Capacity Summary for Northern Ireland 2022-2031

October 2022

SONI

What is the GCS?

The All Island Generation Capacity Statement (GCS), is an annual report by SONI, the electricity transmission system operator for Northern Ireland and EirGrid, our counterpart in Ireland. The Generation Capacity Statement is our analysis of the balance between electricity demand and supply in both jurisdictions for the coming 10 years. Each year, the All Island Generation Capacity Statement is the formally submitted under license condition 35 to the Utility regulator for approval.

Northern Ireland – The Outlook

SONI's core median demand scenario shows there are adequacy challenges emerging within the next four years (2022-25). The short-term outlook for Northern in 2022 and 2023, is the system is within the 4.9 hour LOLE reliability standard; this means system margins will be tight and there is acceptable level of Loss of Load Expectation amounting to a small number of hours within the reliability standard.

Our analysis shows that in the medium-term 2024 & 2025 the 4.9-hour LOLE standard will be breached, as highlighted by deficits in capacity, action is required to bring forward a solution otherwise there will be supply impacts for consumers.

The longer-term outlook for Northern Ireland's generation adequacy position is positive, the core median demand scenario highlights a surplus of capacity from 2026 until 2031.

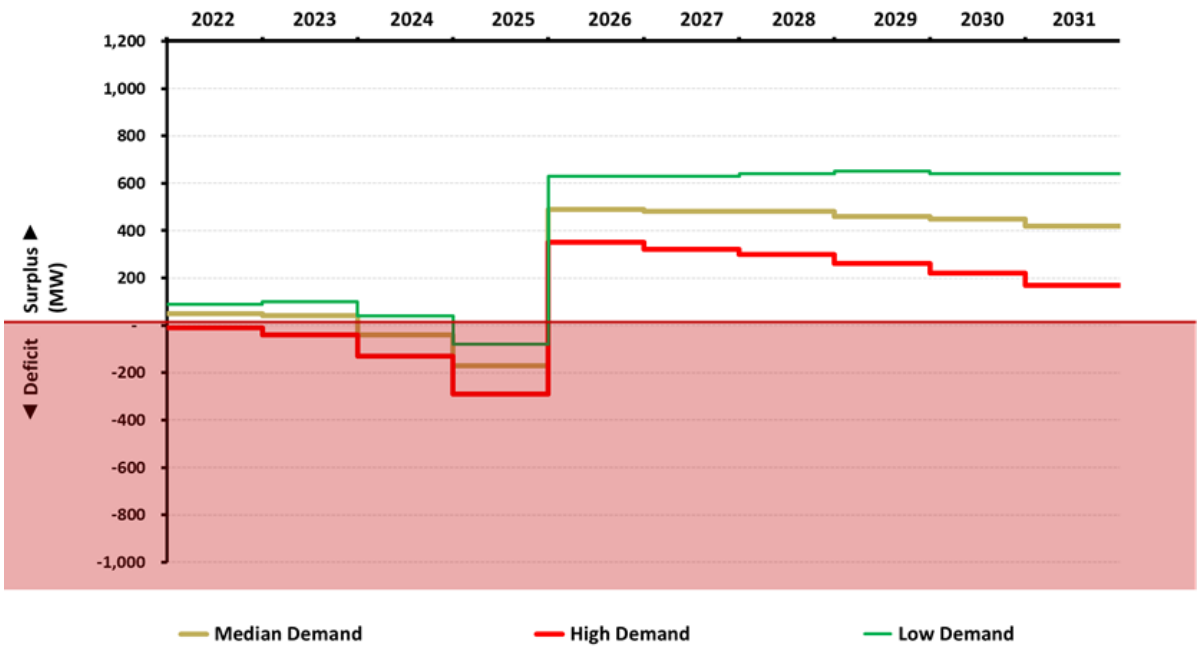

Figure 1 - Adequacy position for Northern Ireland

Why is the outlook from 2022-25 challenging?

Existing Plant Limitations

Since the GCS 2021-2030, SONI recently obtained clarification from the plant operator on the capability of existing near end of life coal plant at the Kilroot power station in County Antrim. At present, the plant needs to operate at a reduced generation capacity following the expiration of the COVID-19 Regulatory Position Statement; they do this to manage and comply with their most recent environmental permit. The reduction in coal plant output reduces Northern Ireland's short-term adequacy surplus.

Run Hour Restrictions on New Units

In addition, SONI recently received clarification from the developer of new capacity at the Kilroot site. This clarification is that Northern Ireland Environment Agency permitting rules will impose annual run hour limitations on its planned new open cycle gas turbines. The current interpretation of permitting rules means that the operators of the new open cycle gas turbines in Northern Ireland are unable to run for more than 1500 hours on average per annum. In 2026 there are plans that the station is to be further developed; the two new gas turbines are combined with a steam turbine to create a more efficient unit (Combined Cycle Gas Turbine),

Running hour restrictions are assumed to be removed once the conversion to combined cycle operation of the two open cycle gas turbines is complete.

In 2024 and 2025, we observe deficits and therefore the system does not meet the adequacy standard due to the running restrictions on the new gas turbines. The situation is exacerbated in 2025 as four older 'peaking' units are unavailable due to planned works. The annual run hour restrictions are removed in 2026 when the new more efficient Combined Cycle Gas Turbine is in situ, meaning the system returns to a surplus for the remaining years of the study.

SONI is actively supporting the Department for the Economy and the Utility Regulator on addressing the issues identified up to 2026.

Demand

When we calculate Northern Ireland's future demand, we consider industry, transport and commercial activity such as retail, office and service sectors. Our analysis highlights an increase in the electricity demand since our last Generation Capacity Statement 2021-30. The difference is primarily due to the assumptions made around growth in electrification of heat and transport, to reflect the direction of the Northern Ireland Energy Strategy. The range difference between median and high demand is based on several factors including the effect of temperature, economics, growth in data centres and new tech loads, energy efficiency as well as electrification of heat and transport.

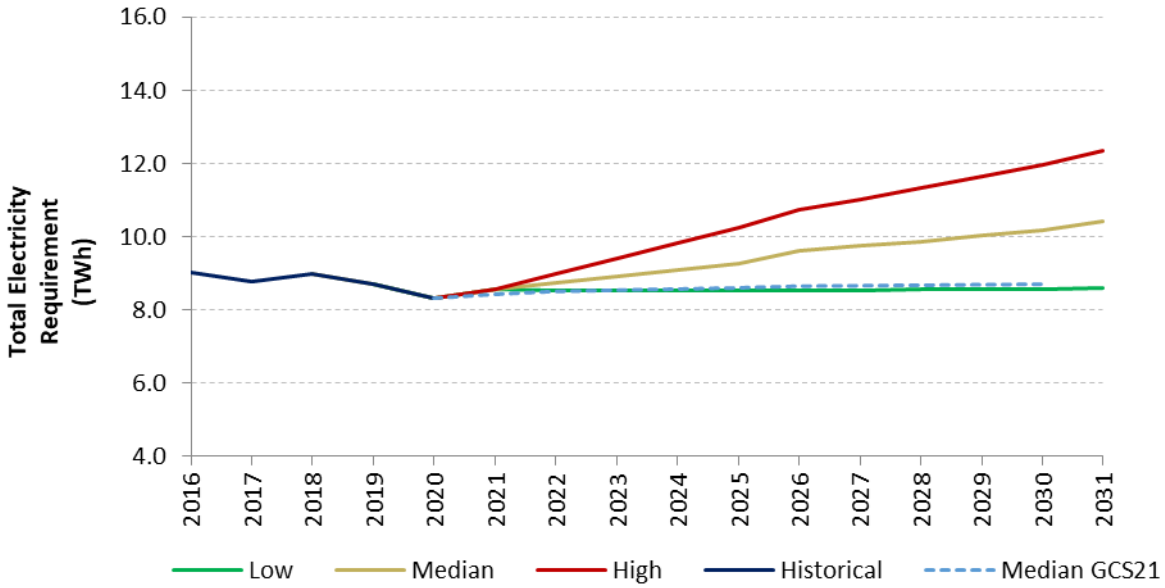

Figure 2 - Northern Ireland TER Forecast

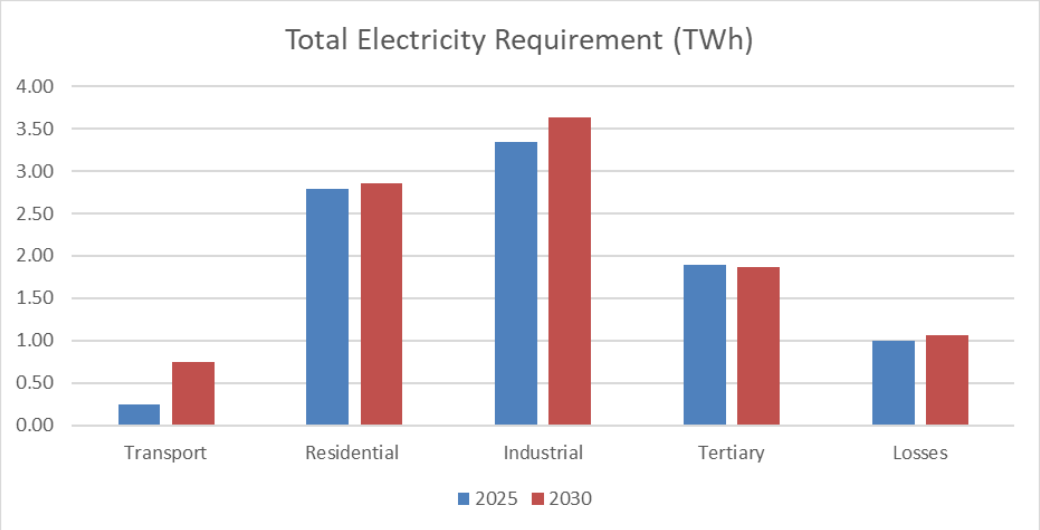

Figure 3 - Illustrates how the electricity demand forecast is built up from the various demand components for the years 2025 and 2030. Growth in electricity demand from 2025 is primarily driven by the electrification of heat and transport based on the NI Energy Strategy

Managing Northern Ireland's near-term generation deficit

This year's GCS predicts a challenging outlook for Northern Ireland with low capacity surpluses identified during 2022 and 2023, and capacity deficits in 2024 and 2025. Our analysis, based on the new information available since the last GCS, highlights that there are significant concerns relating to Northern Ireland's near-term security of supply of electricity. SONI is actively working with the Department for the Economy, the Utility Regulator, the Northern Ireland Environment Agency and the energy industry to find solutions to the near-term security of supply challenges facing Northern Ireland.

The longer-term outlook is optimistic, in 2026, the arrival of additional capacity to create a new efficient Combined Cycle Gas Turbine at Kilroot means Northern Ireland will be in a position of surplus for the remaining years of the study based on the demand forecasts.

Any delays to new units connecting to the system and entering the market will prolong the period of capacity deficits.

Overall, a balanced portfolio of new capacity is required, and this includes the need for new cleaner generation plant, especially at times when the wind and solar generation is low. This balanced portfolio is also crucial to ensuring Northern Ireland meets its renewable energy target for 2030 while maintaining a secure supply of electricity for consumers.

All–Island Assessment

The new North-South interconnector is expected to be completed by end of 2025. Until this date we need to limit the support between both jurisdictions to ensure system stability and security. Our analysis shows the benefits of the new interconnector in supporting the all island security of supply outlook, along with other enduring market measures, including additional interconnection to neighbouring electricity systems.

Conclusion

The electricity industry will have to find new ways to meet the increasing need for energy without relying mainly on burning fossil fuels. Looking out to 2030 electricity demand is set to increase as consumers use electricity in new ways. The Climate Change Act (Northern Ireland) 2022 sets a target that at least 80% of electricity consumption is to be met by renewable sources by 2030. This along with other new government policies are expected to help guide us away from fossil fuels toward alternative heating methods, such as electric heat pumps, and cleaner modes of transport, such as electric vehicles.

This changing demand and generation supply landscape for Northern Ireland and indeed the wider all-island system will require coordinated management of both the volume and type of new capacity, alongside new ways of managing increasing demand to ensure security of supply. To prepare for this change, SONI must make the electricity grid stronger and more flexible. Given the scale of change, there is a need to plan for a great deal of new grid infrastructure – such as underground cables, pylons and substations.

SONI is at the forefront of delivering a cleaner, affordable and secure supply of electricity for consumers in Northern Ireland and working with EirGrid to deliver this on an all-island basis. Mapping the island's electricity needs is an important feature of our work; it helps our governments, regulators and industry to prepare for the future. We are committed to collaborative working with the Department for the Economy, the Utility Regulator, the Northern Ireland Environment Agency and the energy industry in order to overcome the generation challenges for Northern Ireland in the near term, so that in the longer-term Northern Ireland consumers can benefit from a secure, efficient and increasingly clean electricity supply.

SONI is required, under paragraph 6 of Condition 35, to publish the revised statement as approved by the UR. Accordingly, this requirement applies in respect of that information as included in the revised statement which the UR has approved and not in respect of any of the wider information. Therefore, should it be the case that SONI wishes or determines to publish the revised statement in full it shall be ***important for it to annotate the published document to confirm that the UR's approval covers only that information which is required to be shown pursuant to paragraph 1 of Condition 35.***