

# TasNetworks Annual Planning Report 2024

## Summary

# TasNetworks – our role and our network

This brochure summarises the key assumptions and planning rationale detailed in our combined 2024 transmission and distribution Annual Planning Report that provides an overview of our existing networks and development plans that are underpinned by several key developments and activities over the next 10 years; chiefly:

- variable renewable energy generation growth;
- progression of development of a renewable hydrogen industry;
- increased interconnection capacity with the mainland; and
- contributions of the Tasmanian power system to national objectives, such as the Australian Energy Market Operator's Integrated System Plan.

Every five years we prepare and submit revenue proposals to the Australian Energy Regulator outlining forecast expenditure to build, operate and maintain the distribution and transmission networks.

On 30 April 2024, the Australian Energy Regulator made its final determination on allowed transmission and distribution revenues for the period 1 July 2024 to 30 June 2029.

---

**TasNetworks is a State-owned company that provides transmission and distribution network services within the Tasmanian jurisdiction of the National Electricity Market**

We have been appointed by the Minister as the Jurisdictional Planning Body tasked to meet both current and future needs and to optimise network development plans. We are also the Tasmanian System Strength Service Provider and Inertia Service Provider.

Operating as a commercial business with assets of over \$3.5 billion we deliver monopoly and competitive electricity network services to more than 295,000 residential, commercial, and industrial customers. We also provide telecommunications and technology services to customers across our network.

The Tasmanian transmission network connects 25 hydro-electric power stations, five wind farms, and one thermal (gas-fired) power station with a combined capacity of 3,891 MW. Our system also hosts distribution embedded generation (approx. 34 MW) along with 249 MW of roof-top solar photovoltaics. We also facilitate the transfer of electricity between Victoria and Tasmania via Basslink, a privately owned, sub-sea interconnector.



# Introduction

**TasNetworks, as the Tasmanian Jurisdictional Planning Body, continuously reviews the adequacy of the Tasmanian electricity transmission and distribution networks for both current and future needs and develop plans to ensure the network is optimally developed for the future. In accordance with the National Electricity Rules and jurisdictional requirements, we produce a combined transmission and distribution Annual Planning Report.**

The Tasmanian Government continues to progress the Tasmanian Renewable Energy Action Plan<sup>1</sup> aimed at delivering the legislated Tasmanian Renewable Energy Target<sup>2</sup> of 21,000 GWh per year of renewable generation by 2040.

Four candidate Tasmanian Renewable Energy Zones have been identified. In line with the Renewable Energy Coordination Framework,<sup>3</sup> in December 2022 the north-west of Tasmania was announced to be the first region to be explored for the development of Tasmania's first priority Renewable Energy Zone. Subsequently, the Tasmanian Government, through its Renewable Energy Zones Coordinator, (Renewables, Climate and Future Industries Tasmania<sup>4</sup>), commenced consultation on the candidate Renewable Energy Zone in north-west Tasmania to inform any declaration and new legislation needed to support Renewable Energy Zone objectives.

The Tasmanian Government is highly supportive of a green hydrogen industry in Tasmania. The Tasmanian Renewable Hydrogen Action Plan<sup>5</sup> identifies two locations for large-scale renewable hydrogen production and potential export facilities; the Bell Bay Advanced Manufacturing Zone, and industrial precincts in north-west Tasmania (such as Port Latta or Burnie).

Government support continues for the development of Hydro Tasmania's Battery of the Nation initiative and Tarraleah power station redevelopment.

Marinus Link Pty Limited separated from TasNetworks on 22 March 2024 and became a stand-alone entity under a new three-part equity ownership structure between the Australian Government (49%), the Victorian Government (33.3%) and the Tasmanian Government (17.7%). Work continues toward making a final investment decision for Stage 1 in 2025.

The Australian Energy Market Operator published its biennial Integrated System Plan (ISP) in June 2024, being a whole-of-system plan forecasting the generation mix and changes in consumer behaviour and develops an optimal development path for at least 20 years.

We are in the process of considering investments required to meet, on a forward-looking basis, the *system strength standard specification* published by the Australian Energy Market Operator and are currently conducting a Regulatory Investment Test for transmission to procure additional system strength services under a new framework.

We have been collaborating with the Australian Energy Market Operator on the implementation of the new very fast raise (R1) and very fast lower (L1) Frequency Control Ancillary Services markets including investigating potential sources of these services and impacts on the existing minimum inertia requirements for Tasmania.

---

**Funding for two community batteries was acquired through the Australian Government's Community Batteries for Household Solar program. The batteries will be located in Shorewell Park, in the north of the State, and Glebe Hill, in the south.**

- 1 [https://recfit.tas.gov.au/renewables/tasmanian\\_renewable\\_energy\\_action\\_plan](https://recfit.tas.gov.au/renewables/tasmanian_renewable_energy_action_plan)
- 2 Part 1A – Renewable Energy, Energy Co-ordination and Planning Act 1995, Tasmania
- 3 [https://recfit.tas.gov.au/\\_\\_\\_data/assets/pdf\\_file/0007/343618/Renewable\\_Energy\\_Coordination\\_Framework\\_May\\_2022\\_web.pdf](https://recfit.tas.gov.au/___data/assets/pdf_file/0007/343618/Renewable_Energy_Coordination_Framework_May_2022_web.pdf)
- 4 <https://recfit.tas.gov.au/home>
- 5 [https://recfit.tas.gov.au/\\_\\_\\_data/assets/pdf\\_file/0013/313042/Tasmanian\\_Renewable\\_Hydrogen\\_Action\\_Plan\\_web\\_27\\_March\\_2020.pdf](https://recfit.tas.gov.au/___data/assets/pdf_file/0013/313042/Tasmanian_Renewable_Hydrogen_Action_Plan_web_27_March_2020.pdf)

# Tasmanian renewable energy transformation

The Tasmanian Government, through Renewables, Climate and Future Industries Tasmania, is progressing the Tasmanian Renewable Energy Action Plan aimed at delivering “the State’s strategic direction on climate change, renewable energy growth and emissions reduction while maintaining a secure, sustainable, and affordable energy system.”<sup>6</sup> Hydrogen is a key component of the renewable energy transformation.

As an outcome of work completed under its Renewable Energy Coordination Framework the Tasmanian Government is developing a Renewable Energy Approval Pathway<sup>7</sup> that will support projects, such as wind farms and transmission lines, entering the Major Projects<sup>8</sup> assessment process under the Land Use Planning and Approvals Act 1993.

The pathway is intended to assist with significant augmentation of the transmission network, the development of up to 3,000 MW of new installed wind generation capacity needed to meet the Tasmanian Renewable Energy Target, installation of 1,000 MW of hydrogen production capacity to achieve hydrogen ambitions, and to take advantage of Tasmania’s flexible hydropower to be a major contributor to firming variable renewable generation across the National Electricity Market.

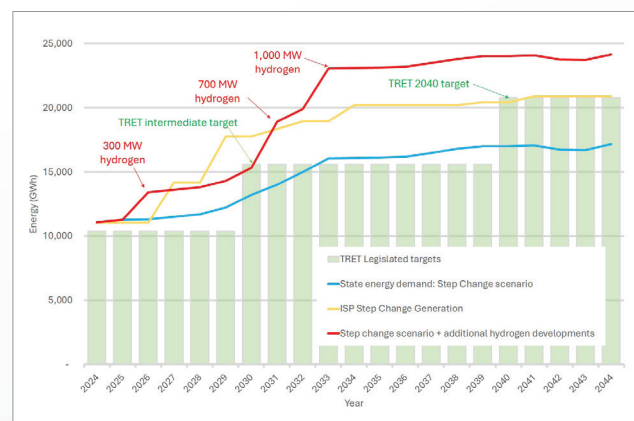
Three key forecasting scenarios were featured in AEMO’s Integrated System Plan and adopted by TasNetworks to plan the transmission and distribution networks.

**Progressive Change** meets Australia’s current Paris Agreement commitment of 43% emissions reduction by 2030 and net zero emissions by 2050.

**Step Change** achieves a scale of energy transformation that supports Australia’s contribution to limiting global temperature rise to below 2°C.

**Green Energy Exports** reflects very strong decarbonisation activities domestically and globally aimed at limiting temperature increase to 1.5°C.

When compared against the State energy demand forecast under the Step Change scenario, the Tasmanian Renewable Energy Target production exceeds the future consumption requirements over the next 20 years. With the development of new large-scale hydrogen production facilities in Tasmania, there would be a significant increase in energy consumption, requiring additional energy supply in excess of the legislated Tasmanian Renewable Energy Target if Tasmania is to remain ‘energy neutral’ on average.



Annual energy forecast – impacts of new hydrogen developments

6 [https://www.stategrowth.tas.gov.au/recfit/about\\_us](https://www.stategrowth.tas.gov.au/recfit/about_us)  
 7 [https://recfit.tas.gov.au/renewables/renewable\\_energy\\_approval\\_pathway](https://recfit.tas.gov.au/renewables/renewable_energy_approval_pathway)  
 8 <https://planningreform.tas.gov.au/planning/major-projects-assessment/major-projects-assessment-process>

# TasNetworks' Revenue Determination

The Australian Energy Regulator (AER) determined TasNetworks' allowed transmission and distribution revenues for the period 1 July 2024 to 30 June 2029.

The AER approved prices for network services and public lighting, and the network charges (tariffs) that will be used to recover revenue from customers, tabled below. The determination provides for strategic trade-offs to place downward pressure on costs without compromising reliability and safety or undermining other priorities.

## AER's Final Determination for 2024-2029 regulatory control period

Final determination	Five-year capital expenditure (\$m)	Five-year operating expenditure (\$m)	Five-year revenue (\$m)	Indicative prices
Transmission	287.8	209.2	819.1	\$12.77/MWh <sup>9</sup>
Distribution	729.1	541.0	1,705.7	\$933 p.a. – residential <sup>10</sup> \$3,311 p.a. – small business <sup>11</sup>



The determination accepted six contingent projects at a total estimated potential investment of \$955 million. These projects support the Tasmanian Government's renewable energy objectives, including the Tasmanian Renewable Energy Target and the Tasmanian Renewable Hydrogen Action Plan.

<sup>9</sup> The average \$/MWh over the 2024-2029 regulatory control period

<sup>10</sup> This represents average 2024-2029 prices (\$ real) for a typical residential customer with an annual energy consumption of 7,834 kWh

<sup>11</sup> This represents average 2024-2029 prices (\$ real) for a typical small business customer with an annual energy consumption of 33,578 kWh

# The Tasmanian power system

## Transmission system

The Tasmanian transmission system comprises:

- 220 kV, and some parallel 110 kV, bulk transmission network;
- A peripheral 110 kV transmission network that provides connections to the bulk transmission network; and
- Substations that form interconnections within the 110 kV and 220 kV transmission network and provide transmission connection points.

## Distribution system

Our distribution system provides supply to more than 295,000 customers and comprises:

- A sub-transmission network that, in addition to transmission-distribution connection points, provides supply to the high voltage distribution network;
- A high voltage network that distributes electricity to the low voltage network and a small number of customers connected directly to the high voltage network; and
- Distribution substations and low voltage circuits.

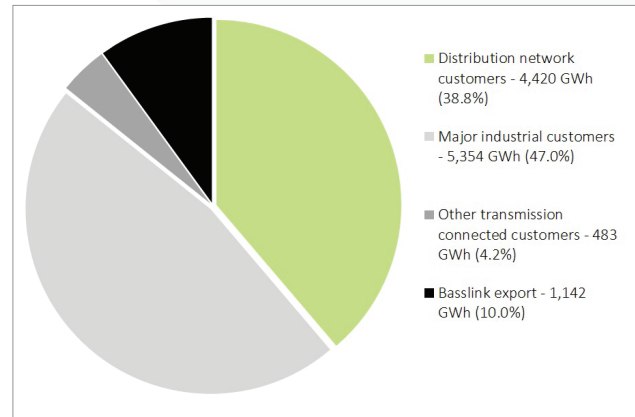
## Demand and Supply

### Demand and Annual Energy Consumption Characteristics

The maximum demand on the transmission network during 2023 to supply Tasmanian customers was 1,720 MW. The network maximum demand including power transfers across Basslink was 2,137 MW.

A relatively high proportion of the energy flow through the Tasmanian network supplies customers directly connected to the transmission network.

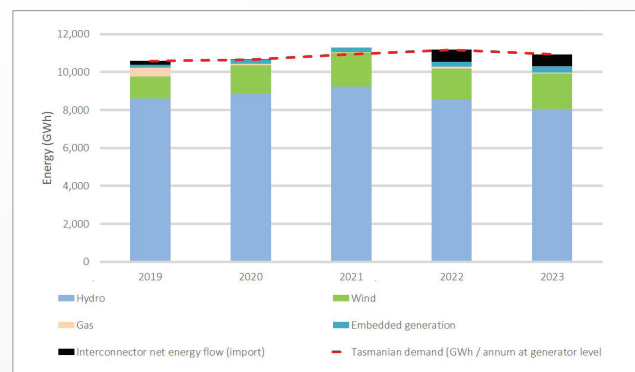
Four major industrial customers used 47% of the total energy delivered through the transmission network, with all remaining transmission customers adding a further 4.2%. Transmission customers contributed to 37% of the network maximum demand in 2023.



Relative transmission network use in 2023

## Supply Characteristics

Tasmania has come close to maintaining a state of "energy neutrality," whereby the on-island generation is sufficient to meet or exceed Tasmania's annual energy requirements. 2023 saw a reduction in hydro energy production, an increase in wind energy, and Basslink energy import similar to that of 2022. The overall state level energy demand for 2023 was approximately 10,808 GWh, 2.7% lower than in 2022.



Supply contribution by type: 2019 to 2023

# Transmission developments

## North West Transmission Developments

The development sequence of the North West Transmission Developments (NWTD) supporting Marinus Link was reviewed to ensure that the minimum network requirements for the initial single Marinus Link cable are met at least cost with the ability to further develop the network to support Marinus Link's ultimate capability of 1,500 MW. The outcome of this assessment was to prioritise the first stage of Marinus Link and a re-scoped first stage of the NWTD comprising:

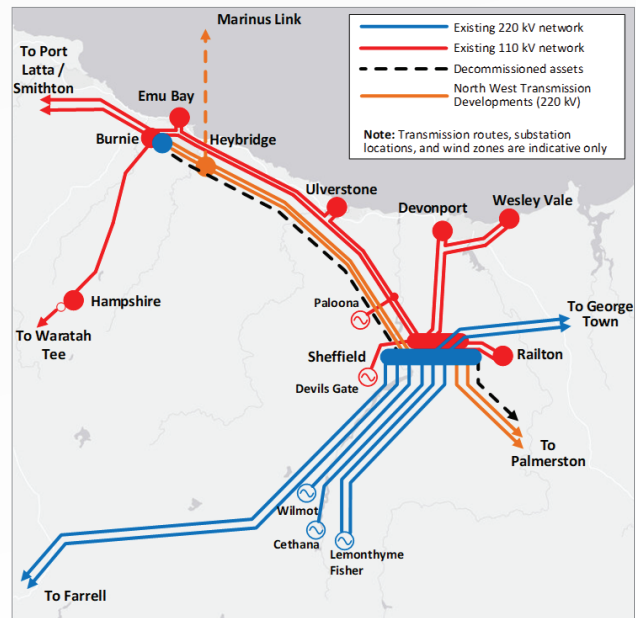
- A new double circuit transmission coastal route between Sheffield and Burnie, with a cut in at Heybridge, and
- Augmentation of the Palmerston–Sheffield 220 kV transmission corridor that is likely to be required under the majority of future scenarios—irrespective of which scenario(s) ensue or in what order.

The balance of the North West Transmission Developments would be developed in support of the second Marinus Link cable and comprise a new double circuit transmission lines between Burnie, Hampshire, and Staverton.

In mid-2023 we requested that corridors for the proposed alignment of the North West Transmission Developments be notified in accordance with the Major Infrastructure Development Approvals Act 1999.

In addition, we are considering scenarios where components of the balance of the North West Transmission Developments are brought forward ahead of Marinus Link Stage 2, including:

- **Burnie approach:** Developing the Burnie-Hampshire Hills 220 kV transmission line; or
- **Sheffield approach:** Developing the Hampshire Hills-Staverton 220 kV line, along with Staverton Switching Station.



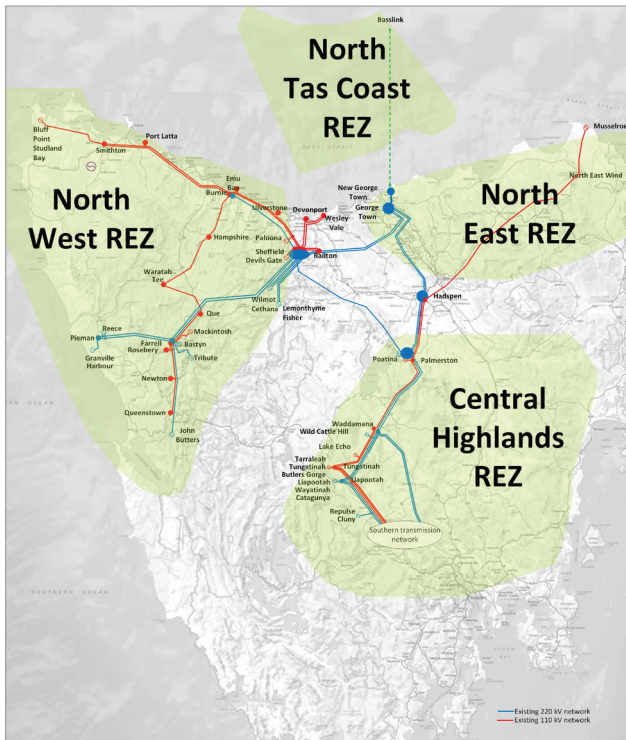
Marinus North West Transmission Developments Stage 1



## Renewable energy Zones

Renewable Energy Zones are “high renewable resource areas” identified by the Australian Energy Market Operator as best suited to renewable energy generation. Four identified candidate Tasmanian zones are:

- North East Tasmania REZ;
- North West Tasmania REZ;
- Central Highlands REZ; and
- North Tasmania Coastal REZ.

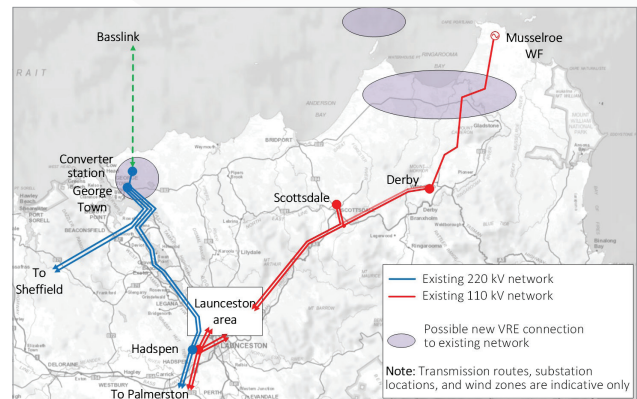


**Tasmanian Renewable Energy Zones**

The Annual Planning Report describes each Tasmanian Renewable Energy Zone’s capability to host new variable renewable energy with the existing network and the potential augmentations required to support further variable renewable energy developments. We take the view that the Renewable Energy Zone concept does not restrict the development and connection of any new generation outside of these nominated areas.

New variable renewable energy generation may use a variety of natural resources; however, in Tasmania wind is forecast to be the dominant developed energy source. In addition, repurposing, and expansion of the existing hydropower system in Tasmania, including future pumped hydro energy storage, will support Renewable Energy Zone development.

The North East REZ has excellent resources, with a high capacity connection between George Town load centre, Basslink and the rest of the network. New generation from far north-eastern Tasmania and north-east offshore area must connect to the 220 kV network requiring long connection assets as the 110 kV network does not have sufficient capability to support them.

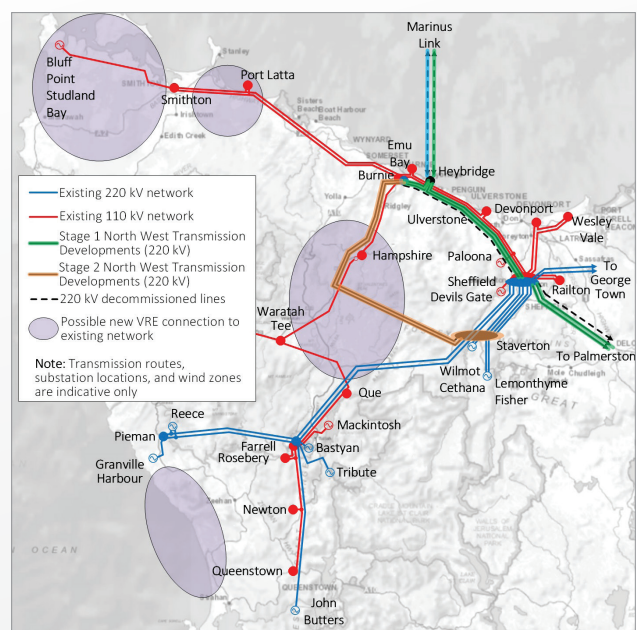


**North East Tasmania Renewable Energy Zone transmission network**

Prospective variable renewable energy developments in the north-east and far north-east region have a combined capacity approaching 2,000 MW. Hosting capacity is currently limited to approximately 400 MW.

The North West Tasmania Renewable Energy Zone, has strong potential for new wind generation. The proposed connection location for Marinus Link is within this zone at Heybridge. There is significant interest in locating new generators in the area, as well as the first tranche of pumped hydro energy storage.

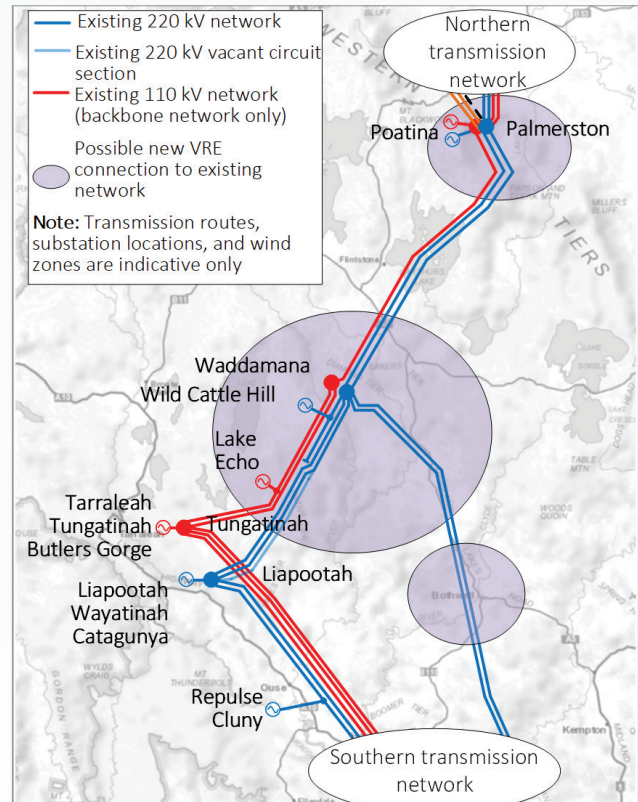
There is a combined interest of approximately 1,600 MW of new generation, the vast majority being wind generation.



**North West Tasmania Renewable Energy Zone with North West Transmission Developments**



The capacity factor for new wind generation in the Central Highlands has been identified as the highest in the National Electricity Market. Coupled with the existing transmission network capacity there is significant opportunity for new wind generation to be developed immediately. Augmentation of the Palmerston to Sheffield 220 kV and Waddamana to Palmerston 220 kV transmission lines enables significant additional generation.



Central Highlands Renewable Energy Zone transmission network

## Hydrogen Development

The network requirements to facilitate hydrogen development will depend on the size, location, and technology of the loads. It is assumed that the connection of hydrogen projects is likely to occur broadly in three tranches:

- Tranche 1, up to 300 MW;
- Tranche 2, an additional up to approximately 700 MW; and
- Tranche 3, up to 1,000 MW.

Augmentation of the northern transmission network between Sheffield, George Town, Palmerston, and Hadspen will be required to support the future proposed tranches of hydrogen and future renewable energy developments.

Included in the 2024-2029 Revenue Determination are contingent projects that provide for the forecast timeframes for hydrogen developments, namely the first two tranches of 300 MW and 700 MW.

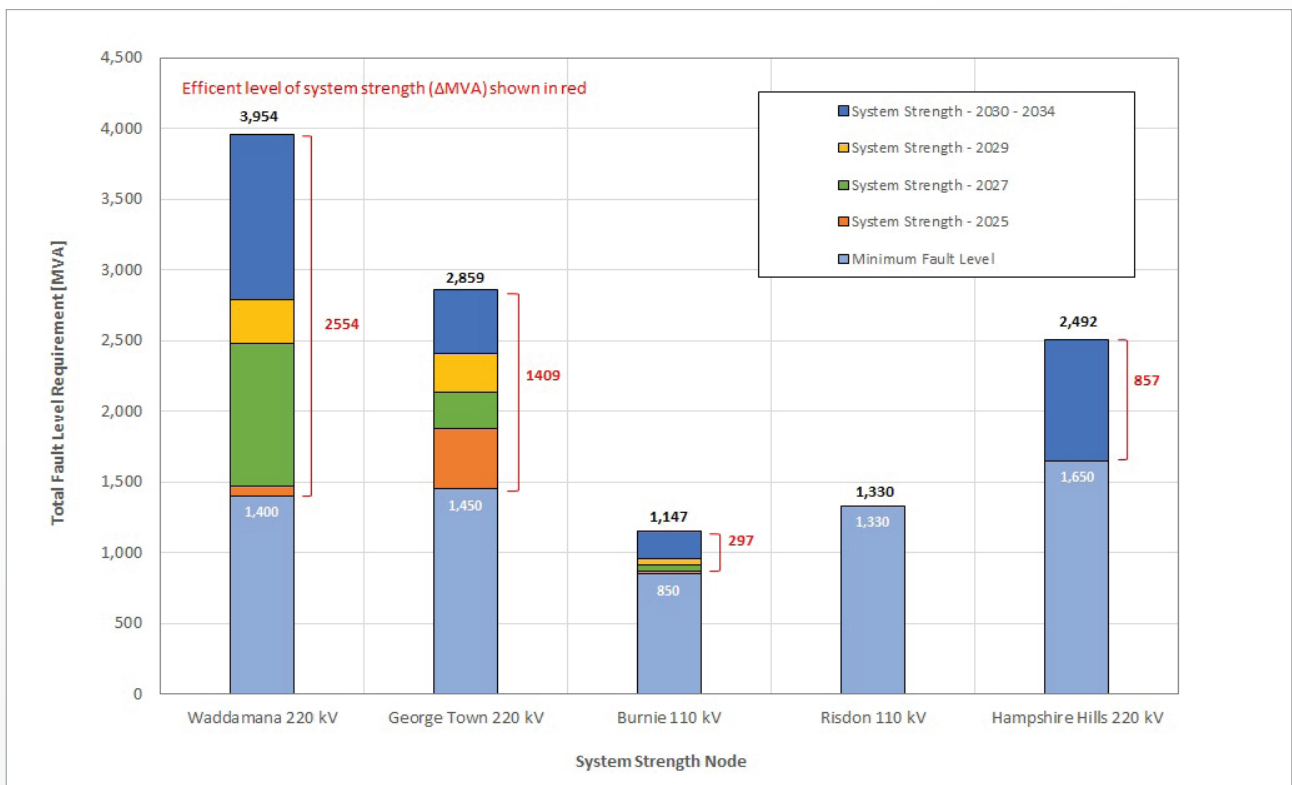
# System Strength Rules changes

Careful management of power system security continues to be a high priority to enable forecast levels of inverter-based resources to connect to the power system and consequent operation without the need for local synchronous generation. As the Tasmanian Transmission Network Service Provider, we are responsible for the provision of Tasmanian region Inertia Services and System Strength Services.

Through the 'Efficient Management of System Strength on the Power System' initiative, the Rules' framework for managing system strength changed, with significant new obligations for System Strength Service Providers commencing on 2nd December 2025. The new framework introduces a completely new approach for the procurement and payment of system strength services, including proactive planning obligations on System Strength Service Providers that now form part of the System Standards within the Rules.

Adequate inertia and system strength services have been procured to fulfil our Rule obligations until 1st December 2025.

We are in the process of considering investments required to meet, on a forward-looking basis, the system strength standard specification published by the Australian Energy Market Operator. The estimated three-phase fault level requirements at each of the declared System Strength Nodes for future years, extending out to 2033 are illustrated below.



Forecast system strength requirements for Tasmania

# Network security and reliability

## Major incidents and network reliability

The Annual Planning Report provides information about applicable network reliability targets, our performance against those targets, the issues that impact on network reliability, and our plans to ensure compliance.

Transmission system performance during 2023 was better than target for all circuit fault outage rate metrics. While the numbers of transmission Loss of Supply events exceeding 0.1 and 1.0 system minutes were on target, the average outage duration of all LOS events exceeded the target.

Distribution network performance for 2023–24 was generally outside the Tasmanian Electricity Code reliability standards as well as the Service Target Performance Incentive Scheme targets set by the Australian Energy Regulator.

Three major event days occurred during 2023-24, all resulting from inclement weather. On 31st July 2023, 25th October 2023, and 31st May 2024 strong winds and rain affected the state with vegetation related incidents disrupting distribution supply. In response, we activated our Incident Contingency System enabling Regional Team Leaders to prioritise actions and accordingly deploy work crews to support timely and targeted supply restoration efforts.

We continue to undertake reliability improvement projects to address issues experienced by specific communities, where performance is consistently below target. During restoration efforts we collaborate with key stakeholder and sector agencies to understand their requirements to triage restoration efforts wherever possible and prioritise supply restoration to highest sensitivity customers.



TasNetworks welcomes feedback and enquiries on our Annual Planning Report, particularly from anyone interested in discussing opportunities for alternate network solutions to those identified.

Please send feedback and enquiries to:  
**[planning.enquiries@tasnetworks.com.au](mailto:planning.enquiries@tasnetworks.com.au)**.

Potential demand management solution providers can also register with us via our Industry Engagement register on our website at:

**[www.tasnetworks.com.au/forms/Industry-Engagement-Register/Industry-Engagement](http://www.tasnetworks.com.au/forms/Industry-Engagement-Register/Industry-Engagement)**