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

## Results for Area I for Solar and Wind

**Version 1.0**

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# Table of Contents


Disclaimer 3

1 Overview for Area I 5

1.1 Introduction 5
1.2 Key Summary 6
1.3 Generation Overview 6
1.4 Subgroups 8
1.5 Area I – Summary Results 9
1.5.1 Non – priority Solar Results for E, F & I 10
1.5.2 Non – priority Wind Results for E, F & I 12

2 Area I Node Results 14

2.1 Barnahely 15
2.2 Castleview 18
2.3 Coolroe 21
2.4 Cow cross 24
2.5 Kilbarry 27
2.6 Knockraha 30
2.7 Knockraha 220kV 33
2.8 Lysaghtstown 36
2.9 Midleton 39
2.10 Raffeen 42
2.11 Rathcoursey 45
2.12 Trabeg 48

# 1 Overview for Area I


*Figure 1-1 Network Map for Area I*

Area I, in the south of the country, includes a mix of wind and solar generation. The counties that are covered in this area include Cork (partial). The transmission network in Area I 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 above. Celtic and one of the south coast offshore is connecting to this area in future.

## 1.1 Introduction

This document is for customers wishing to see the estimated Total Dispatch Down for Area I. For information on the study assumptions, methodology and Ireland summary report please refer to the ECP webpage[1]. This document contains two main sections:

Section 1: An overview of the estimated surplus, curtailment, and constraint values for Area I for a range of scenarios. There is a total of six core ECP-2.5 studies and eight sensitivity studies presented in this report. The results highly depend on the study assumptions, which are described in the Assumptions Document.

Section 2: Area I Node Results: provides a table of results for each renewable generator type at every node in the area. This table documents the installed capacity, available energy, surplus, curtailment, and constraint for every node in Area I.

[1] https://www.eirgrid.ie/industry/customer-information/ecp-constraint-forecast-reports#Enduring%20Connection%20Policy%20(ECP)

## 1.2 Key Summary

For Area I, the dominant power flows tend to be towards the load centres on the east coast and the interconnectors. With Celtic getting connected in Area I, the power flow at times can be towards area I and towards Interconnector depending on the flow on the Celtic. These flow patterns are relevant when seeking to understand constraint apportionment in the simulation.

Constraints in Area I 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 I.

In addition to the power flows out of Area I, there are also power flows across or through Area I. Renewable power from the south-west will flow across the transmission network and at least some of this power will flow through Area I. The power flowing out of Area I meets and joins with power flows from other areas, as the power flows towards the north-east.

Area I is adjacent to Area E and the power from Area E tends to flow onto the 220 kV circuit running from Kilpaddoge towards Knockraha. Power flows to the 220 kV nodes from Area I. Any issues with the 220 kV circuit or with parallel paths can limit the generation in this area. In the Area I, Knockraha to Barrymore region is a major bottleneck in the area during the high-RES scenarios. Additionally, the issues binding for the circuits in Area E can create additional stress on the Area F and Area I circuits, as they merge with rescue flows towards Knockraha.

## 1.3 Generation Overview

A detailed system-level overview of the renewable generation scenarios used in these studies is given in the area non-specific all Island Summary Report. The distribution of generation in each scenario based on technology, area and node is given in Assumptions document. The node-level installed wind and solar generation for Area I in the "ECP" scenario is given in Table 1-1. Installed and controllable energy in Area I is given in Table 1-2 for solar and Table 1-3 for wind.

| Node | SO | Status | Solar | Wind |
|---|---|---|---|---|
| **Barnahely** | DSO | due to connected | 10 | |
| **Barnahely** | DSO | due to connected | 1 | |
| **Barnahely** | DSO | connected | | 5 |
| **Castleview** | DSO | due to connected | 3 | |
| **Coolroe** | DSO | due to connected | 14 | |
| **Cow Cross** | DSO | due to connected | 13 | |
| **Kilbarry** | DSO | connected | 10 | |
| **Kilbarry** | DSO | due to connected | 70 | |
| **Kilbarry** | DSO | connected | | 1 |
| **Knockraha 220kV** | TSO | due to connected | | 378 |
| **Knockraha** | TSO | due to connected | 42 | |
| **Lysaghtstown** | TSO | connected | 87 | |
| **Lysaghtstown** | TSO | due to connected | 45 | |
| **Midleton** | DSO | connected | 4 | |

| | | | | |
|---|---|---|---|---|
| **Midleton** | DSO | due to connected | 29 | |
| **Midleton** | DSO | connected | | 2 |
| **Raffeen** | TSO | due to connected | 55 | |
| **Rathcoursey** | TSO | due to connected | 110 | |
| **Trabeg** | DSO | connected | 5 | |
| **Total** | | | 498 | 386 |

*Table 1-1 Wind and Solar Generation Summary (MW) in Area I for Generation Scenario "ECP"*

| Solar | ECP | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|
| **Installed Ireland (MW)** | 9312 | 9312 | 9312 | 9312 | 9312 |
| **Installed Area I (MW)** | 498 | 498 | 498 | 498 | 498 |
| **Installed Controllable Area I (MW)** | 497 | 497 | 497 | 497 | 497 |
| **Available Controllable Area I (GWh)** | 582 | 582 | 582 | 582 | 582 |

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

| Wind | ECP | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|
| **Installed Ireland (MW)** | 8197 | 11271 | 13197 | 13197 | 13197 |
| **Installed Area I (MW)** | 8 | 8 | 386 | 386 | 386 |
| **Installed Controllable Area I (MW)** | 0 | 0 | 378 | 378 | 378 |
| **Available Controllable Area I (GWh)** | 0 | 0 | 1607 | 1607 | 1607 |

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

## 1.4 Subgroups

There is 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 our 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.

Analysis of Area I identified a constraint subgroup for solar and wind generation combining Area E, Area F and Area I. The subgroup nodes are given in Table 1-4. The individual node level dispatch down is given in Section 2.

| Subgroup | Nodes |
|---|---|
| E, F & I | Barnahely |
| | Castleview |
| | Coolroe |
| | Cow Cross |
| | Kilbarry |
| | Knockraha |
| | Knockraha 220kV |
| | Lysaghtstown |
| | Midleton |
| | Raffeen |
| | Rathcoursey |
| | Trabeg |

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

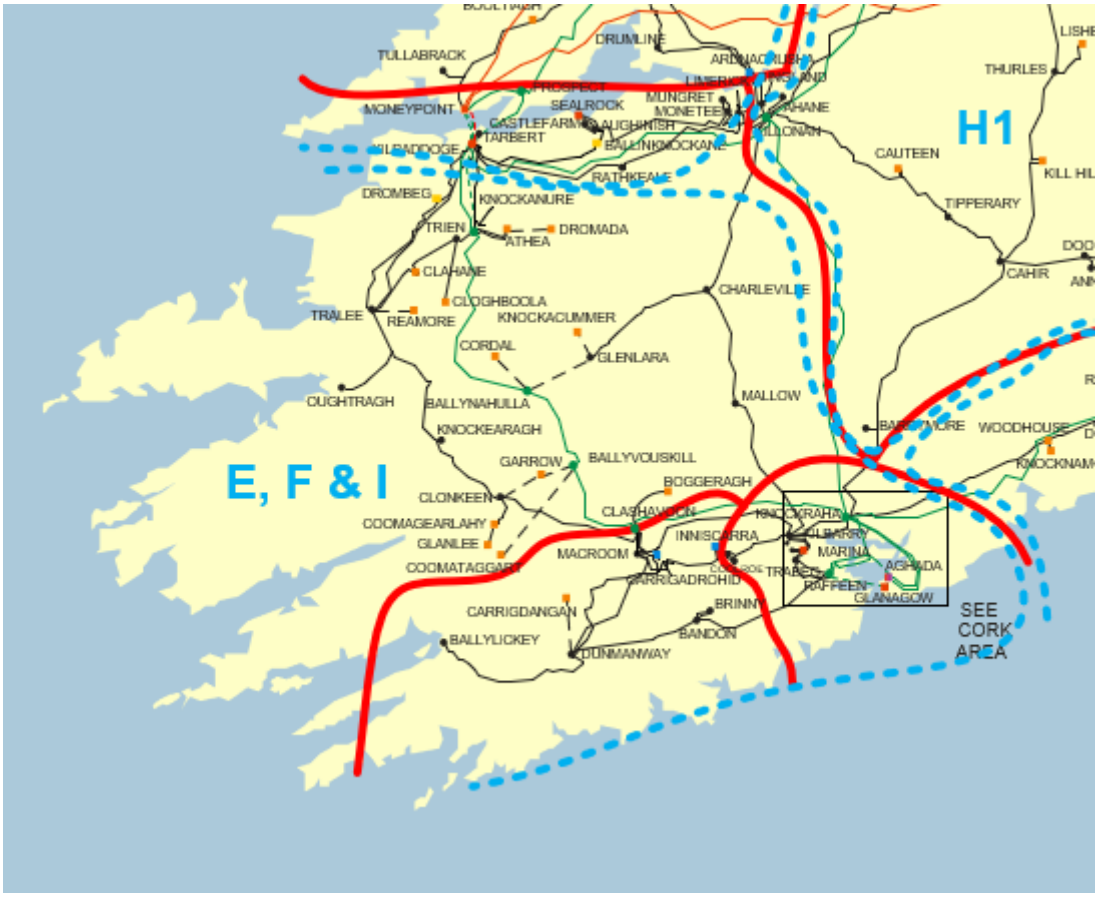


*Figure 1-2 Subgroup E, F & I (subgroups outlined by blue dashed line)*

## 1.5 Area I – Summary Results

The Total Dispatch Down results for Area I are provided below in Table 1-5 to Table 1-7 and Figure 1-3 to Figure 1-4. These include the breakdown between surplus, curtailment and constraint. These include the breakdown between surplus, curtailment, and constraint. The Table 1-6 gives the results of constraint sensitivity scenario. 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 2030 studies are compared with 2028 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 I (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, to 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 the Assumptions document and Methodology report.

### 1.5.1 Non – priority Solar Results for E, F & I

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

| Area I (E,F & I) | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 110 | 304 | 497 | | | | | |
| **Installed Capacity (MW)** | 2030 | 110 | 304 | 497 | 497 | 497 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 497 | 497 | 497 |
| **Available Energy (GWh)** | 2028 | 129 | 356 | 582 | | | | | |
| **Available Energy (GWh)** | 2030 | 129 | 355 | 582 | 582 | 582 | | | |
| **Available Energy (GWh)** | FG | | | | | | 582 | 582 | 582 |
| **Generation (GWh)** | 2028 | 86 | 282 | 404 | | | | | |
| **Generation (GWh)** | 2030 | 109 | 290 | 414 | 358 | 380 | | | |
| **Generation (GWh)** | FG | | | | | | 420 | 390 | 462 |
| **Surplus (%)** | 2028 | 8 % | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | 8 % | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | 4 % | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | 2 % | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | 22 % | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | 5 % | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | 34 % | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | 16 % | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 1-5 Surplus, Curtailment and Constraint for Solar Non-Priority in Area I (E, F & I)*

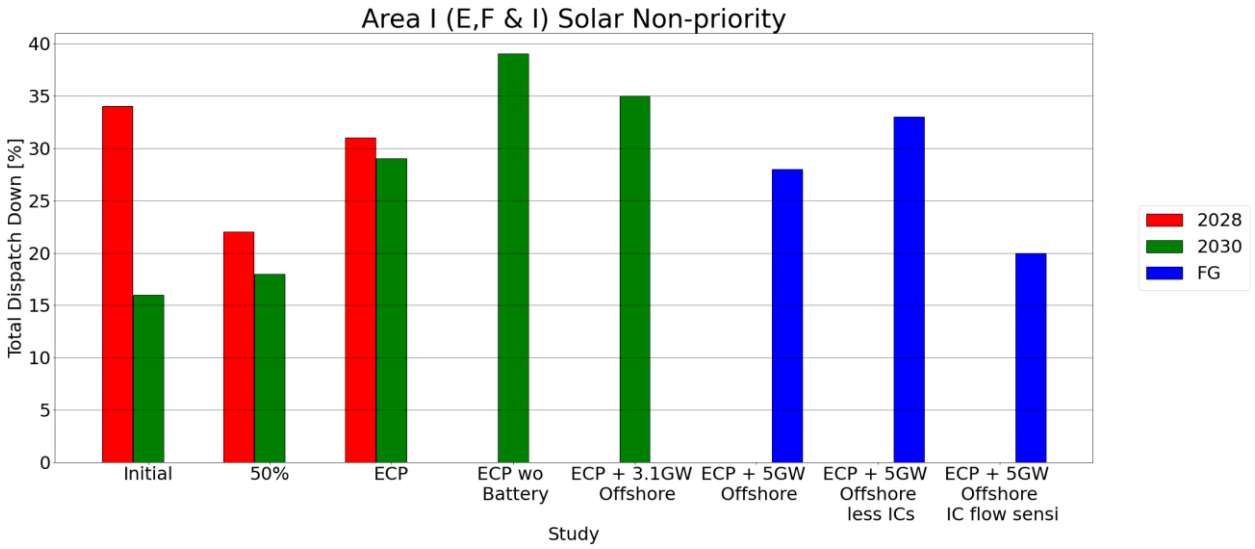


*Figure 1-3 Results Solar Non-Priority Area I (E, F & I)*

| Area I (E,F & I) | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 497 | |
| **Installed Capacity (MW)** | 2030 | 497 | 497 |
| **Available Energy (GWh)** | 2028 | 582 | |
| **Available Energy (GWh)** | 2030 | 582 | 582 |
| **Generation (GWh)** | 2028 | 404 | |
| **Generation (GWh)** | 2030 | 414 | 380 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 1-6 Surplus, Curtailment and Constraint for Solar Non-Priority with Sensitivity in Area I (E, F & I)*

### 1.5.2 Non – priority Wind Results for E, F & I

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

| Area I (E,F & I) | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | | | | | | | | |
| **Installed Capacity (MW)** | 2030 | | | | | | | | |
| **Installed Capacity (MW)** | FG | | | | | | 378 | 378 | 378 |
| **Available Energy (GWh)** | 2028 | | | | | | | | |
| **Available Energy (GWh)** | 2030 | | | | | | | | |
| **Available Energy (GWh)** | FG | | | | | | 1607 | 1607 | 1607 |
| **Generation (GWh)** | 2028 | | | | | | | | |
| **Generation (GWh)** | 2030 | | | | | | | | |
| **Generation (GWh)** | FG | | | | | | 879 | 859 | 1183 |
| **Surplus (%)** | 2028 | | | | | | | | |
| **Surplus (%)** | 2030 | | | | | | | | |
| **Surplus (%)** | FG | | | | | | 29 % | 34 % | 18 % |
| **Curtailment (%)** | 2028 | | | | | | | | |
| **Curtailment (%)** | 2030 | | | | | | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 2 % | 2 % |
| **Constraint (%)** | 2028 | | | | | | | | |
| **Constraint (%)** | 2030 | | | | | | | | |
| **Constraint (%)** | FG | | | | | | 14 % | 11 % | 7 % |
| **Total Dispatch Down (%)** | 2028 | | | | | | | | |
| **Total Dispatch Down (%)** | 2030 | | | | | | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 45 % | 47 % | 26 % |

*Table 1-7 Surplus, Curtailment and Constraint for Wind Non-Priority in Area I (E, F & I)*

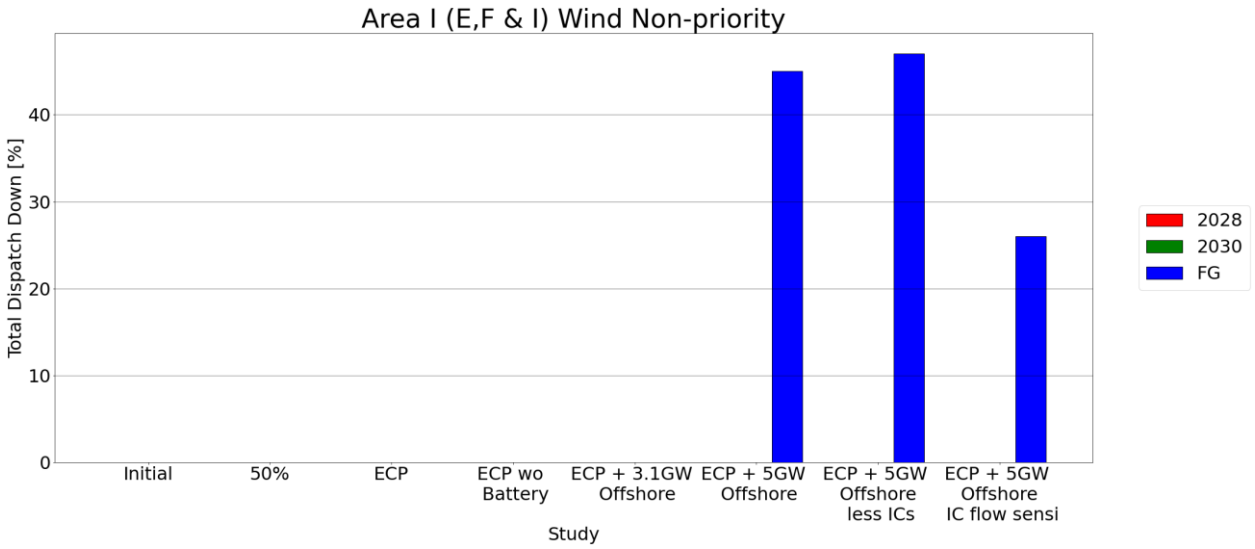


*Figure 1-4 Results Wind Non-Priority in Area I (E, F & I)*

# 2 Area I Node Results

This section presents results for 12 nodes in Area I.

In each node section:

- One table presents a list of the generators at each node that are included in the study.
- For each generator type (solar not priority, wind not priority or wind priority), one table contains the estimated levels of surplus, curtailment and constraint that generators estimate to experience are reported for all study scenarios. Note that the constraint dispatch down allocation is based on Grandfathering, which results in non-priority generators being reduced ahead of priority generators for constraint reasons.
- In addition to the core studies, one table contains a set of sensitivity studies results are also included, which employs pro-rata allocation of constraints.

Example

If you take Barnahely, the below table identified which are Grandfathering and Pro-rata, the entire rest of this document is structed in this manner.

| | | |
|---|---|---|
| Table 2-2 | Grandfathering | |
| Figure 2-2 | Grandfathering | |
| Table 2-3 | Pro-rata | From table 2-2 to table 2-3, constraints dispatch down % and total dispatch down % are different. |

## 2.1 Barnahely

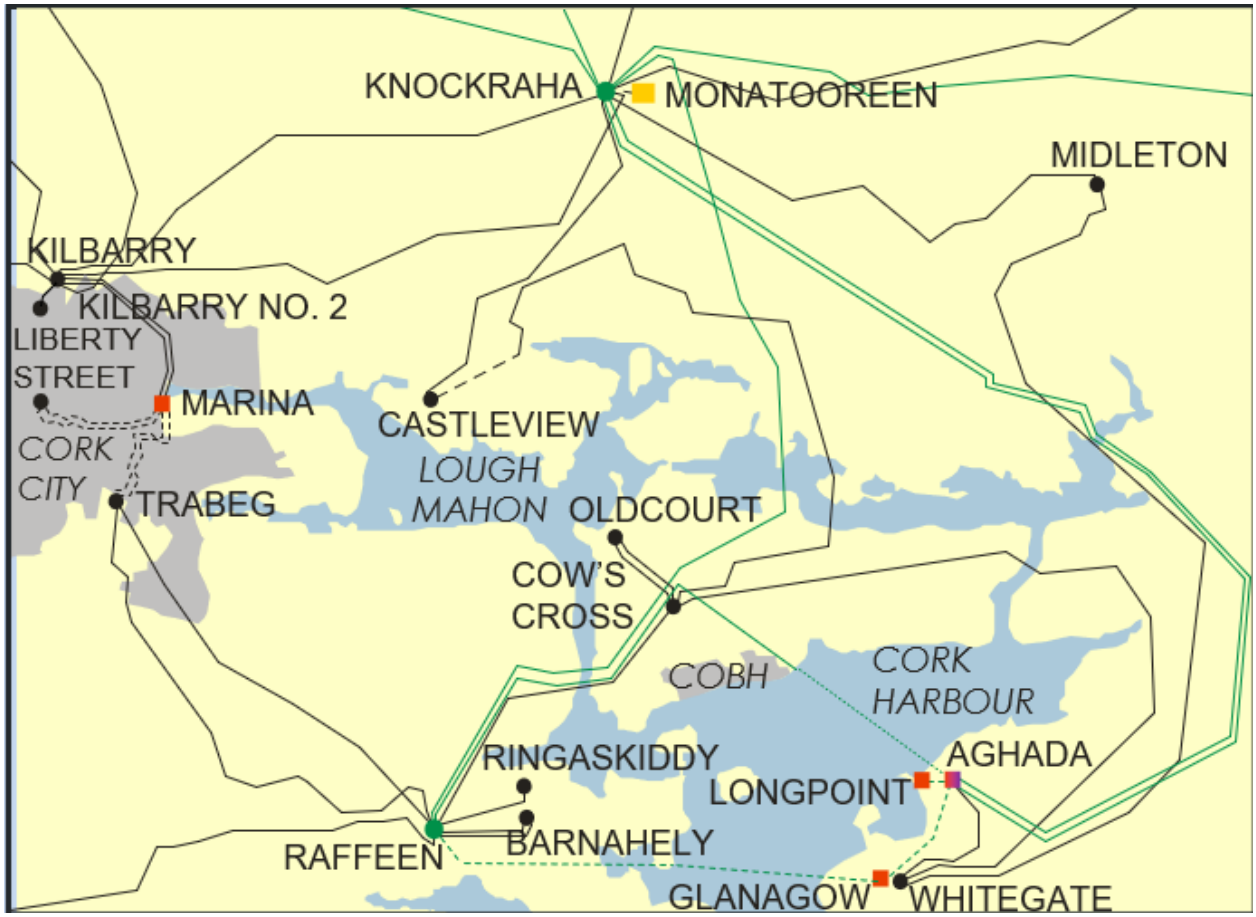


*Figure 2-1 - Location of node Barnahely*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **DePuy** | DSO | 2.5 | wind uncontrolled | connected |
| **Wind Energy Project (Janssen)** | DSO | 2.0 | wind uncontrolled | connected |
| **DePuy Synthes Turbine2** | DSO | 0.99 | wind uncontrolled | connected |
| **Leacht Cross Solar** | DSO | 4.95 | solar not priority | due to connected |
| **Leacht Cross Solar Phase 2** | DSO | 5.0 | solar not priority | due to connected |
| **Carrigaline PV** | DSO | 1.0 | solar uncontrolled | due to connected |

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

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | | 5 | 10 | | | | | |
| **Installed Capacity (MW)** | 2030 | | 5 | 10 | 10 | 10 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 10 | 10 | 10 |
| **Available Energy (GWh)** | 2028 | | 6 | 12 | | | | | |
| **Available Energy (GWh)** | 2030 | | 6 | 12 | 12 | 12 | | | |
| **Available Energy (GWh)** | FG | | | | | | 12 | 12 | 12 |
| **Generation (GWh)** | 2028 | | 5 | 8 | | | | | |
| **Generation (GWh)** | 2030 | | 5 | 8 | 7 | 8 | | | |
| **Generation (GWh)** | FG | | | | | | 8 | 8 | 9 |
| **Surplus (%)** | 2028 | | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-2 - Surplus, Curtailment and Constraint for Solar non-priority for Node Barnahely*

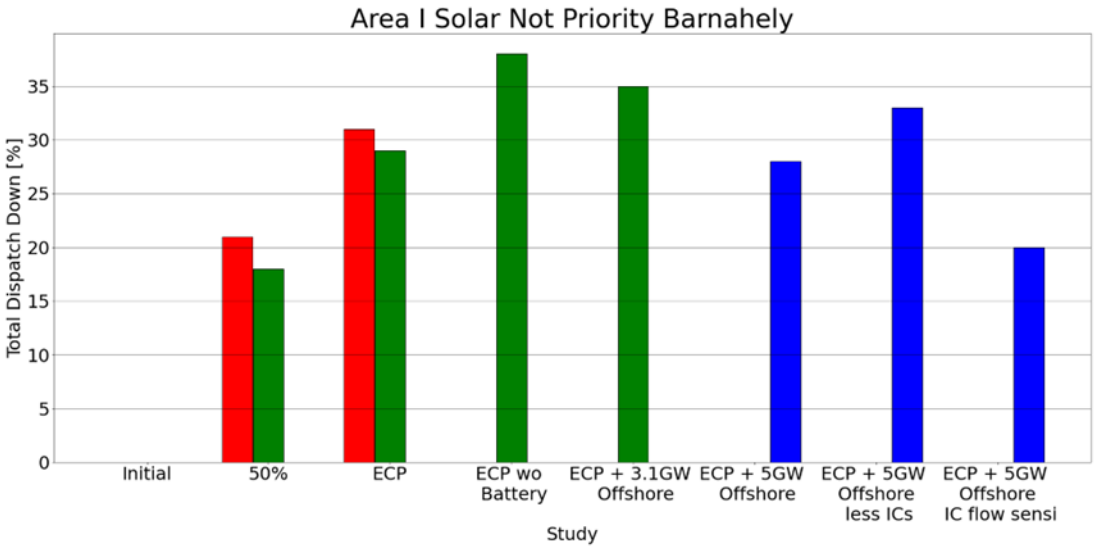


*Figure 2-2 - Total Dispatch Down for Solar not priority for Node Barnahely*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 10 | |
| **Installed Capacity (MW)** | 2030 | 10 | 10 |
| **Available Energy (GWh)** | 2028 | 12 | |
| **Available Energy (GWh)** | 2030 | 12 | 12 |
| **Generation (GWh)** | 2028 | 8 | |
| **Generation (GWh)** | 2030 | 8 | 8 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-3 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Barnahely*

## 2.2 Castleview

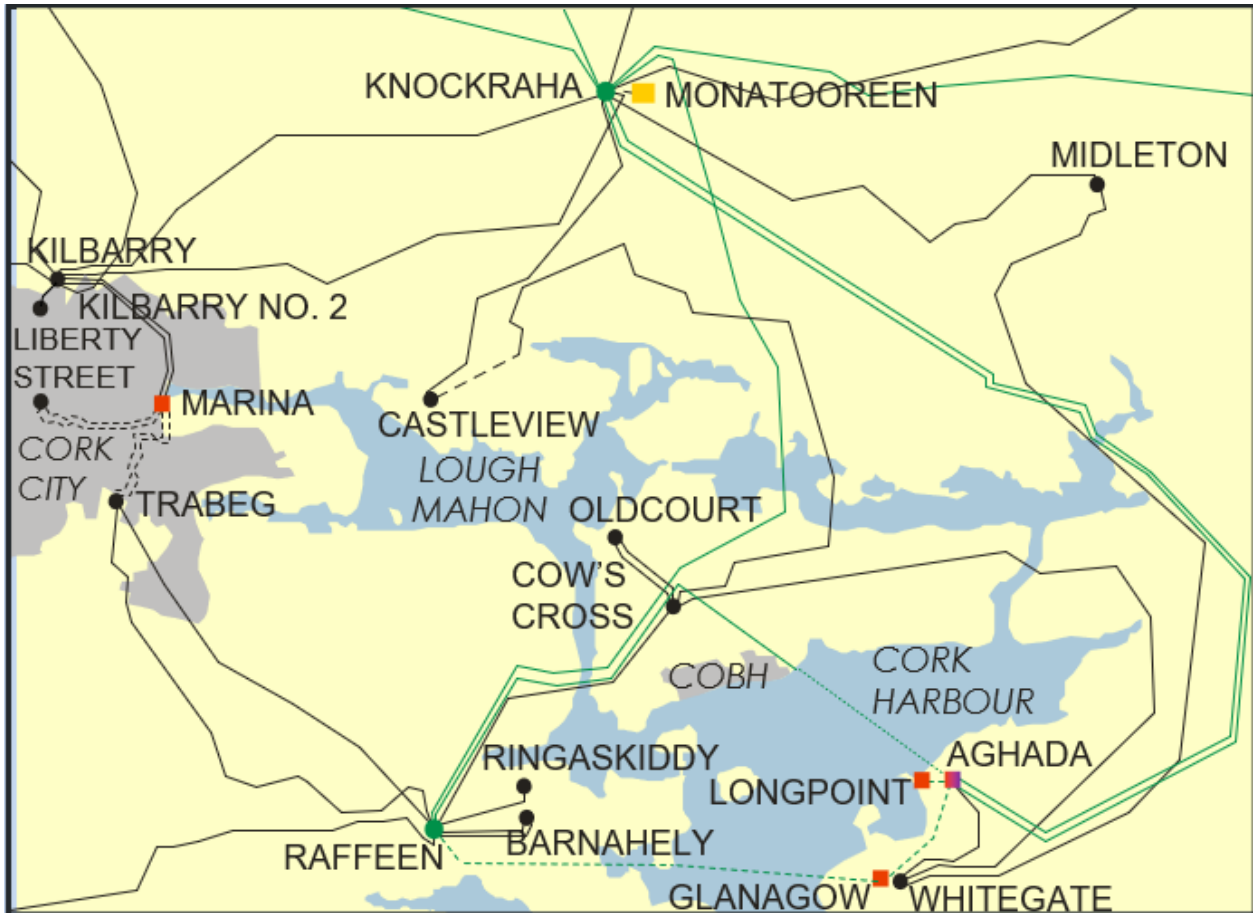


*Figure 2-3 - Location of node Castleview*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **AMS solar** | DSO | 3.49 | solar not priority | due to connected |

*Table 2-4 - Generation Included in Study for Node Castleview*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | | 2 | 3 | | | | | |
| **Installed Capacity (MW)** | 2030 | | 2 | 3 | 3 | 3 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 3 | 3 | 3 |
| **Available Energy (GWh)** | 2028 | | 2 | 4 | | | | | |
| **Available Energy (GWh)** | 2030 | | 2 | 4 | 4 | 4 | | | |
| **Available Energy (GWh)** | FG | | | | | | 4 | 4 | 4 |
| **Generation (GWh)** | 2028 | | 2 | 3 | | | | | |
| **Generation (GWh)** | 2030 | | 2 | 3 | 3 | 3 | | | |
| **Generation (GWh)** | FG | | | | | | 3 | 3 | 3 |
| **Surplus (%)** | 2028 | | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-5 - Surplus, Curtailment and Constraint for Solar non-priority for Node Castleview*

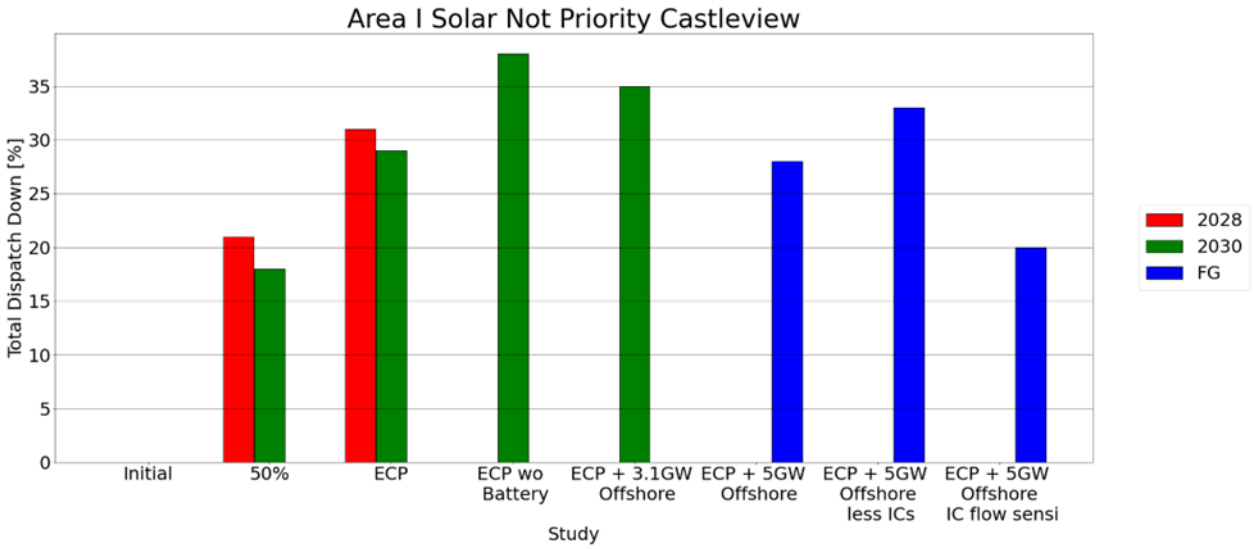


*Figure 2-4 - Total Dispatch Down for Solar not priority for Node Castleview*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 3 | |
| **Installed Capacity (MW)** | 2030 | 3 | 3 |
| **Available Energy (GWh)** | 2028 | 4 | |
| **Available Energy (GWh)** | 2030 | 4 | 4 |
| **Generation (GWh)** | 2028 | 3 | |
| **Generation (GWh)** | 2030 | 3 | 3 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-6 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Castleview*

## 2.3 Coolroe


*Figure 2-5 - Location of node Coolroe*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Garravagh 1 Solar Park** | DSO | 14.0 | solar not priority | due to connected |

*Table 2-7 - Generation Included in Study for Node Coolroe*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | | 7 | 14 | | | | | |
| **Installed Capacity (MW)** | 2030 | | 7 | 14 | 14 | 14 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 14 | 14 | 14 |
| **Available Energy (GWh)** | 2028 | | 8 | 16 | | | | | |
| **Available Energy (GWh)** | 2030 | | 8 | 16 | 16 | 16 | | | |
| **Available Energy (GWh)** | FG | | | | | | 16 | 16 | 16 |
| **Generation (GWh)** | 2028 | | 6 | 11 | | | | | |
| **Generation (GWh)** | 2030 | | 7 | 12 | 10 | 11 | | | |
| **Generation (GWh)** | FG | | | | | | 12 | 11 | 13 |
| **Surplus (%)** | 2028 | | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-8 - Surplus, Curtailment and Constraint for Solar non-priority for Node Coolroe*

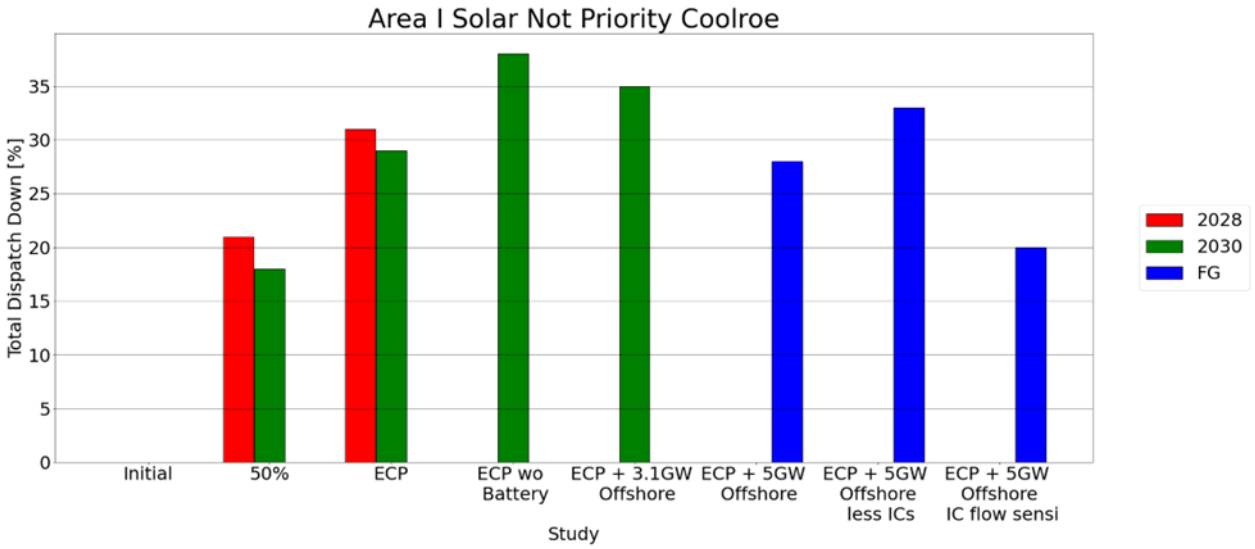


*Figure 2-6 - Total Dispatch Down for Solar not priority for Node Coolroe*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 14 | |
| **Installed Capacity (MW)** | 2030 | 14 | 14 |
| **Available Energy (GWh)** | 2028 | 16 | |
| **Available Energy (GWh)** | 2030 | 16 | 16 |
| **Generation (GWh)** | 2028 | 11 | |
| **Generation (GWh)** | 2030 | 12 | 11 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-9 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Coolroe*

## 2.4 Cow cross

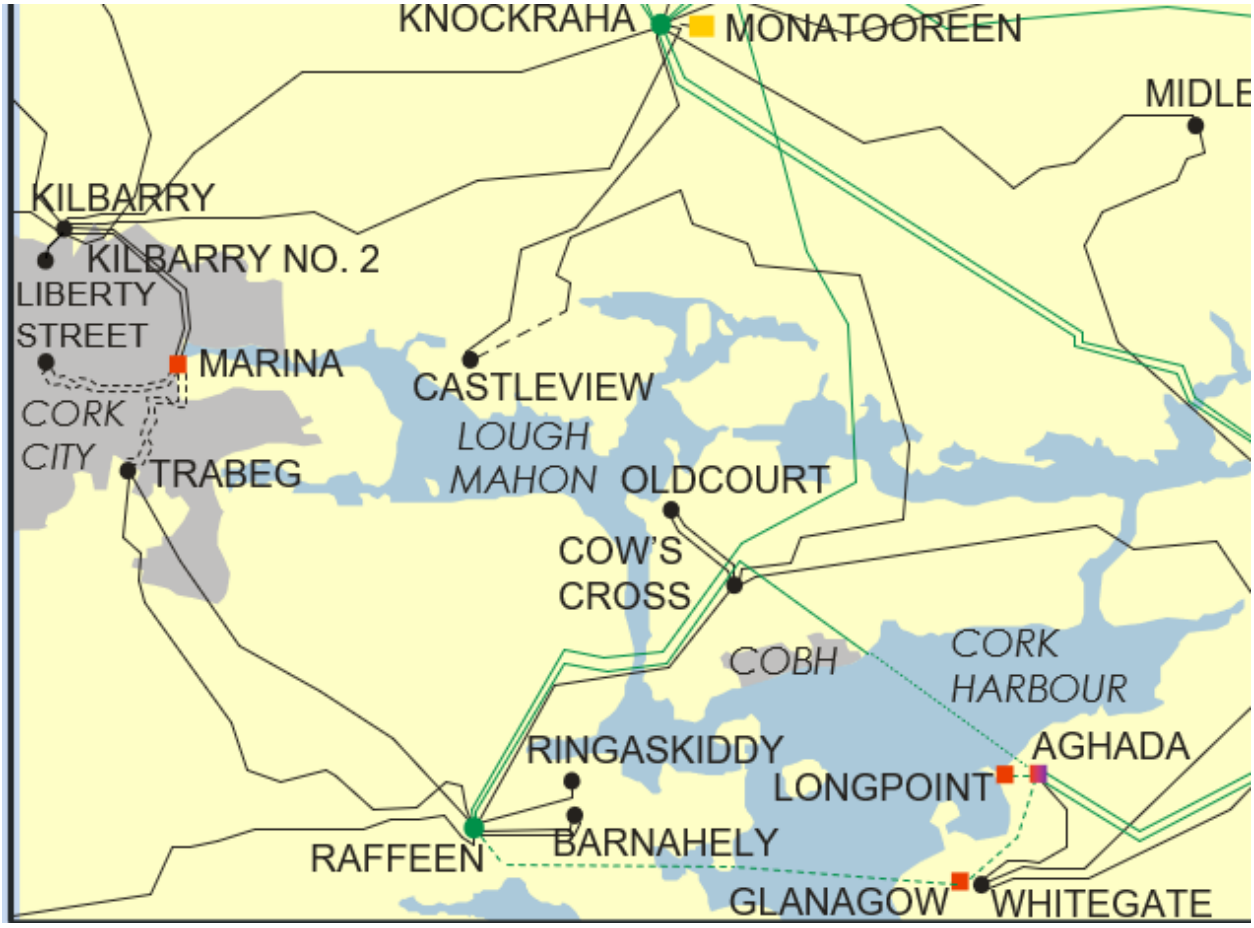


*Figure 2-7 - Location of node Cow cross*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Ballynacrusha** | DSO | 4.95 | solar not priority | due to connected |
| **Barryscourt Solar Farm (Solar)** | DSO | 8.0 | solar not priority | due to connected |

*Table 2-10 - Generation Included in Study for Node Cow cross*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 5 | 9 | 13 | | | | | |
| **Installed Capacity (MW)** | 2030 | 5 | 9 | 13 | 13 | 13 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 13 | 13 | 13 |
| **Available Energy (GWh)** | 2028 | 6 | 10 | 15 | | | | | |
| **Available Energy (GWh)** | 2030 | 6 | 10 | 15 | 15 | 15 | | | |
| **Available Energy (GWh)** | FG | | | | | | 15 | 15 | 15 |
| **Generation (GWh)** | 2028 | 4 | 8 | 11 | | | | | |
| **Generation (GWh)** | 2030 | 5 | 9 | 11 | 9 | 10 | | | |
| **Generation (GWh)** | FG | | | | | | 11 | 10 | 12 |
| **Surplus (%)** | 2028 | 8 % | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | 8 % | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | 4 % | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | 2 % | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | 22 % | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | 5 % | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | 34 % | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | 16 % | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-11 - Surplus, Curtailment and Constraint for Solar non-priority for Node Cow cross*

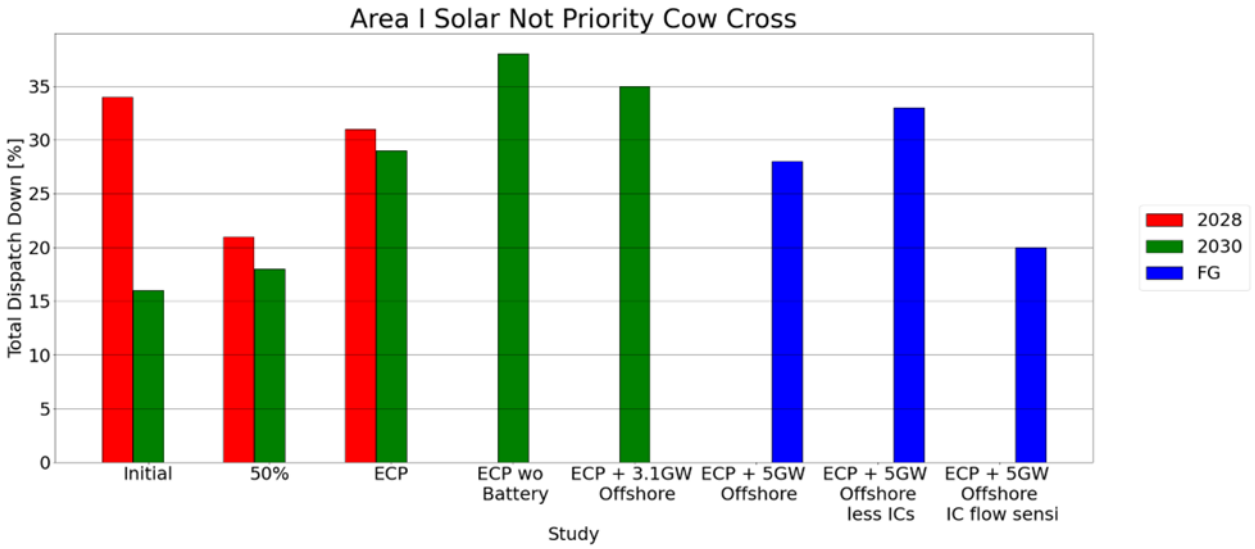


*Figure 2-8 - Total Dispatch Down for Solar not priority for Node Cow cross*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 13 | |
| **Installed Capacity (MW)** | 2030 | 13 | 13 |
| **Available Energy (GWh)** | 2028 | 15 | |
| **Available Energy (GWh)** | 2030 | 15 | 15 |
| **Generation (GWh)** | 2028 | 11 | |
| **Generation (GWh)** | 2030 | 11 | 10 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-12 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Cow cross*

## 2.5 Kilbarry

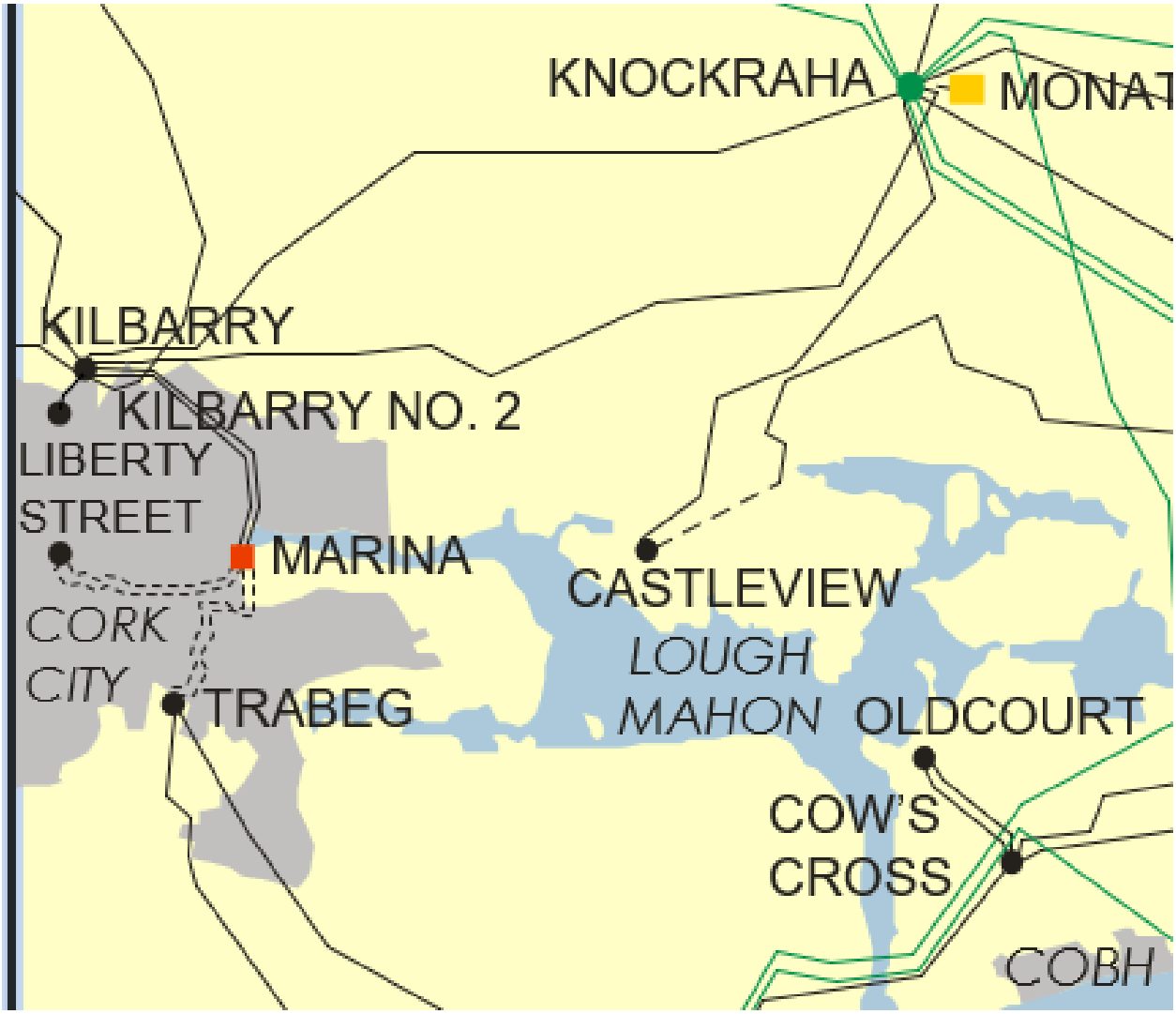


*Figure 2-9 - Location of node Kilbarry*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Pluckanes (1)** | DSO | 0.85 | wind uncontrolled | connected |
| **Coolyduff** | DSO | 4.95 | solar not priority | connected |
| **Drumgarriff South** | DSO | 4.95 | solar not priority | due to connected |
| **Ballynahina Solar Farm** | DSO | 30.0 | solar not priority | due to connected |
| **Rahanisky** | DSO | 39.9 | solar not priority | due to connected |

*Table 2-13 - Generation Included in Study for Node Kilbarry*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 10 | 45 | 80 | | | | | |
| **Installed Capacity (MW)** | 2030 | 10 | 45 | 80 | 80 | 80 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 80 | 80 | 80 |
| **Available Energy (GWh)** | 2028 | 12 | 53 | 94 | | | | | |
| **Available Energy (GWh)** | 2030 | 12 | 53 | 93 | 93 | 93 | | | |
| **Available Energy (GWh)** | FG | | | | | | 93 | 93 | 93 |
| **Generation (GWh)** | 2028 | 8 | 42 | 65 | | | | | |
| **Generation (GWh)** | 2030 | 10 | 43 | 66 | 58 | 61 | | | |
| **Generation (GWh)** | FG | | | | | | 67 | 63 | 74 |
| **Surplus (%)** | 2028 | 8 % | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | 8 % | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | 4 % | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | 2 % | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | 22 % | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | 5 % | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | 34 % | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | 16 % | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-14 - Surplus, Curtailment and Constraint for Solar non-priority for Node Kilbarry*

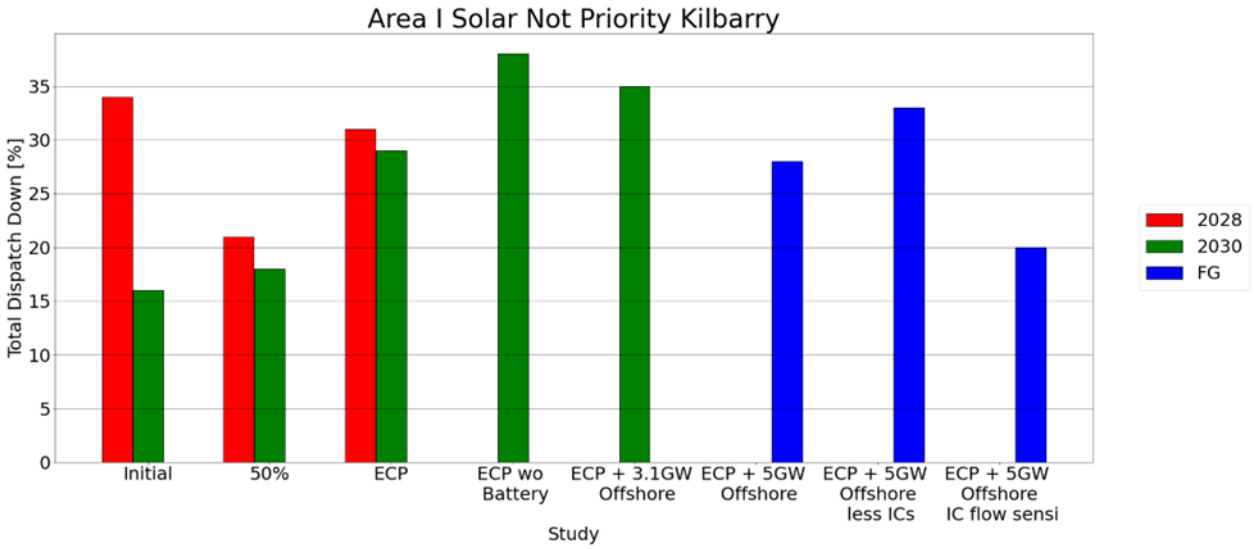


*Figure 2-10 - Total Dispatch Down for Solar not priority for Node Kilbarry*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 80 | |
| **Installed Capacity (MW)** | 2030 | 80 | 80 |
| **Available Energy (GWh)** | 2028 | 94 | |
| **Available Energy (GWh)** | 2030 | 93 | 93 |
| **Generation (GWh)** | 2028 | 65 | |
| **Generation (GWh)** | 2030 | 66 | 61 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-15 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Kilbarry*

## 2.6 Knockraha


*Figure 2-11 - Location of node Knockraha*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Monatooreen Solar** | TSO | 25.7 | solar not priority | due to connected |
| **Ballyvatta Solar Extension** | TSO | 16.3 | solar not priority | due to connected |

*Table 2-16 - Generation Included in Study for Node Knockraha*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | | 21 | 42 | | | | | |
| **Installed Capacity (MW)** | 2030 | | 21 | 42 | 42 | 42 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 42 | 42 | 42 |
| **Available Energy (GWh)** | 2028 | | 25 | 49 | | | | | |
| **Available Energy (GWh)** | 2030 | | 25 | 49 | 49 | 49 | | | |
| **Available Energy (GWh)** | FG | | | | | | 49 | 49 | 49 |
| **Generation (GWh)** | 2028 | | 19 | 34 | | | | | |
| **Generation (GWh)** | 2030 | | 20 | 35 | 30 | 32 | | | |
| **Generation (GWh)** | FG | | | | | | 36 | 33 | 39 |
| **Surplus (%)** | 2028 | | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-17 - Surplus, Curtailment and Constraint for Solar non-priority for Node Knockraha*

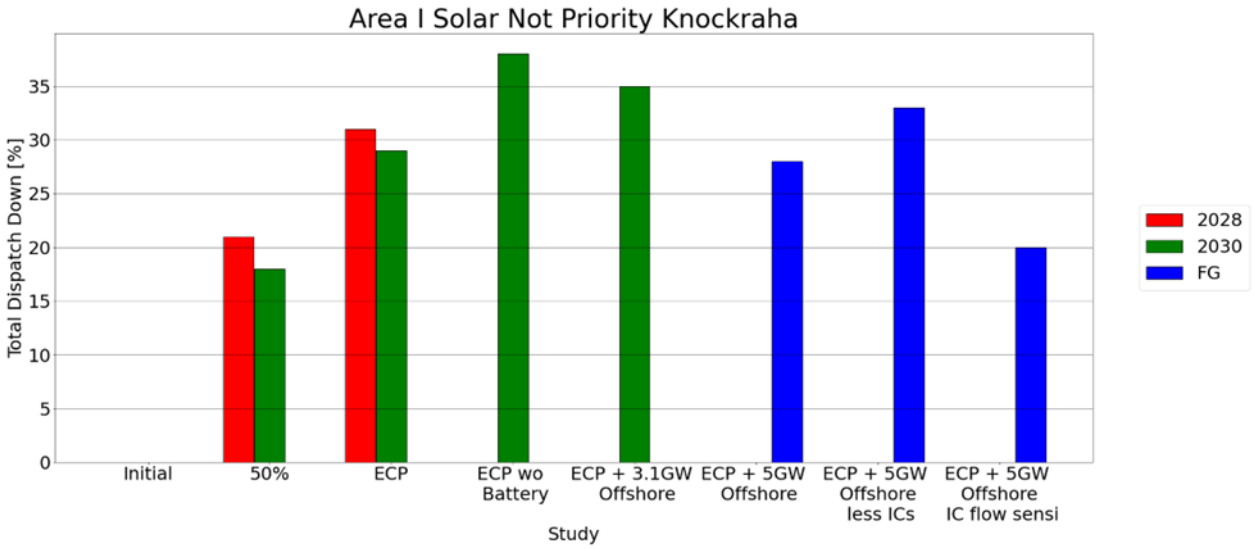


*Figure 2-12 - Total Dispatch Down for Solar not priority for Node Knockraha*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 42 | |
| **Installed Capacity (MW)** | 2030 | 42 | 42 |
| **Available Energy (GWh)** | 2028 | 49 | |
| **Available Energy (GWh)** | 2030 | 49 | 49 |
| **Generation (GWh)** | 2028 | 34 | |
| **Generation (GWh)** | 2030 | 35 | 32 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-18 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Knockraha*

## 2.7 Knockraha 220kV


*Figure 2-13 - Location of node Knockraha 220kV*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Knockraha** | TSO | 378.0 | wind not priority | due to connected |

*Table 2-19 - Generation Included in Study for Node Knockraha 220kV*

The wind not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | | | | | | | | |
| **Installed Capacity (MW)** | 2030 | | | | | | | | |
| **Installed Capacity (MW)** | FG | | | | | | 378 | 378 | 378 |
| **Available Energy (GWh)** | 2028 | | | | | | | | |
| **Available Energy (GWh)** | 2030 | | | | | | | | |
| **Available Energy (GWh)** | FG | | | | | | 1607 | 1607 | 1607 |
| **Generation (GWh)** | 2028 | | | | | | | | |
| **Generation (GWh)** | 2030 | | | | | | | | |
| **Generation (GWh)** | FG | | | | | | 879 | 859 | 1183 |
| **Surplus (%)** | 2028 | | | | | | | | |
| **Surplus (%)** | 2030 | | | | | | | | |
| **Surplus (%)** | FG | | | | | | 29 % | 34 % | 18 % |
| **Curtailment (%)** | 2028 | | | | | | | | |
| **Curtailment (%)** | 2030 | | | | | | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 2 % | 2 % |
| **Constraint (%)** | 2028 | | | | | | | | |
| **Constraint (%)** | 2030 | | | | | | | | |
| **Constraint (%)** | FG | | | | | | 14 % | 11 % | 7 % |
| **Total Dispatch Down (%)** | 2028 | | | | | | | | |
| **Total Dispatch Down (%)** | 2030 | | | | | | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 45 % | 47 % | 26 % |

*Table 2-20 - Surplus, Curtailment and Constraint for Wind non-priority for Node Knockraha 220kV*

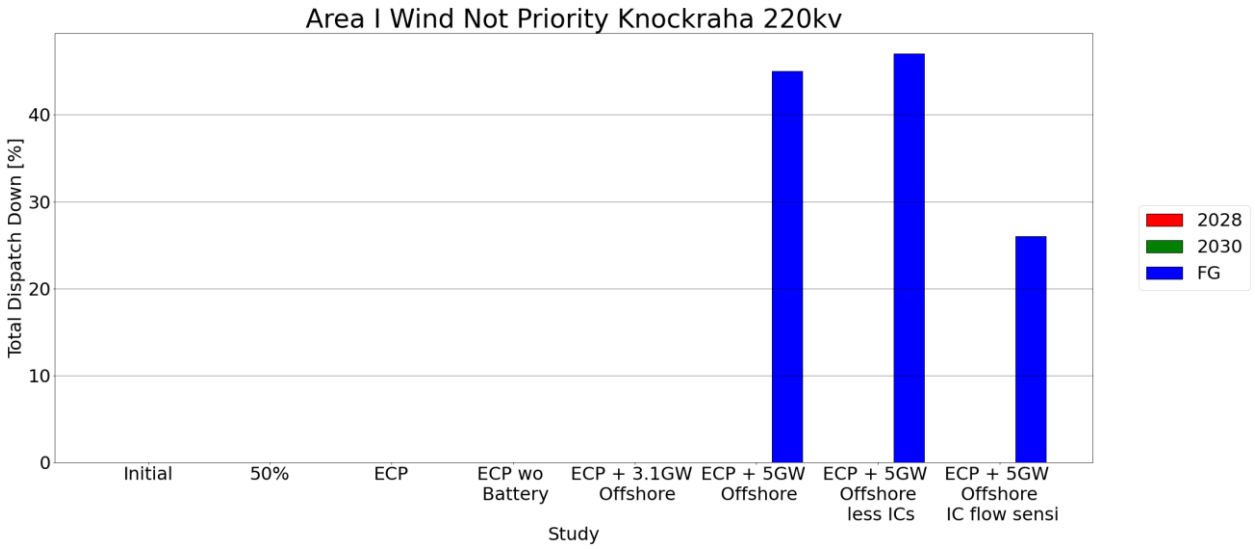


*Figure 2-14- Total Dispatch Down for Wind not priority for Node Knockraha 220kV*

## 2.8 Lysaghtstown


*Figure 2-15 - Location of node Lysaghtstown*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Lysaghtstown Solar** | TSO | 87.0 | solar not priority | connected |
| **Lysaghtstown Phase 2** | TSO | 45.0 | solar not priority | due to connected |

*Table 2-21 - Generation Included in Study for Node Lysaghtstown*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 87 | 110 | 132 | | | | | |
| **Installed Capacity (MW)** | 2030 | 87 | 110 | 132 | 132 | 132 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 132 | 132 | 132 |
| **Available Energy (GWh)** | 2028 | 102 | 128 | 155 | | | | | |
| **Available Energy (GWh)** | 2030 | 102 | 128 | 155 | 155 | 155 | | | |
| **Available Energy (GWh)** | FG | | | | | | 155 | 155 | 155 |
| **Generation (GWh)** | 2028 | 68 | 102 | 107 | | | | | |
| **Generation (GWh)** | 2030 | 86 | 105 | 110 | 95 | 101 | | | |
| **Generation (GWh)** | FG | | | | | | 112 | 104 | 123 |
| **Surplus (%)** | 2028 | 8 % | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | 8 % | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | 4 % | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | 2 % | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | 22 % | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | 5 % | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | 34 % | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | 16 % | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-22 - Surplus, Curtailment and Constraint for Solar non-priority for Node Lysaghtstown*

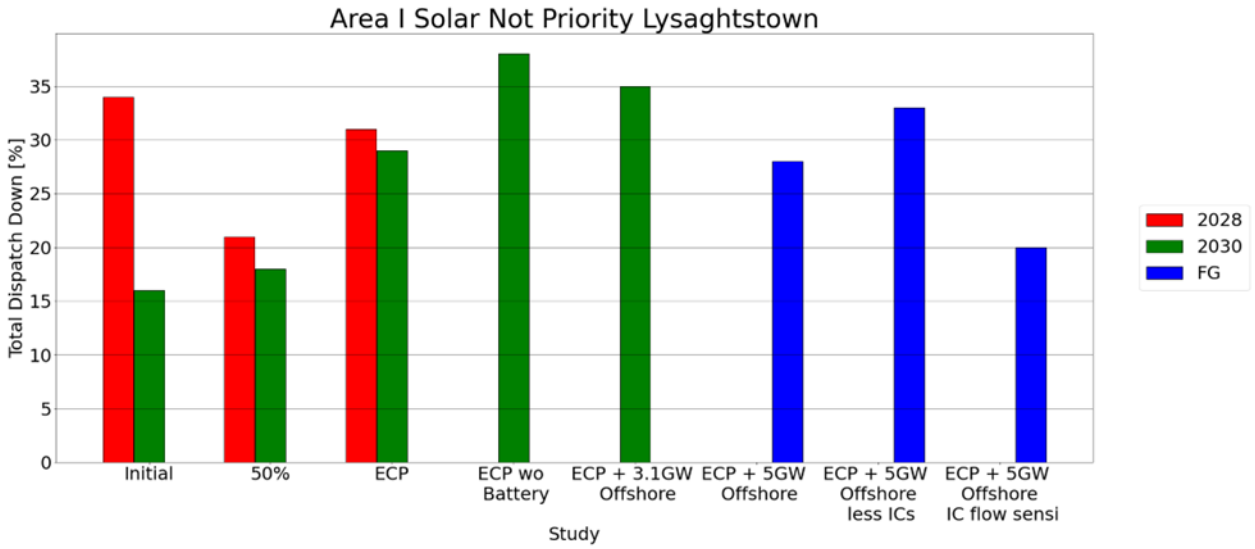


*Figure 2-16 - Total Dispatch Down for Solar not priority for Node Lysaghtstown*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 132 | |
| **Installed Capacity (MW)** | 2030 | 132 | 132 |
| **Available Energy (GWh)** | 2028 | 155 | |
| **Available Energy (GWh)** | 2030 | 155 | 155 |
| **Generation (GWh)** | 2028 | 107 | |
| **Generation (GWh)** | 2030 | 110 | 101 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-23 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Lysaghtstown*

## 2.9 Midleton

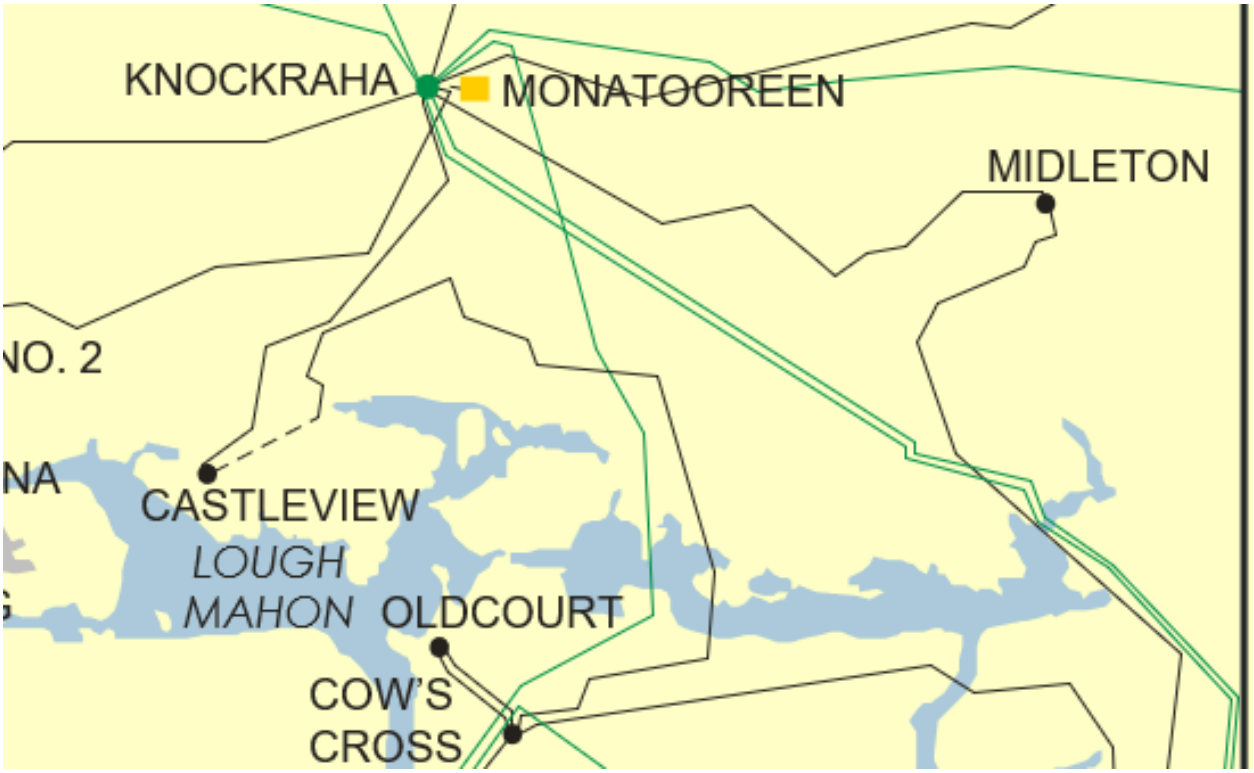


*Figure 2-17 - Location of node Midleton*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Crocane (1)** | DSO | 1.7 | wind uncontrolled | connected |
| **Lurrig Solar Farm** | DSO | 3.6 | solar not priority | connected |
| **Tead More Solar (Meelshane)** | DSO | 3.95 | solar not priority | due to connected |
| **Ballyduff PV** | DSO | 7.0 | solar not priority | due to connected |
| **Carrigogna Solar** | DSO | 10.0 | solar not priority | due to connected |
| **Ballyduff solar ph2** | DSO | 8.0 | solar not priority | due to connected |

*Table 2-24 - Generation Included in Study for Node Midleton*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 4 | 18 | 33 | | | | | |
| **Installed Capacity (MW)** | 2030 | 4 | 18 | 33 | 33 | 33 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 33 | 33 | 33 |
| **Available Energy (GWh)** | 2028 | 4 | 21 | 38 | | | | | |
| **Available Energy (GWh)** | 2030 | 4 | 21 | 38 | 38 | 38 | | | |
| **Available Energy (GWh)** | FG | | | | | | 38 | 38 | 38 |
| **Generation (GWh)** | 2028 | 3 | 17 | 26 | | | | | |
| **Generation (GWh)** | 2030 | 4 | 17 | 27 | 23 | 25 | | | |
| **Generation (GWh)** | FG | | | | | | 28 | 26 | 30 |
| **Surplus (%)** | 2028 | 8 % | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | 8 % | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | 4 % | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | 2 % | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | 22 % | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | 5 % | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | 34 % | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | 16 % | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-25 - Surplus, Curtailment and Constraint for Solar non-priority for Node Midleton*

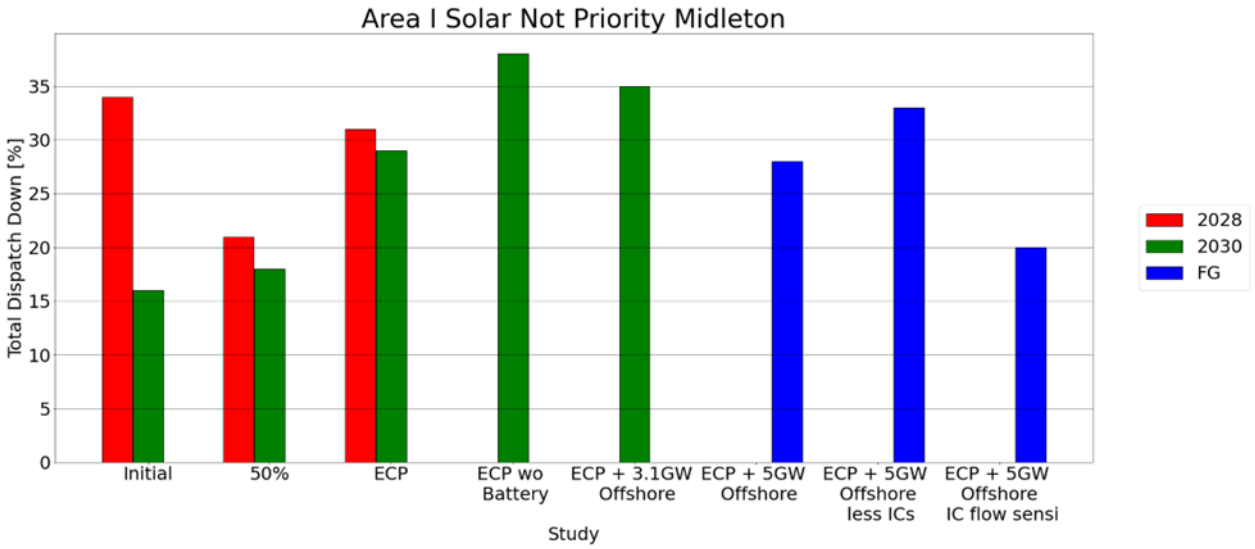


*Figure 2-18 - Total Dispatch Down for Solar not priority for Node Midleton*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 33 | |
| **Installed Capacity (MW)** | 2030 | 33 | 33 |
| **Available Energy (GWh)** | 2028 | 38 | |
| **Available Energy (GWh)** | 2030 | 38 | 38 |
| **Generation (GWh)** | 2028 | 26 | |
| **Generation (GWh)** | 2030 | 27 | 25 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-26 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Midleton*

## 2.10 Raffeen

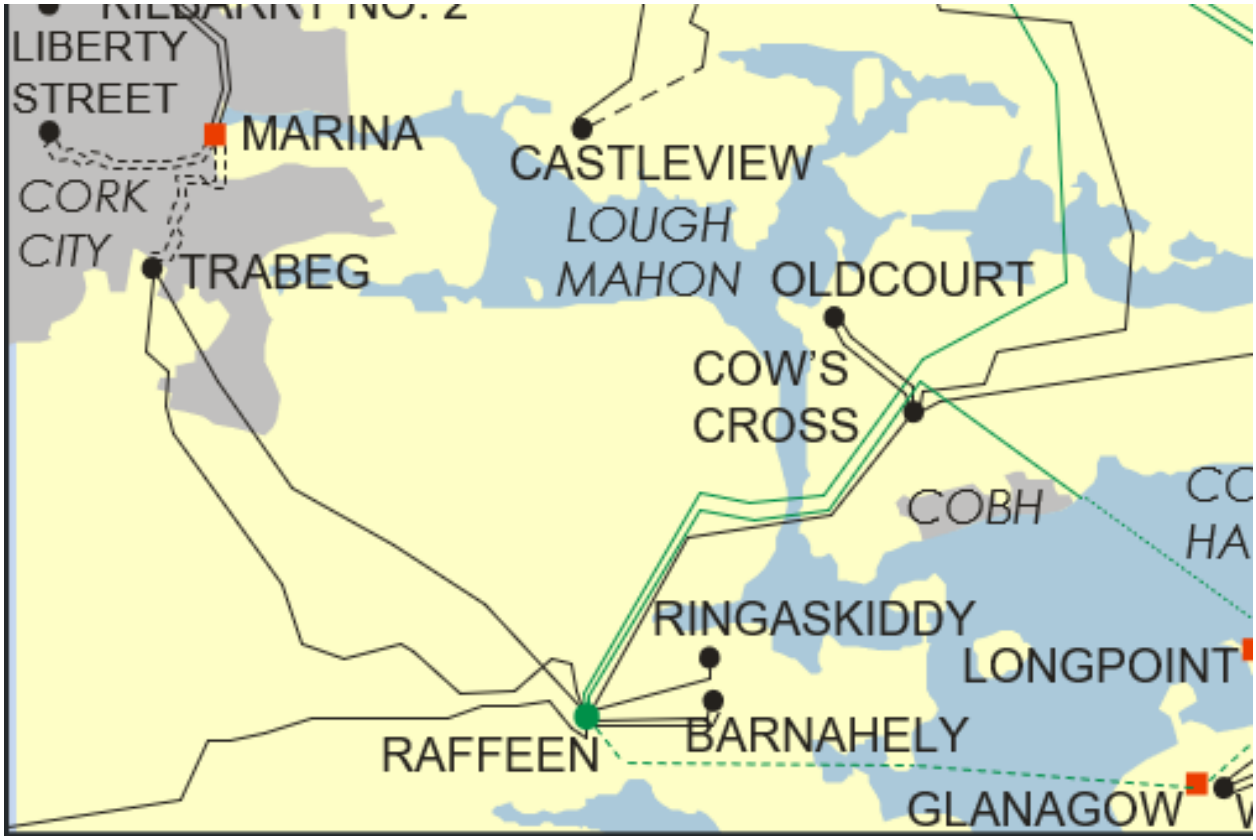


*Figure 2-19 - Location of node Raffeen*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Ballinrea Solar Park** | TSO | 55.0 | solar not priority | due to connected |

*Table 2-27 - Generation Included in Study for Node Raffeen*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | | 28 | 55 | | | | | |
| **Installed Capacity (MW)** | 2030 | | 28 | 55 | 55 | 55 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 55 | 55 | 55 |
| **Available Energy (GWh)** | 2028 | | 32 | 64 | | | | | |
| **Available Energy (GWh)** | 2030 | | 32 | 64 | 64 | 64 | | | |
| **Available Energy (GWh)** | FG | | | | | | 64 | 64 | 64 |
| **Generation (GWh)** | 2028 | | 26 | 45 | | | | | |
| **Generation (GWh)** | 2030 | | 26 | 46 | 40 | 42 | | | |
| **Generation (GWh)** | FG | | | | | | 47 | 43 | 51 |
| **Surplus (%)** | 2028 | | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-28 - Surplus, Curtailment and Constraint for Solar non-priority for Node Raffeen*

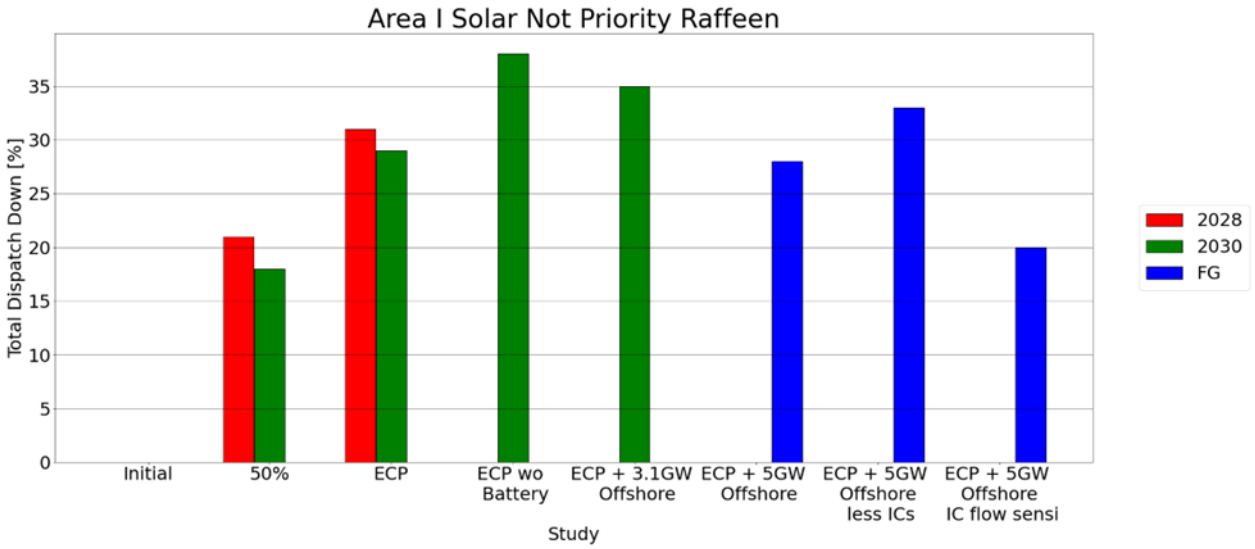


*Figure 2-20 - Total Dispatch Down for Solar not priority for Node Raffeen*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 55 | |
| **Installed Capacity (MW)** | 2030 | 55 | 55 |
| **Available Energy (GWh)** | 2028 | 64 | |
| **Available Energy (GWh)** | 2030 | 64 | 64 |
| **Generation (GWh)** | 2028 | 45 | |
| **Generation (GWh)** | 2030 | 46 | 42 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-29 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Raffeen*

## 2.11 Rathcoursey

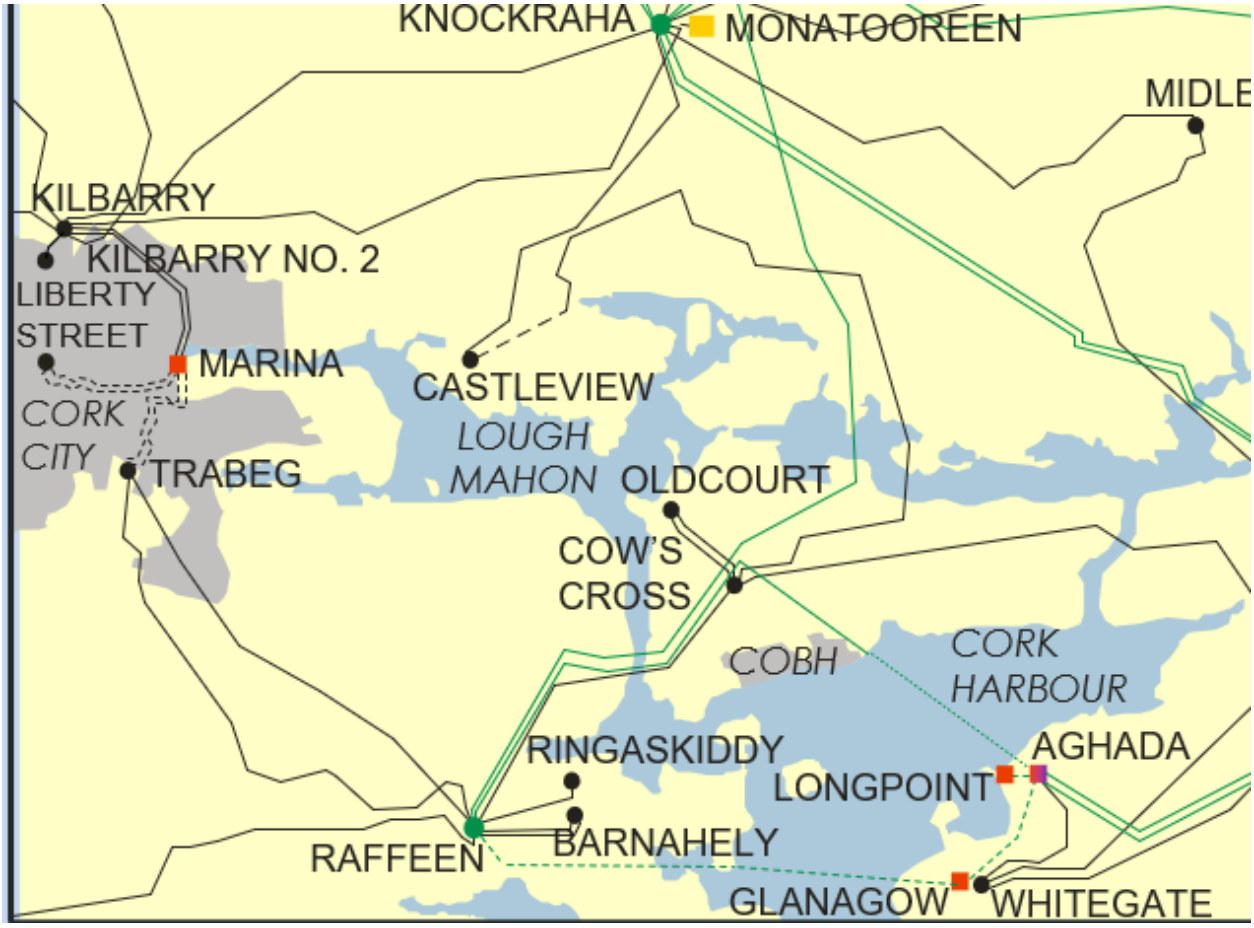


*Figure 2-21 - Location of node Rathcoursey (new node between Cow cross and Whitegate)*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Rathcoursey Solar** | DSO | 110.0 | solar not priority | due to connected |

*Table 2-30 - Generation Included in Study for Node Rathcoursey*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | | 55 | 110 | | | | | |
| **Installed Capacity (MW)** | 2030 | | 55 | 110 | 110 | 110 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 110 | 110 | 110 |
| **Available Energy (GWh)** | 2028 | | 64 | 129 | | | | | |
| **Available Energy (GWh)** | 2030 | | 64 | 129 | 129 | 129 | | | |
| **Available Energy (GWh)** | FG | | | | | | 129 | 129 | 129 |
| **Generation (GWh)** | 2028 | | 51 | 89 | | | | | |
| **Generation (GWh)** | 2030 | | 53 | 92 | 79 | 84 | | | |
| **Generation (GWh)** | FG | | | | | | 93 | 86 | 102 |
| **Surplus (%)** | 2028 | | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-31 - Surplus, Curtailment and Constraint for Solar non-priority for Node Rathcoursey*

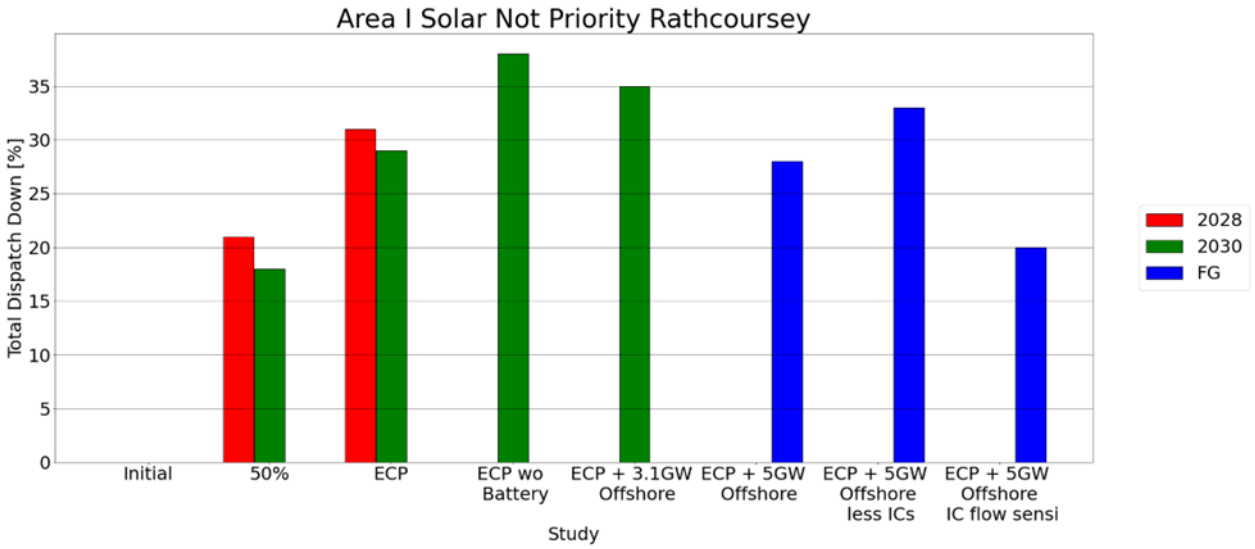


*Figure 2-22 - Total Dispatch Down for Solar not priority for Node Rathcoursey*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 110 | |
| **Installed Capacity (MW)** | 2030 | 110 | 110 |
| **Available Energy (GWh)** | 2028 | 129 | |
| **Available Energy (GWh)** | 2030 | 129 | 129 |
| **Generation (GWh)** | 2028 | 89 | |
| **Generation (GWh)** | 2030 | 92 | 84 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-32 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Rathcoursey*

## 2.12 Trabeg


*Figure 2-23 - Location of node Trabeg*

| Generator | SO | Capacity | Type | Status |
|---|---|---|---|---|
| **Shanagraigue** | DSO | 4.95 | solar not priority | connected |

*Table 2-33 - Generation Included in Study for Node Trabeg*

The solar not priority data is given in the following table.

| Area I | Year | Initial | 50% | ECP | ECP wo Battery | ECP + 3.1GW Offshore | ECP + 5GW Offshore | ECP + 5GW Offshore less ICs | ECP + 5GW Offshore IC flow sensi |
|---|---|---|---|---|---|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 5 | 5 | 5 | | | | | |
| **Installed Capacity (MW)** | 2030 | 5 | 5 | 5 | 5 | 5 | | | |
| **Installed Capacity (MW)** | FG | | | | | | 5 | 5 | 5 |
| **Available Energy (GWh)** | 2028 | 6 | 6 | 6 | | | | | |
| **Available Energy (GWh)** | 2030 | 6 | 6 | 6 | 6 | 6 | | | |
| **Available Energy (GWh)** | FG | | | | | | 6 | 6 | 6 |
| **Generation (GWh)** | 2028 | 4 | 5 | 4 | | | | | |
| **Generation (GWh)** | 2030 | 5 | 5 | 4 | 4 | 4 | | | |
| **Generation (GWh)** | FG | | | | | | 4 | 4 | 5 |
| **Surplus (%)** | 2028 | 8 % | 13 % | 23 % | | | | | |
| **Surplus (%)** | 2030 | 8 % | 15 % | 25 % | 33 % | 31 % | | | |
| **Surplus (%)** | FG | | | | | | 23 % | 29 % | 18 % |
| **Curtailment (%)** | 2028 | 4 % | 4 % | 6 % | | | | | |
| **Curtailment (%)** | 2030 | 2 % | 3 % | 4 % | 5 % | 4 % | | | |
| **Curtailment (%)** | FG | | | | | | 2 % | 3 % | 2 % |
| **Constraint (%)** | 2028 | 22 % | 4 % | 2 % | | | | | |
| **Constraint (%)** | 2030 | 5 % | 1 % | 0 % | 0 % | 0 % | | | |
| **Constraint (%)** | FG | | | | | | 3 % | 1 % | 1 % |
| **Total Dispatch Down (%)** | 2028 | 34 % | 21 % | 31 % | | | | | |
| **Total Dispatch Down (%)** | 2030 | 16 % | 18 % | 29 % | 38 % | 35 % | | | |
| **Total Dispatch Down (%)** | FG | | | | | | 28 % | 33 % | 20 % |

*Table 2-34 - Surplus, Curtailment and Constraint for Solar non-priority for Node Trabeg*

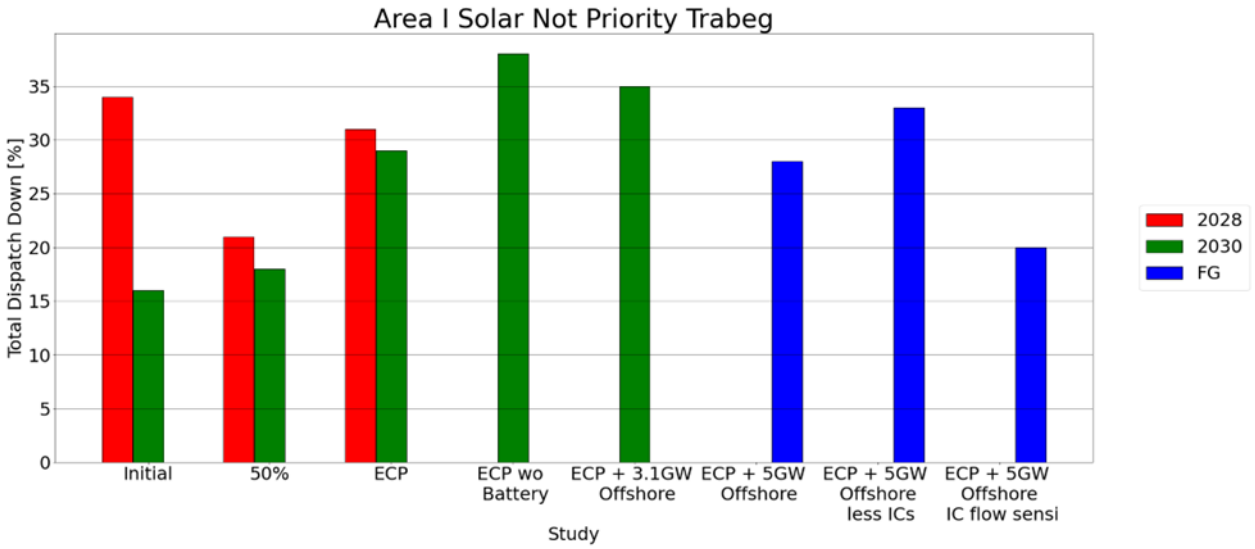


*Figure 2-24 - Total Dispatch Down for Solar not priority for Node Trabeg*

The solar not priority with sensitivity data is given in the following table.

| Area I | Year | ECP | ECP + 3.1GW Offshore |
|---|---|---|---|
| **Installed Capacity (MW)** | 2028 | 5 | |
| **Installed Capacity (MW)** | 2030 | 5 | 5 |
| **Available Energy (GWh)** | 2028 | 6 | |
| **Available Energy (GWh)** | 2030 | 6 | 6 |
| **Generation (GWh)** | 2028 | 4 | |
| **Generation (GWh)** | 2030 | 4 | 4 |
| **Surplus (%)** | 2028 | 23 % | |
| **Surplus (%)** | 2030 | 25 % | 31 % |
| **Curtailment (%)** | 2028 | 6 % | |
| **Curtailment (%)** | 2030 | 4 % | 4 % |
| **Constraint (%)** | 2028 | 2 % | |
| **Constraint (%)** | 2030 | 0 % | 0 % |
| **Total Dispatch Down (%)** | 2028 | 31 % | |
| **Total Dispatch Down (%)** | 2030 | 29 % | 35 % |

*Table 2-35 - Surplus, Curtailment and Constraint for Solar non-priority with sensitivity for Node Trabeg*