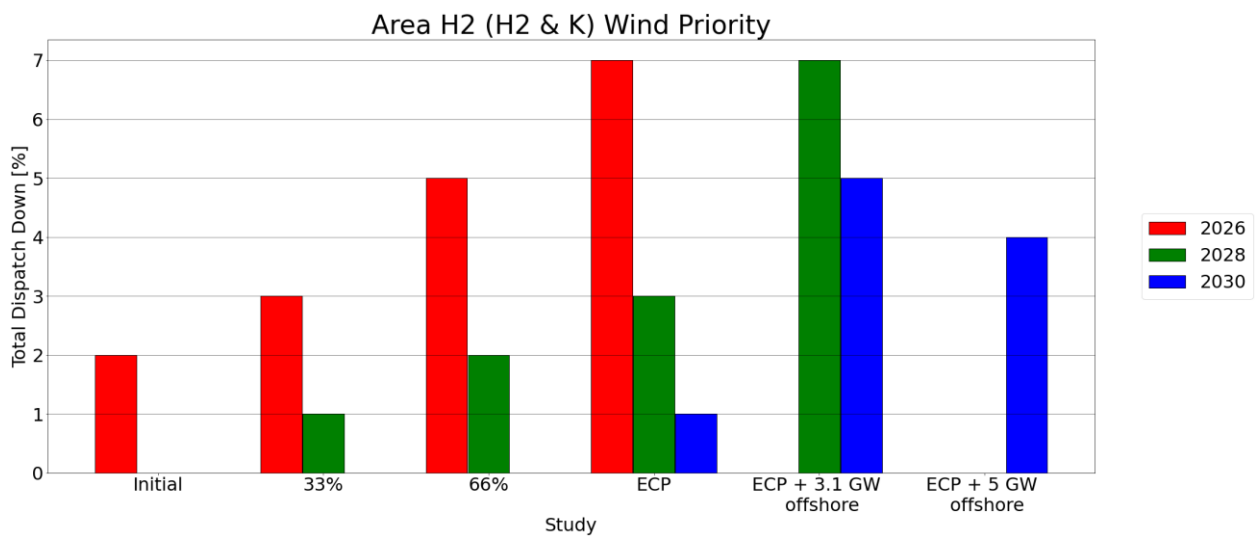


Figure 1-5 - Results Wind Priority Area H2 (H2 & K)

## 1.7 Conclusion - Results for Area H2

This section provides an overview of the estimated surplus, curtailment and constraint values for Area H2 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 H2.

## 2 Area H2 Node Results

This section presents the results of the modelling analysis for Area H2. The levels of surplus, curtailment and constraint that controllable solar and wind generators in Area H2 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 H2

## 2.1 Arklow



Figure 2-1 - Location of node Arklow

Generator	SO	Capacity	Type	Status
<b>Arklow Bank (1)</b>	DSO	25.2	wind priority	connected
<b>Ballycumber (1)</b>	DSO	18.0	wind priority	connected
<b>Ballymanus Wind Farm</b>	DSO	39.99	wind non-priority	due to connect
<b>Coolboy Solar Farm</b>	DSO	8.8	solar non-priority	due to connect
<b>Coolnagloose Community Solar Farm</b>	DSO	1.0	solar non-priority	due to connect
<b>Glenoge Community Solar</b>	DSO	4.99	solar non-priority	due to connect
<b>Johnstown North PV</b>	DSO	22.0	solar non-priority	due to connect
<b>Knockadosan Solar (formerly Springfarm Wind Farm)</b>	DSO	6.0	solar non-priority	due to connect
<b>North Arklow Solar</b>	TSO	47.0	solar non-priority	due to connect
<b>Raheenleagh (1)</b>	DSO	35.2	wind priority	connected
<b>Templeraíne East Solar Farm (Ballycooleen)</b>	DSO	4.0	solar non-priority	due to connect
<b>Ballymoney PV</b>	DSO	9.0	solar non-priority	due to connect

*Table 2-1 - Generation Included in Study for Node Arklow*

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	10	41	72	103		
Installed Capacity (MW)	2028	10	41	72	103	103	
Installed Capacity (MW)	2030				103	103	103
Available Energy (GWh)	2026	12	48	84	120		
Available Energy (GWh)	2028	12	48	84	121	121	
Available Energy (GWh)	2030				120	120	120
Generation (GWh)	2026	11	44	74	98		
Generation (GWh)	2028	11	46	79	106	99	
Generation (GWh)	2030				112	108	103
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-2 - Surplus, Curtailment and Constraint for Solar non-priority in Area H2

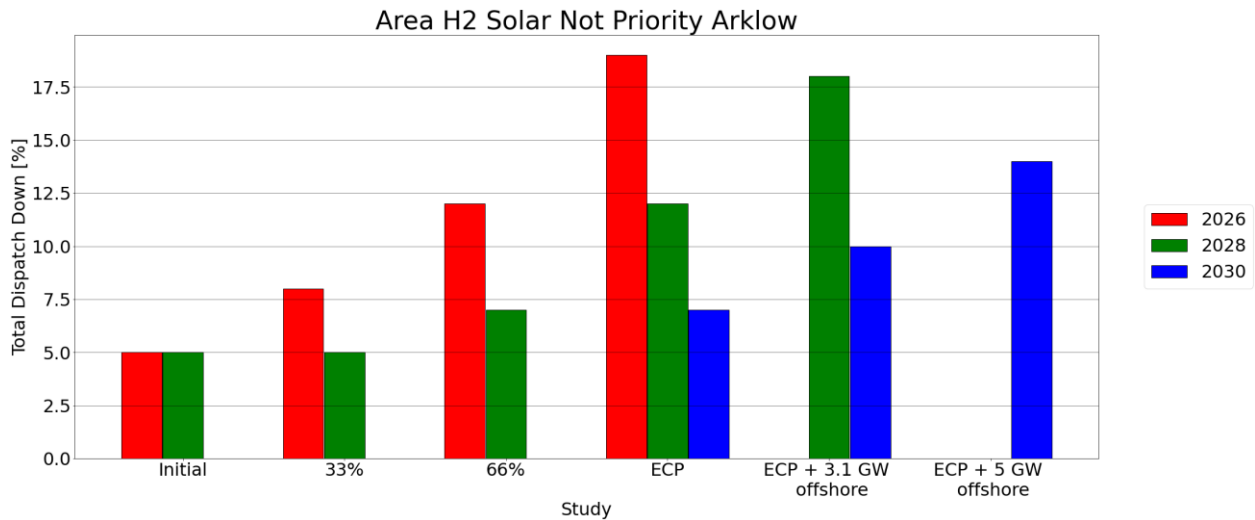


Figure 2-2 - Total Dispatch Down for Solar non-priority for Node Arklow



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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	40	40	40	40		
Installed Capacity (MW)	2028	40	40	40	40	40	
Installed Capacity (MW)	2030				40	40	40
Available Energy (GWh)	2026	113	113	113	113		
Available Energy (GWh)	2028	114	114	114	114	114	
Available Energy (GWh)	2030				113	113	113
Generation (GWh)	2026	90	95	92	88		
Generation (GWh)	2028	105	106	104	101	82	
Generation (GWh)	2030				106	98	84
Surplus (%)	2026	2 %	5 %	9 %	13 %		
Surplus (%)	2028	<1 %	1 %	2 %	5 %	21 %	
Surplus (%)	2030				1 %	10 %	22 %
Curtailed (%)	2026	2 %	3 %	4 %	4 %		
Curtailed (%)	2028	<1 %	1 %	2 %	3 %	5 %	
Curtailed (%)	2030				<1 %	2 %	2 %
Constraint (%)	2026	17 %	9 %	6 %	5 %		
Constraint (%)	2028	8 %	6 %	4 %	4 %	2 %	
Constraint (%)	2030				4 %	2 %	2 %
Total Dispatch Down (%)	2026	20 %	16 %	19 %	22 %		
Total Dispatch Down (%)	2028	8 %	7 %	8 %	11 %	28 %	
Total Dispatch Down (%)	2030				6 %	14 %	26 %

Table 2-3 - Surplus, Curtailment and Constraint for Wind non-priority in Area H2

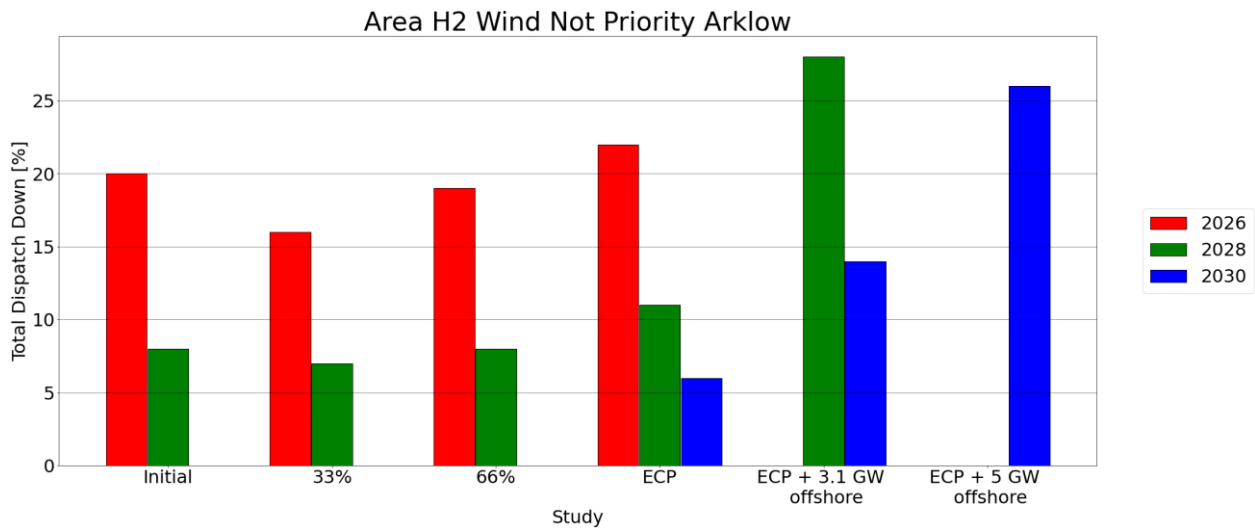


Figure 2-3 - Total Dispatch Down for Wind non-priority for Node Arklow

The wind priority data is given in the following table.

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	78	78	78	78		
Installed Capacity (MW)	2028	78	78	78	78	78	
Installed Capacity (MW)	2030				78	78	78
Available Energy (GWh)	2026	222	222	222	222		
Available Energy (GWh)	2028	223	223	223	223	223	
Available Energy (GWh)	2030				222	222	222
Generation (GWh)	2026	217	214	210	207		
Generation (GWh)	2028	222	221	218	215	206	
Generation (GWh)	2030				221	210	214
Surplus (%)	2026	<1 %	<1 %	<1 %	<1 %		
Surplus (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Surplus (%)	2030				<1 %	<1 %	<1 %
Curtailement (%)	2026	2 %	3 %	5 %	7 %		
Curtailement (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Curtailement (%)	2030				1 %	5 %	4 %
Constraint (%)	2026	<1 %	<1 %	<1 %	<1 %		
Constraint (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Constraint (%)	2030				<1 %	<1 %	<1 %
Total Dispatch Down (%)	2026	2 %	3 %	5 %	7 %		
Total Dispatch Down (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Total Dispatch Down (%)	2030				1 %	5 %	4 %

Table 2-4 - Surplus, Curtailement and Constraint for Wind priority in Area H2

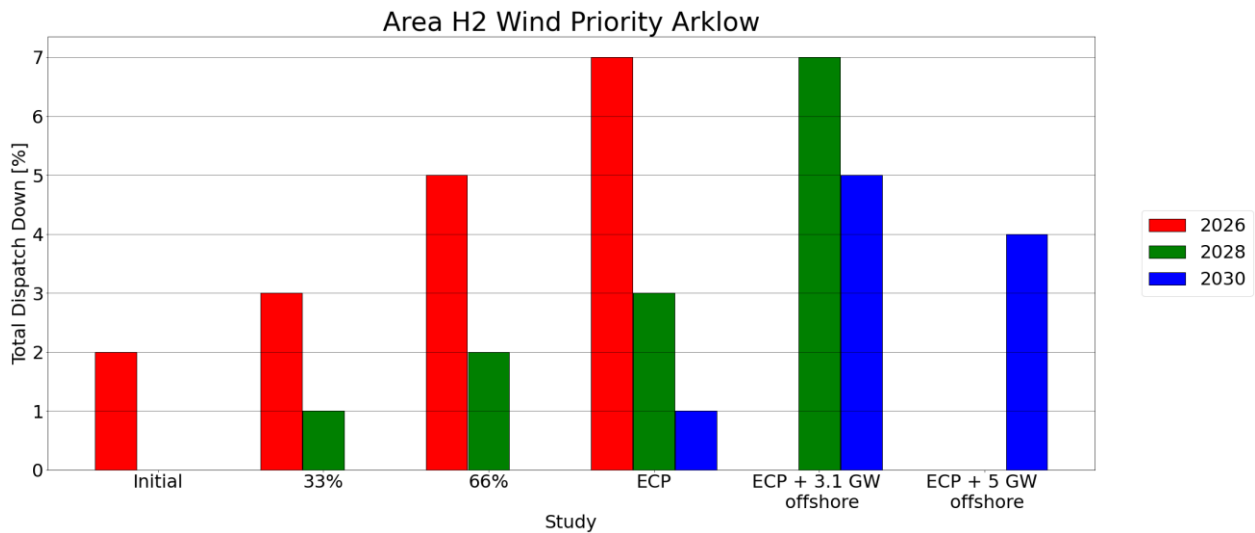


Figure 2-4 - Total Dispatch Down for Wind priority for Node Arklow

## 2.2 Arklow 220 kV



Figure 2-5 - Location of node Arklow 220 kV

Generator	SO	Capacity	Type	Status
Arklow Bank Phase 2 A	TSO	400.0	wind non-priority	due to connect
Arklow Bank Phase 2 B	TSO	400.0	wind non-priority	due to connect

Table 2-5 - Generation Included in Study for Node Arklow 220 kV

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026						
Installed Capacity (MW)	2028						
Installed Capacity (MW)	2030						800
Available Energy (GWh)	2026						
Available Energy (GWh)	2028						
Available Energy (GWh)	2030						3217
Generation (GWh)	2026						
Generation (GWh)	2028						
Generation (GWh)	2030						2464
Surplus (%)	2026						
Surplus (%)	2028						
Surplus (%)	2030						20 %
Curtailement (%)	2026						
Curtailement (%)	2028						
Curtailement (%)	2030						2 %
Constraint (%)	2026						
Constraint (%)	2028						
Constraint (%)	2030						2 %
Total Dispatch Down (%)	2026						
Total Dispatch Down (%)	2028						
Total Dispatch Down (%)	2030						23 %

Table 2-6 - Surplus, Curtailement and Constraint for Wind non-priority in Area H2

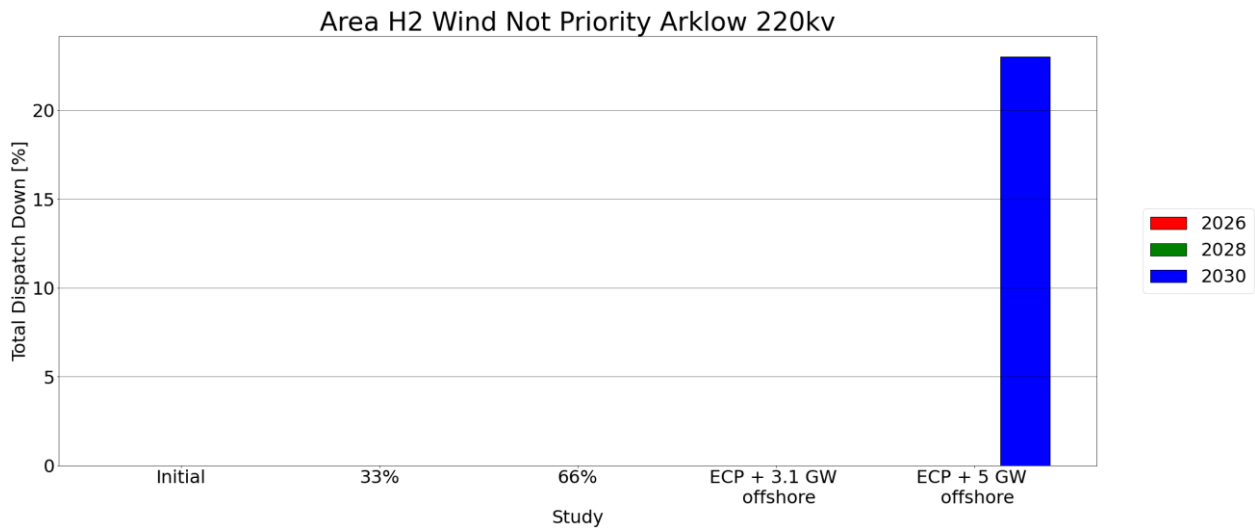


Figure 2-6 - Total Dispatch Down for Wind non-priority for Node Arklow 220 kV

## 2.3 Ballybeg

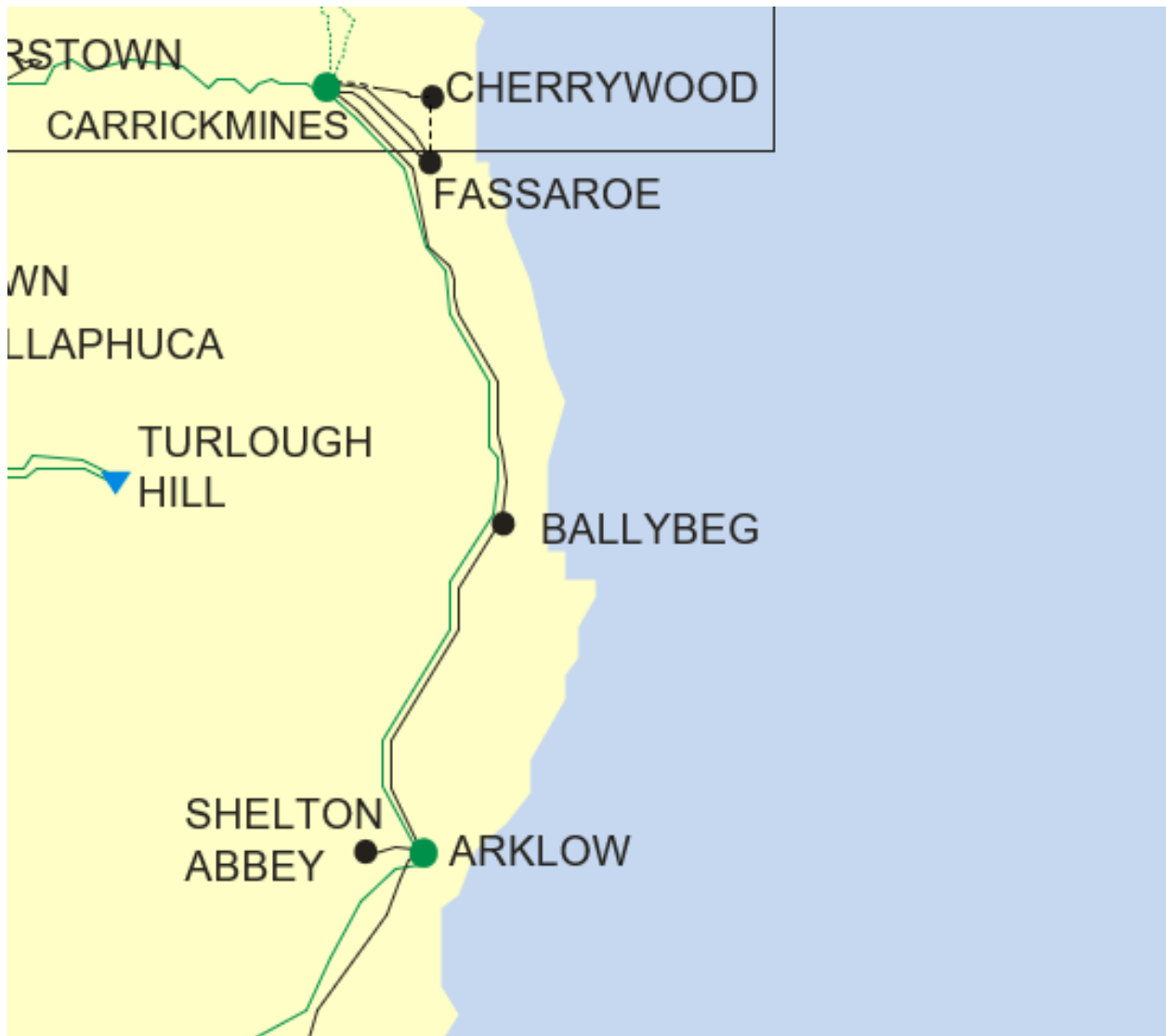


Figure 2-7 - Location of node Ballybeg

Generator	SO	Capacity	Type	Status
Ballinacloyh Solar Farm	DSO	8.5	solar non-priority	due to connect
Millvale PV	DSO	8.0	solar non-priority	connected

Table 2-7 - Generation Included in Study for Node Ballybeg

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	8	11	14	16		
Installed Capacity (MW)	2028	8	11	14	16	16	
Installed Capacity (MW)	2030				16	16	16
Available Energy (GWh)	2026	10	14	18	21		
Available Energy (GWh)	2028	10	14	18	21	21	
Available Energy (GWh)	2030				21	21	21
Generation (GWh)	2026	10	13	15	17		
Generation (GWh)	2028	10	13	16	19	17	
Generation (GWh)	2030				20	19	18
Surplus (%)	2026	1 %	3 %	5 %	9 %		
Surplus (%)	2028	<1 %	1 %	2 %	5 %	11 %	
Surplus (%)	2030				3 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-8 - Surplus, Curtailment and Constraint for Solar non-priority in Area H2

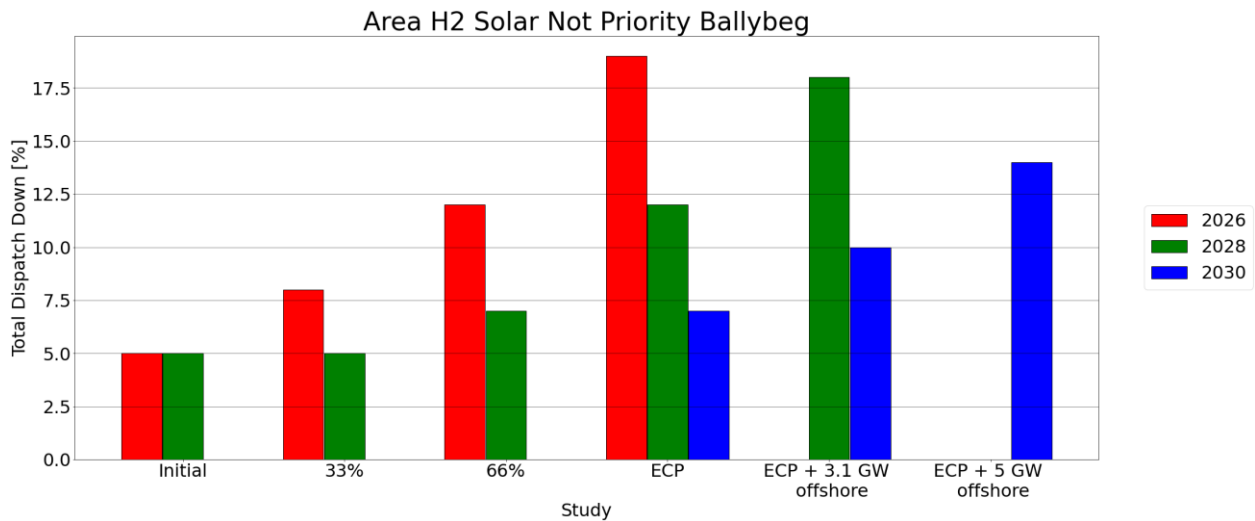


Figure 2-8 - Total Dispatch Down for Solar non-priority for Node Ballybeg

## 2.4 Ballyragget

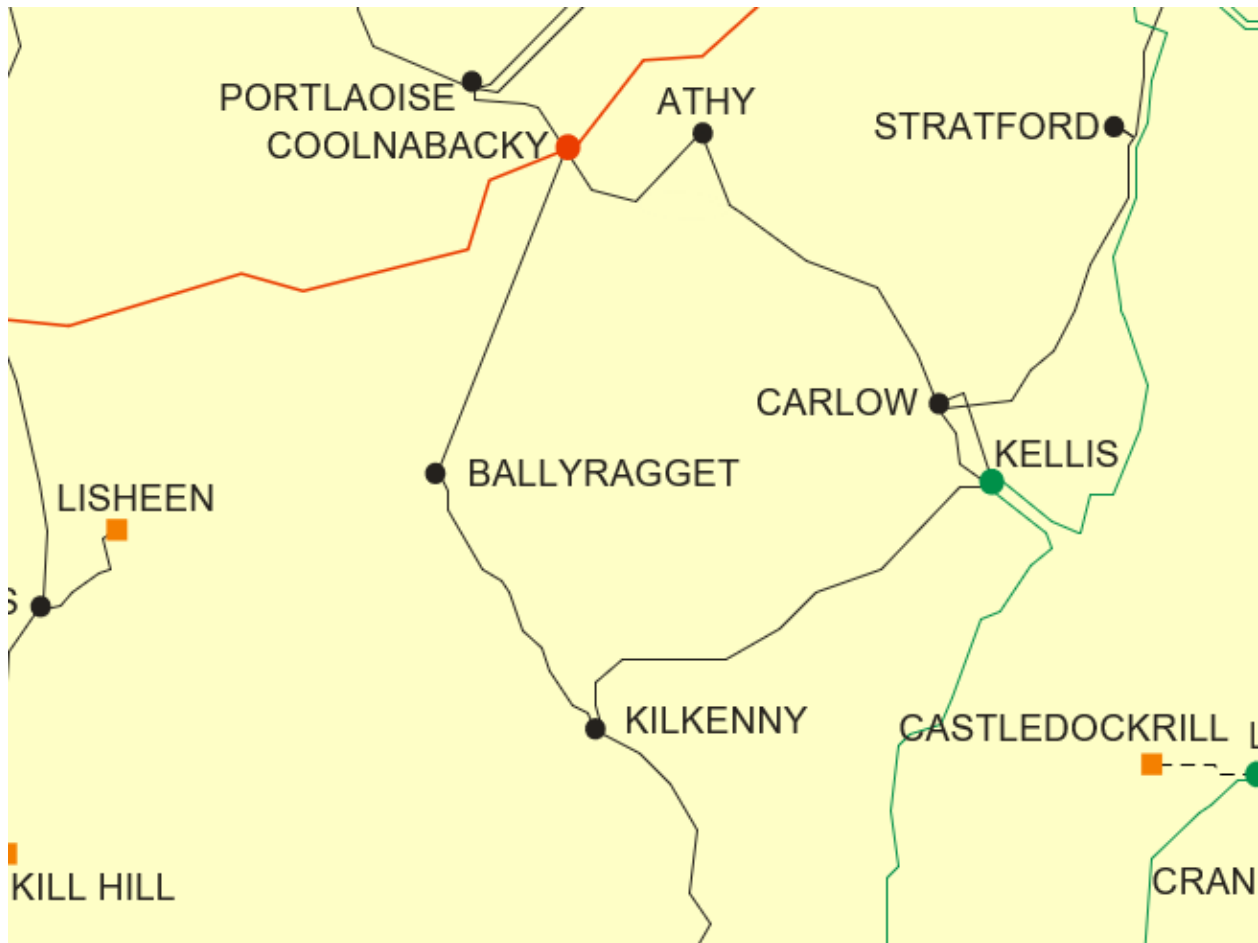


Figure 2-9 - Location of node Ballyragget

Generator	SO	Capacity	Type	Status
<b>Farranrory Wind Farm</b>	DSO	45.0	wind non-priority	due to connect
<b>Loan PV</b>	DSO	4.99	solar non-priority	due to connect
<b>Parksgrove solar</b>	DSO	35.0	solar non-priority	due to connect
<b>Pinewoods wind</b>	TSO	49.5	wind non-priority	due to connect

Table 2-9 - Generation Included in Study for Node Ballyragget

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	40	40	40	40		
Installed Capacity (MW)	2028	40	40	40	40	40	
Installed Capacity (MW)	2030				40	40	40
Available Energy (GWh)	2026	47	47	47	47		
Available Energy (GWh)	2028	47	47	47	47	47	
Available Energy (GWh)	2030				47	47	47
Generation (GWh)	2026	44	43	41	38		
Generation (GWh)	2028	45	45	44	41	38	
Generation (GWh)	2030				43	42	40
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-10 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

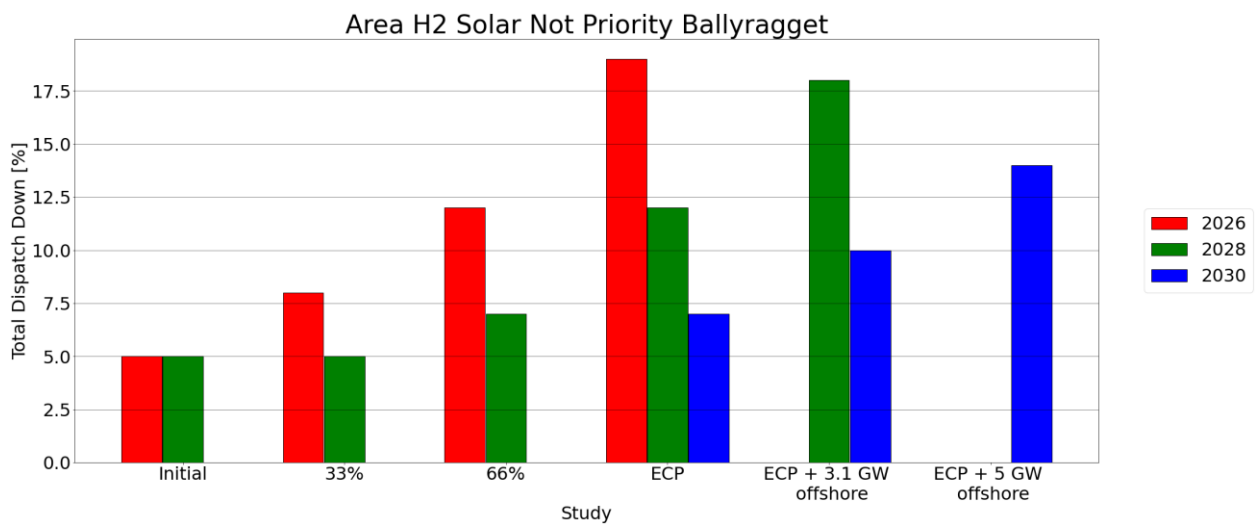


Figure 2-10 - Total Dispatch Down for Solar non-priority for Node Ballyragget



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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		31	63	94		
Installed Capacity (MW)	2028		31	63	94	94	
Installed Capacity (MW)	2030				94	94	94
Available Energy (GWh)	2026		89	178	267		
Available Energy (GWh)	2028		90	179	269	269	
Available Energy (GWh)	2030				267	267	267
Generation (GWh)	2026		74	145	207		
Generation (GWh)	2028		83	164	238	194	
Generation (GWh)	2030				251	231	199
Surplus (%)	2026		5 %	9 %	13 %		
Surplus (%)	2028		1 %	2 %	5 %	21 %	
Surplus (%)	2030				1 %	10 %	22 %
Curtailement (%)	2026		3 %	4 %	4 %		
Curtailement (%)	2028		1 %	2 %	3 %	5 %	
Curtailement (%)	2030				<1 %	2 %	2 %
Constraint (%)	2026		9 %	6 %	5 %		
Constraint (%)	2028		6 %	4 %	4 %	2 %	
Constraint (%)	2030				4 %	2 %	2 %
Total Dispatch Down (%)	2026		16 %	19 %	22 %		
Total Dispatch Down (%)	2028		7 %	8 %	11 %	28 %	
Total Dispatch Down (%)	2030				6 %	14 %	26 %

Table 2-11 - Surplus, Curtailement and Constraint for Wind non-priority in Area H2

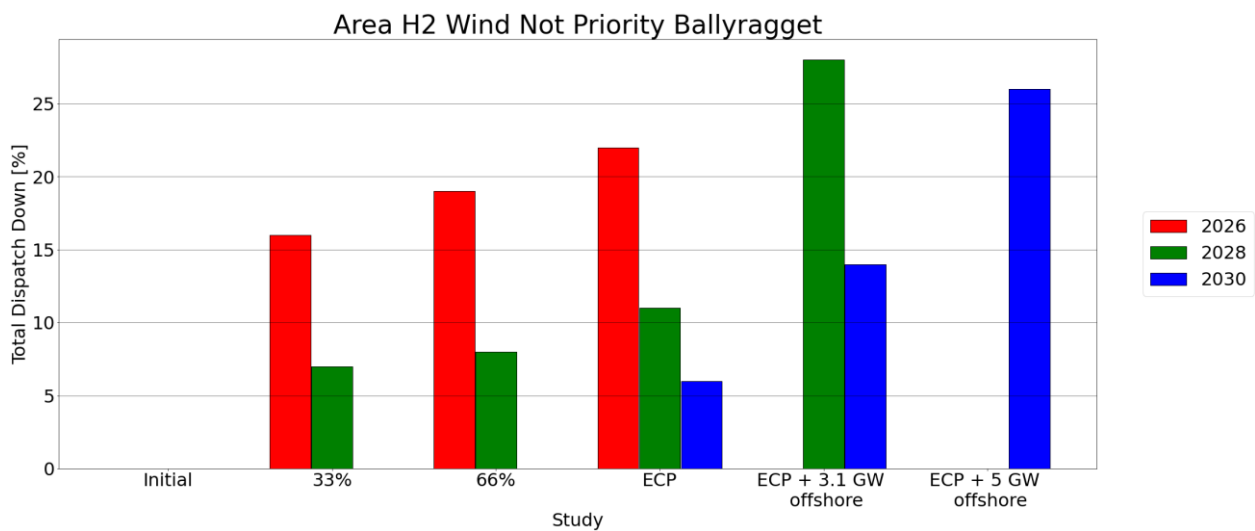


Figure 2-11 - Total Dispatch Down for Wind non-priority for Node Ballyragget

## 2.5 Ballywater



Figure 2-12 - Location of node Ballywater

Generator	SO	Capacity	Type	Status
<b>Ballywater (1)</b>	TSO	31.5	wind priority	connected
<b>Ballywater (2)</b>	TSO	10.5	wind priority	connected

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

The wind priority data is given in the following table.

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	42	42	42	42		
Installed Capacity (MW)	2028	42	42	42	42	42	
Installed Capacity (MW)	2030				42	42	42
Available Energy (GWh)	2026	119	119	119	119		
Available Energy (GWh)	2028	120	120	120	120	120	
Available Energy (GWh)	2030				119	119	119
Generation (GWh)	2026	116	115	113	111		
Generation (GWh)	2028	119	118	117	115	111	
Generation (GWh)	2030				118	112	115
Surplus (%)	2026	<1 %	<1 %	<1 %	<1 %		
Surplus (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Surplus (%)	2030				<1 %	<1 %	<1 %
Curtailement (%)	2026	2 %	3 %	5 %	7 %		
Curtailement (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Curtailement (%)	2030				1 %	5 %	4 %
Constraint (%)	2026	<1 %	<1 %	<1 %	<1 %		
Constraint (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Constraint (%)	2030				<1 %	<1 %	<1 %
Total Dispatch Down (%)	2026	2 %	3 %	5 %	7 %		
Total Dispatch Down (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Total Dispatch Down (%)	2030				1 %	5 %	4 %

Table 2-13 - Surplus, Curtailement and Constraint for Wind priority in Area H2

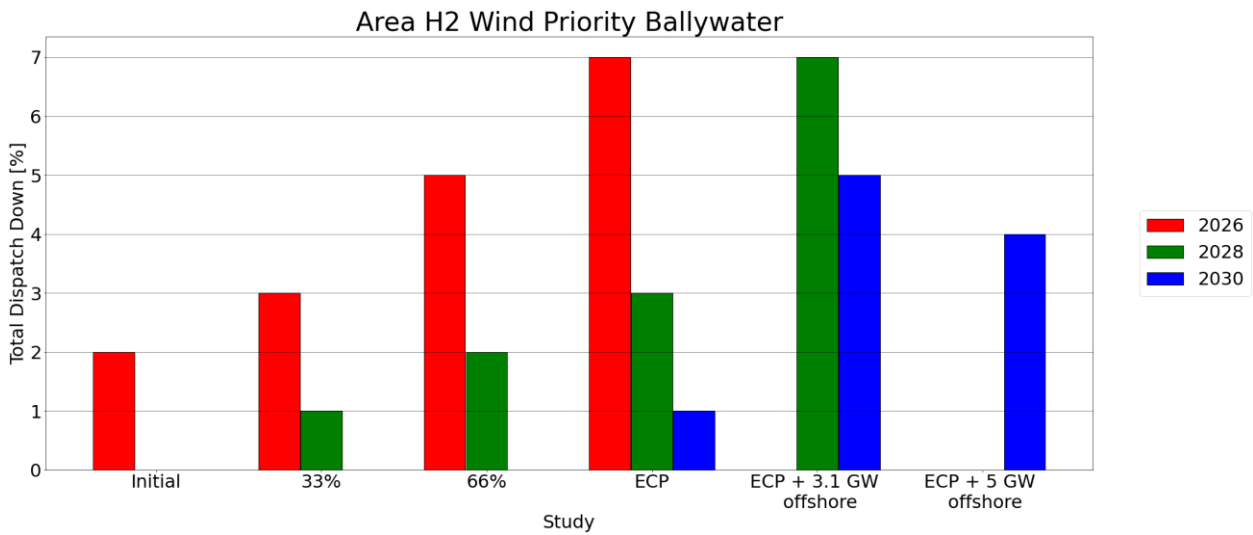


Figure 2-13 - Total Dispatch Down for Wind priority for Node Ballywater

## 2.6 Banoge

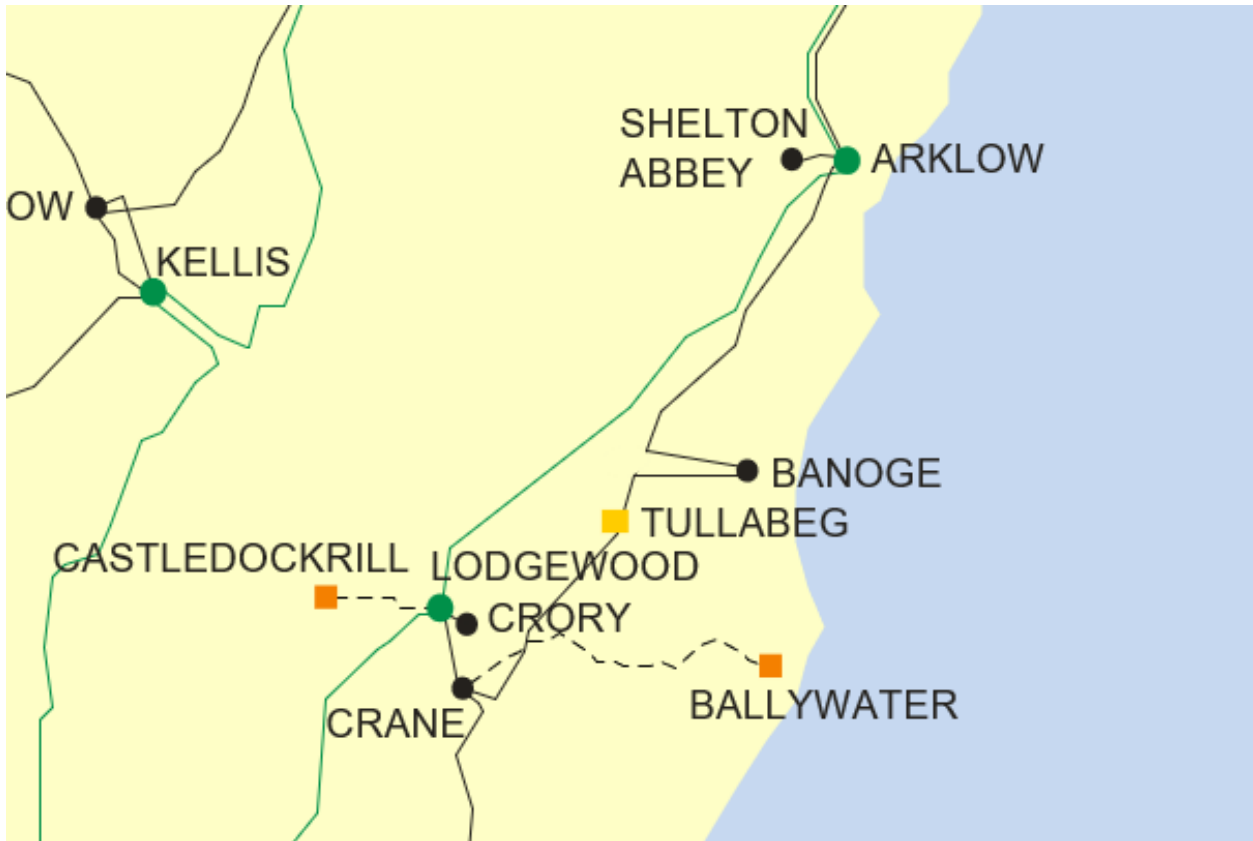


Figure 2-14 - Location of node Banoge

Generator	SO	Capacity	Type	Status
<b>Courtown Solar Farm (previously Coolnastudd)</b>	DSO	4.0	solar non-priority	due to connect
<b>Gorey Solar</b>	DSO	4.0	solar non-priority	due to connect

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

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	8	8	8	8		
Installed Capacity (MW)	2028	8	8	8	8	8	
Installed Capacity (MW)	2030				8	8	8
Available Energy (GWh)	2026	9	9	9	9		
Available Energy (GWh)	2028	9	9	9	9	9	
Available Energy (GWh)	2030				9	9	9
Generation (GWh)	2026	9	9	8	8		
Generation (GWh)	2028	9	9	9	8	8	
Generation (GWh)	2030				9	8	8
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-15 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

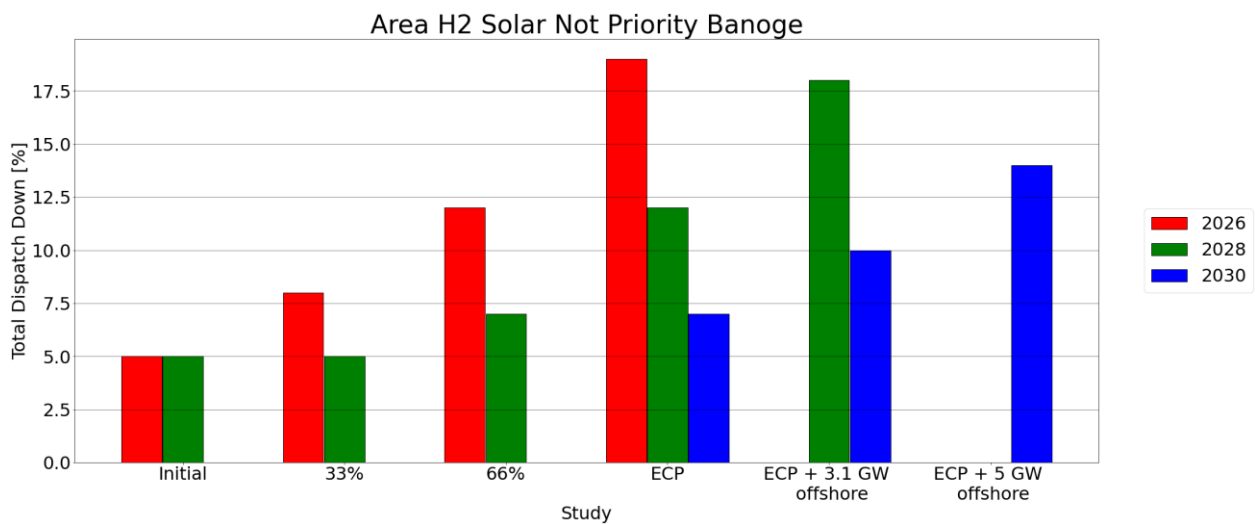


Figure 2-15 - Total Dispatch Down for Solar non-priority for Node Banoge

## 2.7 Carlow

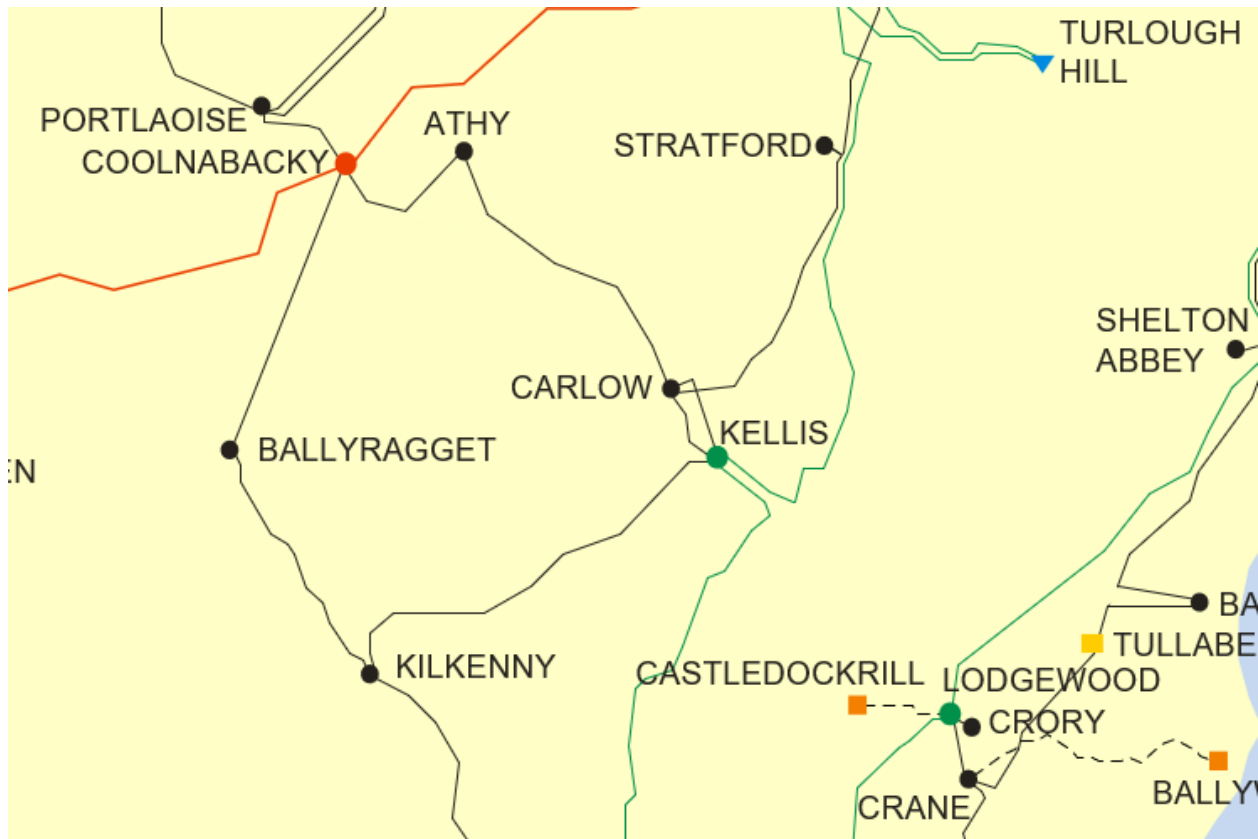


Figure 2-16 - Location of node Carlow

Generator	SO	Capacity	Type	Status
<b>Bilboa (1)</b>	DSO	15.0	wind non-priority	due to connect
<b>Bilboa Wind farm Ext</b>	DSO	6.0	wind non-priority	due to connect
<b>Coppenagh solar</b>	DSO	4.6	solar non-priority	due to connect
<b>Cronelea (1)</b>	DSO	4.99	wind priority	connected
<b>Cronelea (2)</b>	DSO	4.5	wind priority	connected
<b>Cronelea Upper (1)</b>	DSO	2.55	wind uncontrolled	connected
<b>Cronelea Upper (2)</b>	DSO	1.7	wind uncontrolled	connected
<b>Gortahile (1)</b>	DSO	21.0	wind priority	connected
<b>Kilcarrig Solar PV Farm</b>	DSO	4.0	solar non-priority	due to connect
<b>Coppenagh Solar Phase 2</b>	DSO	6.0	solar non-priority	due to connect
<b>Killerrig Solar Farm</b>	DSO	20.0	solar non-priority	due to connect

Table 2-16 - Generation Included in Study for Node Carlow

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	9	17	26	35		
Installed Capacity (MW)	2028	9	17	26	35	35	
Installed Capacity (MW)	2030				35	35	35
Available Energy (GWh)	2026	10	20	30	41		
Available Energy (GWh)	2028	10	20	30	41	41	
Available Energy (GWh)	2030				41	41	41
Generation (GWh)	2026	10	19	27	33		
Generation (GWh)	2028	10	19	28	36	33	
Generation (GWh)	2030				38	36	35
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-17 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

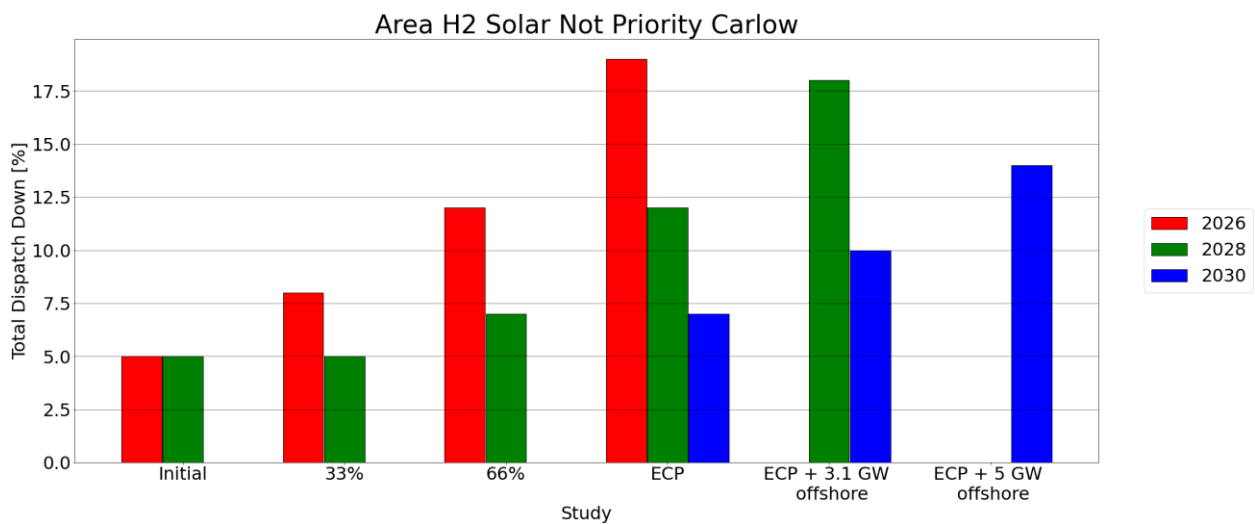


Figure 2-17 - Total Dispatch Down for Solar non-priority for Node Carlow

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		7	14	21		
Installed Capacity (MW)	2028		7	14	21	21	
Installed Capacity (MW)	2030				21	21	21
Available Energy (GWh)	2026		20	40	59		
Available Energy (GWh)	2028		20	40	60	60	
Available Energy (GWh)	2030				59	59	59
Generation (GWh)	2026		17	32	46		
Generation (GWh)	2028		18	37	53	43	
Generation (GWh)	2030				56	51	44
Surplus (%)	2026		5 %	9 %	13 %		
Surplus (%)	2028		1 %	2 %	5 %	21 %	
Surplus (%)	2030				1 %	10 %	22 %
Curtailement (%)	2026		3 %	4 %	4 %		
Curtailement (%)	2028		1 %	2 %	3 %	5 %	
Curtailement (%)	2030				<1 %	2 %	2 %
Constraint (%)	2026		9 %	6 %	5 %		
Constraint (%)	2028		6 %	4 %	4 %	2 %	
Constraint (%)	2030				4 %	2 %	2 %
Total Dispatch Down (%)	2026		16 %	19 %	22 %		
Total Dispatch Down (%)	2028		7 %	8 %	11 %	28 %	
Total Dispatch Down (%)	2030				6 %	14 %	26 %

Table 2-18 - Surplus, Curtailement and Constraint for Wind non-priority in Area H2

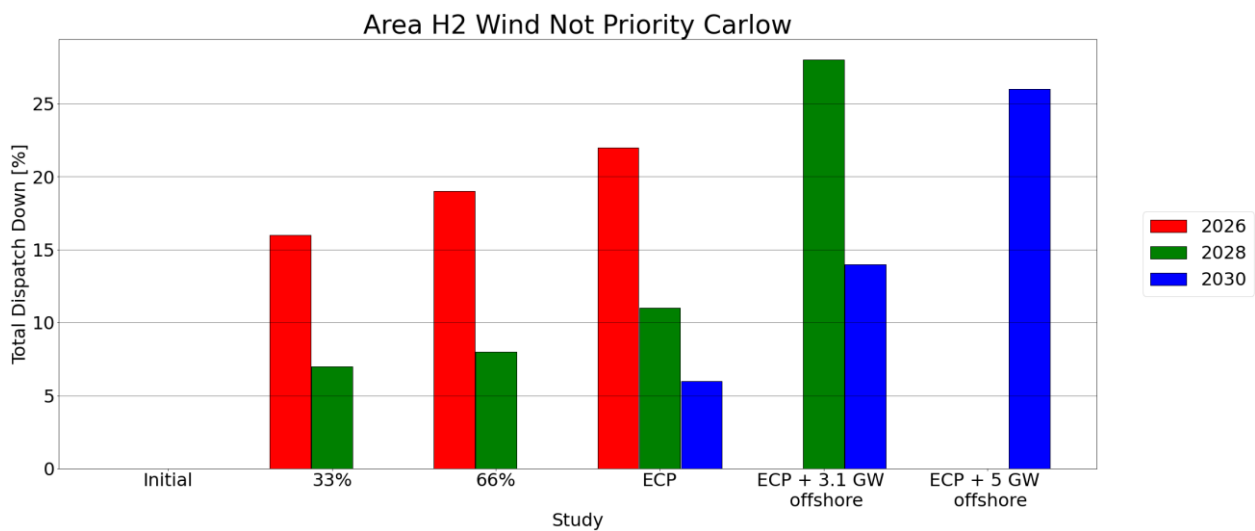


Figure 2-18 - Total Dispatch Down for Wind non-priority for Node Carlow



The wind priority data is given in the following table.

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	30	30	30	30		
Installed Capacity (MW)	2028	30	30	30	30	30	
Installed Capacity (MW)	2030				30	30	30
Available Energy (GWh)	2026	86	86	86	86		
Available Energy (GWh)	2028	87	87	87	87	87	
Available Energy (GWh)	2030				86	86	86
Generation (GWh)	2026	84	83	82	81		
Generation (GWh)	2028	87	86	85	84	80	
Generation (GWh)	2030				86	82	83
Surplus (%)	2026	<1 %	<1 %	<1 %	<1 %		
Surplus (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Surplus (%)	2030				<1 %	<1 %	<1 %
Curtailed (%)	2026	2 %	3 %	5 %	7 %		
Curtailed (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Curtailed (%)	2030				1 %	5 %	4 %
Constraint (%)	2026	<1 %	<1 %	<1 %	<1 %		
Constraint (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Constraint (%)	2030				<1 %	<1 %	<1 %
Total Dispatch Down (%)	2026	2 %	3 %	5 %	7 %		
Total Dispatch Down (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Total Dispatch Down (%)	2030				1 %	5 %	4 %

Table 2-19 - Surplus, Curtailment and Constraint for Wind priority in Area H2

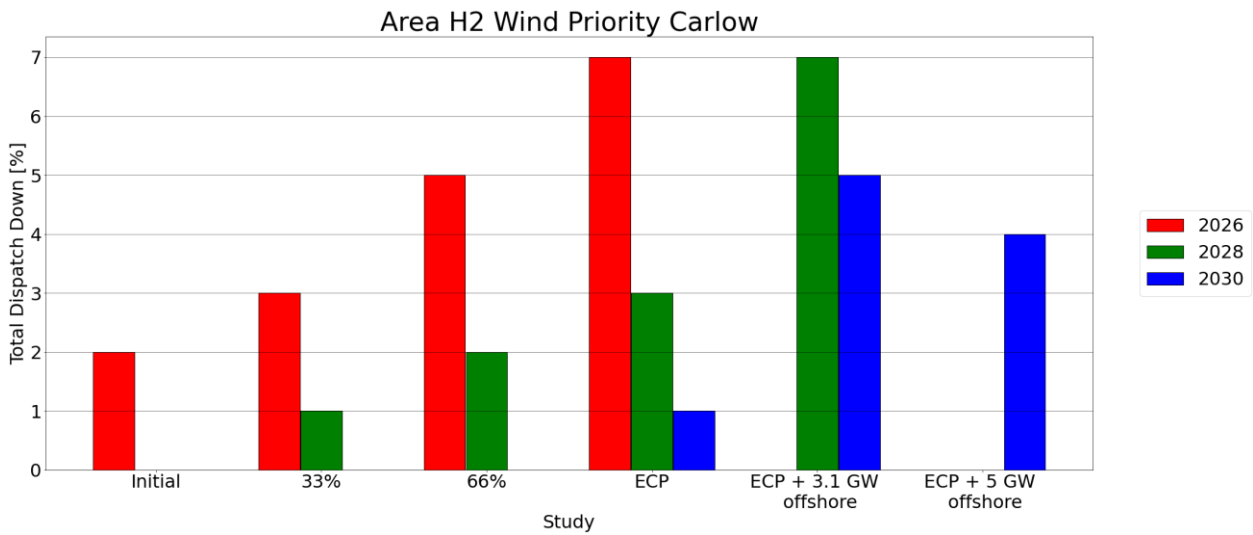


Figure 2-19 - Total Dispatch Down for Wind priority for Node Carlow

## 2.8 Castledockrell

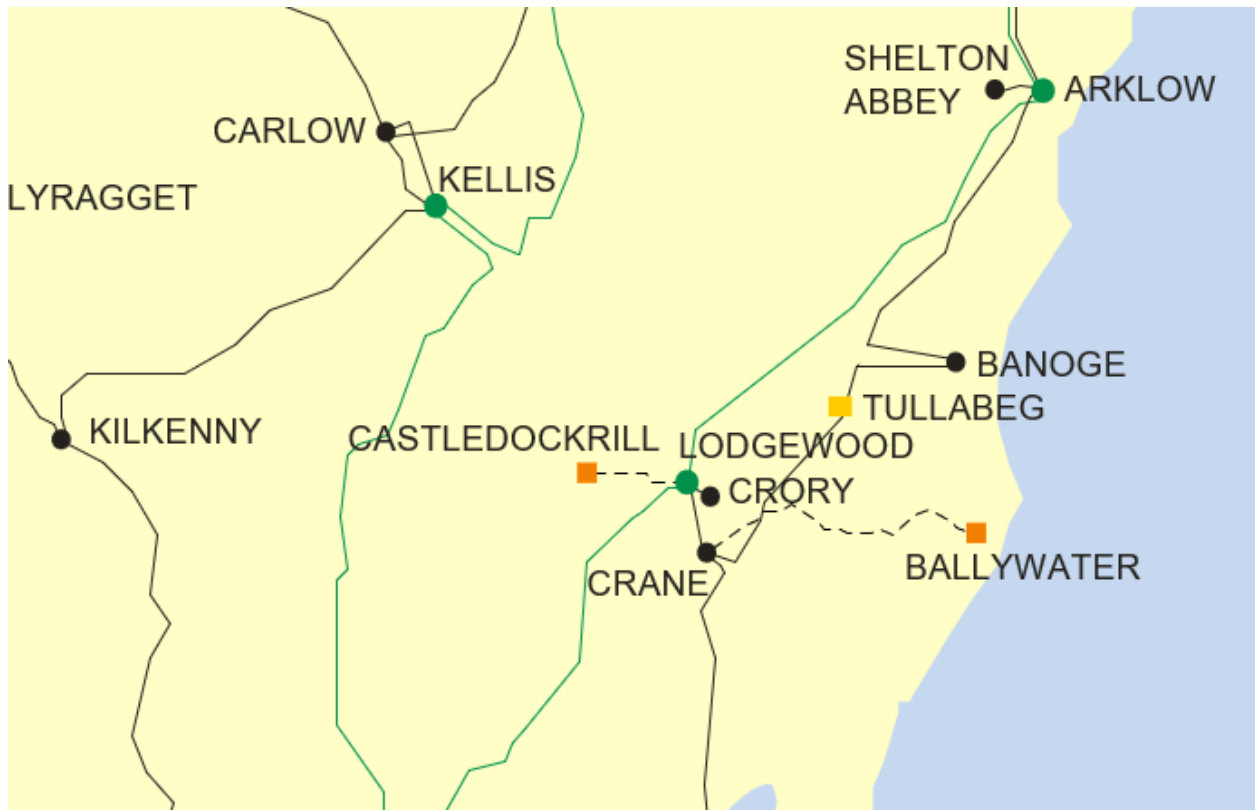


Figure 2-20 - Location of node Castledockrell

Generator	SO	Capacity	Type	Status
Castledockrell (1)	TSO	20.0	wind priority	connected
Castledockrell (2)	TSO	2.0	wind priority	connected
Castledockrell (3)	TSO	3.3	wind priority	connected
Castledockrell (4)	TSO	16.1	wind priority	connected

Table 2-20 - Generation Included in Study for Node Castledockrell

The wind priority data is given in the following table.

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	41	41	41	41		
Installed Capacity (MW)	2028	41	41	41	41	41	
Installed Capacity (MW)	2030				41	41	41
Available Energy (GWh)	2026	117	117	117	117		
Available Energy (GWh)	2028	118	118	118	118	118	
Available Energy (GWh)	2030				117	117	117
Generation (GWh)	2026	115	113	111	109		
Generation (GWh)	2028	117	116	115	114	109	
Generation (GWh)	2030				116	111	113
Surplus (%)	2026	<1 %	<1 %	<1 %	<1 %		
Surplus (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Surplus (%)	2030				<1 %	<1 %	<1 %
Curtailed (%)	2026	2 %	3 %	5 %	7 %		
Curtailed (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Curtailed (%)	2030				1 %	5 %	4 %
Constraint (%)	2026	<1 %	<1 %	<1 %	<1 %		
Constraint (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Constraint (%)	2030				<1 %	<1 %	<1 %
Total Dispatch Down (%)	2026	2 %	3 %	5 %	7 %		
Total Dispatch Down (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Total Dispatch Down (%)	2030				1 %	5 %	4 %

Table 2-21 - Surplus, Curtailment and Constraint for Wind priority in Area H2

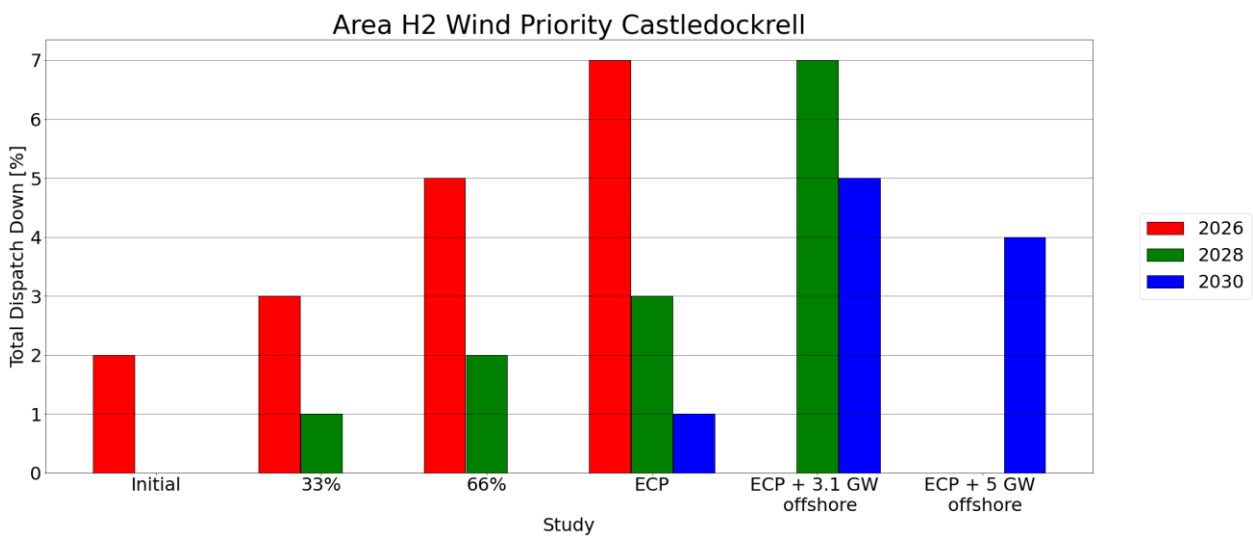


Figure 2-21 - Total Dispatch Down for Wind priority for Node Castledockrell

## 2.9 Crane

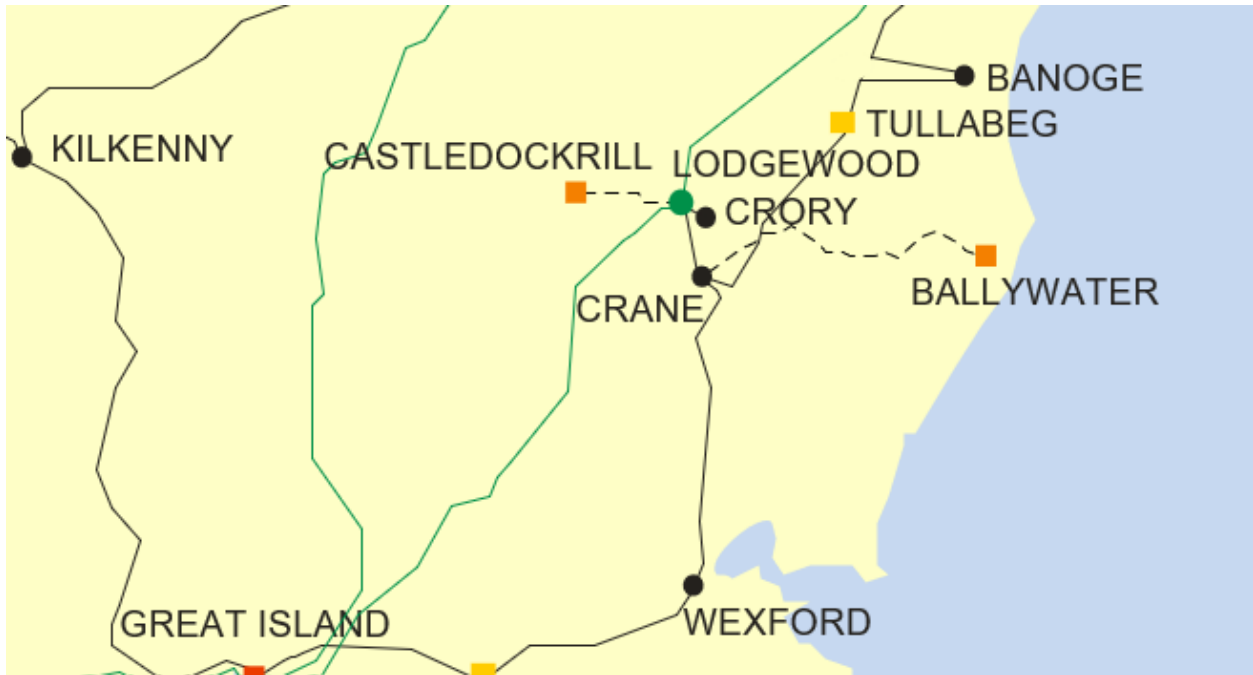


Figure 2-22 - Location of node Crane

Generator	SO	Capacity	Type	Status
Deerpark New Solar Park	DSO	2.9	solar non-priority	due to connect
Graigue Beg Community Solar Farm	DSO	4.99	solar non-priority	due to connect
Greenoge (1)	DSO	4.99	wind uncontrolled	connected
Kilbranish (1)	DSO	2.5	wind priority	connected
Macallian Solar	DSO	9.0	solar non-priority	due to connect
Tomsallagh Solar	TSO	50.0	solar non-priority	due to connect
Monart Spa Ground Mount 3	DSO	1.0	solar non-priority	due to connect

Table 2-22 - Generation Included in Study for Node Crane

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	9	29	48	68		
Installed Capacity (MW)	2028	9	29	48	68	68	
Installed Capacity (MW)	2030				68	68	68
Available Energy (GWh)	2026	11	34	57	79		
Available Energy (GWh)	2028	11	34	57	80	80	
Available Energy (GWh)	2030				79	79	79
Generation (GWh)	2026	10	31	50	65		
Generation (GWh)	2028	10	32	53	70	65	
Generation (GWh)	2030				74	71	68
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailed (%)	2026	1 %	1 %	2 %	4 %		
Curtailed (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailed (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-23 - Surplus, Curtailment and Constraint for Solar non-priority in Area H2

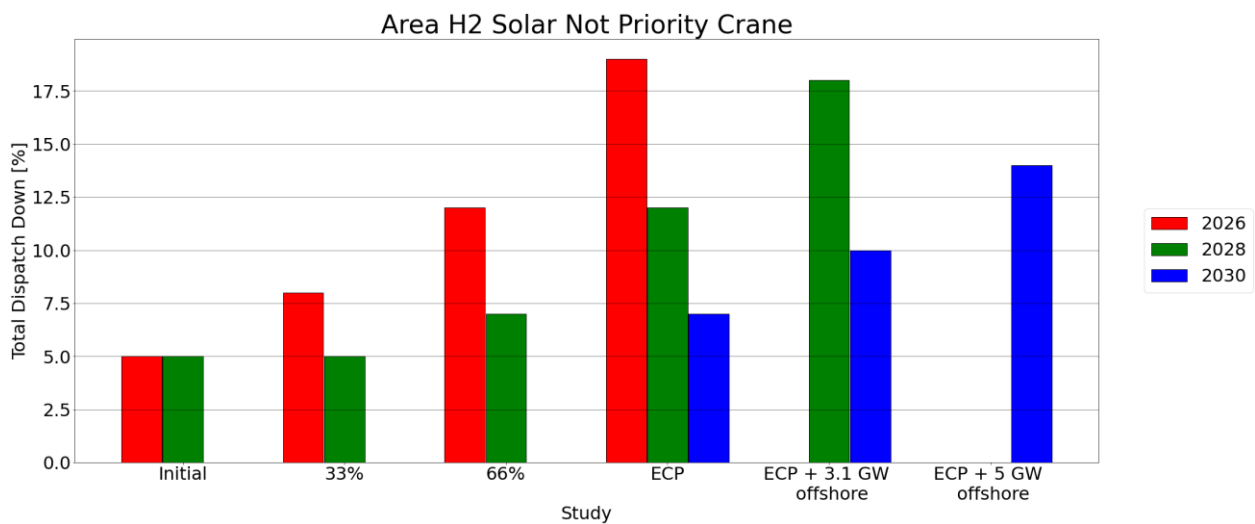


Figure 2-23 - Total Dispatch Down for Solar non-priority for Node Crane

The wind priority data is given in the following table.

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	2	2	2	2		
Installed Capacity (MW)	2028	2	2	2	2	2	
Installed Capacity (MW)	2030				2	2	2
Available Energy (GWh)	2026	7	7	7	7		
Available Energy (GWh)	2028	7	7	7	7	7	
Available Energy (GWh)	2030				7	7	7
Generation (GWh)	2026	7	7	7	7		
Generation (GWh)	2028	7	7	7	7	7	
Generation (GWh)	2030				7	7	7
Surplus (%)	2026	<1 %	<1 %	<1 %	<1 %		
Surplus (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Surplus (%)	2030				<1 %	<1 %	<1 %
Curtailed (%)	2026	2 %	3 %	5 %	7 %		
Curtailed (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Curtailed (%)	2030				1 %	5 %	4 %
Constraint (%)	2026	<1 %	<1 %	<1 %	<1 %		
Constraint (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Constraint (%)	2030				<1 %	<1 %	<1 %
Total Dispatch Down (%)	2026	2 %	3 %	5 %	7 %		
Total Dispatch Down (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Total Dispatch Down (%)	2030				1 %	5 %	4 %

Table 2-24 - Surplus, Curtailment and Constraint for Wind priority in Area H2

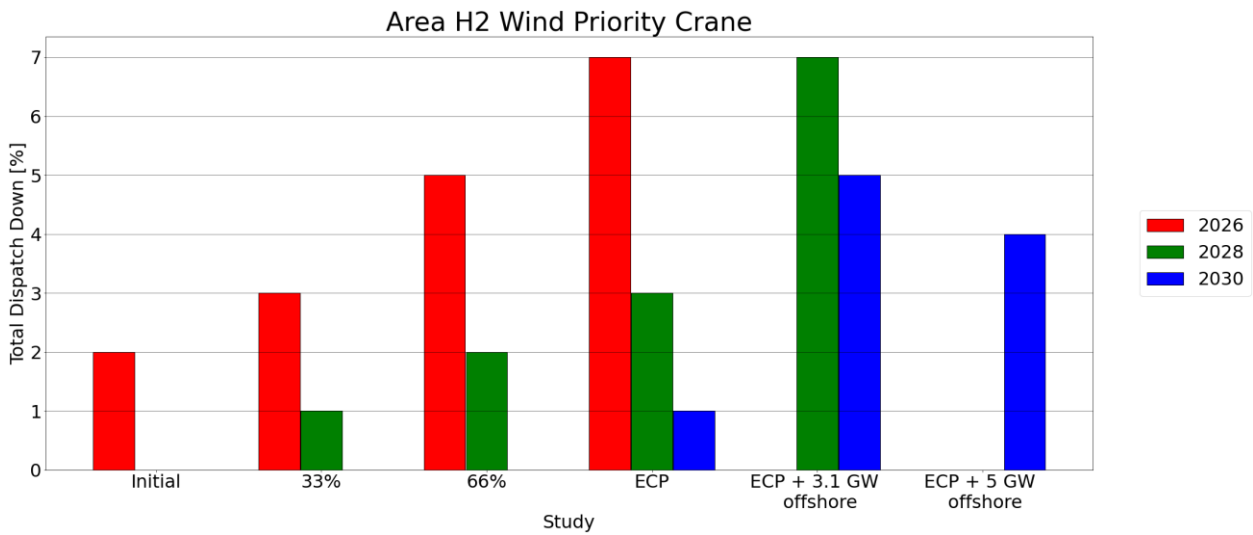


Figure 2-24 - Total Dispatch Down for Wind priority for Node Crane

## 2.10 Croy



Figure 2-25 - Location of node Croy

Generator	SO	Capacity	Type	Status
<b>Ballaman formerly (Kennystown) (1)</b>	DSO	3.6	wind uncontrolled	connected
<b>Ballycadden (1)</b>	DSO	14.45	wind priority	connected
<b>Ballycadden (2)</b>	DSO	9.76	wind priority	connected
<b>Ballyduff (1)</b>	DSO	4.0	wind uncontrolled	connected
<b>Ballynancoran (1)</b>	DSO	4.0	wind uncontrolled	connected
<b>Gibbet Hill (1)</b>	DSO	14.8	wind priority	connected
<b>Knocknalour (1)</b>	DSO	5.0	wind priority	connected
<b>Knocknalour (2)</b>	DSO	3.95	wind uncontrolled	connected
<b>The Dell Solar</b>	DSO	20.0	solar non-priority	due to connect

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

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

Area H2	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	23	23	23	23		
Available Energy (GWh)	2028	23	23	23	23	23	
Available Energy (GWh)	2030				23	23	23
Generation (GWh)	2026	22	22	21	19		
Generation (GWh)	2028	22	22	22	21	19	
Generation (GWh)	2030				22	21	20
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-26 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

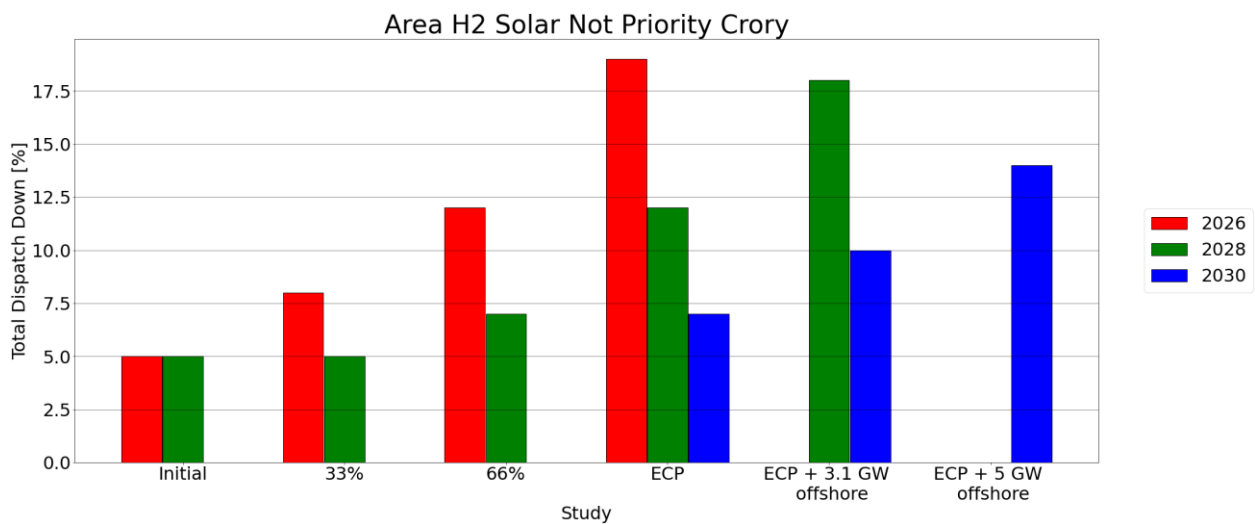


Figure 2-26 - Total Dispatch Down for Solar non-priority for Node Croy



The wind priority data is given in the following table.

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	44	44	44	44		
Installed Capacity (MW)	2028	44	44	44	44	44	
Installed Capacity (MW)	2030				44	44	44
Available Energy (GWh)	2026	124	124	124	124		
Available Energy (GWh)	2028	125	125	125	125	125	
Available Energy (GWh)	2030				124	124	124
Generation (GWh)	2026	122	120	118	116		
Generation (GWh)	2028	125	124	123	121	116	
Generation (GWh)	2030				124	118	120
Surplus (%)	2026	<1 %	<1 %	<1 %	<1 %		
Surplus (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Surplus (%)	2030				<1 %	<1 %	<1 %
Curtailed (%)	2026	2 %	3 %	5 %	7 %		
Curtailed (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Curtailed (%)	2030				1 %	5 %	4 %
Constraint (%)	2026	<1 %	<1 %	<1 %	<1 %		
Constraint (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Constraint (%)	2030				<1 %	<1 %	<1 %
Total Dispatch Down (%)	2026	2 %	3 %	5 %	7 %		
Total Dispatch Down (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Total Dispatch Down (%)	2030				1 %	5 %	4 %

Table 2-27 - Surplus, Curtailment and Constraint for Wind priority in Area H2

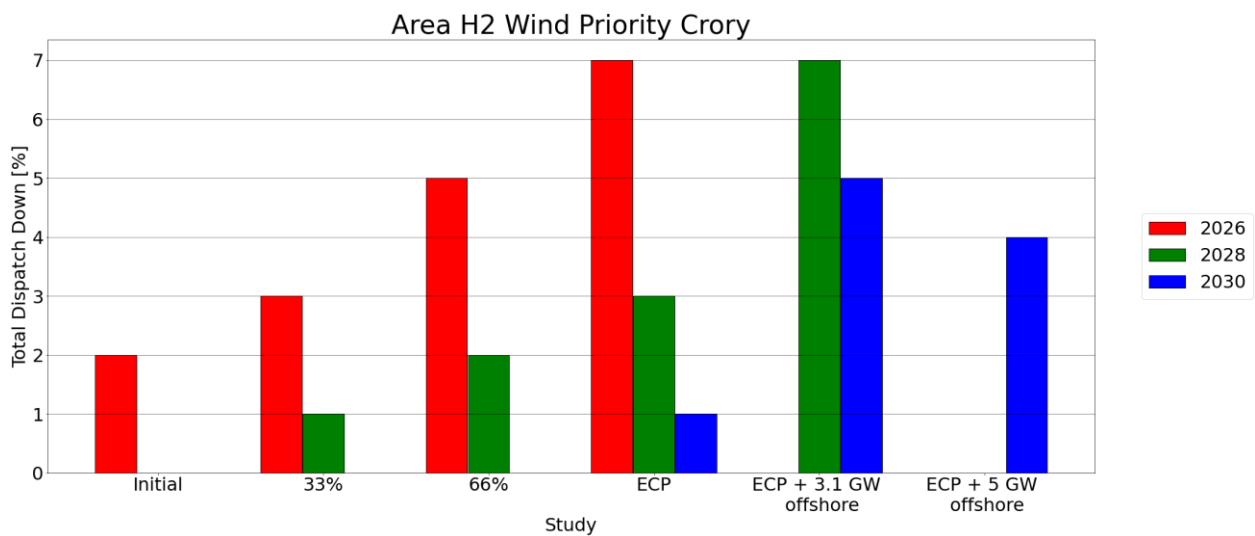


Figure 2-27 - Total Dispatch Down for Wind priority for Node Croy

## 2.11 Great Island



Figure 2-28 - Location of node Great Island

Generator	SO	Capacity	Type	Status
Ballyedock	DSO	12.0	solar non-priority	due to connect
Ballycullane Solar Park	DSO	4.99	solar non-priority	due to connect

Table 2-28 - Generation Included in Study for Node Great Island

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	17	17	17	17		
Installed Capacity (MW)	2028	17	17	17	17	17	
Installed Capacity (MW)	2030				17	17	17
Available Energy (GWh)	2026	20	20	20	20		
Available Energy (GWh)	2028	20	20	20	20	20	
Available Energy (GWh)	2030				20	20	20
Generation (GWh)	2026	19	18	17	16		
Generation (GWh)	2028	19	19	19	18	16	
Generation (GWh)	2030				18	18	17
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-29 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

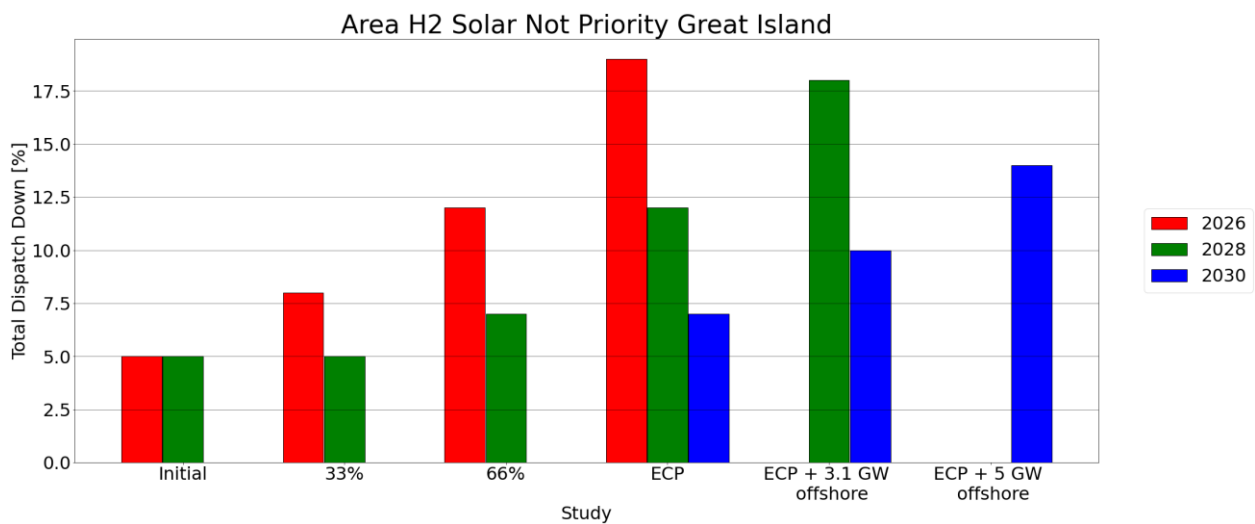


Figure 2-29 - Total Dispatch Down for Solar non-priority for Node Great Island

## 2.12 Great Island 220 kV



Figure 2-30 - Location of node Great Island 220 kV

Generator	SO	Capacity	Type	Status
Great Island OWF	TSO	378.0	wind non-priority	due to connect

Table 2-30 - Generation Included in Study for Node Great Island 220 kV

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026						
Installed Capacity (MW)	2028						
Installed Capacity (MW)	2030						378
Available Energy (GWh)	2026						
Available Energy (GWh)	2028						
Available Energy (GWh)	2030						1520
Generation (GWh)	2026						
Generation (GWh)	2028						
Generation (GWh)	2030						1164
Surplus (%)	2026						
Surplus (%)	2028						
Surplus (%)	2030						19%
Curtailement (%)	2026						
Curtailement (%)	2028						
Curtailement (%)	2030						2%
Constraint (%)	2026						
Constraint (%)	2028						
Constraint (%)	2030						2%
Total Dispatch Down (%)	2026						
Total Dispatch Down (%)	2028						
Total Dispatch Down (%)	2030						23%

Table 2-31 - Surplus, Curtailement and Constraint for Wind non-priority in Area H2

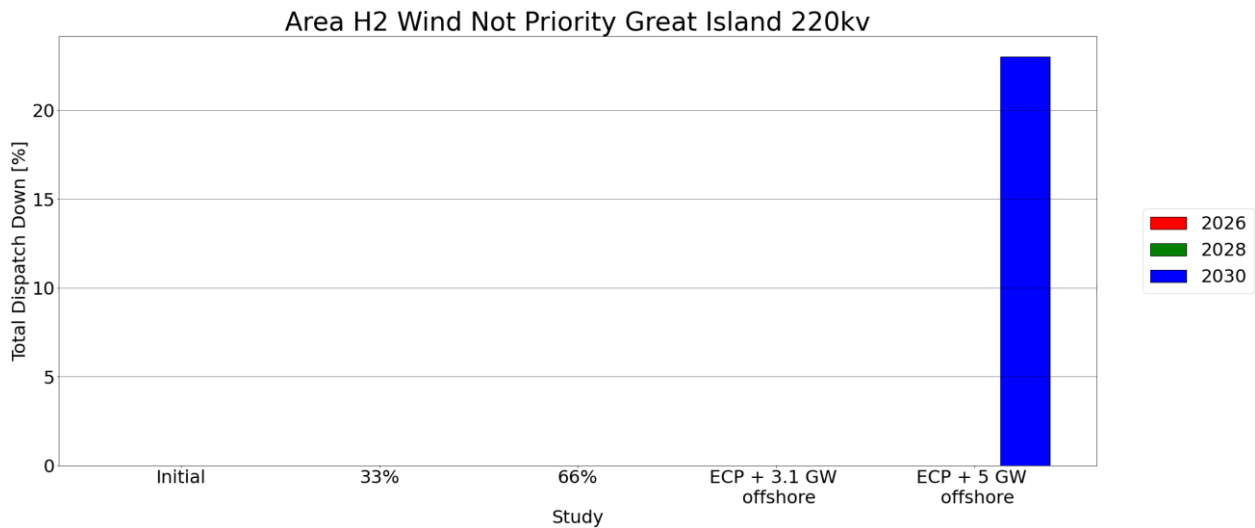


Figure 2-31 - Total Dispatch Down for Wind non-priority for Node Great Island 220 kV

## 2.13 Kellis



Figure 2-32 - Location of node Kellis

Generator	SO	Capacity	Type	Status
Garreenleen Solar Farm	TSO	81.0	solar non-priority	due to connect
Grangeford Solar PV	TSO	48.0	solar non-priority	due to connect

Table 2-32 - Generation Included in Study for Node Kellis

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		43	86	129		
Installed Capacity (MW)	2028		43	86	129	129	
Installed Capacity (MW)	2030				129	129	129
Available Energy (GWh)	2026		50	101	151		
Available Energy (GWh)	2028		50	101	151	151	
Available Energy (GWh)	2030				151	151	151
Generation (GWh)	2026		46	88	123		
Generation (GWh)	2028		48	94	133	124	
Generation (GWh)	2030				140	135	129
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		4 %	5 %	6 %		
Constraint (%)	2028		4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026		8 %	12 %	19 %		
Total Dispatch Down (%)	2028		5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-33 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

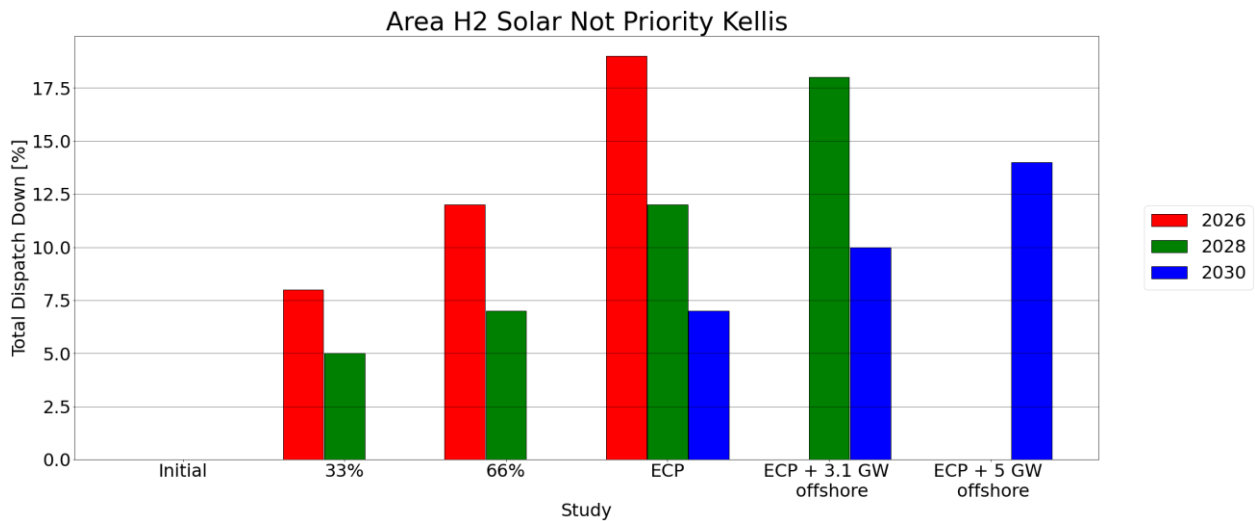


Figure 2-33 - Total Dispatch Down for Solar non-priority for Node Kellis

## 2.14 Kilkenny

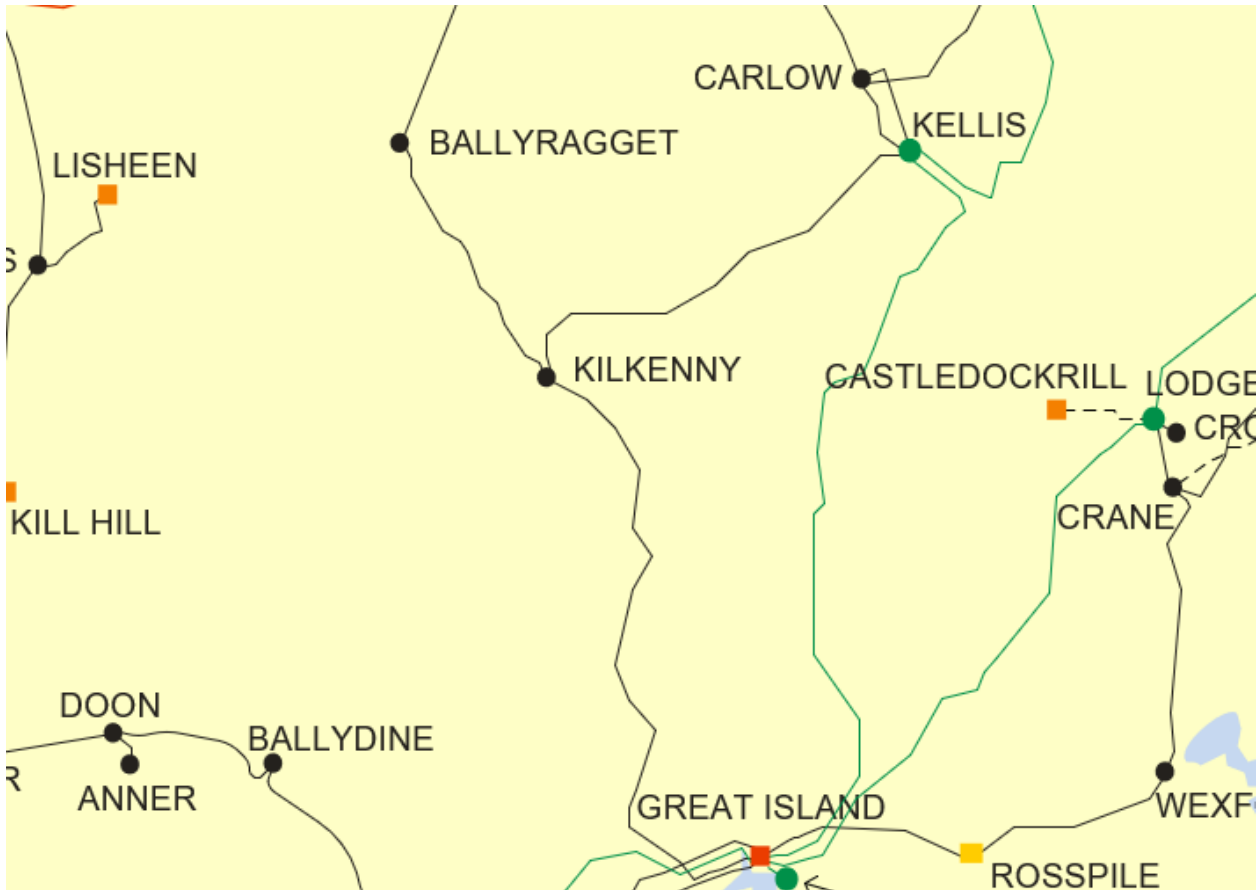


Figure 2-34 - Location of node Kilkenny

Generator	SO	Capacity	Type	Status
Ballytobin Solar PV	DSO	4.0	solar non-priority	due to connect
Castlekelly Solar PV Farm	DSO	4.0	solar non-priority	due to connect
Clashwilliam Solar	DSO	44.0	solar non-priority	due to connect
Keatingstown Solar Farm	DSO	6.0	solar non-priority	due to connect
Thomastown Road Solar	DSO	4.0	solar non-priority	due to connect

Table 2-34 - Generation Included in Study for Node Kilkenny



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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	14	30	46	62		
Installed Capacity (MW)	2028	14	30	46	62	62	
Installed Capacity (MW)	2030				62	62	62
Available Energy (GWh)	2026	16	35	54	73		
Available Energy (GWh)	2028	16	35	54	73	73	
Available Energy (GWh)	2030				73	73	73
Generation (GWh)	2026	16	32	47	59		
Generation (GWh)	2028	16	33	50	64	60	
Generation (GWh)	2030				67	65	62
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailed (%)	2026	1 %	1 %	2 %	4 %		
Curtailed (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailed (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-35 - Surplus, Curtailment and Constraint for Solar non-priority in Area H2

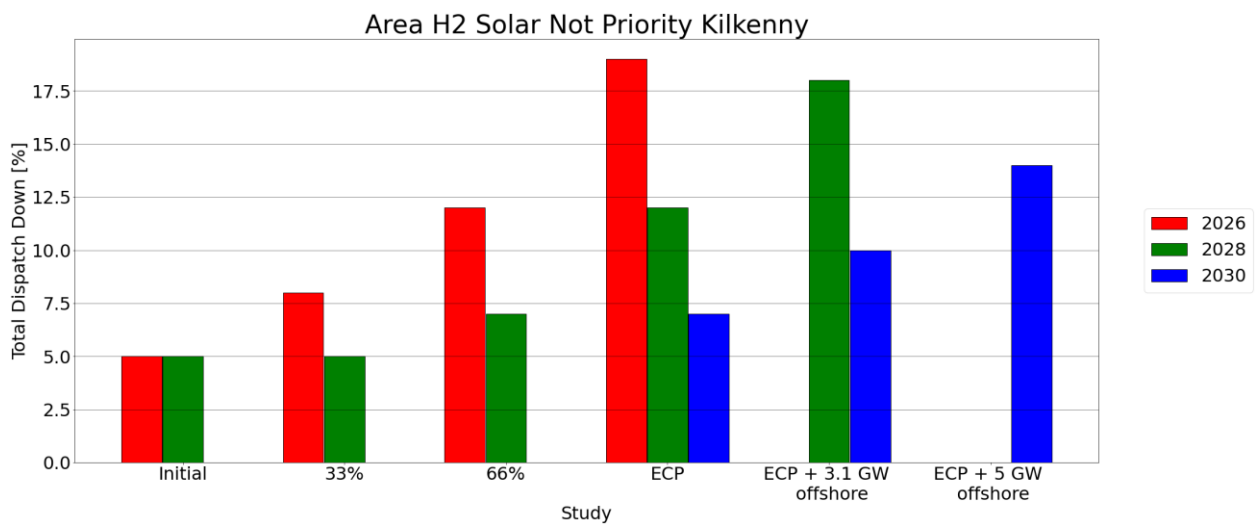


Figure 2-35 - Total Dispatch Down for Solar non-priority for Node Kilkenny

## 2.15 Kilvinoge



Figure 2-36 - Location of node Kilvinoge (this location is indicative and may be subject to change due to planning)

Generator	SO	Capacity	Type	Status
Castlebanny Wind Farm	TSO	138.6	wind non-priority	due to connect

Table 2-36 - Generation Included in Study for Node Kilvinoge

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		46	92	139		
Installed Capacity (MW)	2028		46	92	139	139	
Installed Capacity (MW)	2030				139	139	139
Available Energy (GWh)	2026		131	261	392		
Available Energy (GWh)	2028		131	263	394	394	
Available Energy (GWh)	2030				392	392	392
Generation (GWh)	2026		109	212	304		
Generation (GWh)	2028		122	241	349	284	
Generation (GWh)	2030				369	339	292
Surplus (%)	2026		5 %	9 %	13 %		
Surplus (%)	2028		1 %	2 %	5 %	21 %	
Surplus (%)	2030				1 %	10 %	22 %
Curtailement (%)	2026		3 %	4 %	4 %		
Curtailement (%)	2028		1 %	2 %	3 %	5 %	
Curtailement (%)	2030				<1 %	2 %	2 %
Constraint (%)	2026		9 %	6 %	5 %		
Constraint (%)	2028		6 %	4 %	4 %	2 %	
Constraint (%)	2030				4 %	2 %	2 %
Total Dispatch Down (%)	2026		16 %	19 %	22 %		
Total Dispatch Down (%)	2028		7 %	8 %	11 %	28 %	
Total Dispatch Down (%)	2030				6 %	14 %	26 %

Table 2-37 - Surplus, Curtailement and Constraint for Wind non-priority in Area H2

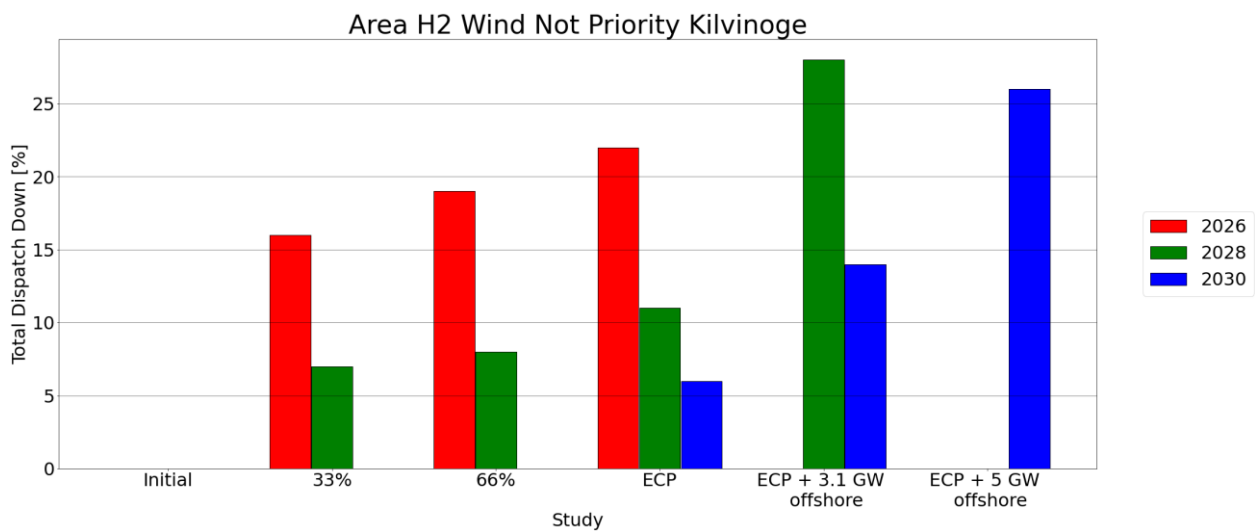


Figure 2-37 - Total Dispatch Down for Wind non-priority for Node Kilvinoge

## 2.16 Lodgewood



Figure 2-38 - Location of node Lodgewood

Generator	SO	Capacity	Type	Status
Monart East Solar Farm	TSO	50.0	solar non-priority	due to connect

Table 2-38 - Generation Included in Study for Node Lodgewood

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026		17	33	50		
Installed Capacity (MW)	2028		17	33	50	50	
Installed Capacity (MW)	2030				50	50	50
Available Energy (GWh)	2026		20	39	59		
Available Energy (GWh)	2028		20	39	59	59	
Available Energy (GWh)	2030				59	59	59
Generation (GWh)	2026		18	34	48		
Generation (GWh)	2028		19	37	52	48	
Generation (GWh)	2030				54	53	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		4 %	5 %	6 %		
Constraint (%)	2028		4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026		8 %	12 %	19 %		
Total Dispatch Down (%)	2028		5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-39 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

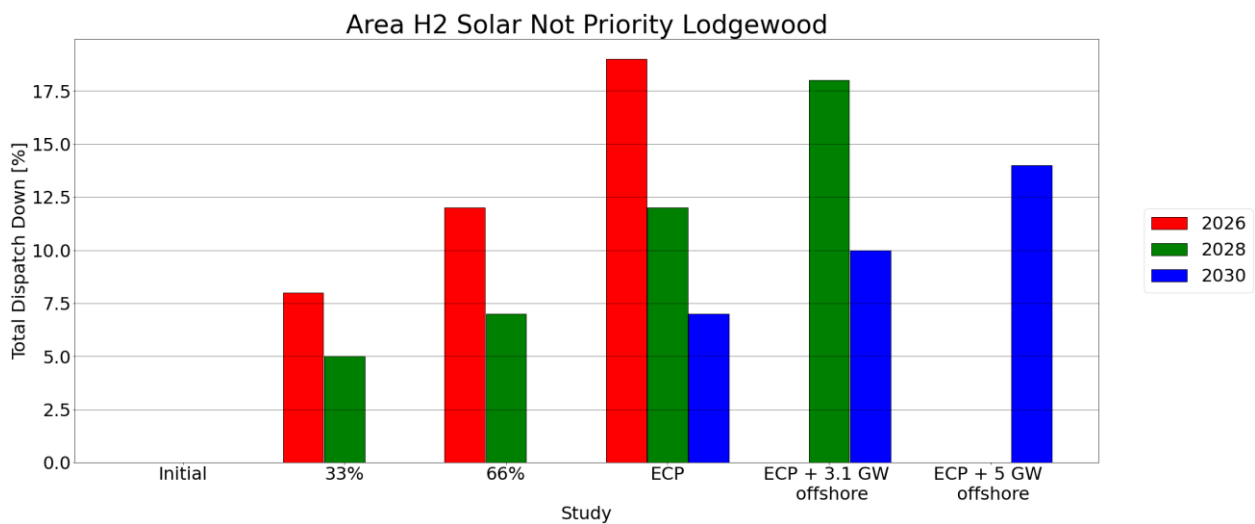


Figure 2-39 - Total Dispatch Down for Solar non-priority for Node Lodgewood

## 2.17 Rosspile



Figure 2-40 - Location of node Rosspile

Generator	SO	Capacity	Type	Status
Rosspile Solar Farm	TSO	95.0	solar non-priority	connected
Moortown Solar plus Storage Facility (Solar)	TSO	49.0	solar non-priority	due to connect

Table 2-40 - Generation Included in Study for Node Rosspile

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	95	111	128	144		
Installed Capacity (MW)	2028	95	111	128	144	144	
Installed Capacity (MW)	2030				144	144	144
Available Energy (GWh)	2026	111	130	149	169		
Available Energy (GWh)	2028	111	131	150	169	169	
Available Energy (GWh)	2030				169	169	169
Generation (GWh)	2026	105	120	131	137		
Generation (GWh)	2028	106	124	140	148	138	
Generation (GWh)	2030				157	151	144
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-41 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

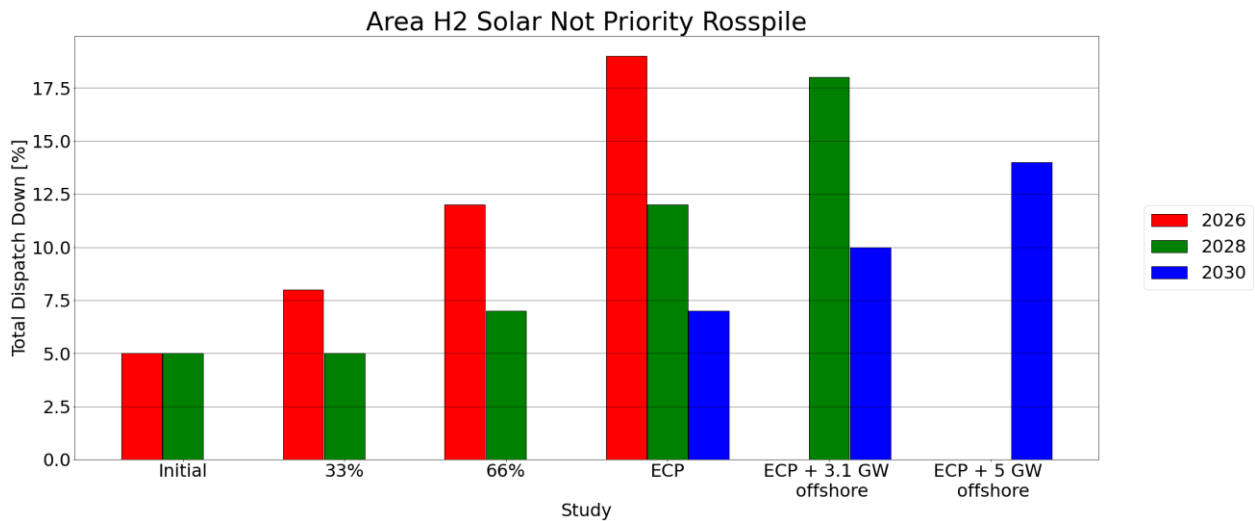


Figure 2-41 - Total Dispatch Down for Solar non-priority for Node Rosspile

## 2.18 Tullabeg



Figure 2-42 - Location of node Tullabeg

Generator	SO	Capacity	Type	Status
Tullabeg Solar Park	TSO	50.0	solar non-priority	due to connect
Tullabeg Phase 2	TSO	105.0	solar non-priority	due to connect

Table 2-42 - Generation Included in Study for Node Tullabeg



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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	50	85	120	155		
Installed Capacity (MW)	2028	50	85	120	155	155	
Installed Capacity (MW)	2030				155	155	155
Available Energy (GWh)	2026	59	100	140	181		
Available Energy (GWh)	2028	59	100	141	182	182	
Available Energy (GWh)	2030				181	181	181
Generation (GWh)	2026	55	92	123	147		
Generation (GWh)	2028	56	95	132	160	149	
Generation (GWh)	2030				169	163	155
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-43 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

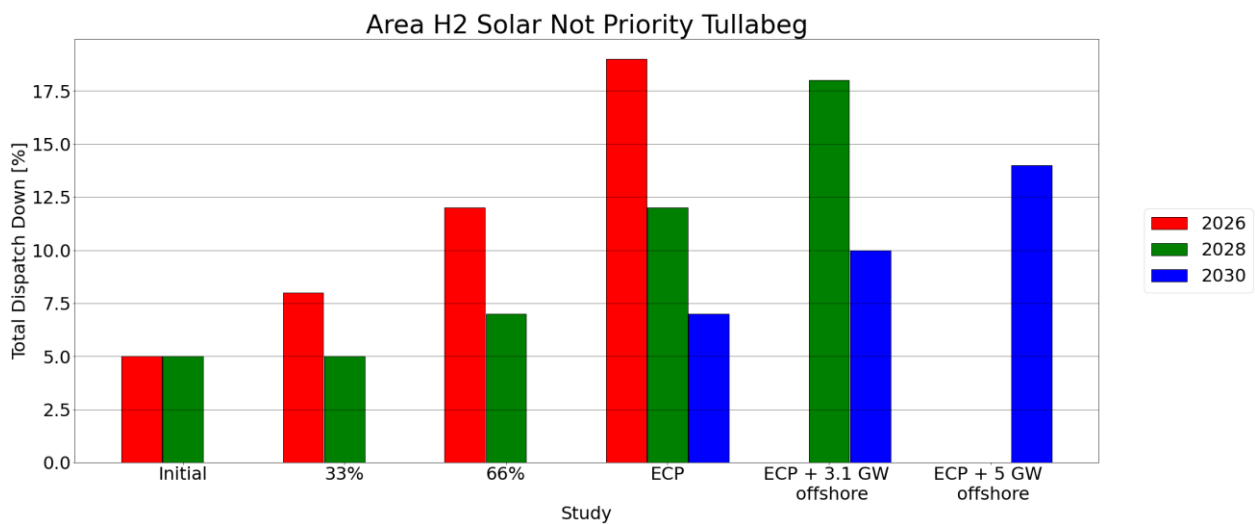


Figure 2-43 - Total Dispatch Down for Solar non-priority for Node Tullabeg

## 2.19 Waterford



Figure 2-44 - Location of node Waterford

Generator	SO	Capacity	Type	Status
<b>Ballymartin (1)</b>	DSO	6.0	wind priority	connected
<b>Ballymartin (2)</b>	DSO	8.28	wind priority	connected
<b>Curraghmartin Solar Park</b>	DSO	3.99	solar non-priority	connected
<b>Farranmacedmond Solar Farm</b>	DSO	6.0	solar non-priority	due to connect
<b>Rahora (1)</b>	DSO	4.25	wind uncontrolled	connected

Table 2-44 - Generation Included in Study for Node Waterford

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	4	6	8	10		
Installed Capacity (MW)	2028	4	6	8	10	10	
Installed Capacity (MW)	2030				10	10	10
Available Energy (GWh)	2026	5	7	9	12		
Available Energy (GWh)	2028	5	7	9	12	12	
Available Energy (GWh)	2030				12	12	12
Generation (GWh)	2026	4	6	8	10		
Generation (GWh)	2028	4	7	9	10	10	
Generation (GWh)	2030				11	10	10
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-45 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

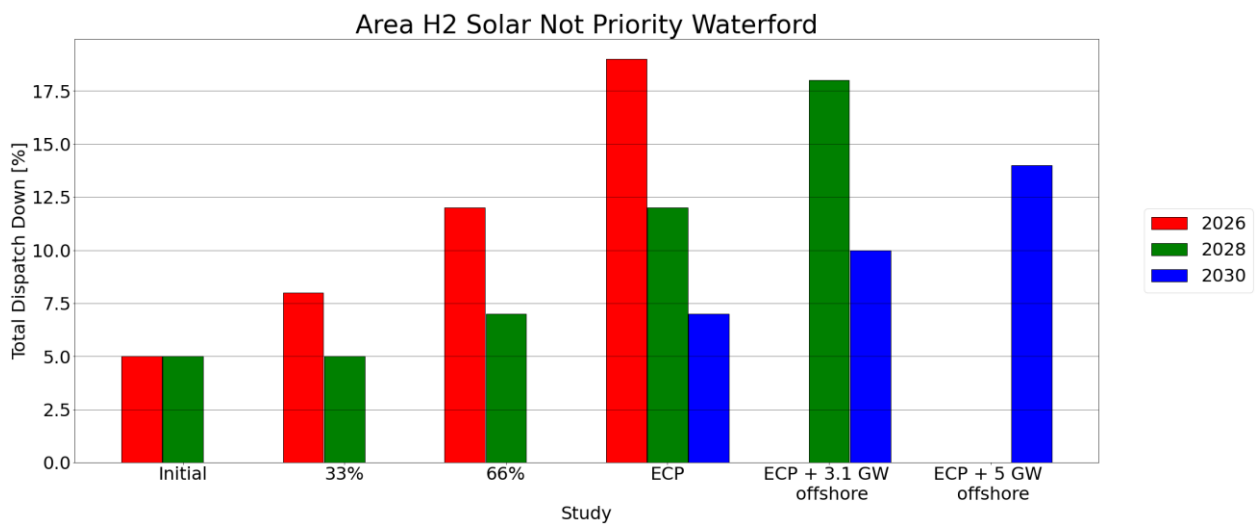


Figure 2-45 - Total Dispatch Down for Solar non-priority for Node Waterford

The wind priority data is given in the following table.

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	14	14	14	14		
Installed Capacity (MW)	2028	14	14	14	14	14	
Installed Capacity (MW)	2030				14	14	14
Available Energy (GWh)	2026	40	40	40	40		
Available Energy (GWh)	2028	41	41	41	41	41	
Available Energy (GWh)	2030				40	40	40
Generation (GWh)	2026	40	39	38	38		
Generation (GWh)	2028	41	40	40	39	38	
Generation (GWh)	2030				40	38	39
Surplus (%)	2026	<1 %	<1 %	<1 %	<1 %		
Surplus (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Surplus (%)	2030				<1 %	<1 %	<1 %
Curtailed (%)	2026	2 %	3 %	5 %	7 %		
Curtailed (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Curtailed (%)	2030				1 %	5 %	4 %
Constraint (%)	2026	<1 %	<1 %	<1 %	<1 %		
Constraint (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Constraint (%)	2030				<1 %	<1 %	<1 %
Total Dispatch Down (%)	2026	2 %	3 %	5 %	7 %		
Total Dispatch Down (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Total Dispatch Down (%)	2030				1 %	5 %	4 %

Table 2-46 - Surplus, Curtailment and Constraint for Wind priority in Area H2

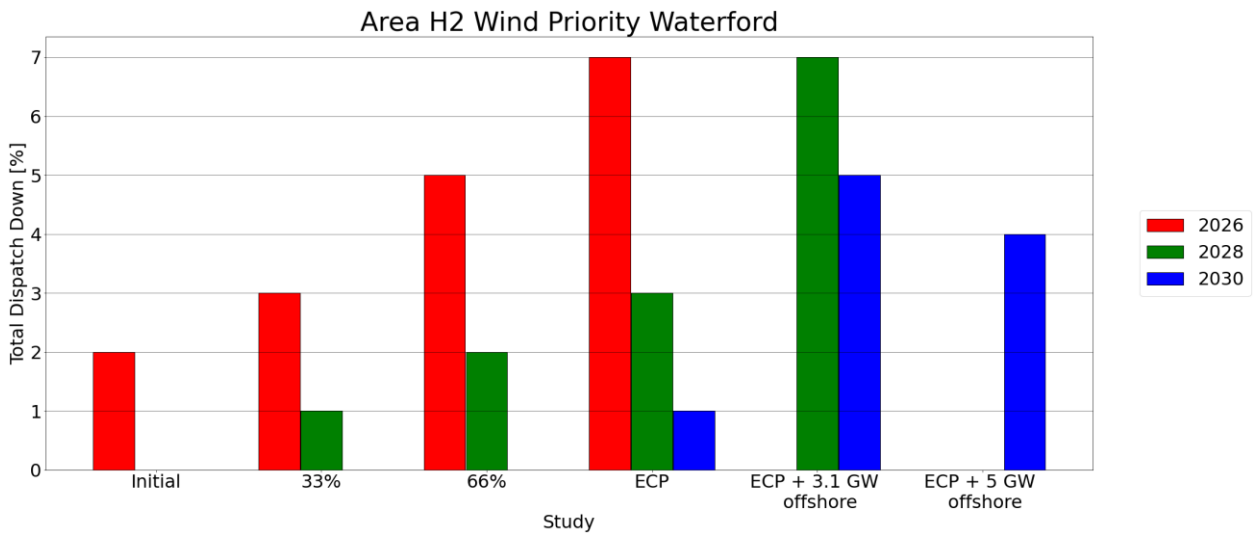


Figure 2-46 - Total Dispatch Down for Wind priority for Node Waterford

## 2.20 Wexford



Figure 2-47 - Location of node Wexford

Generator	SO	Capacity	Type	Status
Blusheens Solar (1)	DSO	7.98	solar non-priority	connected
Carnsore (1)	DSO	11.9	wind uncontrolled	connected
Davidstown Solar	DSO	4.95	solar non-priority	due to connect
Grahormick solar	TSO	54.8	solar non-priority	due to connect
Richfield (1)	DSO	20.25	wind priority	connected
Richfield (2)	DSO	6.75	wind priority	connected
Tracystown Solar	TSO	101.1	solar non-priority	due to connect

Table 2-47 - Generation Included in Study for Node Wexford

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

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	13	65	117	169		
Installed Capacity (MW)	2028	13	65	117	169	169	
Installed Capacity (MW)	2030				169	169	169
Available Energy (GWh)	2026	15	76	137	198		
Available Energy (GWh)	2028	15	76	137	198	198	
Available Energy (GWh)	2030				198	198	198
Generation (GWh)	2026	14	70	120	161		
Generation (GWh)	2028	14	72	128	174	162	
Generation (GWh)	2030				184	177	169
Surplus (%)	2026	1 %	2 %	5 %	9 %		
Surplus (%)	2028	<1 %	<1 %	2 %	5 %	11 %	
Surplus (%)	2030				2 %	6 %	10 %
Curtailement (%)	2026	1 %	1 %	2 %	4 %		
Curtailement (%)	2028	<1 %	1 %	1 %	2 %	3 %	
Curtailement (%)	2030				1 %	1 %	1 %
Constraint (%)	2026	4 %	4 %	5 %	6 %		
Constraint (%)	2028	5 %	4 %	3 %	5 %	3 %	
Constraint (%)	2030				4 %	3 %	3 %
Total Dispatch Down (%)	2026	5 %	8 %	12 %	19 %		
Total Dispatch Down (%)	2028	5 %	5 %	7 %	12 %	18 %	
Total Dispatch Down (%)	2030				7 %	10 %	14 %

Table 2-48 - Surplus, Curtailement and Constraint for Solar non-priority in Area H2

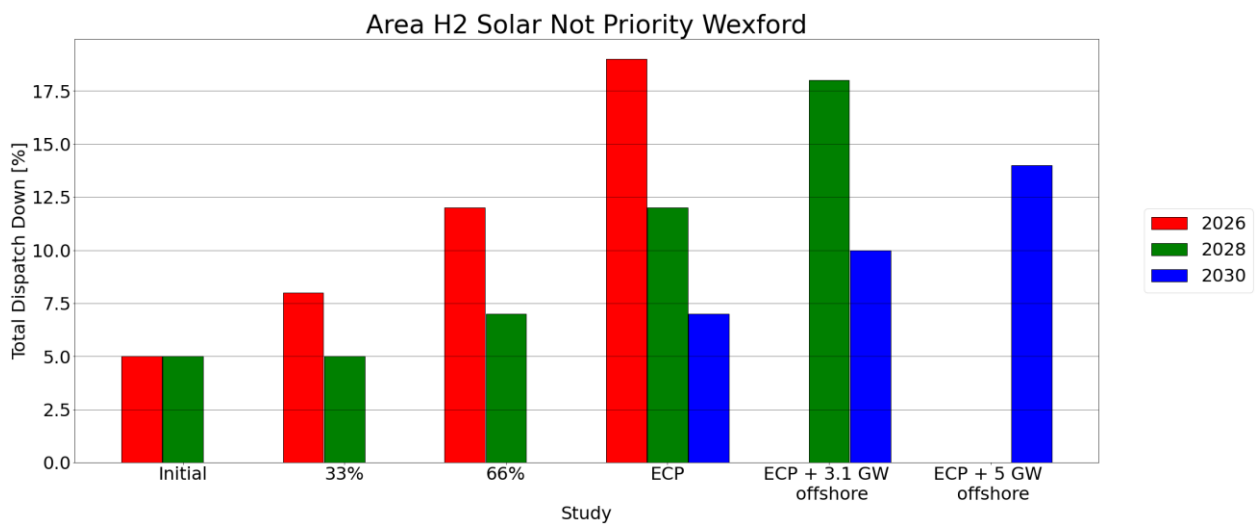


Figure 2-48 - Total Dispatch Down for Solar non-priority for Node Wexford

The wind priority data is given in the following table.

Area H2	Year	Initial	33%	66%	ECP	ECP + 3.1 GW offshore	ECP + 5 GW offshore
Installed Capacity (MW)	2026	27	27	27	27		
Installed Capacity (MW)	2028	27	27	27	27	27	
Installed Capacity (MW)	2030				27	27	27
Available Energy (GWh)	2026	76	76	76	76		
Available Energy (GWh)	2028	77	77	77	77	77	
Available Energy (GWh)	2030				76	76	76
Generation (GWh)	2026	75	74	72	71		
Generation (GWh)	2028	77	76	75	74	71	
Generation (GWh)	2030				76	72	74
Surplus (%)	2026	<1 %	<1 %	<1 %	<1 %		
Surplus (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Surplus (%)	2030				<1 %	<1 %	<1 %
Curtailed (%)	2026	2 %	3 %	5 %	7 %		
Curtailed (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Curtailed (%)	2030				1 %	5 %	4 %
Constraint (%)	2026	<1 %	<1 %	<1 %	<1 %		
Constraint (%)	2028	<1 %	<1 %	<1 %	<1 %	<1 %	
Constraint (%)	2030				<1 %	<1 %	<1 %
Total Dispatch Down (%)	2026	2 %	3 %	5 %	7 %		
Total Dispatch Down (%)	2028	<1 %	1 %	2 %	3 %	7 %	
Total Dispatch Down (%)	2030				1 %	5 %	4 %

Table 2-49 - Surplus, Curtailment and Constraint for Wind priority in Area H2

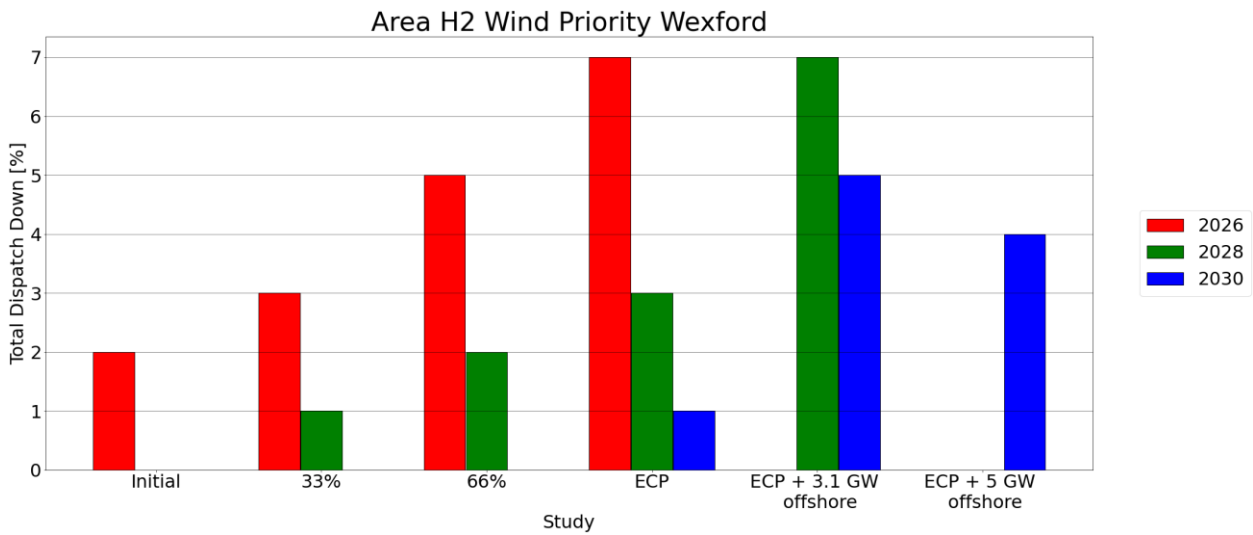


Figure 2-49 - Total Dispatch Down for Wind priority for Node Wexford