

## RenewableNI response to the UR's consultation on SONI's draft Transmission Development Plan 2023-2032

RenewableNI (RNI) is the voice for the renewable electricity industry in Northern Ireland. Through the development of policy, best practice, and public communications, we represent those engaged in wind, solar, and battery storage development. Our members make up a large majority of the renewable industry supply chain in Northern Ireland.

RNI welcomes the opportunity to respond to the Utility Regulator (UR)'s consultation on the updated SONI draft Transmission Development Plan for Northern Ireland (TDPNI) 2023-32 which sets out SONI's proposals for the development of Northern Ireland's transmission network and interconnection over the coming ten years.

RNI sees this as a critical juncture in the energy transition, and an opportunity for all key stakeholders, and particularly SONI, to commit with a renewed focus on accelerating delivery of the transmission developments essential to achieve the Executive's renewable electricity target of 80% by 2030 (80 by 30).

### Background

RNI responded to SONI's initial consultation on the TDPNI 2023-32 in January 2024, and a copy of that consultation response is appended hereto at Appendix 1. Much of the content of that response is still valid to this updated consultation. We have read and welcome SONI's '*Report on Public Consultation on Transmission Development Plan Northern Ireland 2023-2032*'. We have also reviewed the updated draft TDPNI, and our following response focuses on the changes since the data freeze 01 May 2023 which were set under the original consultation.

Our response to the original draft TDP included detailed observation and discussion on the following key headings:

1. Policy Context;
2. Dispatch Down;
3. Project Pipeline;
4. Connecting Future Renewable Generation;
5. Project Websites Interconnection;
6. Accelerating Renewables Taskforce; &

## 7. Resource;

In this response to the updated Draft TDP as published in July 2024, we have followed similar discussion headings, focusing more on any changes since we submitted our original response in January 2024. These should all be read in conjunction with our response as appended at Appendix 1.

## Policy Context

The previous UK Government set in legislation a requirement for a 'net zero' economy by 2050<sup>1</sup>. As the leader in decarbonisation, the power sector will have to achieve zero-carbon first, with heat and transport expected to significantly rely on electrification as the main way of cutting emissions. Furthermore, the previous regime made a commitment to decarbonising the electricity system by 2035<sup>2</sup> and there is no caveat in the UK ambition which excludes NI.

The new Labour government, committed to bringing forward the UK target for zero carbon electricity to 2030<sup>3</sup>, and since taking power has now reiterated this commitment<sup>4</sup>, making clear it will hold fast to its 2030 Clean Power Mission and nationally determined contributions. The new government's plans include quadrupling offshore wind capacity to 55GW, tripling solar power to 50GW, and doubling onshore wind capacity to 35GW, signalling an increasingly ambitious approach to the roll-out of renewables as the rest of this critical decade progresses.

RNI successfully advocated for an ambitious 80% by 2030 renewable electricity target (80 by 30), which is now a legal requirement of NI climate change legislation and will also contribute to the UK government meeting its own 2050 net zero pledge. We currently have 1.8GW of renewable capacity and must at least double this to meet growing demand. In its report Accelerating Renewables<sup>5</sup>, KPMG assessed that under a business as usual scenario, NI will fall well short of this target.

TES 2023 was published in May 2024<sup>6</sup> further to RNI's engagement with SONI following its consultation process. RNI had taken issue with a lack of ambition in SONI's future energy scenario planning. Two further sub-scenarios which RNI requested were then included which operate under the assumption that a net zero power system could be achieved by 2035. RNI maintains that a more ambitious transition to renewables led generation with a net zero power system by 2035 or earlier is achievable and must be SONI's goal.

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<sup>1</sup> [UK becomes first major economy to pass net zero emissions law - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law)

<sup>2</sup> [Plans unveiled to decarbonise UK power system by 2035 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035)

<sup>3</sup> Pg. 6, [Clean Power Mission \(labour.org.uk\)](https://www.labour.org.uk/clean-power-mission)

<sup>4</sup> [Clean Energy Superpower Mission - Hansard - UK Parliament](https://www.parliament.uk/hansard/commons/2024/energy/clean-energy-superpower-mission)

<sup>5</sup> [RNI-Report-Accelerating-renewables-in-Northern-Ireland-online-version.pdf \(renewableni.com\)](https://renewableni.com/reports/rni-report-accelerating-renewables-in-northern-ireland-online-version.pdf)

<sup>6</sup> [TES-2023-Final-Full-Report.pdf \(soni.ltd.uk\)](https://soni.ltd.uk/tes-2023-final-full-report.pdf)

The most recent statistics published by the Northern Ireland Statistics and Research Agency (NISRA) show that for the 12 month period from April 2023 to March 2024, 45.5% of total electricity consumption in Northern Ireland was generated from renewable sources in Northern Ireland. This is not only considerably far off the 80 by 30 target, but more worryingly it represents a decrease of 3.0 percentage points on the previous 12 month period of April 2022 to March 2023<sup>7</sup>. This would suggest that rather than being characterised by acceleration, the process of renewable deployment is slowing down.

In SONI's Q2 2024 Associated Transmission Reinforcement (ATR) Status Update<sup>8</sup> (published June 2024), with the exception of a small number of projects, the majority of reinforcement projects are indicated in the draft plan as delayed further. These delays are analysed in further detail below but in six months two of these key enabler projects (North West of NI 110kV reinforcement & Mid-Tyrone) have seen their estimated completion dates (ECDs) extended by three and four years respectively. RNI acknowledges that delays may be inevitable, but these are not minor revisions when it comes to new completion dates. Moreover, both these projects are key enablers for 80% renewable electricity by 2030, and, yet they now have delivery dates of 2033, long after the target date.

RNI sees 2024, as we approach the mid-point of this decade, as a crucial moment at which to galvanise all key stakeholders, and crucially SONI, into adopting a renewed and ambitious focus on accelerating delivery of the transmission developments essential to maximise delivery of indigenous, renewable energy, achieving 80 by 30 and beyond that, transitioning to net zero.

## Dispatch Down

Dispatch Down has become a persistent and increasingly pressing crisis in NI. Dispatch Down refers to a reduction of a renewable generator's export volumes compared to their availability. For example, where a windfarm could have been generating but for whatever reason has been instructed to produce less electricity than it can or even to shut down entirely.

This issue in NI is currently being driven primarily by constraints. This refers to times when the grid is too congested at certain locations to facilitate any higher levels of renewable electricity. NI (especially the North West) is effectively now a constraints zone. Constraint levels have been averaging above 20% since the middle of 2023 (July) and in April one of our members reported the average level Dispatch Down for their windfarms as 45% (6% curtailment, 39% constraints) and a maximum level of 51% (6% curtailment, 45% constraints).

The main causes of this current high level of constraints are *inter alia* consistently high levels of imports across the Moyle interconnector due to lower wholesale prices in the GB market, levels of minimum generation continuing to be relatively high, and, crucially, the delay in the much needed

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<sup>7</sup> [Electricity Consumption and Renewable Generation in Northern Ireland \(nisra.gov.uk\)](https://www.nisra.gov.uk/electricity-consumption-and-renewable-generation-in-northern-ireland)

<sup>8</sup> [Q2-2024-Associated-Transmission-Reinforcement-for-publication-Final.pdf \(soni.ltd.uk\)](https://www.soni.ltd.uk/q2-2024-associated-transmission-reinforcement-for-publication-final.pdf)

second North-South interconnector. RNI continues to support the delivery of the second North-South Interconnector, as an urgent and critical upgrade to the grid infrastructure on the Island of Ireland and acknowledges that SONI has identified it as one of its key enabler projects to deliver 80 by 30.

These levels of dispatch down represent a waste of indigenously generated renewable electricity. It is resulting in a greater reliance on fossil fuel generators, a major loss of revenue for renewable generators, and eroding the economic viability of their existing investments. The longer-term impact of this is then to deter future investment in needed green energy infrastructure and endanger delivery of our legally binding 80 by 30 target.

This sharp and continued increase in dispatch down of wind, by most projections, is expected to be sustained until at least 2030 and will act as a significant disincentive for renewable generation in NI unless strategic steps are taken to address this. Reducing both current and future constraint levels is key to maximising the potential from renewable generation in Northern Ireland. Delivery of the transmission projects outlined in SONI's TDPNI, particularly the key enabler projects, will be vital in helping to alleviate these unsustainably high levels of constraints.

## Project Pipeline

RNI conducted its annual pipeline survey in April 2024 and supplemented this with data from the RenewableUK [Energy Pulse](#) resource. It shows that at that time, the following level of projects were in development:

- 2,574MW of onshore wind
- 3,820MW of offshore (wind & tidal)
- 576MW of solar PV
- 3,850MW of battery storage

See Appendix 2 for further detail.

## Connecting Future Renewable Generation

As noted in our response to the initial TDP consultation, RNI has significant concerns that the key transmission developments which are essential to achieve the governments renewable energy target of 80% by 2030 will simply not be delivered in time to meet the obligations of the NI Climate Act.

At a time when the 80% renewable electricity by 2030 obligation will require us to connect new renewables at a pace not previously seen it is manifestly clear that a Business as Usual approach will result in failure to achieve anything close to the government targets. An accelerated approach needs

to be taken individually and cumulatively across all sectors from SONI and NIEN, DfE and DfI, the Utility Regulator, local councils, industry, and all other key stakeholders.

Numerous key tasks like finalising the design of a new support mechanism by DfE, updated planning policy by DfI, various updated strategic transmission & distribution plans and policies by both SONI and NIE Networks are being progressed with a view to accommodating the obligations under the NI Climate Act. However as is clear from SONI's draft TDP a Business as Usual approach from any quarter will not suffice.

RNI believes that accelerating delivery of NI's transmission infrastructure to ensure that we can fully exploit home-grown generation and our world-leading levels of renewables remains the best solution to ensure both security of supply and the cheapest electricity prices for consumers. RNI has expressed concern regarding recent GB interconnector trends and the impact high levels of interconnector imports are having on dispatch down levels and future renewables' investment in Northern Ireland at a time when we need to expedite growth of our renewable energy capacity and build-out of the enabling infrastructure. Displacing the domestic renewables industry in NI will have a profound and detrimental impact on both achieving the 80 by 30 target and the cost to the NI consumer.

NI is regularly importing 400MW across the Moyle Interconnector. In fact, the Moyle Interconnector was a net importer for every month in 2023, and this has continued to date, in 2024. Existing interconnector policy and corresponding assumptions thus far have focused on the positive export potential of renewables through increased interconnection, but modelling indicates a danger that NI will become dependent on imports as we journey to 2030. Prices of GB electricity are expected to continue to be lower than prices in the All-Island market, meaning that existing SEM-GB interconnectors will most probably continue to be net-importers on an enduring basis. The more short-term focus on any positive benefits from net import through interconnectors is, ultimately, at odds with the more significant negative longer-term impact it may have on delivering energy security, affordability to consumers and achieving the legally binding 80% renewable electricity from domestic sources by 2030 target.

Therefore, a lack of transmission investment in Northern Ireland means prices here will continue to be higher, resulting in continued imports and a consequent lack of investment. It is essential to reduce a reliance on imported power so we can realise NI's decarbonisation objectives.

Our response of January 2024 noted that *'as well as presenting an increase in the volume of transmission reinforcement projects, the TDPNI must accelerate the pace at which these reinforcements are delivered. Otherwise the 80 by 30 obligation will become unachievable.'* A focus of RNI's response was the persistent trend of projects Estimated Completion Delays (ECDs) being continually extended and presented a comparison of the trends in ECDs over most recent TDPs (2020, 2021, and draft 2023). In the short period since the publication of the draft TDP 2023 in October

2023, there have been numerous further delays identified in both the updated TDP of July 2024, and SONI's Q2 2024 ATR update. We have captured a summary of these additional delays in the table that follows.

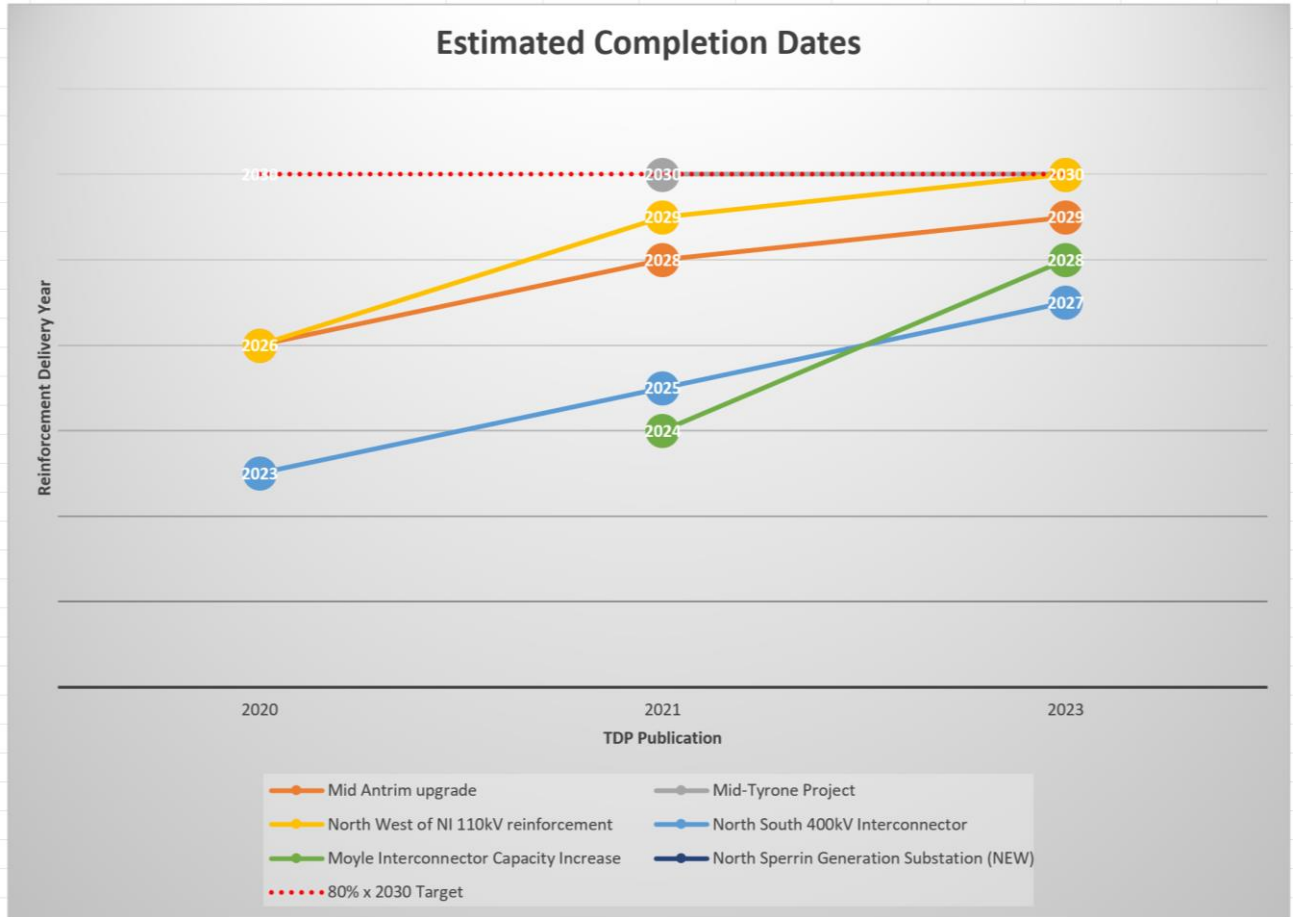
Whilst these delays are concerning we do understand that SONI's reason for these significant negative updates follows '*a comprehensive deliverability assessment undertaken jointly between SONI and NIE Networks as part of a programme of work designed to assess project timescales more accurately for the purpose of developing an acceleration pathway*'.

Whilst the deliverability of all project in the TDP are essential necessary upgrades, SONI has identified six particular new build projects as '**key enablers for 80% by 2030**', and SONI note that '*completion of these projects is critical to meeting (and then exceeding) the 2030 targets*'. The six projects identified by SONI include:

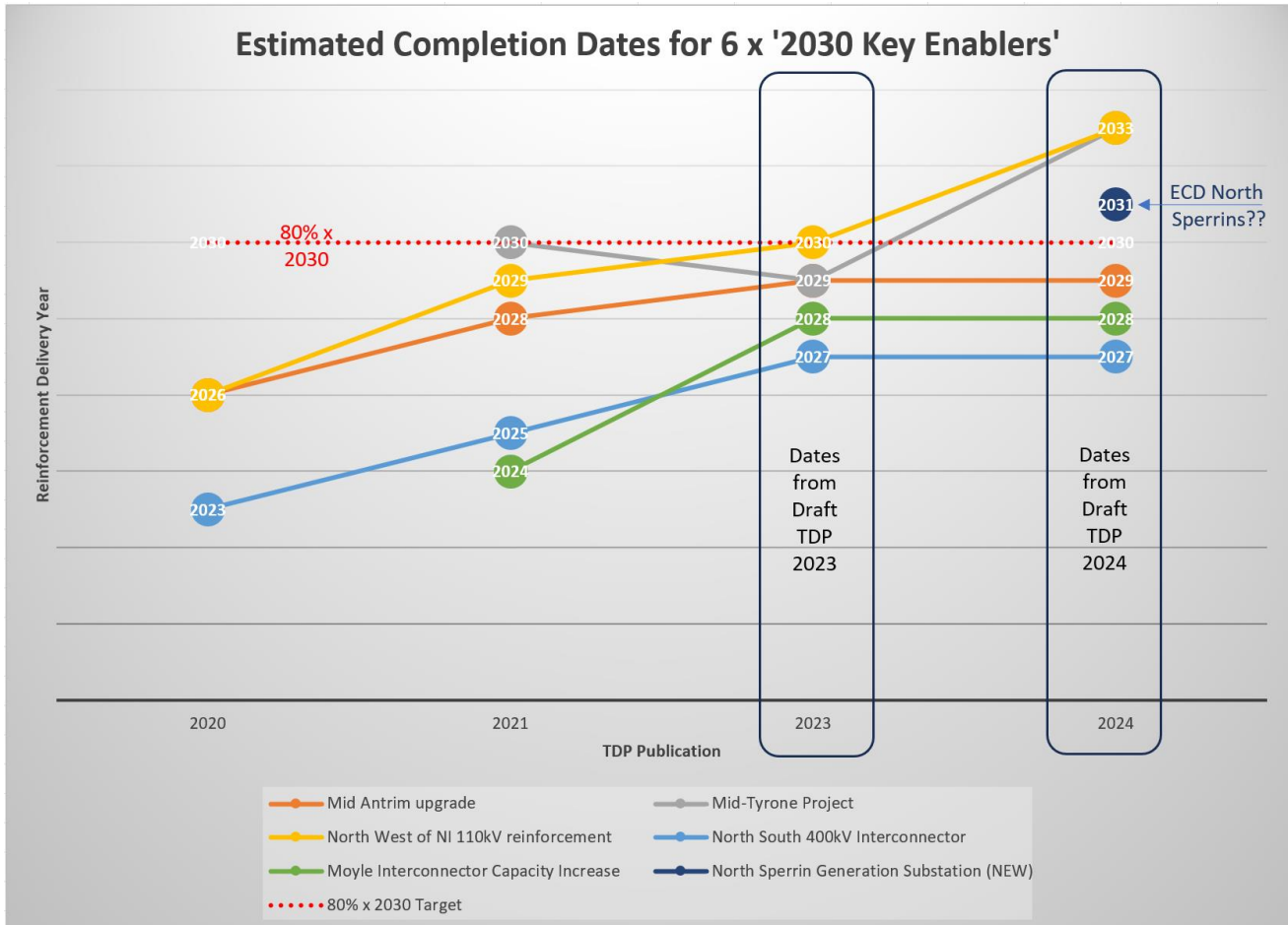
1. North – South interconnector;
2. Mid Antrim Upgrade;
3. Mid Tyrone Project;
4. Moyle Interconnector Capacity Increase;
5. North Sperrin Generation Substation; &
6. Northwest of NI 110kV Reinforcement;

**Graph 1.1** underneath is copied from the RNI response to the draft TDP in January 2024, and provides a comparison of ECD dates from the 2020, 2021, and draft 2023 TDP's for these six key projects. The graph highlighted a worrying sliding scale of delivery dates from each TDP, with little evident progress. At that point, two of the projects (Mid Tyrone & NW of NI reinforcement) were both scheduled for completion in 2030, thus had zero room for further delay. The proposed new generation substation in the North Sperrins, also identified as a key 2030 enabler had not been given an estimated completion date.

**Graph 1.2** which follows includes the same data as Graph 1.1 with the inclusion of the updated delivery dates now presented by SONI in July 2024.



**Graph 1.1** Estimated Completion Dates for the Six Key Enabler Projects (as of Oct 2023)



**Graph 1.2** Estimated Completion Dates for the Six Key Enabler Projects (as of July 2024)

In this short period two of these key enabler projects (North West of NI 110kV reinforcement & Mid-Tyrone) have seen their ECDs extended by 3 and 4 years respectively, such that both key enablers for 2030 now have delivery dates of 2033. In addition a delivery date for the North Sperrins project has yet to be identified.

As noted in our original response, when considering the total list of Asset Replacement Projects (ARPs) and Network Development Projects (NDPs) in the round, it appears that the pace with which the projects are being developed and progressed to completion, in fact appears to be stalled, if not slowed down. With the exception of a small number of projects, the majority of reinforcement projects are indicated in the draft plan as delayed further. Table 1.1 in our response of January 2024 (Appendix 1) provides an overview of the changes to estimated completion dates (ECD) between the 2021 TDP and the now proposed draft TDP. Of the 41 individual ARPs listed, there was a cumulative delay of



33 years identified between the draft ECDs identified in the 2021 plan and the 2023 plan, or on average c.10 months per project (note this is a 10 month delay over a 24 month period).

**Tables 1.2 & 1.3** within the original RNI response of January 2024 presented a similar comparison of ECDs, and summarised the numerous delays identified in the draft 2023 TDP. These tables have been reproduced hereunder and have included a new column with the updated dates taken from Table 1-2 of the July 2024 draft TDP.

	NDP Project Title [North & West Planning Area]	ECD [TDP 2024]	ECD [TDP 2023]	ECD [TDP 2021]	Change from 2021- 2024
1	Cam Cluster Substation (NEW)	2030 <sup>9</sup>	2029	N/A	1 year delay
2	Coolkeeragh 110 kV extension	2029	2029	2029	Same
3	Coolkeeragh – Killymallaght - Strabane 110 kV Uprate	2031	2031	2025	6 year delay
4	Coolkeeragh – Limavady – Coleraine Uprate (NEW)	2035	2027	N/A	8 year delay
5	Limavady Transformer Replacement (NEW)	2026	2026	N/A	N/A
6	Gort 110/33 kV 2 <sup>nd</sup> Transformer	2024	2024	2023	1 year delay
7	Mid-Antrim Upgrade*	2029	2029	2027	2 years delay
8	North Sperrin Generation Substation (NEW)*	<b>TBC</b>	<b>TBC</b>	N/A	N/A
9	Northwest of NI 110 kV Reinforcement*	2033	2030	>2029	4 year delay
10	Mid Tyrone Project [previously NW & MT Large Scale Reinforcement]*	2033	2029	2029	4 year delay
11	Omagh Main – Dromore Uprate	2023	2023	2023	Same
12	Strabane – Omagh 110 kV Uprate	On hold	2031	2028	On hold
13	Coolkeeragh T1 Transformer cabling uprate	2026	2026	2023	3 year delay
14	East Tyrone Reinforcement Project	2030	2024	2026	4 year delay
15	Northwest Special Protection Scheme upgrade	2023	2023	2022	1 year delay
16	Coolkeeragh 275 kV Redevelopment	2033	2031	2029	4 year delay

**Table 1.2 (R1) NDPs [North & West] – Comparison of 2021, 2023, & 2024 ECDs**

<sup>9</sup> Changes to the October 2023 TDP dates coloured in red.

	NDP Project Title [South-East Planning Area]	ECD [TDP 2024]	ECD [TDP 2023]	ECD [TDP 2021]	Change from 2021- 2024
1	Energising Belfast [previously Castlereagh-Hannahstown]	2030	2027	2027	3 year delay
2	Carnmoney – Eden Reinforcement	2029	2028	2026	3 year delay
3	Kells 110/33 kV Cluster	2025	2025	2023	2 year delay
4	Ballylumford – Ballyvallyagh 110 kV Uprate (NEW)	TBC	2030	New	New
5	Larne Transformer Replacement (NEW)	2026	2026	New	New
6	Drumnakelly - Tamnamore 110 kV Uprate	2029	2027	2026	3 year delay
7	Airport Road Main 110/33 kV substation	2026	2026	2023	3 year delay
8	Armagh and Drumnakelly Reinforcement	2031	2029	2027	4 year delay
9	Newry Reinforcement	2035	2030	N/A	5 year delay
10	Shunt Reactors - Castlereagh, Tandragee and Tamnamore	2028	2028	2024	4 year delay
11	Castlereagh 110 kV Switchgear replacement	2027	2027	2028	1 year improvement
12	Tandragee 110 kV Switchgear replacement	2027	2027	2025	2 year delay
13	Castlereagh 275 kV Redevelopment	2033	2033	2029	4 year delay
14	Kells 275 kV Redevelopment	2031	2031	2030	1 year delay
15	Magherafelt 275 kV Redevelopment	2035	2031	>2030	4 year delay
16	Tandragee 275 kV Redevelopment	2038	2038	>2030	8 year delay
17	North South 400 kV Interconnection Development (TYNDP/ 81)*	2027	2027	2025	2 year delay
18	Moyle Interconnector Capacity Increase*	2028	2028	2024	4 year delay

**Table 1.3 (R1) NDPs [South & East] – Comparison of 2021, 2023, & 2024 ECDs**

\* The six Network Development Projects highlighted in yellow in the above tables have been identified by SONI as key enablers for the 80% x 2030 government targets. SONI noted that ‘*Completion of these projects is critical to meeting (and then exceeding) the 2030 targets*’.

Graphs 1.1 & 1.2, and Tables 1.1 (in original response), and 1.2(R1), & 1.3(R1) all highlight and demonstrate a worrying and concerning trend with ECDs identified in the 2021 and 2023 TDP’s (and now the updated TDP of July 2024). Of the 75 projects listed, only a single project is now identified with an ‘improved delivery date’, whilst 53 of the 75 listed projects are delayed somewhere between 1 to 8 years.

We recognise that there can be inevitable delays to projects e.g., as a result of the planning process, which is, of course, outside of SONI’s control, but RNI would urge that every effort be made to avoid

such delays to projects, now and in the future, and propose that a transparent approach is adopted with clear reasons given for every project that is delayed in future. SONI itself has acknowledged that a Business as Usual approach will not suffice and accelerating delivery must underpin its future work.

RNI is keen to work closely and collaboratively with SONI, the Utility Regulator, NIE Networks, and any other stakeholders to ensure that the planning and regulatory systems are favourable to renewable developments and decarbonisation of our electricity system. It is crucial that a more anticipatory approach to investment is adopted.

## Interconnection

RNI fully supports the development of the second North-South interconnector. While it is disappointing that the delivery date had slipped by two years since the previous estimation of 2025, we are aware of the planning difficulties that the project has faced. We understand this has now slipped again and is due to be completed in 2027. As this is a key project in allowing NI to achieve its 80 by 30 target, it is crucial that this its delivery is expedited.

A substantial proportion of current constraints of renewable generation in Northern Ireland would be removed when the North-South interconnector is complete and we therefore look forward to its construction.

In our response to the 2021 TDPNI consultation, RNI welcomed the new target date of 2024 for completion of works to allow the full integration of the 500MW export capacity of the Moyle Interconnector. Since the TDPNI 2021-2030, we are disappointed to note that this has been delayed by 4 years, and is now expected to be completed in 2028.

Ultimately, interconnection will be an important part of NI's energy future and SONI has recognised this within TES 2023. RNI acknowledges this, but wants to stress that the main priority and focus should remain improving at pace NI's transmission infrastructure so it is able to fully maximise domestically generated renewable electricity.

We must avoid a future scenario in which interconnection would replace or displace NI's own renewable energy solutions. Therefore, proposals for new interconnectors, including the planned Lir Interconnector, must be subject to rigorous cost benefit analysis in accordance with a comprehensive DfE interconnection policy that is clear that new interconnectors must provide overall net-benefits to NI consumers and take into account the full cost of Dispatch Down (i.e., the compensation which will ultimately fall payable when Article 13(7) of the Clean Energy Package is implemented).

## Accelerating Renewables Taskforce

Prior to the Executive returning, RNI had advocated for the establishment of an Accelerating Renewables Taskforce. This was to be a forum for key decision makers and stakeholders to accelerate the deployment of NI renewables. RNI had openly lauded the work of the OREAP Steering Committee as being a best practice example of joined up governance which could be replicated in an Accelerating Renewables Taskforce.

This bespoke taskforce has not yet been established, however there is a programme of work within DfE with similar goals which RNI has already fed into. In June 2024, RNI met with the department as part of their 80 by 30 efforts to engage with industry and outlined key actions needed, including accelerating grid buildout and encouraging anticipatory investment. Such engagement is welcomed, but a taskforce which would allow all key stakeholders to meet regularly to discuss how we can reduce timelines for the completion of renewable projects, from conception to connection is vital. So too, is the opportunity for industry, government and SONI/NIEN/The Utility Regulator to discuss these issues together and collaborate.

RNI notes that more anticipatory investment, expediting planning and grid timelines, and a widening of the UR's mandate are issues which concern a number of policy makers and stakeholders. RNI maintains, therefore, that engagement in a forum for all stakeholders is key to successfully delivering 80 by 30 and it is crucial that an Accelerating Renewables Taskforce is created to enable this.

## Resource

RNI acknowledges that to deliver development of the transmission system at a pace needed to meet the 80 by 30 obligation, SONI must have the correct resourcing and expertise. RNI is concerned that SONI does not currently have sufficient resources to complete the required modelling studies, to complete designs, to manage and deliver ARPs and NDPs on time (and, ideally, ahead of time) and provide the timely connection offers needed to meet the pressing timescales for the noted transmission system upgrades and new connections. It is vital that SONI is resourced to facilitate these crucial projects which will enable NI's decarbonisation journey and future green growth and further delays risk endangering delivery of 80 by 30.

NIE Networks' [Networks for Net Zero](#) study shows that due to downward pressure increased renewable generation exerts on the wholesale price of electricity, that achieving 70% renewable generation, will result in a net consumer saving of 1% after taking account of all the necessary grid investments. RNI's *Achieving Zero* study estimates that going from 70% to 80% will result in an additional consumer saving of £50m.

## SONI's Report on Public Consultation on TDPNI 2023-2032

In SONI's report on Public Consultation on TDPNI 2023-2032<sup>10</sup>, SONI has highlighted its own concern regarding future timely delivery without meaningful reform, "we acknowledge the role that we play as TSO in supporting the delivery of this target and that "business as usual" will not deliver for us." RNI is encouraged to see SONI actively acknowledging industry feedback on this point and making clear that they want to progress with a more ambitious and anticipatory approach to deliver the 80 by 30 target, "we agree with industry responses of the requirement to move to a more pro-active and anticipatory approach to network development to reduce network constraints in a timely manner and deliver on renewable energy targets."

At present, SONI is working on the upcoming TES Needs Assessment which will confirm the need for any additional projects necessary beyond 2030. RNI notes that the next TDP (2024-2033) will take the outputs of this Needs Assessment into account. As soon as the Needs Assessment is published in Q4 2024, the work on the next iteration of the TDP should commence and RNI maintains that this must continue on an annual basis.

Within SONI's report, SONI reference a move to a plan- rather than a developer-led approach. This seems to be a change in approach from the conclusions of Shaping Our Electricity Future 1.1 which had identified a balance but with a focus on developer-led. In SONI's evidence to the NI Affairs Committee in January 2024<sup>11</sup>, it stated "to accelerate the connection of new generation, SONI recommends working collaboratively to industry to move to more of a plan-led approach whereby there would be more flexibility to signal the most appropriate and strategic locations and technology."

RNI maintains that whatever approach is adopted going forward, that it is vital that SONI work with industry, government and the Utility Regulator to increase grid capacity proactively and at pace through more anticipatory investment.

## Conclusion

RNI acknowledges and is heartened by SONI's leading ambition and commitment to facilitating increased renewable electricity generation onto the grid. As repeated throughout this response, increased (and ahead of time) investment and significantly improved planning timelines will be needed to achieve NI's 80 by 30 target and, our ultimate decarbonisation and net-zero ambitions.

However, currently we are not yet persuaded that the necessary grid infrastructure is being delivered at the needed pace and we would need to see a marked change in order to meet the 80% target in the required timeframe. In particular, SONI must outline what additional measures are being put in

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<sup>10</sup> [Report-on-Draft-TDPNI-2023-2032-SONI-Consultation.pdf](#)

<sup>11</sup> [committees.parliament.uk/writtenevidence/127529/pdf/](#)

place to ensure that the six 'critical key enablers' for 2030 are being prioritised and do not continue to be delayed.

In short, we need to reverse delays and accelerate delivery. We look forward to continuing productive collaboration with SONI and our other partners, including the Utility Regulator and NIE Networks, to ensure that development of the transmission grid is progressed at pace to maximise our domestic renewable resource and achieve the NI Executive's 80 by 30 ambitions.

## Appendix 1: RNI Response to draft TDPNI 2023-2032 dated January 2024

### RenewableNI response to SONI draft Transmission Development Plan 2023-2032

RenewableNI (RNI) is the voice for the renewable electricity industry in Northern Ireland. Through the development of policy, best practice, and public communications, we represent those engaged in wind, solar, and battery storage development. Our members make up a large majority of the renewable industry supply chain in Northern Ireland.

RNI welcomes the opportunity to respond to SONI's consultation on the draft Transmission Development Plan for Northern Ireland (TDPNI) 2023-32.

### Policy Context

The UK Government has set in legislation a requirement for a 'net zero' economy by 2050. As the leader in decarbonisation, the power sector will have to achieve zero carbon first, with heat and transport expected to significantly electrify as the main way of cutting emissions. The International Energy Agency has stated that all advanced economies must achieve zero carbon power by 2035<sup>12</sup> and the UK Government has made a commitment to achieve this<sup>13</sup>.

Working in conjunction with Wind Energy Ireland, RNI is committed to driving policy to deliver zero carbon power on the island of Ireland by 2035. This can only be achieved if the necessary level of renewable generation and the required zero carbon system services, are facilitated by the electricity network.

RNI therefore welcomes the publication of the [SONI SOEF V1.1](#) which sets out the necessary upgrades required to reach 80% renewable electricity 2030. SONI's [TES 2020](#) which was published in July 2020 noted in its opening key message '*The context of climate change is well understood and the question now is how fast society can respond to limit the damage, protecting our planet for current and future generations.*'

SONI identified an Accelerated Ambition scenario in TES 2020 which is now the adopted position of the NI government, i.e. 80% of electricity from renewables by 2030. This *accelerated ambition* needs to be reflected in the draft TDPNI. The ambition for 80% renewables is there, however, with completion dates for key network infrastructure continually being pushed back, the impression is one of slowing down rather than accelerating projects.

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<sup>12</sup> Pg 20, [Net Zero by 2050](#)

<sup>13</sup> <https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035>

RNI's [Achieving Zero](#) report provides a pathway for zero carbon power and concludes that the technologies needed to achieve this are known to us today. RNI contends that SONI must ultimately plan for zero carbon power and work backwards from this, and therefore should recognise that 2030 is only a staging post and not the end goal.

[Latest figures](#) published by the Department for the Economy (DfE) show that 45.5% of total electricity consumption in Northern Ireland was from renewable sources (RES-E) for the 12 months period from July 2022 to June 2023.

Of all renewable electricity generated within Northern Ireland over the 12 month period July 2022 to June 2023, 83.5% was generated from wind. This compares to 84.2% for the previous 12 month period (July 2021 to June 2022).<sup>14</sup>

## Dispatch Down

The projects outlined in the TDPNI will be vital in reducing constraint levels in NI which have been rising significantly since 2018. NI curtailment generally remained materially higher than corresponding figures from ROI in 2020 and 2021, and to the analysis date in 2023 (See Appendix 1). SONI's recent [NI Constraints Report](#) shows a continuation of this trend as we increase renewables penetration.

Curtailment levels in NI have also followed a similar trend with SNSP increases failing to have a significant impact. Mullan Grid assess minimum generation levels of conventional plant (min gen) as being the predominant driver of curtailment.

As renewable generation increases there must be a corresponding decrease in min gen, in order to decarbonise our power system. Baringa's *Achieving Zero* study shows how min gen can be phased out while maintaining system security through the deployment of long duration storage technologies and hydrogen fuelled baseload. Highlighting that these technologies are known to us today, Baringa's analysis points to the importance of developing market structures to incentivise investment in such technologies.

Mullan Grid estimate that total Dispatch Down has resulted in lost revenue for renewable generators of £22m, £42m and £47m in 2021, 2022 and 2023 (January – November) respectively. As the power is instead being provided by fossil fuel generators there is also a carbon cost, estimated by Mullan Grid to have equated to 0.721MtCO<sub>2</sub> across the island in 2022, and 0.346MtCO<sub>2</sub> from January to July 2023, marking a substantial increase from 2021.

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<sup>14</sup> <https://www.economy-ni.gov.uk/articles/electricity-consumption-and-renewable-generation-statistics>



It is vital that transmission system developments keep pace with the connection of new renewable generation, and we see a corresponding ramping down of min gen, otherwise total dispatch down levels will make future renewable investments unfinanceable and potential carbon savings will not be realised.

## Project Pipeline

RNI conducted its annual pipeline survey in April 2023 and supplemented this with data from the RenewableUK [Energy Pulse](#) resource. It shows that at that time, the following level of projects were in development:

- 1,771MW of onshore wind
- 2,220MW of offshore (wind & tidal)
- 691MW of solar PV
- 1575MW of battery storage

See Appendix 2 for further detail.

## Connecting Future Renewable Generation

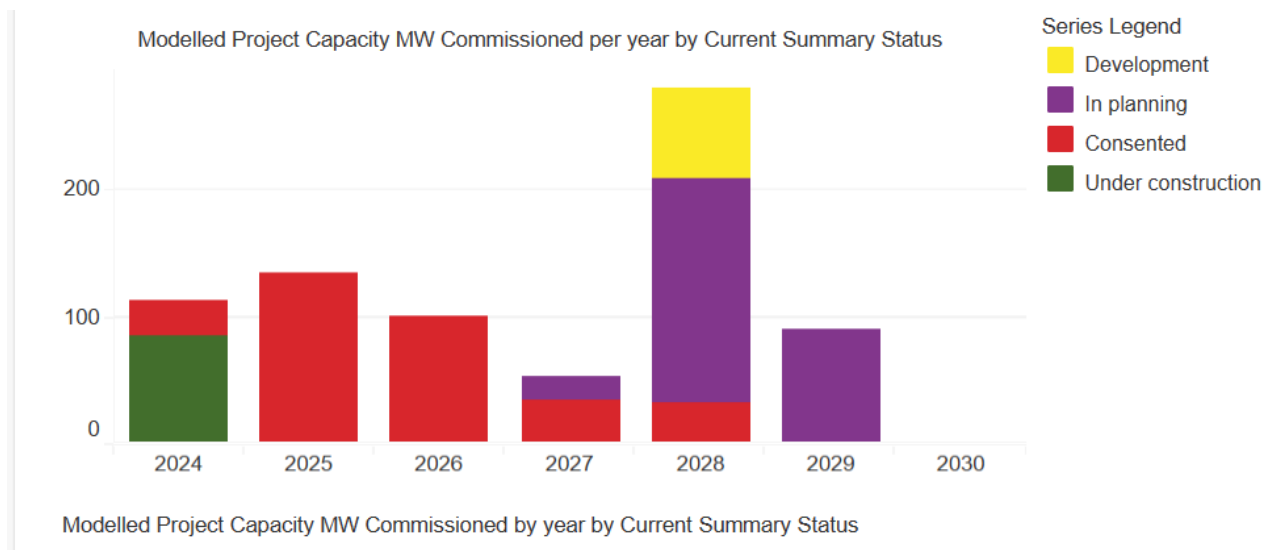
RNI is concerned that the necessary transmission developments will not be delivered in time to meet the obligations of the NI Climate Act.

At a time when the 80% renewable electricity by 2030 (80 by 30) obligation will require us to connect new renewables at a pace not previously seen, the lack of a Firm Access policy will act as a significant barrier to new connections. The Non Firm Access policy was intended as an interim solution to allow new connections in the absence of a wider energy policy. Now that the Energy Strategy has been published it is vital that progress is made on a Firm Access Policy. We note that this was recently consulted on by the SEMC, with a firm access policy introduced for ROI. This is another example of a lack of cohesion within the SEM, and a clear example of how ROI is progressing policy at a much quicker rate than NI, with NI lagging behind.

As well as presenting an increase in the volume of transmission reinforcement projects, the TDPNI must accelerate the pace at which these reinforcements are delivered. Otherwise the 80 by 30 obligation will become unachievable.

Table 5.1 within the draft TDPNI identifies forecast peak demand and generation capacity over the period 2022 to 2031, and predicts a reasonably linear and even delivery of new generation each year

to 2030. This table suggests 130MW of new generation will be connected in 2023, with a further 120MW projected to connect in 2024, followed by a consistent 180 to 190MW of new generation connecting each year to 2029. In order facilitate this new generation the associated transmission projects need to be delivered in a timely continual sequential manner, in order to avoid a log jam of projects all trying to connect just before the end of the decade, with limited commissioning resources and opportunities to connect them.



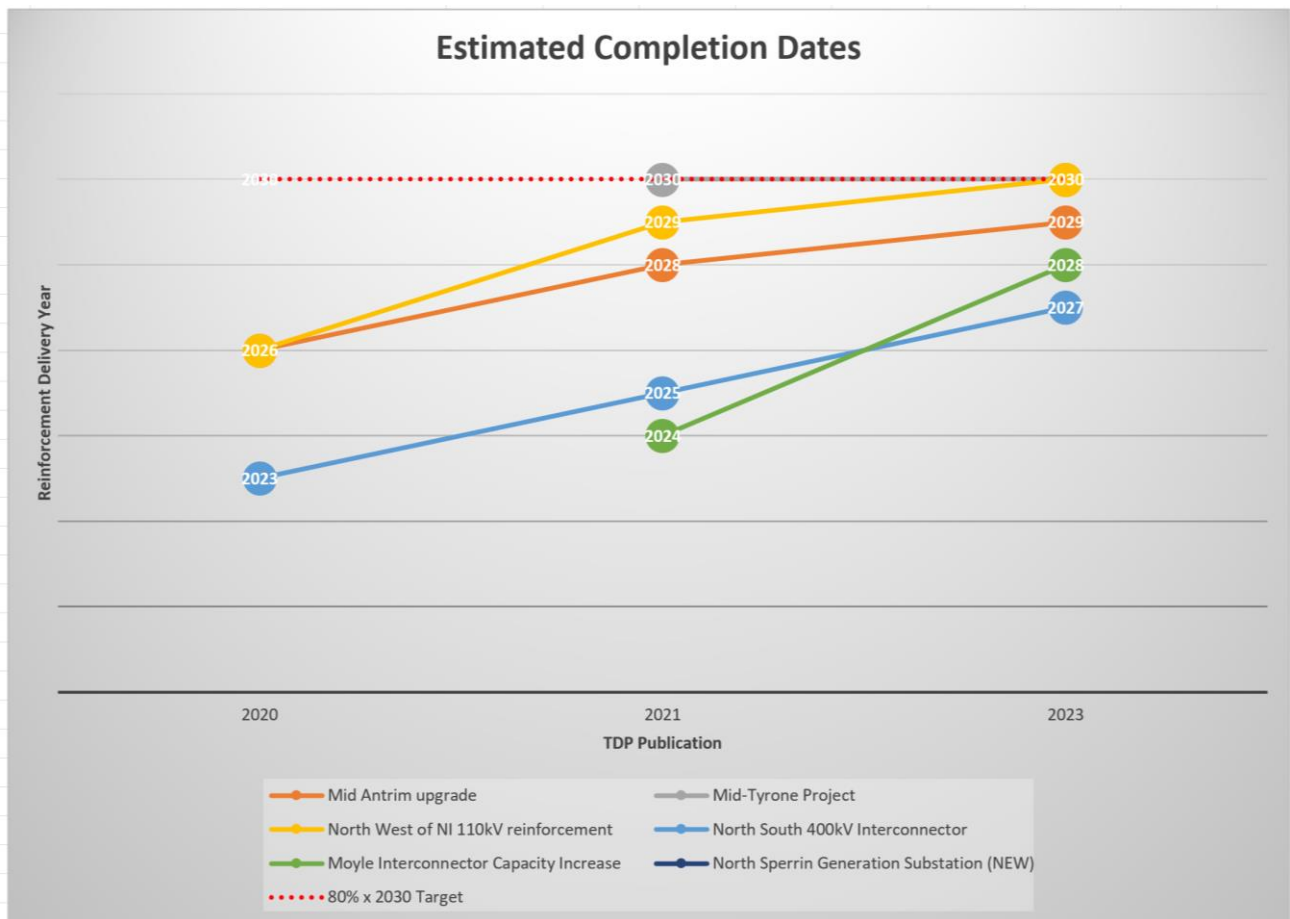
As we can see from the above [Energy Pulse](#) forecast, projects are unlikely to connect in the linear manner the TDPNI assumes. The introduction of a new NI renewable electricity support scheme will likely see a surge in projects looking to connect by 2030. Already there is an additional 1181MW of onshore wind and 574MW of solar developments in the pre planning phase, that is not included in these results. These projects all have an estimated completion date in advance of the end of 2030. Even with a probability weighting of 40% for the completion of pre planning projects, this still represents significant capacity that will need to be accommodated. RNI notes that the draft TDPNI indicates that 78 projects are currently in progress, consisting of 37 Network Development Projects, and 41 Asset Replacement Projects. The draft TDPNI also identifies six new build projects as key enablers for 80% by 2030, and that completion of these projects is critical to meeting and then exceeding the 2030 targets. The six projects identified by SONI include:

7. North – South interconnector;
8. Mid Antrim Upgrade;
9. Mid Tyrone Project;
10. Moyle Interconnector Capacity Increase;

11. North Sperrin Generation Substation; &

12. Northwest of NI 110kV Reinforcement;

**Graph 1.1** underneath provides a comparison of Estimated Completion Dates (ECD) dates from the 2020, 2021, and now draft 2023 TDP's for these six key projects. The graph shows a worrying sliding scale of delivery dates from each TDP, with little evident progress. Two of the projects (Mid Tyrone & NW of NI reinforcement) are both already scheduled for completion in 2030, thus have no room for further delay. The proposed new generation substation in the north Sperrins has not been given an estimated completion date, which needs to be specified in the final TDP if it has any realistic chance of being delivered ahead of 2030.



**Graph 1.1** Estimated Completion Dates for the Six Key Enabler Projects

Given the historic trends with delivery of all these projects, RNI have significant concerns with respect to the ability to deliver these key enabler projects in a timely manner.

While renewable developers will share with SONI frustrations with delays in the NI planning system, SONI must be accountable for delivery against its own timelines. It is unacceptable that expected completion dates are continually pushed back without sufficient explanation. The impact of not delivering these transmission projects is fewer renewable energy projects connecting, with greater levels of dispatch down resulting in lost revenue, higher costs to consumers, and increased carbon emissions. Accelerated ambition cannot be said to be being met.

In a wider sense, when looking at the total list of Asset Replacement Projects (ARPs) and Network Development Projects (NDPs), it appears that the pace with which the projects are being developed and progressed to completion appears to be stationary, if not slowing down. With the exception of a small number of projects, the majority of reinforcement projects are indicated in the draft plan as delayed further. The below tables 1.1 to 1.3 provide an overview of the changes to estimated completion dates (ECD) between the 2021 TDP and the now proposed draft TDP:

	ARP Project Title	ECD [TDP 2023]	ECD [TDP 2021]	Change from 2021 to 2023
1	Ballylumford-Eden 110 kV Circuit Uprate	2023	2023	Same
2	Ballylumford Switchgear Replacement	2027	2025	2 yrs delay
3	Coolkeeragh-- Magherafelt 275 kV Circuits Refurbishment	2023	2022	1 yr delay
4	Enniskillen Main Transformer 1 and 2 replacement	2024	2024	same
5	Glengormley Main Transformer B Replacement	2025	2023	2 yrs delay
6	Hannahstown Shunt Reactor Replacement	2025	>2024	same
7	Hannahstown inter-bus transformer 1 replacement	2025	2023	2 yrs delay
8	Hannahstown 275 kV Structures, Busbars and Disconnectors Replacement	2024	2024	Same
9	Tandragee Shunt Reactor Replacement	2025	2024	1 yr delay
10	Kilroot 275 kV CT Replacement Phase 1	2025	2024	1 yr delay
11	Strabane Main 110 kV refurbishment	2023	2023	Same
12	RP6 275 kV Tower Maintenance	2025	2024	1 yr delay

	ARP Project Title	ECD [TDP 2023]	ECD [TDP 2021]	Change from 2021 to 2023
13	RP6 110 kV Tower and Overhead Line Maintenance	2025	2024	1 yr delay
14	RP6 110 kV Cable Maintenance	2025	2024	1 yr delay
15	RP6 110 kV Transmission Protection	2025	2024	1 yr delay
16	RP6 275 kV Transmission Protection	2025	2024	1 yr delay
17	RP6 22 kV Transmission Protection	2025	2024	1 yr delay
18	Miscellaneous RP6 Works	2025	2024	1 yr delay
19	Banbridge Main Transformer 1, 2, 3 and 4 replacement	>2025	>2024	1 yr delay
20	Ballylumford 275 kV CVT Replacement	>2025	N/A	N/A
21	Castlereagh inter-bus Transformer 1 Replacement	>2025	>2024	1 yr delay
22	Castlereagh inter-bus Transformer 3 replacement	>2025	2024	1 yr delay
23	Castlereagh – Rosebank Tower Line Removal	>2025		
24	Cregagh Refurbishment	>2025	>2024	1 yr delay
25	Donegall Main (North) transformer replacement	>2025	2021	4 yrs delay
26	Dungannon Main transformer 1 replacement	>2025	N/A	N/A
27	Hannahstown 110 kV Pantograph and CT Replacement	>2025	N/A	N/A
28	Kells Shunt Reactor Replacement	>2025	>2024	1 yr delay
29	Kilroot 275 kV CT Replacement Phase 2	>2025	N/A	N/A
30	Kilroot CVT Replacement	>2025	N/A	N/A
31	Logestown Transformer 1 and 2 Replacement	>2025	N/A	N/A

	ARP Project Title	ECD [TDP 2023]	ECD [TDP 2021]	Change from 2021 to 2023
32	Noise Enclosures	>2025	N/A	N/A
33	Rathgael 110 kV Structures Replacement	>2025	>2024	1 yr delay
34	Standby Generators	>2025	N/A	N/A
35	Tandragee inter-bus Transformer 1 & 2 replacement	>2025	>2024	1 yr delay
36	RP7 275 kV Tower and Overhead Line Maintenance	>2025	>2024	1 yr delay
37	RP7 110 kV Tower and Overhead Line Maintenance	>2025	>2024	1 yr delay
38	RP7 110 kV Cable Maintenance	>2025	>2024	1 yr delay
39	RP7 110 kV Transmission Protection	>2025	>2024	1 yr delay
40	RP7 275 kV Transmission Protection	>2025	>2024	1 yr delay
41	Miscellaneous RP7 works	>2025	>2024	1 yr delay

**Table 1.1** Asset Replacement Projects – Comparison of 2021 & 2023 ECDs

	NDP Project Title [North & West Planning Area]	ECD [TDP 2023]	ECD [TDP 2021]	Change from 2021-2023
1	Cam Cluster Substation (NEW)	2029	N/A	N/A
2	Coolkeeragh 110 kV extension	2029	2029	same
3	Coolkeeragh – Killymallaght - Strabane 110 kV Uprate	2031	2025	6 yrs delay
4	Coolkeeragh – Limavady – Coleraine Uprate (NEW)	2027	N/A	N/A
5	Limavady Transformer Replacement (NEW)	2026	N/A	N/A
6	Gort 110/33 kV 2 <sup>nd</sup> Transformer	2024	2023	1yr delay
7	Mid-Antrim Upgrade*	2029	2027	2 yrs delay
8	North Sperrin Generation Substation (NEW)*	<b>TBC</b>	N/A	N/A
9	Northwest of NI 110 kV Reinforcement*	2030	>2029	1yr delay
10	Mid Tyrone Project [previously NW & MT Large Scale Reinforcement]*	2029	2029	same
11	Omagh Main – Dromore Uprate	2023	2023	same
12	Strabane – Omagh 110 kV Uprate	2031	2028	3 yrs delay
13	Coolkeeragh T1 Transformer cabling uprate	2026	2023	3 yrs delay
14	East Tyrone Reinforcement Project	2024	2026	2yrs improvement
15	Northwest Special Protection Scheme upgrade	2023	2022	1 yr delay
16	Coolkeeragh 275 kV Redevelopment	2031	2029	2 yrs delay

**Table 1.2** Network Development Projects [North & West] – Comparison of 2021 & 2023 ECDs

	NDP Project Title [South-East Planning Area]	ECD [TDP 2023]	ECD [TDP 2021]	Change from 2021-2023
1	Energising Belfast [previously Castlereagh-Hannahstown]	2027	2027	same
2	Carnmoney – Eden Reinforcement	2028	2026	2 yrs delay
3	Kells 110/33 kV Cluster	2025	2023	2 yrs delay
4	Ballylumford – Ballyvallyagh 110 kV Uprate (NEW)	2030	New	New
5	Larne Transformer Replacement (NEW)	2026	New	New
6	Drumnakelly - Tamnamore 110 kV Uprate	2027	2026	1 yr delay
7	Airport Road Main 110/33 kV substation	2026	2023	3 yrs delay
8	Armagh and Drumnakelly Reinforcement	2029	2027	2 yrs delay
9	Newry Reinforcement	2030	N/A	N/A
10	Shunt Reactors - Castlereagh, Tandragee and Tamnamore	2028	2024	4 yrs delay
11	Castlereagh 110 kV Switchgear replacement	2027	2028	1 yr improvement
12	Tandragee 110 kV Switchgear replacement	2027	2025	2 yrs delay
13	Castlereagh 275 kV Redevelopment	2033	2029	4 yrs delay
14	Kells 275 kV Redevelopment	2031	2030	1 yr delay
15	Magherafelt 275 kV Redevelopment	2031	>2030	same
16	Tandragee 275 kV Redevelopment	2038	>2030	8 yrs delay
17	North South 400 kV Interconnection Development (TYNDP/ 81)*	2027	2025	2 years delay
18	Moyle Interconnector Capacity Increase*	2028	2024	4 years delay

**Table 1.3** Network Development Projects [South & East] – Comparison of 2021 & 2023 ECDs



\* The six Network Development Projects highlighted in yellow have been identified by SONI as key enablers for the 80% x 2030 government targets. SONI noted that ‘*Completion of these projects is critical to meeting (and then exceeding) the 2030 targets*’.

Graph 1.1, Tables 1.1, 1.2, & 1.3 all demonstrate a concerning trend with ECD’s between the 2021 and 2023 TDP’s. Of the 75 projects listed, only two projects are identified with improved delivery dates, whilst 47 of the 75 listed projects are delayed somewhere between 1 to 8 years.

We recognise that there can be inevitable delays to projects e.g. relating to planning, but we would urge that every effort be made to avoid delays to projects and we would suggest that clear reasons be given to every project that is being delayed in future.

Appendix 3 details the timeline to date of the Mid Antrim Upgrade. This vital improvement has been continually delayed without a clear explanation as to why this has been the case. With only six years to deliver against the 80 by 30 obligation, it is critical that we need to see a new urgency in developing these grid projects. RNI is consistently including transmission infrastructure in its calls for a streamlined planning process for green infrastructure projects.

RNI is keen to work in partnership with SONI to ensure that the planning and regulatory systems are favourable to renewable developments and decarbonisation of our electricity system. It is crucial that a more anticipatory approach to investment is adopted.

## Project Websites

RNI would encourage SONI to provide more frequent updates to the [Projects](#) page of the SONI website. It currently appears that only four of the six key enabler projects have dedicated pages, with updates on both Mid Tyrone and Moyle Interconnector due to be added:

Project	Last Update under ‘What’s Happening Now’
North-South interconnector	October 2023
Mid Antrim Upgrade	November 2023
Mid Tyrone Project	March 2023
Moyle Interconnector Capacity Increase	December 2022
North Sperrin Generation Substation	No Info
Northwest of NI 110kV Reinforcement	No Info

## Interconnection

RNI fully supports the development of the second North-South interconnector. While it is disappointing that the delivery date had slipped by two years since the previous estimation of Winter 2023, we are aware of the planning difficulties that the project has faced. We understand this has now slipped again and is due to be completed in 2027. As this is a key project in allowing NI to achieve its 80 by 30 targets, it is crucial that this is delivered as soon as possible.

A substantial proportion of current constraints of renewable generation in Northern Ireland would be removed when the North-South interconnector is complete and we therefore look forward to its construction.

In our response to the last TDPNI consultation, RNI welcomed the new target date of 2024 for completion of works to allow the full integration of the 500MW export capacity of the Moyle Interconnector. Since the TDPNI 2021-2030, we are disappointed to note that this has been delayed by 4 years, and is now expected to be completed in 2028.

## Accelerating Renewables Taskforce

RNI has been working with DfE to establish an Accelerating Renewables Taskforce. This would see key stakeholders meeting regularly to discuss how we can reduce timelines for the completion of renewable projects, from conception to connection. SONI would be key to the success of this work and we hope you will respond positively to this proposal as it advances.

We note that more anticipatory investment, speeding up of planning and grid timelines, and a widening of the UR's remit are issues which concern a number of policy makers and stakeholders. To ensure that the 80 by 30 obligation is met, it is crucial that an Accelerating Renewables Taskforce is created to get all of these bodies together in one forum.

## Resource

RNI appreciates that to deliver development of the transmission system at a pace needed to meet the 80 by 30 obligation, that SONI must be sufficiently resourced. We are concerned that SONI does not currently have sufficient resources to complete the required modelling studies, compete designs, manage and deliver, ARP's and NDP's on time (ideally ahead of time) and provide the timely connection offers needed to meet the very pressing timescales for the noted transmission system upgrades and new connections. NIE Networks' [Networks for Net Zero](#) study shows that due to downward pressure increased renewable generation has on the wholesale price of electricity, that achieving 70% renewable generation, will result in a net consumer saving of 1% after taking account of all the necessary grid investments. RNI's *Achieving Zero* study estimates that going from 70% to 80% will result in an additional consumer saving of £50m.

It is important that the Utility Regulator (UR) recognises that the investments needed to incorporate a greater penetration of renewables will save the consumer money. RNI is concerned that the UR takes a narrow view of network costs when the earlier we can make these investments, the better the return will be for the consumer. RNI is keen to work with SONI to help make this case.

## Conclusion

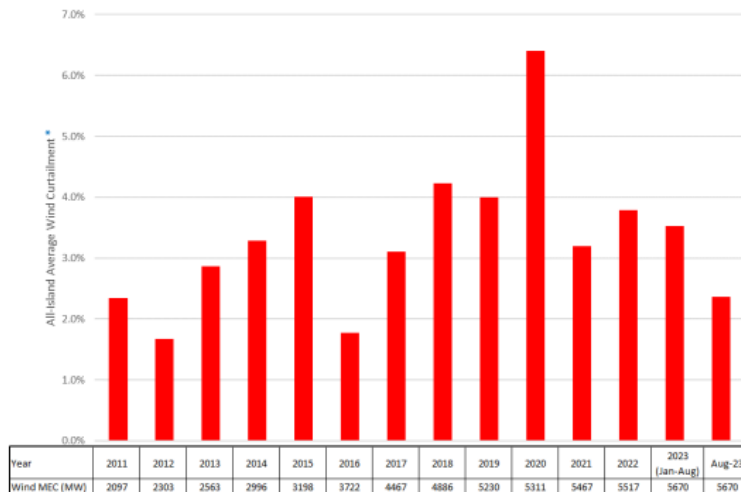
RNI commends SONI's commitment to facilitating increased renewable electricity generation onto the grid. Increased investment and improved planning timelines will be needed to achieve our renewable energy targets and ultimately our decarbonisation ambitions.

However, we are not yet persuaded that the necessary grid infrastructure is being delivered at pace and we would need to see a step change in order to meet the 80% target in the required timeframe. SONI must outline what additional measures are being put in place to ensure that the six 'critical key enablers' don't continue to be delayed. We need to reverse delays and accelerate delivery.

We look forward to working with SONI and other partners, including the Utility Regulator and NIE Networks, to ensure that the development of the grid is sufficient to meet our 2030 obligations.

## Appendix 1: Mullan Grid Wind Farm Dispatch Down Analysis September 2023

### 1. Historical Wind Curtailment

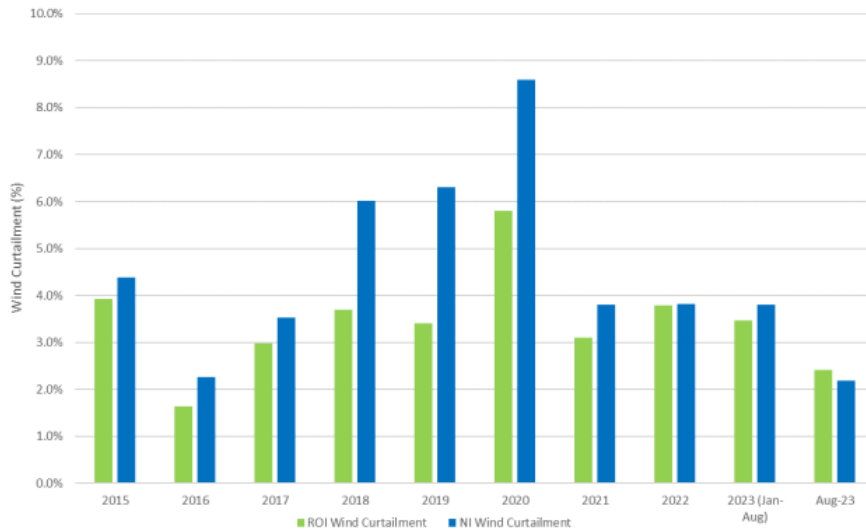


\* = % Curtailment of controllable wind presented above. However figures between 2011 and 2015 are MullanGrid estimates as EirGrid and SONI only started publishing data relating to controllable wind farms from 2016 onwards.  
 Source: Curtailment data from EirGrid & SONI's Annual Renewable Energy Constraint and Curtailment Reports, and Wind Farm Dispatch Down Reports.

With the exception of 2012 (EWIC was commissioned and less windy compared to 2011), 2016 (higher interconnector exports, SNSP limit increased to 55% and less windy compared to 2015), 2019 (very high constraints due to 10-month Moneypoint forced outage minimized curtailment) and 2021 (high constraints and very low wind year) wind curtailment has generally been increasing. Significant increase in wind curtailment in 2020 appears to be primarily due to Q1 being a very windy quarter, and lower demand in Q2 due to COVID-19. 2021 wind curtailment reduced back to more expected levels, but is relatively low, most likely due to a combination of less windy conditions, high constraints, an increase in Moyle exports, and an increase in the SNSP limit. Curtailment has increased in 2022 and 2023 to date mainly due to an increase in wind levels.



## 1. Historical Wind Curtailment (cont'd)

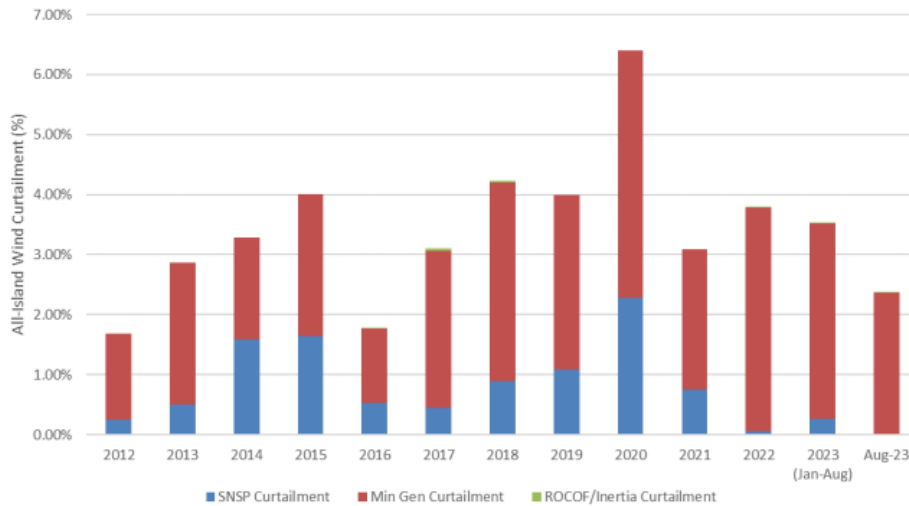


Source: EirGrid & SONI's Annual Renewable Energy Constraint and Curtailment Reports, and Wind Farm Dispatch Down Reports

NI curtailment reported by SONI in recent years has been artificially high, because SONI had been incorrectly flagging constraints on the existing North – South interconnector as curtailment – understood this issue was resolved at the start of Q4 2019. NI curtailment generally remained materially higher than ROI in 2020 and 2021, and to date in 2023. Appears that variations in jurisdictional curtailment levels could be related to limitations with the existing Wind Dispatch Tool in EirGrid's control centre, and also variations in jurisdictional constraint levels (where NI generally experiences higher constraints than ROI) which have an impact on the allocation of curtailment.



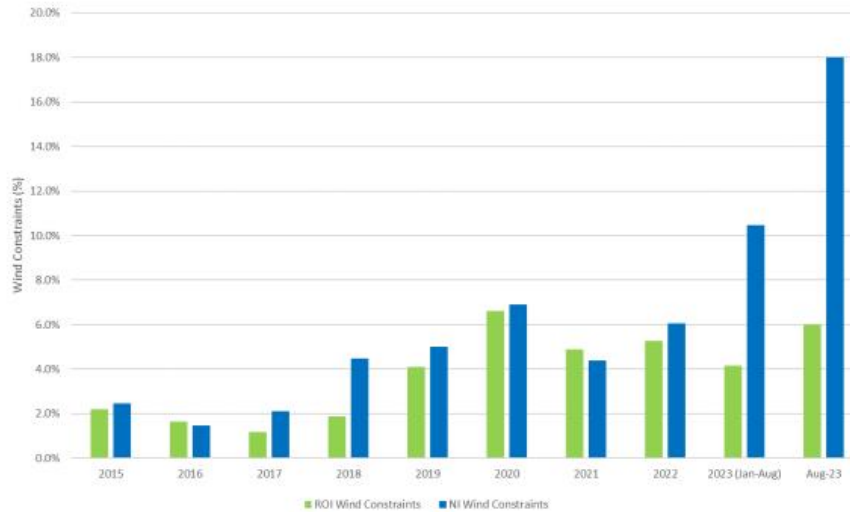
## 2. Drivers of Wind Curtailment



Source: EirGrid & SONI's Annual Renewable Energy Constraint and Curtailment Reports, and Wind Farm Dispatch Down Reports

- Minimum generation levels of conventional plants has generally been the predominant driver of curtailment.
- The SNSP limit has been increasing since 2015, but there has not been similar levels of improvement to Min Gen (refer to Section 6). It is for these reasons why Min Gen has been the predominant driver of curtailment.
- If wind curtailment levels are to be reduced in the future, it will be necessary that Min Gen levels also reduce.
- Noted that the SNSP limit has been binding more often in recent months and appears to be due to a combination of some reductions in Min Gen and also substantial reductions in interconnector exports.

### 3. Historical Wind Constraints



Source: EirGrid & SONI’s Annual Renewable Energy Constraint and Curtailment Reports, Wind Farm Dispatch Down Reports

Average constraints experienced by controllable wind farms in both ROI and NI presented above. However some wind farms have experienced significant double digit constraints in recent years, primarily due to outages associated with transmission reinforcements. In the case of ROI the majority of constraints to date have been experienced in the North West, West and South West regions. Constraints in ROI have significantly increased from 2019 onwards and are mainly due to forced and planned outages. Constraints in NI have increased significantly from 2018 onwards. It is understood that constraints on the existing North-South interconnector make up a significant proportion of all constraints experienced by wind farms in NI. It is worth noting that constraints in ROI and NI in 2021 were quite high considering that it was a relatively low wind year. Constraints increased in 2022 due to higher wind levels and noted that very high ROI constraints experienced by wind farms in North-West and West regions since May 2022, while NI constraints significantly increased since June 2022. Noted that NI in particular is experiencing very high constraints to date in 2023.



## 5. Estimated Cost of Wind Farm Dispatch Down

Parameter	2018	2019	2020	2021	2022	2023 Jan-Aug
Curtailment (%)	4.2%	4.0%	6.4%	3.2%	3.8%	3.5%
Constraints (%)	2.5%	4.3%	6.7%	4.8%	5.4%	5.4%
Total Dispatch Down (%)	6.7%	8.3%	13.1%	8.0%	9.2%	8.9%
Estimated Dispatched Down Energy (GWh)	705	1015	1874	912	1380	887
Lost Revenue (€)*	€49m	€77m	€129m	€81m	€106m	€62m
Dispatched Down Energy equivalent to CO <sub>2</sub> emissions from thermal generators (Mt CO <sub>2</sub> )**	0.256	0.370	0.688	0.345	0.721	0.346 (Jan-July)
Estimated Lost Wind Energy as Percentage of All-Island Electricity Demand***	1.9%	2.8%	5.2%	2.4%	3.5%	3.4%

\* Does not consider proposed revenue cap.

\*\* Estimates based on SEAI data: monthly energy balances and emissions factors published on their website.

\*\*\* Based on all-island demand figure obtained from EirGrid's "System-and-Renewable-Data-Summary-Report" spreadsheet on their website.



## Appendix 2: RenewableNI Pipeline Survey April 2023

### Onshore Wind

Planning Authority	Capacity (MW)	No. of Projects
Antrim & Newtonabbey	19.25	21
Ards & North Down	5.3	21
Armagh City, Banbridge & Craigavon	14.98	46
Belfast	6.5	5
Causeway Coast & Glens	423.525	89
Derry City & Strabane	458.185	58
Fermanagh & Omagh	355.5	186
Lisburn & Castlereagh	4.65	15
Mid & East Antrim	85.075	54
Mid Ulster	139.4	111
Newry, Mourne & Down	9.375	37
Strategic Planning Division	248.8	8
<b>Total</b>	<b>1770.54</b>	<b>651</b>

Status	Capacity (MW)
Under Construction	57.975
Consented with grid	186.3
Consented (no grid offer/unknown)	355.99

In Planning	302.425
Pre Planning	867.95
<b>Total</b>	<b>1770.64</b>

## Offshore

Technology	Capacity (MW)	No. of Projects
<b>Total</b>	<b>2,200</b>	<b>4</b>

Status	Capacity (MW)
Pre Planning	2,200
<b>Total</b>	<b>2200</b>

## Solar PV

Planning Authority	Capacity (MW)	No. of Projects
Antrim & Newtownabbey	0.0	0
Ards & North Down	0.0	0
Armagh City, Banbridge & Craigavon	29.9	1
Belfast	0.0	0
Causeway Coast & Glens	335.7	7
Derry City & Strabane	0.0	0
Fermanagh & Omagh	5.0	1
Lisburn & Castlereagh	80.0	1

Mid & East Antrim	0.0	0
Mid Ulster	0.0	0
Newry, Mourne & Down	0.0	0
Strategic Planning Directorate	150.4	7
<b>Total</b>	<b>89.7</b>	<b>20</b>

Status	Capacity (MW)
Under Construction	0
Consented	71.6
In Planning	54.95
Pre Planning	564.1
<b>Total</b>	<b>690.65</b>

## Storage

Planning Authority	Capacity (MW)	No. of Projects
Antrim & Newtownabbey	56	3
Ards & North Down	>43	3
Armagh City, Banbridge & Craigavon	66	3
Belfast	50	1
Causeway Coast & Glens	>126	8
Derry City & Strabane	157	2
Fermanagh & Omagh	110	3
Lisburn & Castlereagh	>125	3
Mid & East Antrim	208.6	7
Mid Ulster	539.79	7
Newry, Mourne & Down	>93.25	6
Strategic Planning Directorate	-	2
<b>Total</b>	<b>&gt;1575</b>	<b>48</b>

Status	Capacity (MW)
Under Construction	0
Consented	112
In Planning	580.6
Pre Planning	599

Total	1291.6
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## Appendix 3: Mid-Antrim Upgrade (Previously known as new Kells-Rasharkin circuit)

June 2016 - RGLG meeting – SONI, Emerging Development Strategy - Reinforcement in Kells / Rasharkin corridor

March 2017 - Listed in SONI/NIE Renewable Integration Development report as *“The new circuit between Kells and Rasharkin is being taken forward at present.”*

March 2017 – RGLG meeting, SONI presentation “2nd Kells Rasharkin will address principal thermal issues”

August 2017 – SONI and NIE Generation Connections Industry Workshop 2017, listed at feasibility stage

January 2018 – RGLG Meeting – Update, Pre-construction outline design

June 2018 – RGLG Meeting – Update, At outline design stage

Q3 2018 - Listed in SONI ATR list as being scheduled to be complete in 2024

June 2019 – SONI 2018 Final development plan, scheduled completion winter 2024

March 2020 – SONI 2019 draft development plan, scheduled completion winter 2026

November 2020 – SONI 2020 draft development plan, scheduled completion winter 2026

June 2021 - RGLG meeting, Part 1 of process, early stages of stakeholder engagement, Scheduled complete 2027

August 2021 - SONI website project page update, in part 1 of 3 part process. schedule complete 2028

May 2023 – Updated ECD is 2029, which is a 2 years delay from the projection included in the TDP 2021

## Appendix 2: RNI Pipeline Data (April 2024)

### ONSHORE

Planning Authority	Total Capacity 2023 (MW)	Total Capacity 2024 (MW)	Change (MW)
Antrim & Newtownabbey	19	22	3
Ards & North Down	5	8	3
Armagh City, Banbridge & Craigavon	15	17	2
Belfast	7	6	-1
Causeway Coast & Glens	424	252	-172
Derry City & Strabane	458	151	-307
Fermanagh & Omagh	356	217	-139
Lisburn & Castlereagh	5	5	0
Mid & East Antrim	85	56	-29
Mid Ulster	139	129	-10
Newry, Mourne & Down	9	11	2
Strategic Planning Division	631	1700	1069
<b>Total</b>	<b>2153</b>	<b>2574</b>	<b>421</b>

### SOLAR

Planning Authority	Total Capacity 2023 (MW)	Total Capacity 2024 (MW)	Change (MW)
Antrim & Newtownabbey	0	4	4
Ards & North Down	0	0	0
Armagh City, Banbridge & Craigavon	30	31	1
Belfast	0	0	0

Causeway Coast & Glens	336	23	-313
Derry City & Strabane	0	7	7
Fermanagh & Omagh	5	0	-5
Lisburn & Castlereagh	80	0	-80
Mid & East Antrim	0	85	85
Mid Ulster	0	31	31
Newry, Mourne & Down	0	0	0
Strategic Planning Division	150	395	245
<b>Total</b>	<b>601</b>	<b>576</b>	<b>-25</b>

## STORAGE

Planning Authority	Total Capacity 2023 (MW)	Total Capacity 2024 (MW)	Change (MW)
Antrim & Newtownabbey	56	7	-49
Ards & North Down	43	43	0
Armagh City, Banbridge & Craigavon	66	16	-50
Belfast	50	50	0
Causeway Coast & Glens	126	573	447
Derry City & Strabane	157	316	159
Fermanagh & Omagh	110	370	260
Lisburn & Castlereagh	125	650	525
Mid & East Antrim	208.6	676	468
Mid Ulster	539.79	1006	466
Newry, Mourne & Down	93	93	0
Strategic Planning Directorate	0	50	50
<b>Total</b>	<b>1575</b>	<b>3850</b>	<b>2275</b>



## OFFSHORE

Technology	Total Capacity 2023 (MW)	Total Capacity 2024 (MW)	Change (MW)
FOW	2,200	3,720	1,520
Tidal Stream	100	100	0
<b>Total</b>	<b>2,300</b>	<b>3,820</b>	<b>1,520</b>