

Proposed North West Transmission Developments **Landowner Information Pack**

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Energy generation and storage potential in North West Tasmania

North West Tasmania can play a key role in delivering low-cost, reliable and clean energy to Tasmania and other parts of the National Electricity Market. Electricity generation, storage and transmission developments will also benefit the region through construction, operation and maintenance activities, stimulating significant job growth and broader economic growth.

The electricity transmission network in North West Tasmania is expected to undergo significant changes over the coming years to support the region's role in Australia's transition to a low emissions future. As part of this transition, the Australian Energy Market Operator (AEMO) has developed a blueprint to manage the evolution of Australia's power system. This blueprint is called the Integrated System Plan (ISP).

North West Tasmania has been identified as a high priority renewable energy zone in AEMO's 2020 ISP. This is because North West Tasmania has excellent potential for developing renewable generation, storage and dispatchable 'on demand' energy projects, including:

- new large-scale wind generation in the order of **2,000 megawatts (MW)**
- latent/existing excess hydro power of up to **750 MW**
- new pumped hydro energy storage developments of at least **750 MW**, and
- renewable hydrogen projects.

The region also hosts the expected connection point for Marinus Link, the proposed 1500 MW capacity undersea and underground electricity transmission interconnector that will link North West Tasmania to the Latrobe Valley in Gippsland, Victoria. The extra capacity provided by Marinus Link is critical to unlocking the large-scale wind, existing hydro capacity and new pumped hydro energy storage resources planned for development in North West Tasmania.

Marinus Link enables a two-way flow of energy, meaning it will both import and export, reducing risk and increasing benefits.

To support continued supply of low-cost, reliable and clean energy to Tasmania and the National Electricity Market, North West Tasmania's electricity transmission network requires additional development.

The work TasNetworks has done to date shows that Marinus Link and the supporting transmission developments in North West Tasmania stack up. The benefits to customers and local economies will outweigh the costs.

Did you know?

A megawatt (MW) is approximately equivalent to the energy needed, at a point in time, for **powering 1,000 homes**.

This means that Marinus Link will have the capacity to transport low cost, reliable and clean power for approximately **1.5 million homes**.

MARINUS LINK

What is **Marinus Link**?

Marinus Link is a proposed 1500 megawatt (MW) capacity undersea and underground electricity and telecommunications connection between Victoria and Tasmania to increase two-way energy exchange throughout the National Energy Market, as Australia continues its transition to cleaner energy. Marinus Link will also incorporate significant optical fibre capacity, strengthening data connectivity between Victoria and Tasmania.

By increasing energy exchange between Tasmania and Victoria, Marinus Link will unlock renewable energy generation opportunities and cost-effective

energy storage, supporting affordable, reliable and clean energy in Victoria, Tasmania and beyond.

The Australian Government has provided funding support to progress Marinus Link and the supporting North West Transmission Developments. TasNetworks is progressing the design and approval phase of the North West Transmission Developments, and is working with communities, businesses and authorities to deliver a successful project, with long lasting relationships and ongoing regional benefits.

Further information

TasNetworks Annual Planning Report 2020

<https://www.tasnetworks.com.au/config/getattachment/4a3679b2-d65a-4c8e-b2f6-34920dbb2045/tasnetworks-annual-planning-report-2020.pdf>

Australian Energy Market Operator 2020 Integrated Service Plan

<https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2020-integrated-system-plan-isp>

Project Marinus Initial Feasibility Report

<https://www.marinuslink.com.au/initial-feasibility-report>

Project Marinus Business Case Assessment Report

<https://www.marinuslink.com.au/wp-content/uploads/2019/12/project-marinus-business-case-assessment-report.pdf>

Project Marinus Project Assessment Draft Report

<https://www.marinuslink.com.au/padr>

Marinus Link Regulatory Investment Test for Transmission - Supplementary Analysis Report

<https://www.marinuslink.com.au/rit-t-process/>

TasNetworks role as network planner

TasNetworks is the electricity network planner for Tasmania. We develop plans to outline how the transmission network will be developed to connect new generation and storage and meet customers' energy needs. This includes the network requirements to efficiently unlock Tasmania's renewable energy zones identified by the Australian Energy Market Operator's Integrated System Plan. We aim to work with all parties interested in the future development of the transmission network in Tasmania.

The existing transmission system in North West Tasmania does not have sufficient capacity to support the proposed generation, storage and interconnector developments. As a result, changes to the existing transmission network and new transmission routes will be required in the region to increase network capacity and ensure the power system can accommodate the future renewable energy developments proposed for the region, including Marinus Link.

Strategic Planning

TasNetworks has undertaken strategic planning for the North West Tasmania transmission network, including assessing planned developments required to support the energy market in the long term.

As part of progressing plans, TasNetworks is now assessing and designing the transmission upgrades and potential new transmission developments that may be required. This strategic planning aims to minimise adverse impacts on landowners, community, the environment and areas of cultural

significance by using existing transmission routes where viable and cost-efficient. However, our assessment indicates that to support efficient development of renewable energy zones in Tasmania, some new transmission corridors will be needed.

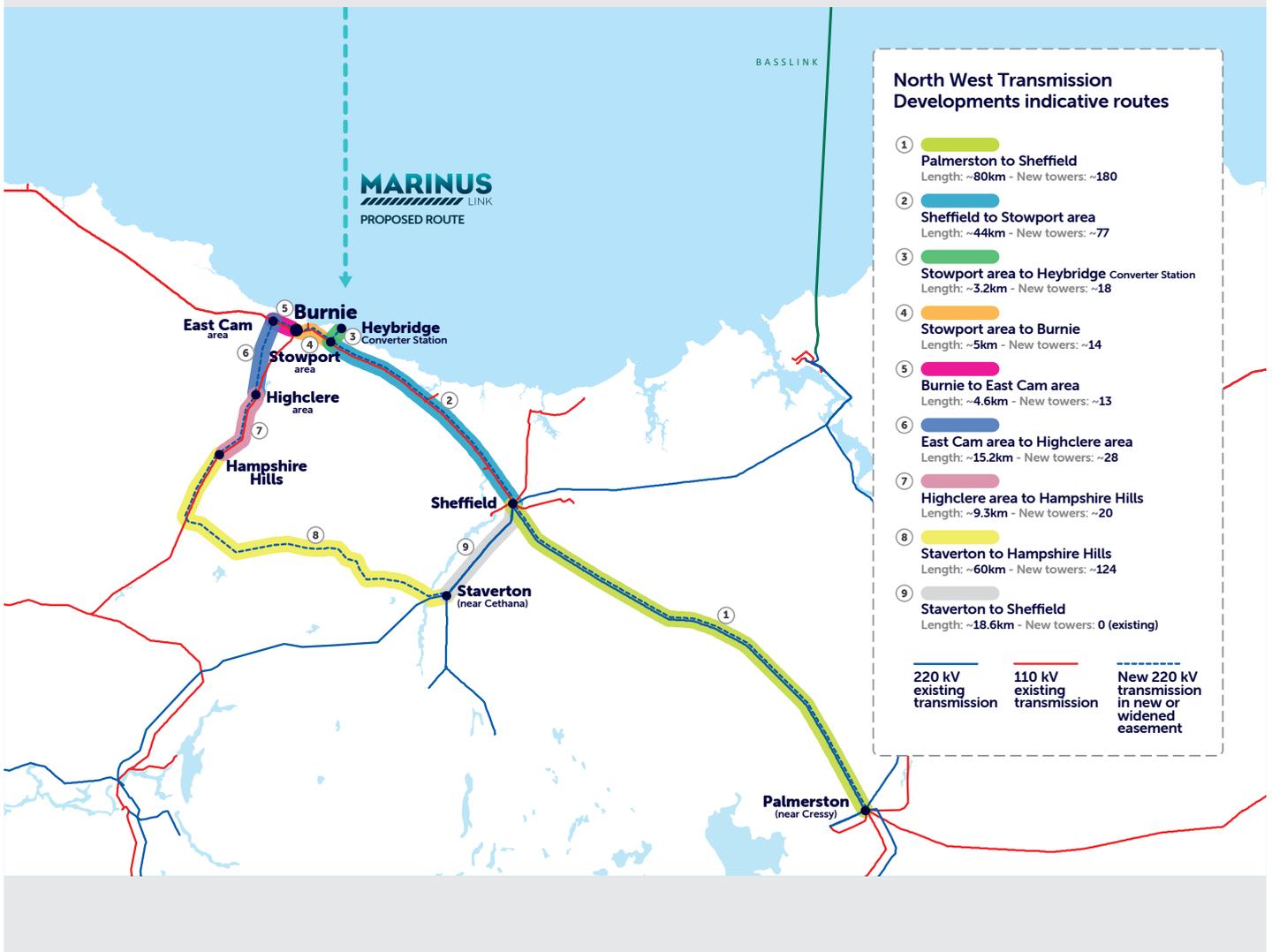
TasNetworks has also undertaken a business case assessment and feasibility study for Marinus Link and the North West Transmission Developments. Our analysis shows that the project is commercially viable and technically feasible, will provide substantially greater benefits than costs for customers, and should proceed to being 'shovel ready' by 2023-24.

TasNetworks will continue to refine plans for the North West Transmission Developments as Marinus Link and new renewable generation and pumped hydro energy storage developments progress. We will continue to consult with the community, landowners, businesses and stakeholders throughout this process.

Proposed North West Transmission Developments

Proposed transmission developments for North West Tasmania include upgrades to existing transmission lines and development of new transmission corridors and infrastructure.

The proposed North West Transmission Developments will include upgrades to existing transmission lines, new transmission lines and new electrical substations.



Transmission developments are being planned in the following areas:

1. **Palmerston to Sheffield (existing plus widened easement)**
2. **Sheffield to Stowport area (existing easement)**
3. **Stowport area to Heybridge Converter Station (new easement)**
4. **Stowport area to Burnie (existing easement)**
5. **Burnie to East Cam area (existing easement)**
6. **East Cam area to Highclere area (existing plus widened easement)**
7. **Highclere area to Hampshire Hills (new easement)**
8. **Staverton to Hampshire Hills (new easement), and**
9. **Staverton to Sheffield (existing easement)**

TasNetworks' strategic planning recommends strengthening the transmission network in North West Tasmania by creating a 220 kilovolt (kV) 'rectangle' that connects new and upgraded transmission substations and switching stations at Sheffield, Staverton, Hampshire Hills and in the Burnie area. The existing transmission corridor between Sheffield and Palmerston will also be strengthened, with a new transmission line and upgrades to substations at either end.

This 220 kV 'rectangle', and strengthening to Palmerston, aims to provide significant system benefits. These benefits include:

- transmission route diversity and redundancy
- reduced transmission losses
- maximising power transfer capability, and
- system resilience

TasNetworks' strategic planning indicates that the proposed developments will allow Tasmania's power system to remain strong and stable while passing more energy efficiently through the network.

The majority of the proposed new and upgraded transmission lines follow existing transmission line corridors.

When could these developments take place?

The timing and staging of the proposed North West Transmission Developments is influenced by the progress of new renewable energy generation and storage projects, as well as Marinus Link.

TasNetworks' analysis indicates the transmission developments in North West Tasmania required to support Marinus Link could be in service from the late 2020s with construction commencing approximately two years earlier.

The Staverton to Hampshire Hills transmission development is planned to commence earlier than this in order to connect proposed renewable energy projects.

The North West Transmission Developments and Marinus Link will only progress to construction once the necessary approvals are in place, together with appropriate funding, ownership and pricing arrangements. These developments will follow land-use planning and environment approvals processes at local Council, Tasmanian Government and Australian Government levels, and are subject to a rigorous and regulated economic cost-benefit analysis.

What's the **process from here?**

The land use planning and environmental and social impact assessment and approvals process for Marinus Link and the North West Transmission Developments commenced in late 2019 and involves extensive community consultation.

Assessments, surveys and investigations are also being undertaken to help determine the design of the remaining sections of the proposed developments.

The first transmission corridor TasNetworks is progressing for approvals is the Staverton to Hampshire Hills route. This is a new transmission corridor with engagement having commenced in 2019 for this route.

In 2020 TasNetworks commenced engagement on the Palmerston to Sheffield, and Sheffield to Stowport corridors.

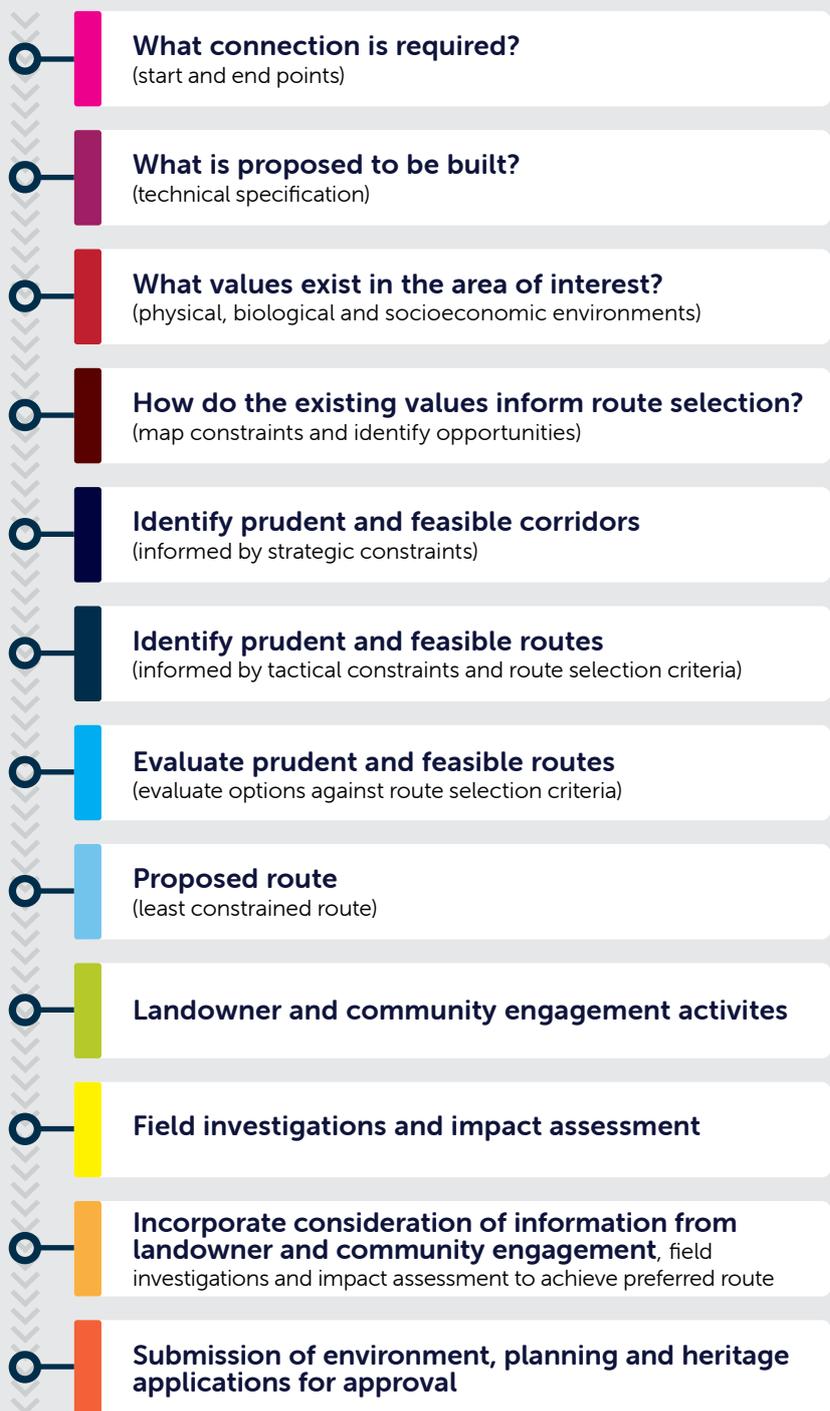
In May 2021, engagement commenced on all remaining corridors. TasNetworks' experienced landowner relations advisors will contact all affected landowners along the proposed routes directly to discuss the potential impact of the developments on their property. Some landowners may be contacted ahead of their neighbours, with a view to access certain properties for targeted field surveys.



Route Selection

Where practicable, TasNetworks has followed existing corridors and easements to reduce impacts on land use and native vegetation. Where this was not feasible, due to the need for additional network capacity, terrain or other constraints, alternative routes were chosen to minimise the impact on communities and the environment, cultural heritage and land use.

A detailed route selection process has been used to determine the preferred routes. The process considered the technical requirements for the project, as well as key environmental and social factors, to find feasible routes that minimise impacts and deliver cost effective and strong performing network outcomes.



Route Selection Process

The routes and site selection process starts by finding feasible options, which are investigated and analysed against technical parameters and environmental and social criteria to find the preferred routes. This aims to ensure that the most efficient route with the least impacts is selected.

These parameters and criteria include:

- proximity to houses and communities
- visual impacts
- cost for construction
- ease of access
- steep terrain and slope stability
- system requirements, including safety and maintenance
- land uses
- planning zones and overlays
- significant agricultural land
- native vegetation
- threatened plants and animals
- cultural heritage values
- potential for contaminated land disturbance
- areas of local and state significance.
- mountain ranges and undulating plateaus dissected by incised rivers and creeks
- high quality agricultural land and land used for plantation forestry, irrigation and other practices
- tracts and patches of native vegetation including threatened vegetation communities, flora and fauna species and their habitat
- small rural communities and major towns with communities deriving their livelihoods mainly from agriculture, forestry and tourism
- coastal development is expanding inland and rural residential subdivisions and small landholdings
- Aboriginal heritage sites and historic cultural heritage places, and
- scenic road corridors and scenic management areas identified in local planning schemes.

What values exist in the areas of interest?

Physical, biological, socioeconomic, environmental and landscape and scenic values identified in the areas potentially affected by easement widening, new corridors or upgrades to the transmission lines include:

How do the existing values inform route selection?

The existing physical, biological and socioeconomic values constrain route options but also provide opportunities, particularly those created by existing linear infrastructure and existing electricity transmission easements.

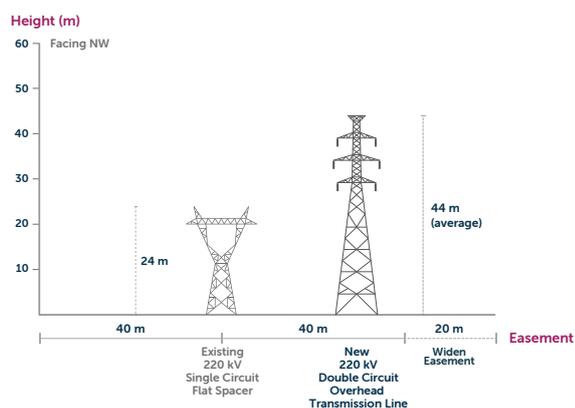
Existing infrastructure corridors are considered first when planning new transmission developments. Where there is an existing corridor in the geographic area requiring transmission development, and where the values and uses are compatible, these present as prudent and feasible options.

Existing transmission easement corridors provide significant opportunities for re-use or widening of existing easements to accommodate the new proposed transmission lines.

Proposed North West Transmission Developments

The following provides a summary of the planned upgrades and new transmission corridors for each component of the Proposed North West Transmission Developments.

1. Palmerston to Sheffield

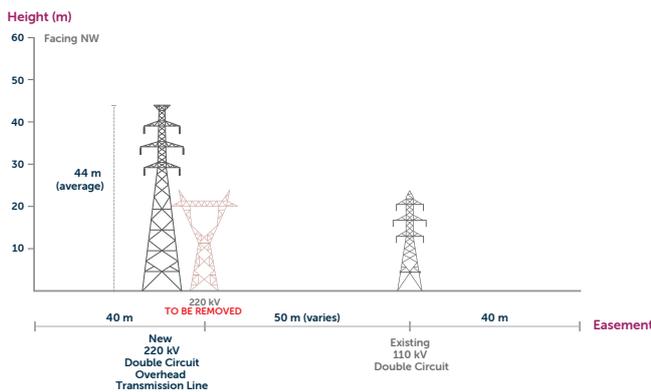


Between Palmerston and Sheffield a new double circuit 220 kV transmission line is proposed to be constructed adjacent to the existing single circuit 220 kV transmission line on the northeast side. This would require widening the existing easement by approximately 20 metres.

The new line is approximately 80 kilometres long and involves approximately 180 new towers.

Engagement commenced on this route in mid-2020, and continues with landowners and the community.

2. Sheffield to Stowport area



A new 220 kV double circuit transmission line is proposed to be built within the existing easement to replace the existing 220 kV single circuit line.

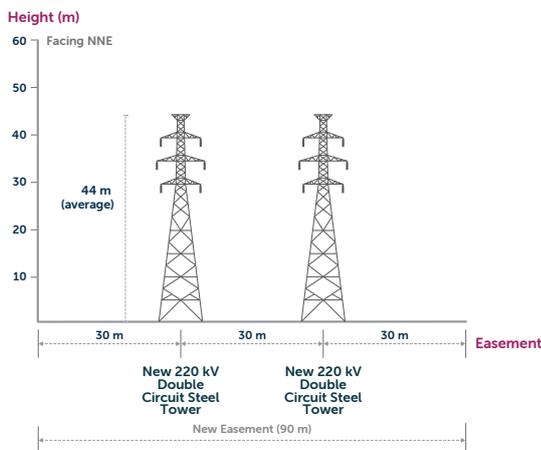
The proposed development would not require the easement to be widened where it follows

the existing easement between Sheffield and Burnie.

The new line is approximately 44 kilometres long and involves approximately 77 new towers.



3. Stowport area to the Heybridge Converter Station



From Minna Road, Stowport to the Heybridge Converter (and Switching) Station a new easement will be required for this 3.2 kilometre section of corridor to link the transmission network with the Heybridge Converter Station to connect Marinus Link.

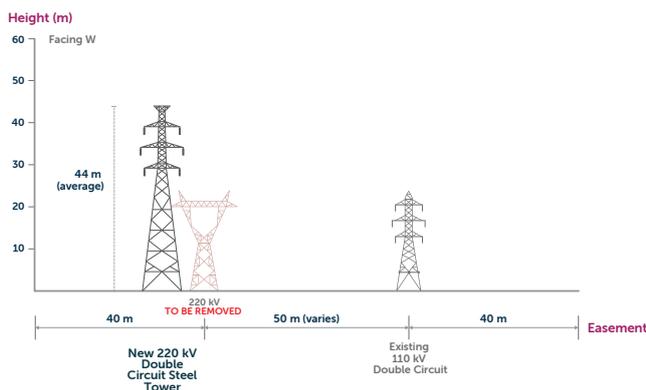
Two new 220 kV double circuit transmission lines are proposed to be built in a 90 metre wide easement.

These lines will carry loads to and from Sheffield and the Converter Station, and to and from Burnie and the Converter Station.

It is anticipated this 3.2 kilometre section will involve approximately 18 towers, 9 towers for each double circuit transmission line.



4. Stowport area to Burnie

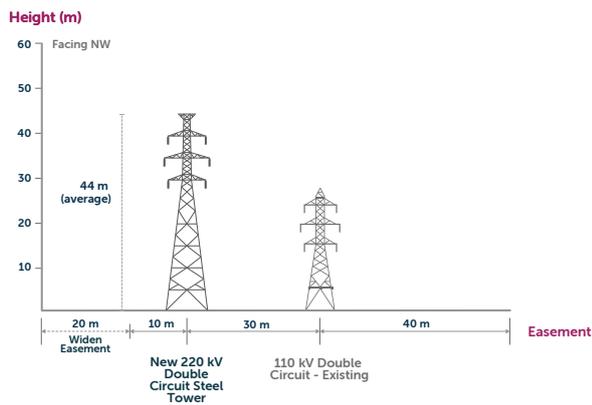


From Minna Road, Stowport to Burnie the existing single circuit flat spacer transmission infrastructure will be replaced with a new double circuit 220 kV transmission line.

This section is approximately 5 kilometres in length and will involve around 14 new towers in total.



5. Burnie to East Cam area



Between Burnie and East Cam, a new transmission line will be constructed next to the existing one, on the southern side, which will require the easement to be widened by 20 metres.

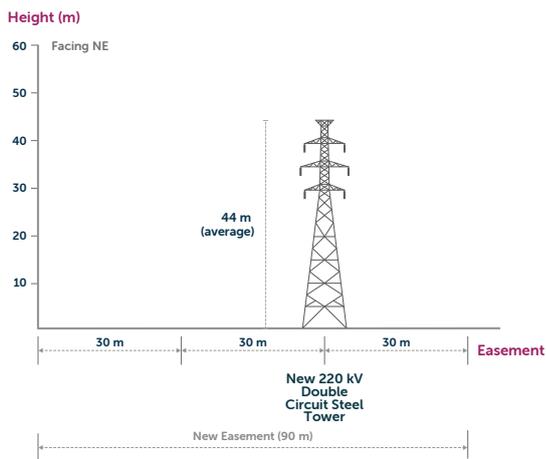
This new transmission line will connect the Burnie Substation to a new transmission line at East Cam.

The new connection at East Cam allows for a future switching station for future connections.

This line is approximately 4.6 kilometres in length and will involve around 13 new towers.



6. East Cam area to Highclere area

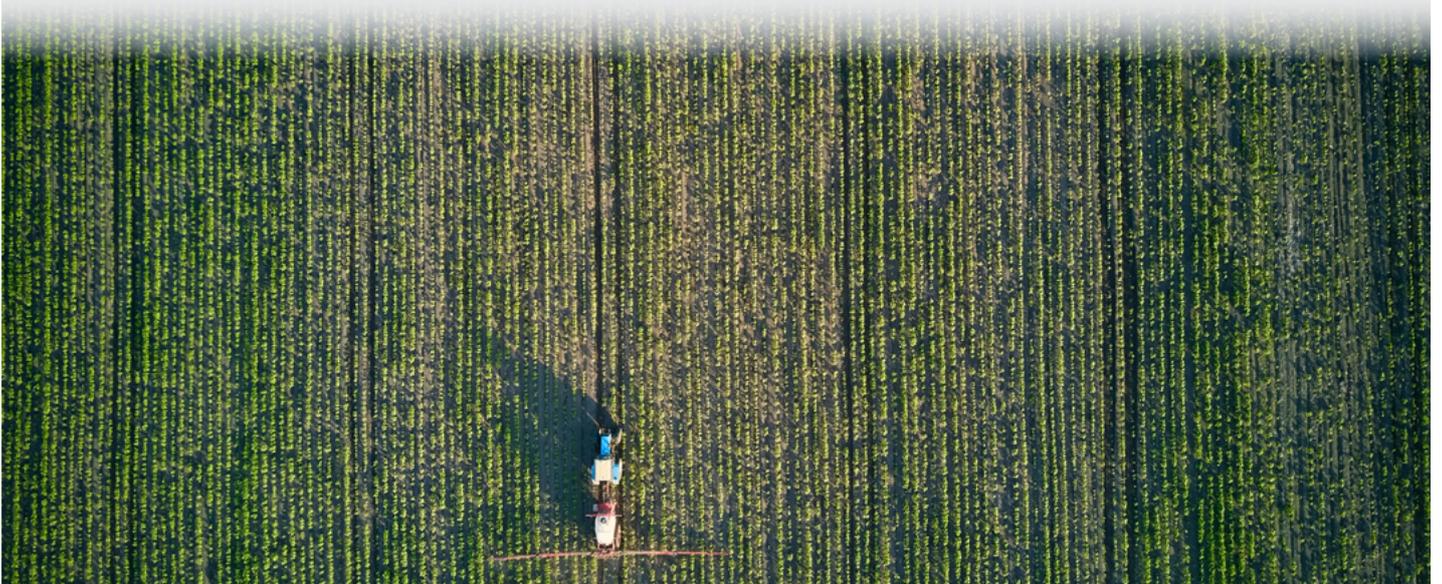


Between East Cam and Highclere a new double circuit 220 kV transmission line will be required in a new 90 metre wide easement. Only one transmission line will be constructed initially, but there is provision for a second transmission line to cater for future customer needs.

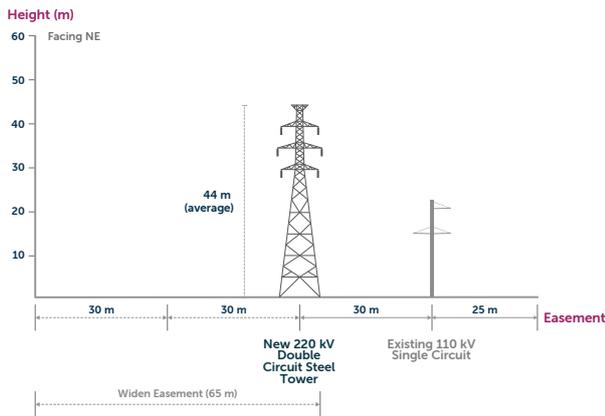
The route was chosen because it reduces impacts on environmentally significant vegetation and

reduces the route's exposure to historic landslides and landslip-prone land. Land-use along this route predominately comprises plantations, native vegetation forestry and some private land.

This line is approximately 15.2 kilometres in length and will involve around 28 towers.



7. Highclere area to Hampshire Hills



Between Highclere and Hampshire Hills a new double circuit 220 kV transmission line is proposed. Only one transmission line will be constructed initially, but there is provision for a second transmission line if required.

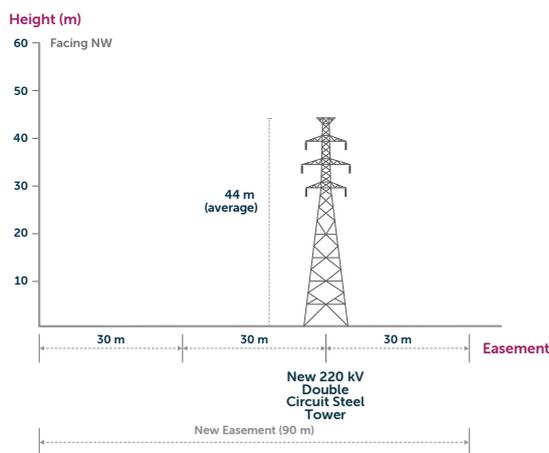
The route was chosen because it reduces impacts on environmentally significant vegetation and reduces the route’s exposure to historic landslides and landslip-prone land. Land use along this route predominately comprises of plantations, native vegetation forestry and some private land.

The first new transmission line will be built next to the existing 110 kV steel pole transmission line. The easement in this section will be widened initially by 35 metres and ultimately by 65 metres to accommodate the second new transmission line, if required.

This line is approximately 9.3 kilometres in length and will involve around 20 towers.



8. Staverton to Hampshire Hills



Between Staverton and Hampshire Hills a new double circuit 220 kV transmission line is proposed to be built within a predominantly new 90 metre wide easement.

Near Staverton, the new transmission line is proposed to be constructed along existing easements, which require widening by 30 metres.

Near Hampshire Hills, the new transmission line is proposed along the existing easements, which require widening by up to 65 metres.

TasNetworks released a proposed route in November 2019, and after further desktop analysis and considering community and landowner feedback the proposed route was refined with a preferred route identified and released in August 2020.

As part of the environment, planning and heritage assessment process, TasNetworks undertook studies along the preferred route to understand any potential impacts the project may have on the environment and local communities. The field surveys identified some significant geological and ecological features.

Specifically, the results of the field studies and geotechnical drilling have shown that a section of the transmission line, around 10km, is located on land that is prone to landslides, could result in impacts to the karst and cave systems as well as areas of native rainforest.

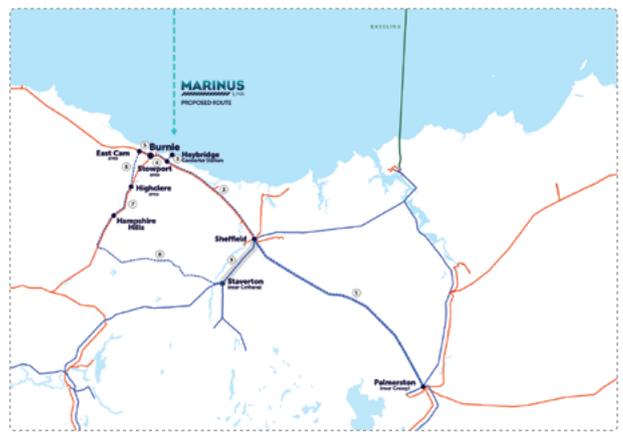
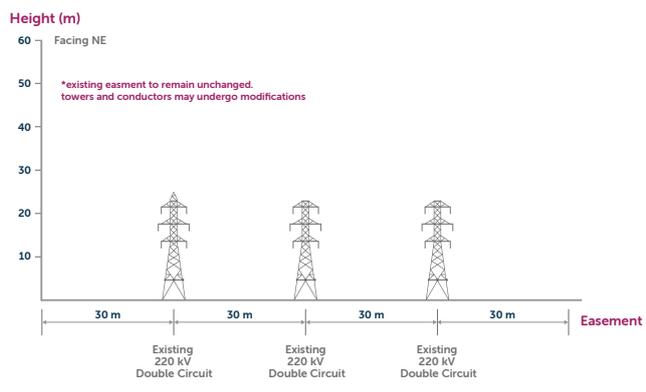
Based on these findings, it is necessary to realign a section of the preferred route further to the south to avoid these areas.

The selected route continues to mainly cross through commercial forestry plantations, however there are a small number of private landholdings, which are also affected by this change. We are working with landowners to assess their individual circumstances, listen to their concerns and look at ways to mitigate any impacts where possible.

This new line is approximately 60 kilometres in length and will include 124 towers.

Landowner engagement commenced on this route in mid-2019, and continues with ongoing opportunities for landowners and the community to provide feedback on TasNetworks proposal.

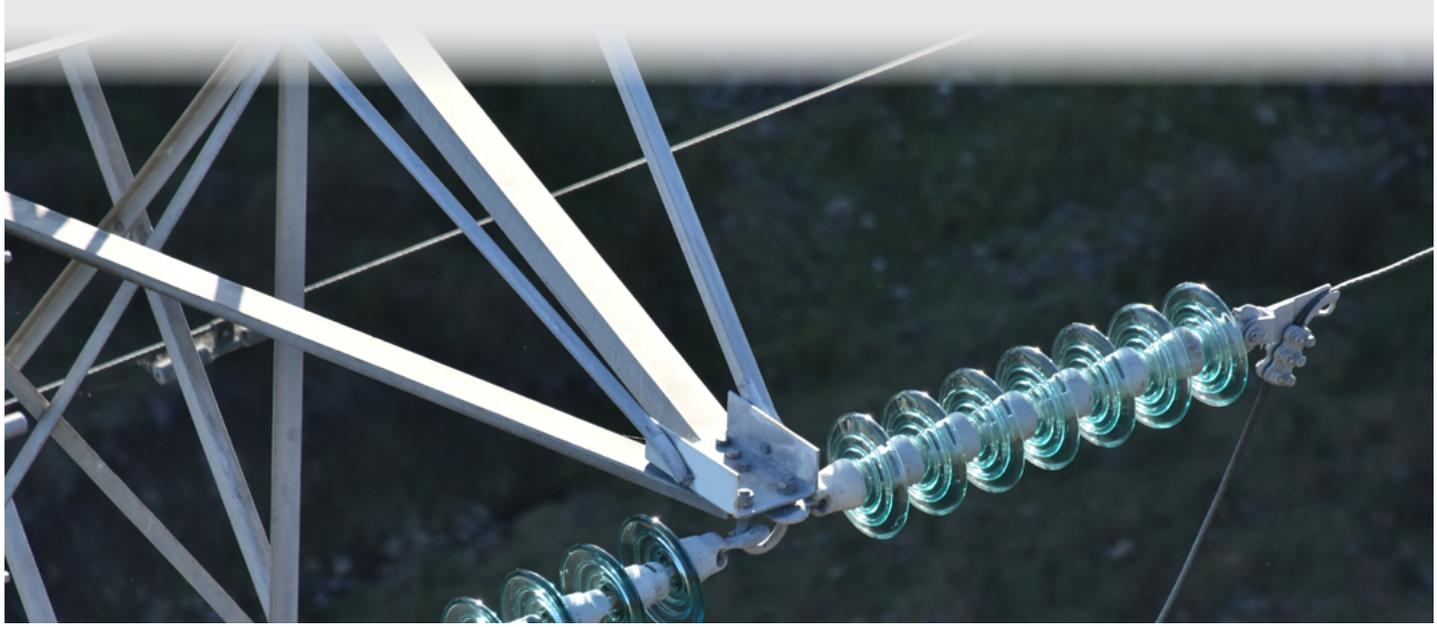
9. Staverton to Sheffield



This component of the Proposed North West Transmission Developments consists of upgrading 18.6 kilometres of existing transmission lines to carry more electricity. This might include re-stringing the transmission lines with new conductors, increasing tower heights, modifying insulator strings, civil works and upgrading equipment in the Sheffield Substation.

A new switching station will be built at Staverton under the existing transmission lines.

It is anticipated that no new transmission lines will need to be constructed and easements will stay the same size.



Engagement

How are we engaging with landowners and community?

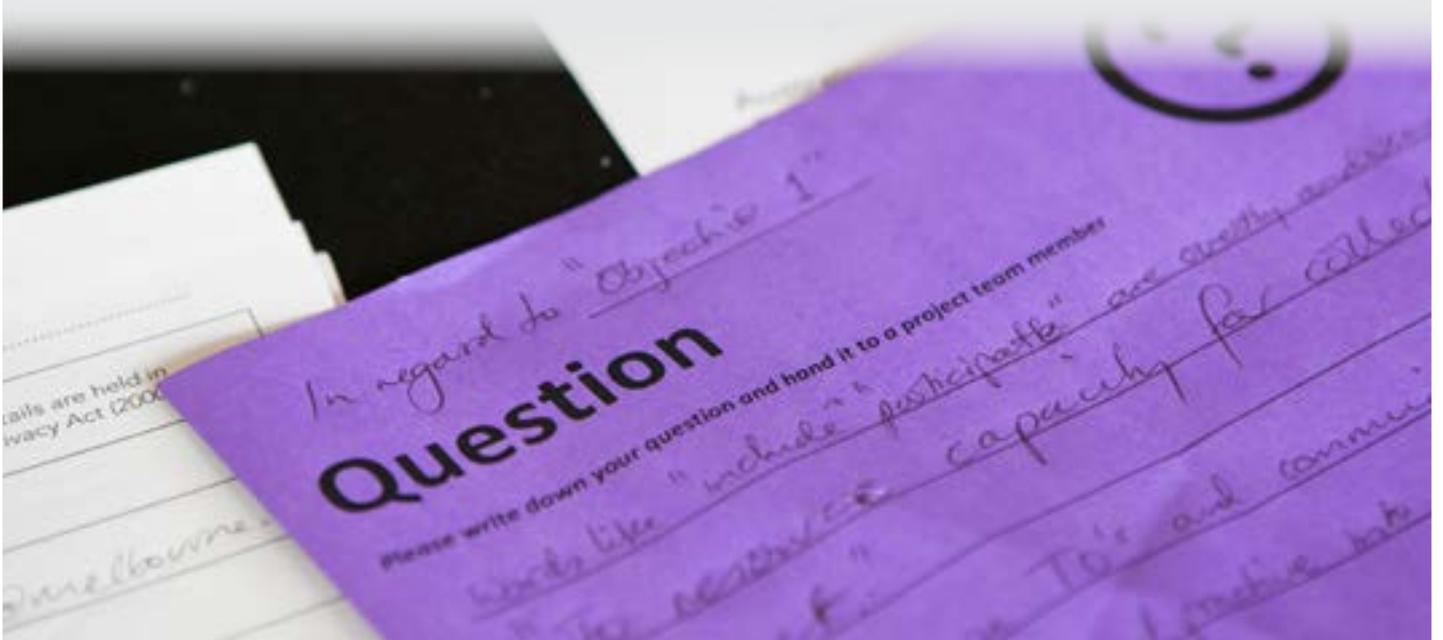
We have commenced engagement activities with landowners and the local community ahead of undertaking a range of field investigations.

This work forms part of the critical early works required to progress the proposed North West Transmission Developments, which are needed to support Marinus Link and the implementation of TasNetworks' strategic plan for North West Tasmania.

We are committed to engaging with landowners throughout the project to understand and address their needs and concerns wherever possible.

Landowner and community input will also be necessary to help to inform final design and construction considerations to reduce impacts.

Our discussions will be ongoing and there will be several opportunities for the community to comment during the environmental, land use planning and cultural heritage approvals processes. These will include formal opportunities required by the approvals processes and informal opportunities through planned engagement activities or in conversation with us.



Engagement process



Cultural Heritage

**TasNetworks is committed to working with the
Tasmanian Aboriginal community.**



Protecting **Aboriginal heritage**

As part of the route selection process for the North West Transmission Developments, TasNetworks is engaging with representatives of the Tasmanian Aboriginal community of the country the route runs through and seeking their advice on the proposed routes.

TasNetworks recognises that Aboriginal cultural heritage sites and artefacts exist on and near the proposed routes. In particular, routes along coastal and near-shore areas, and near inland watercourses, are likely to indicate evidence of past Aboriginal occupation and associated story lines.

Aboriginal Heritage Officers will conduct field surveys and investigations along proposed project routes. Aboriginal people from the local area will be invited to visit the sites of interest.

The aim of the cultural heritage field surveys is to identify Aboriginal and historic cultural heritage

sites and areas of potential archaeological sensitivity that may be present. These surveys will contribute to an overall assessment of the Aboriginal and archaeological values and sensitivity of the area. There may be potential to mitigate impact of the proposed developments.

Working together as the **project** **progresses**

TasNetworks will continue to engage and build meaningful relationships with Tasmanian Aboriginal people and the Traditional Owners in Victoria as Marinus Link and the North West Transmission Developments progress.



Find out
more

How can I **find out more?**

Engagement has commenced on the Proposed North West Transmission Developments. We will be meeting with landowners, Councils, the community and other key stakeholders over the coming months to discuss the developments.

We are committed to communicating on the Proposed North West Transmission Developments in a transparent, respectful, and timely manner, in addition to working with the community to realise the benefits these proposed developments can deliver for the north west of Tasmania.



You can contact us with any questions about the proposed developments to the North West Tasmanian transmission network via our project email and phone line.

visit: tasnetworks.com.au

email: NWTD@tasnetworks.com.au

call: **1300 127 777**



