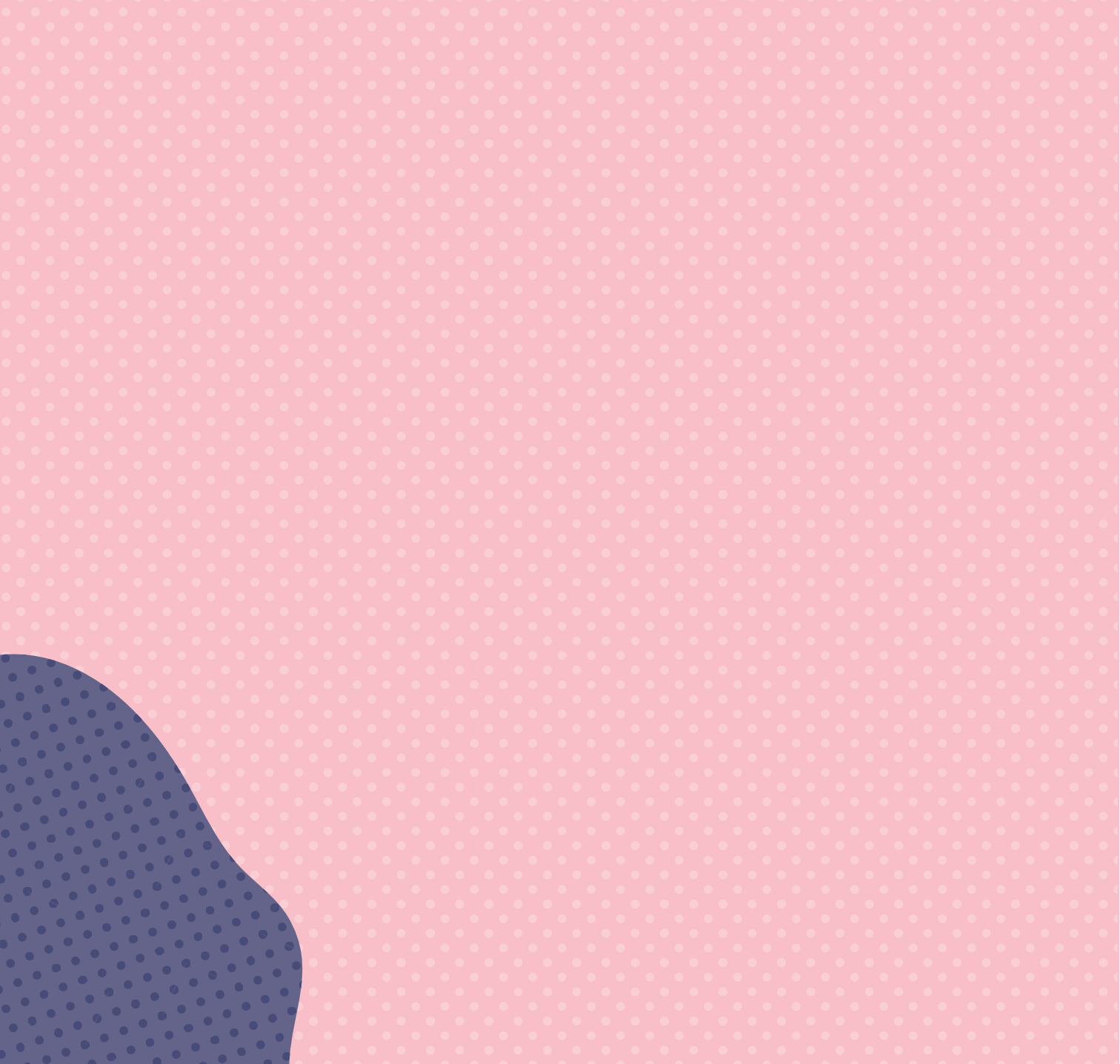


An illustration of a hand holding a globe. The globe is divided into a green upper half and a light blue lower half. The green half features icons for wind turbines, power lines, a solar panel, a pink car, and a green charging station with a lightning bolt symbol. The light blue half features a sun, clouds, and a hand holding a pen. The background is light blue with dark blue dotted patterns in the corners.

Giving young Tasmanians their say

on the Draft Tasmanian
Renewable Energy Action Plan





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Minister's comments

Renewable energy is important. It's clean, sustainable and can help manage climate change.

Tasmania is Australia's first state when it comes to renewable energy. We have some of the best water and wind resources in the world that are helping us build a renewable energy industry for the future.

We are doing so well that we will soon be producing enough renewable energy for all of the houses and businesses in Tasmania. It means Tasmanians will be able to say our electricity is 100 per cent renewable. That's a record for Australia and up there with only a handful of countries around the world.

Not only is it great that Tasmania will soon be producing enough clean renewable energy for all Tasmanians, but we can produce even more. In fact we have so much renewable energy ready to be developed that we set a target to double how much we produce by 2040. What's exciting is that Tasmania is the only place in the world that has set such a target.

Growing our renewable energy production will create jobs for young people and help ensure a strong future for all Tasmanians for years to come.



Australia's energy industry is also changing. As a country we are introducing more and more renewable energy from natural resources like wind and solar. At the same time some of Australia's older plants that use fossil fuels like coal are planning to close.

We need to ensure people have enough electricity to power their homes and businesses. But what is great is that Tasmania wants to help Australia by providing more of our clean, reliable and affordable energy for them.

Tasmania already provides some electricity to mainland Australia through an undersea cable across Bass Strait, called Basslink. Now Tasmania has big plans to put in two more cables called MarinusLink, to send even more of our renewable energy across to the mainland. It means more Australians will get the benefit of our low cost, reliable and clean energy.

In May we launched our Draft Tasmanian Renewable Energy Action Plan which explains how we plan to produce more renewable energy for use here in Tasmania and on mainland Australia. We also have exciting plans to turn our renewable energy into hydrogen so we can send our renewable energy beyond Australia to other countries, so that even more people can get the benefit of Tasmania's energy.

It is our goal to build a renewable energy industry that can safeguard Tasmania's future while helping it recover from COVID-19.

The Government also recognises that climate change is one of the most important issues for young people, as it is you who will be most affected into the future. Tasmania can play such an important role. Not only were we the first state in Australia to reach zero net emissions in 2015, but we have held that amazing position for five years running.

Renewable energy will be key in creating a cleaner environment and more sustainable future for everyone.

That's why we have produced a version of the draft Plan so that you and other young people can have a say on Tasmania's plan for increased growth and use of renewable energy.

This is your opportunity to tell the Tasmanian Government what you think about our plans to expand and grow our clean, reliable and affordable renewable energy sector. We look forward to hearing from you.

Hon Guy Barnett MP
Minister for Energy

Talking with children and young people

In May this year, the Tasmanian Government published a draft document called the Tasmanian Renewable Energy Action Plan. It explains the actions that will help Tasmania take the next steps towards generating more renewable energy for use in Tasmania and on mainland Australia. If you want to find out more you can read about it here: https://www.stategrowth.tas.gov.au/energy_and_resources/energy/renewable_energy.

The Government has created this version of the draft plan, at the suggestion of Tasmania's Commissioner for Children and Young People, so that you can have your say on the Tasmanian Government's plan for increased use of renewable energy to help our environment and to create the jobs of the future.

Environmental issues and Tasmania's future are really important issues for children and young people, which is why we want you to tell us what you think of our plans to expand and grow our renewable energy sector.

To help you we have prepared some survey questions which you can find here: www.surveygizmo.com/s3/5839970/CCYP-Renewables-Have-your-say

You don't have to answer all of the questions, but we would appreciate your thoughts and ideas on any that you would like to answer.

Your answers will go to the Tasmanian Minister for Energy to help the Tasmanian Government finalise their Tasmanian Renewable Energy Action Plan which will be published before the end of this year.

The closing date for your feedback is 22 October 2020.





Survey questions

1. How can the Tasmanian Government involve children and young people more in discussions about the role that renewable energy can play in addressing climate change and building a cleaner environment?
2. Should the Government try to create more jobs in renewable energy? If yes, what is the best way to do this?
3. Do you think the Tasmanian Government should set strong renewable energy targets (or goals)? Why?
4. Should the Tasmanian Government support large renewable energy projects like Project Marinus and Battery of the Nation? Which ones? Why?
5. Pollution from vehicles using fossil fuels is one of the largest sources of carbon emissions around the world. Should the Tasmanian Government invest in alternative renewable fuel sources like hydrogen, or sustainable technology such as electric vehicles? Why?
6. Waste from industrial processes (e.g. factories), agriculture, forestry and rubbish can be turned into renewable energy (bioenergy) to provide heat, electricity and fuel for trucks or other transport vehicles. Should the Tasmanian Government be looking at how we could make electricity, heat or fuel from bioenergy in Tasmania? Why?
7. Is Tasmania's 'brand' as a clean, green place to work and live important? Should clean renewable energy be part of this brand? If so, why?
8. Is there anything else that you think the Tasmanian Government should know or be doing?

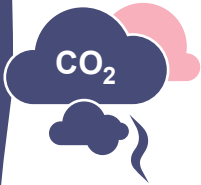
Definitions of key terms

Brand A brand is a name given to a product or service that has its own identity.



Carbon emissions

Carbon emissions (also known as greenhouse gases) are the release of carbon into the atmosphere. Carbon emissions are the main contributors to climate change. Burning fossil fuels for energy is a key source of carbon emissions.



Fossil fuels

This describes a group of energy sources that have been formed from ancient plants and organisms a very long time ago (before dinosaurs!). There are three main types of fossil fuels: coal, oil and natural gas.



Pollution

The contamination of air, water or soil by things that are harmful to living organisms. Pollution can occur naturally, for example through volcanic eruptions, or from human activities, such as through spilling oil or through releasing carbon emissions.



Below are some key terms and definitions we use in the plan

Bioenergy Bioenergy is a form of renewable energy that uses organic renewable materials (known as biomass) to produce heat, electricity, biogas and liquid fuels. The most cost effective and environmentally friendly sources of biomass are wastewater, Council waste and waste streams from agriculture, forestry and industry.



Decarbonisation

The reduction or elimination of carbon dioxide emissions that are produced by human activity, in particular, through reducing the use of fossil fuels.



NEM The National Electricity Market.

Renewable energy

Energy that comes from natural resources such as sunlight, wind, biomass or water which is constantly replaced or refilled and never runs out. This is unlike energy that comes from non-renewable resources, such as coal, gas or oil, which runs out once it is used.



Renewable Energy in Tasmania

Renewable

Something that is not totally used up or depleted when used.

Sustainable

Using natural resources in a way that we could keep doing for a long time. We can be more sustainable by reducing and better managing our use of natural resources. We can also help restore natural resources.

Targets

An objective or goal that we are aiming for.

TRET

Tasmanian Renewable Energy Target.



Tasmania has a long history of developing renewable energy. Our first hydro-electric (water-powered) generator, Waddamana Power Station, started providing electricity back in 1916.

In the 80 years that followed, Tasmania's hydro-electricity system grew to have 30 power stations and 54 dams. So Tasmania has long been seen as having a world-class electricity system.

Australia's electricity supply industry is experiencing many changes as older fossil fuel generators, such as coal power stations, are beginning to shut down as the nation shifts to using clean renewable energy sources.

Over the years Tasmania has built a large part of its economy on clean, affordable renewable energy, most of it coming from hydro-electric generators. More recently, wind farms have also become an important part of our renewable energy mix.

Today, thousands of Tasmanians are employed by Hydro Tasmania, managing our hydro-electricity system, as well as other energy businesses such as wind farms. TasNetworks' teams maintain the poles and wires that bring energy to your home.

The people working on renewable energy in Tasmania have skills and experiences that are valued worldwide. But we are happy that they choose to work and live here and Tasmania is now a national leader in renewable energy.

Using clean renewable energy is one of the most important ways that Tasmania can contribute to a cleaner environment and help Australia to become a clean energy nation.

Why do we need a Renewable Energy Action Plan?

Renewable energy is one of the key industries for Tasmania's future and one of the most important ways that we can help the environment. Tasmania is in a unique position to produce the renewable energy needed to create a cleaner world and more skilled "green" jobs for Tasmania's future.

Currently our renewable energy industry is growing like never before, with major wind farms being built and plans to expand our hydro-electricity resources and build an undersea cable to send our renewable energy to the rest of Australia.

Now is the right time for Tasmania to develop a detailed plan of action to map out a pathway for achieving our renewable energy future.

Our draft Tasmanian Renewable Energy Action Plan is important for all Tasmanians because it sets out a plan for how Tasmania can create thousands of jobs and ensure energy stays affordable.

As a result of COVID-19, there are new challenges facing Australian households and industries. Our renewable energy developments will form a key part in rebuilding Tasmania after the pandemic.

One of the most important parts of our Plan is our overall goal for Tasmania. It shows how we intend to be a leader in building renewable energy, not just in Australia but worldwide.

Our vision is:

“That the Renewable Energy Action Plan will transform Tasmania from being Australia’s renewable energy powerhouse into a world leading provider of clean, reliable and affordable energy.”

This vision has three goals:

- 1. Turning Tasmania into a global renewable energy powerhouse.**
- 2. Making energy work for the Tasmanian community.**
- 3. Growing the economy and providing jobs.**

The plan sets clear targets and actions to achieve this, and these are discussed later on.

Tasmanian Renewable Energy Target (TRET)

Tasmania will soon be the first Australian state, and one of few places globally, with 100 per cent renewable electricity generation. This means Tasmania will make enough renewable energy to meet all of our current electricity power needs every year.

However, we want to achieve more! We want to double our renewable energy production so we can also export enough energy to mainland Australia to help move the nation to clean renewable energy.

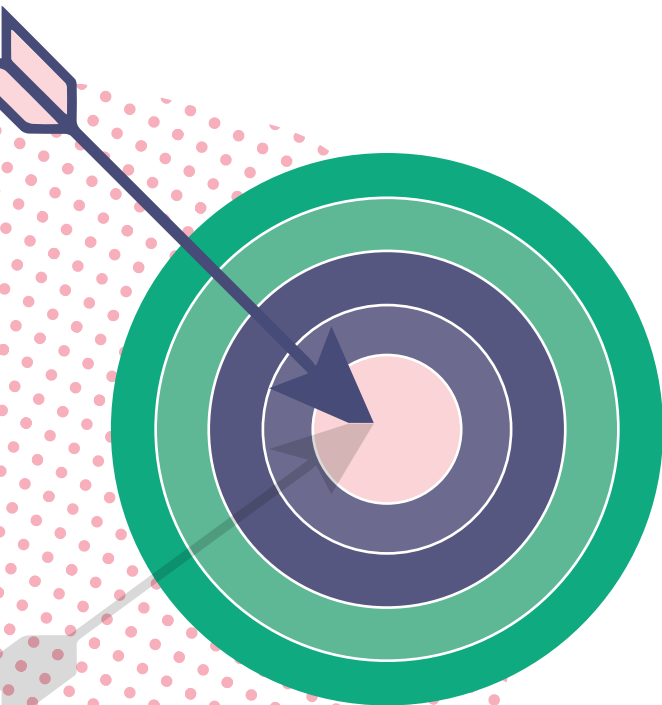
This renewable energy could also be used to attract new industries to Tasmania that use large amounts of electricity, but only want to use clean energy.

This is why the Tasmanian Government has announced a new renewable energy target of 200 per cent of our current needs by 2040, which will double Tasmania's renewable electricity production.

Tasmania's new target shows that our state is committed to helping Australia manage climate change, as well as expanding our renewable energy sector in all its forms: solar, biomass, ocean power and hydro-electricity.

It will also encourage investment and development in Tasmania. This will help boost the Tasmanian economy and create jobs, which is more important than ever as we recover from the impacts of the COVID-19 pandemic.

There are no other renewable energy targets in the world as big as Tasmania's.



Turning Tasmania into a global renewable energy powerhouse (Priority 1)



Key targets

- By 2022 – Tasmania will be 100 per cent self-sufficient in renewable electricity generation.
- By 2040 – we will double our renewable electricity generation – with a target of 200 per cent of our current needs.
- From 2030 – Tasmania is a producer and exporter of renewable hydrogen.

Objectives

In 2018 the Government set a target for Tasmania to become 100 per cent self-sufficient in renewables by 2022. We are now ahead of schedule to reach this target.

Soon Tasmania will be generating enough electricity from renewable resources to power all of Tasmania's electricity needs. This will form the basis for the Tasmanian Renewable Energy Target (TRET) to double our renewable energy production to 200 per cent of our current electricity needs by 2040.

To achieve our TRET the Government will continue to champion major national renewable energy projects such as:

- Battery of the Nation and Project Marinus,
- wind farm developments, and
- other opportunities offered by our natural renewable energy resources like solar and bioenergy.

However, community support for large scale renewable energy projects is also really important particularly in the areas that these developments are likely to be built. This includes working with local communities to maximise the benefits and ensuring correct environmental practices are followed.



ACTION:

Introduce a Tasmanian Renewable Energy Target to double Tasmania's renewable energy production to meet 200 per cent of our current electricity needs.

The Tasmanian Renewable Energy Target means that by 2040 Tasmania will generate twice as much renewable electricity as it will be generating in 2022.

This will allow Tasmania to increase its electricity exports to other states through the National Electricity Market (which is a market in Australia where electricity is traded). It will also allow us to attract and develop new industries like renewable hydrogen, and give Tasmania a real advantage compared to other places as a clean, green, modern, renewables-based economy. And it will further assist Australia's efforts to reduce carbon emissions.



ACTION: Continue to progress Project Marinus and Battery of the Nation.

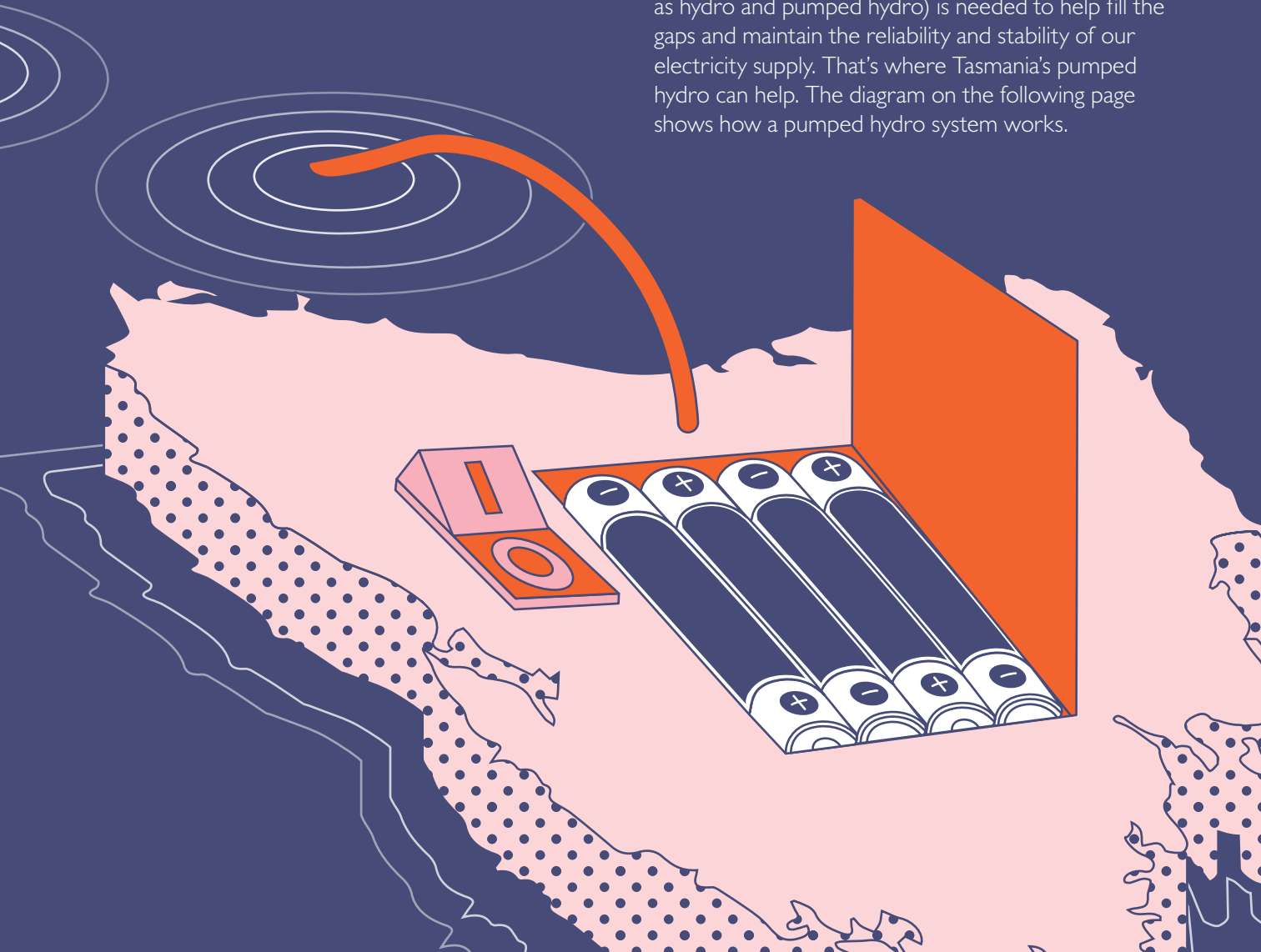
Project Marinus – what is it?

- A proposed undersea electricity cable that connects Tasmania and Victoria.
- A way for Tasmania to export more of our renewable energy resources to the other states that currently use mostly coal for their electricity generation.
- A way to attract new businesses to Tasmania that use a lot of electricity, or grow ones that are already here.
- A project that is capable of creating billions of dollars of investment in Tasmania and creating thousands of local jobs.

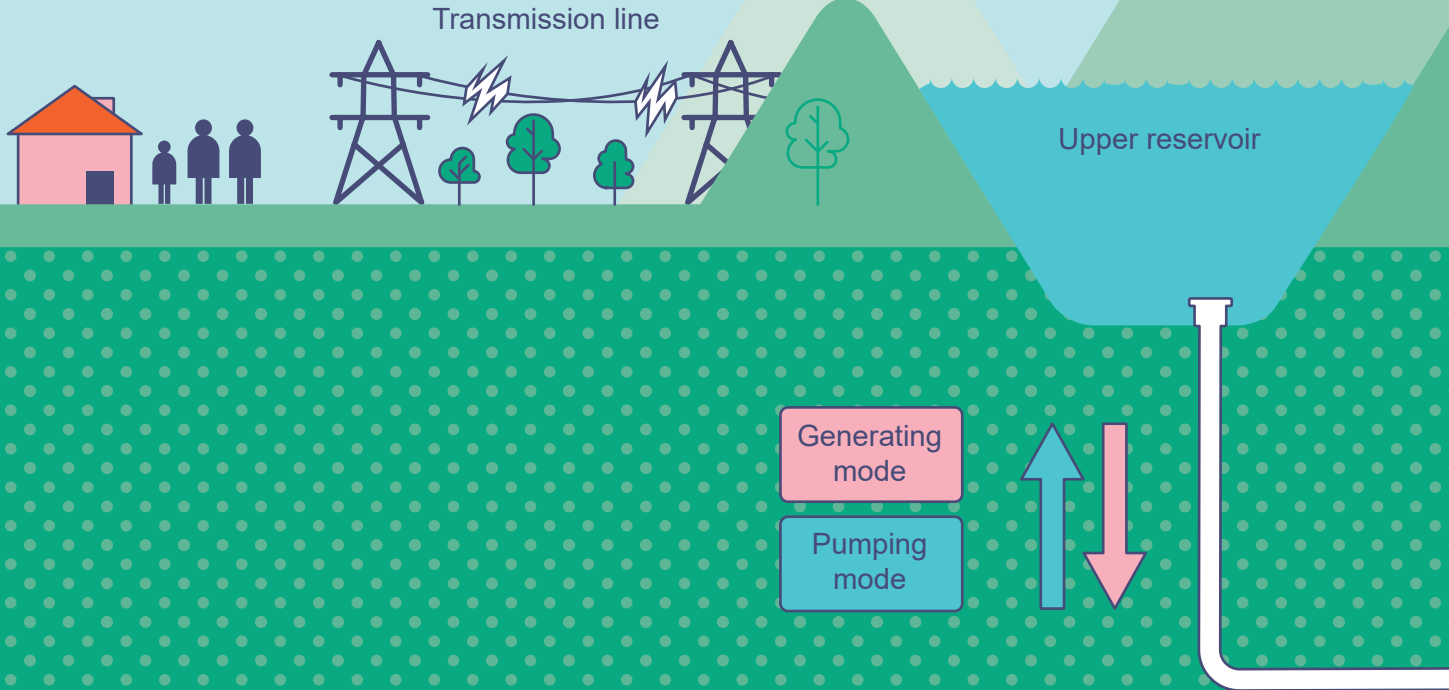
Battery of the Nation – what is it?

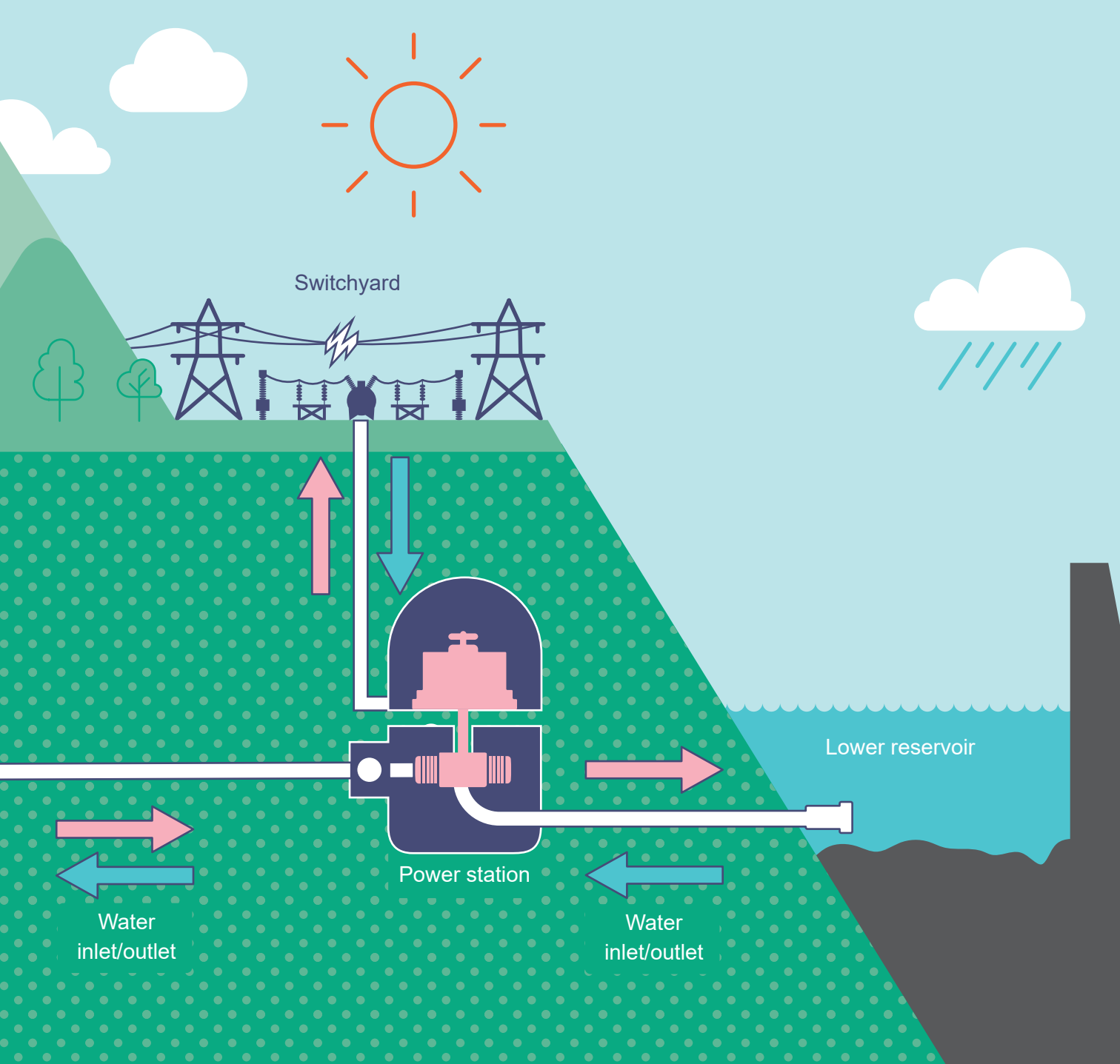
- A project led by Hydro Tasmania that uses a pumped hydro (water) energy storage system to act like a large battery.
- These pumped hydro energy systems have an upper and lower reservoir (pool).
- The water is stored in the upper reservoir until it is needed. When it is needed, the water in the upper reservoir is released and flows through a turbine which spins the water into the lower reservoir, which generates electricity.
- The project is also looking at upgrading and better using our existing hydropower dams. We currently have 30 hydropower stations across Tasmania and they form our largest source of electricity supply.

New sources of renewable energy like wind and solar are low-cost and becoming more plentiful. But they are variable (sometimes the sun isn't shining and the wind isn't blowing) so energy storage (such as hydro and pumped hydro) is needed to help fill the gaps and maintain the reliability and stability of our electricity supply. That's where Tasmania's pumped hydro can help. The diagram on the following page shows how a pumped hydro system works.



How does pumped hydro energy storage work?





Switchyard

Lower reservoir

Power station

Water inlet/outlet

Water inlet/outlet

ACTION: **Consult the community on an ambitious net zero emissions target.**

In 2015, Tasmania became the first Australian state or territory to achieve net zero emissions.

Net zero emissions means the amount of greenhouse gases released into the atmosphere is no more than the amount taken out. You can think of it like a set of scales. Producing greenhouse gas emissions tips the scales, and we want to get those scales back into balance with no new greenhouse gas being added to the atmosphere in any one year.

Net zero emissions is a key goal for many countries aiming to reduce carbon emissions and manage climate change.

The Government will consult the community on what further action Tasmania needs to take to continue to reduce our emissions and support Australia's move to a low-carbon future, including an ambitious net zero emissions target for Tasmania.

The Government understands that climate change will affect the lives of all generations for years to come but that young people in particular are passionate about their future including renewable energy and carbon reduction.

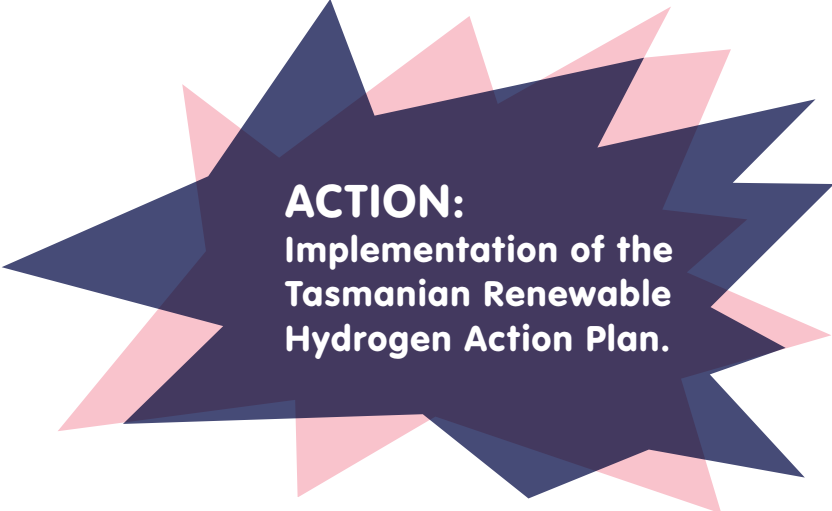
So we are really keen to hear your views about what further actions you think Tasmania needs to take.

See www.dpac.tas.gov.au/divisions/climatechange to learn about the Tasmanian Government's climate change initiatives, and sign up to the newsletter to keep up to date.

ACTION: **Investigating a Renewable Energy Centre of Excellence.**

The Tasmanian Government is investigating the possibility of setting up a Renewable Energy Centre of Excellence in Tasmania which would be a world class centre for innovative research, training, and collaboration.

A renewable energy centre would further strengthen Tasmania's position as a global leader on clean energy, and attract a lot of interest from other countries.



ACTION:
**Implementation of the
Tasmanian Renewable
Hydrogen Action Plan.**

Many countries want to use cleaner, renewable forms of energy to reduce the amount of carbon dioxide that causes climate change. This process is called decarbonisation.

The use of renewable hydrogen as a form of clean energy made from renewable energy, is one way of doing this. Tasmania has an opportunity to develop a large-scale renewable hydrogen production and distribution industry, using our many renewable energy resources. This includes power sourced from wind, which would then be supported by our extensive existing hydropower generation.

Tasmanian renewable hydrogen has a number of economic and environmental benefits by reducing the need for imported fossil fuels.

To kick-start this new renewable energy industry the Tasmanian Government has introduced a \$50 million package of support measures to build a renewable hydrogen industry. This support is part of a range of other activities the Government has underway to help develop this new industry.

You can read the Tasmanian Renewable Hydrogen Action Plan here:

**[www.stategrowth.tas.gov.au/
renewablehydrogen](http://www.stategrowth.tas.gov.au/renewablehydrogen)**

How is green hydrogen produced?

Clean energy generation

Hydro and wind are used to generate clean renewable energy.

1

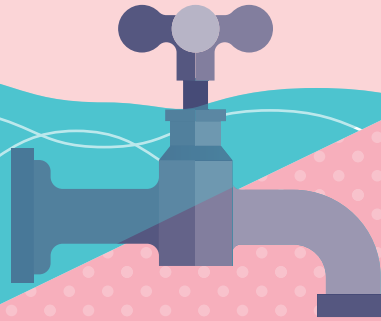
Use

Once stored, the gas can be transported to anywhere in the world for use at home or for industries.

5

Add water

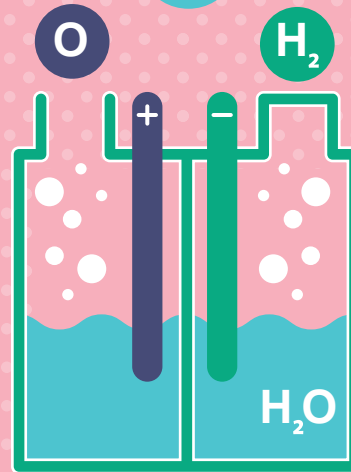
This energy is fed into a splitting machine called an electrolyser with water.



2

Green hydrogen production

The electrolyser splits the water molecules to create hydrogen and oxygen.

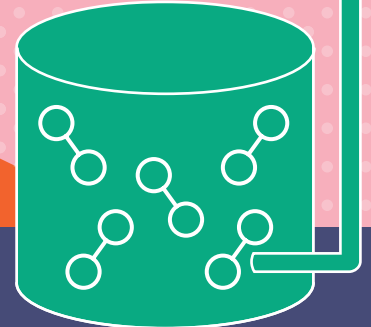
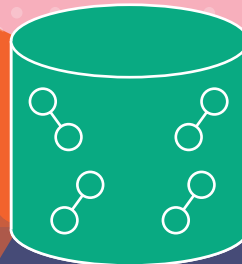


3

4

Storage

The hydrogen gas is pressed into containers for storage.





ACTION:
**Develop options to support the
bioenergy sector.**

Bioenergy uses organic renewable materials (known as biomass, for example, waste from cities and towns and agricultural, industrial and forestry sources) that would otherwise decompose in the landscape to produce heat, electricity, biogas and liquid fuels.

Bioenergy is one of the largest forms of renewable energy globally and Tasmania has a lot of unused wood waste and other feedstocks that could be used to produce it.

The Tasmanian Government is looking to grow the bioenergy sector in Tasmania and is already supporting a number of bioenergy projects.

Types of biomass

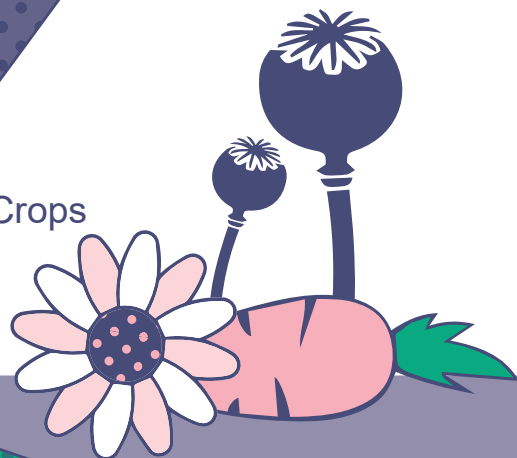
Rubbish



Wood



Crops



Landfill gas



Alcohol fuels



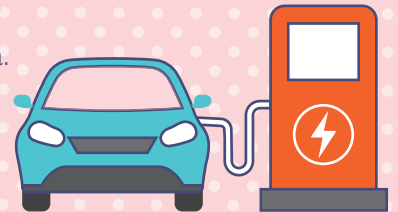
ACTION: **Transport industry emissions pathway.**

The use of cars and other vehicles is a significant source of Tasmania's greenhouse gas emissions.

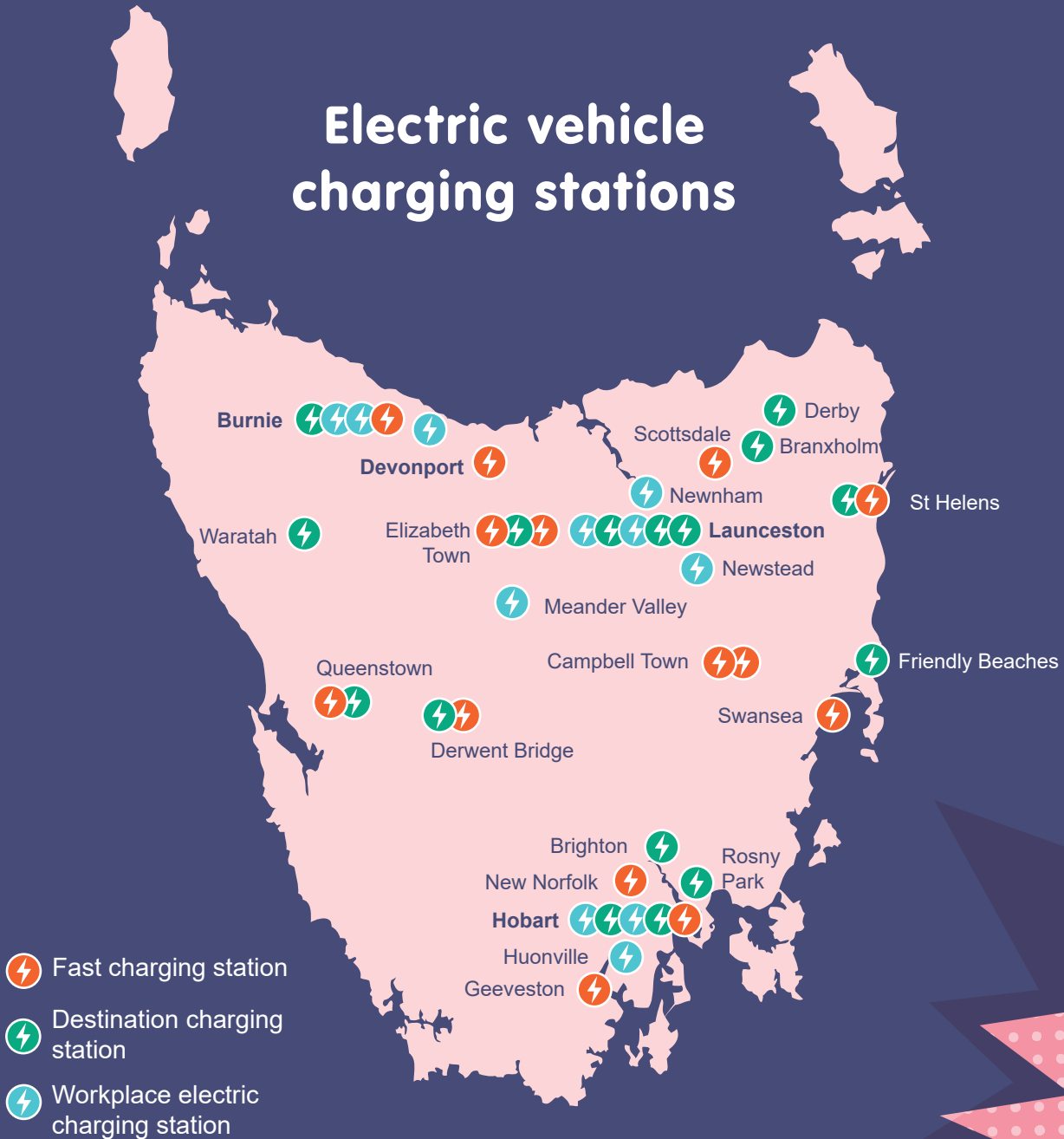
The Government wants to reduce Tasmania's transport emissions, by supporting more electric vehicles powered by our own renewable energy and a state-wide electric vehicle fast charging network.

Fourteen fast charging stations are being installed at 12 locations around Tasmania, which will assist locals and visitors who wish to tour the state using electric vehicles. This includes the installation of four ultra-fast charging stations capable of charging the next generation of electric vehicles in less than 10 minutes.

The Tasmanian Government will also investigate setting a target to transition government vehicles to electric vehicles, and explore opportunities for the use of hydrogen to power vehicles in Tasmania.



Electric vehicle charging stations



Making energy work for the Tasmanian community (Priority 2)

Objectives

Ensuring Tasmanians have access to reliable, secure and affordable energy is important, especially as the COVID-19 pandemic continues.

Access to new technology like smart meters means that Tasmanians can better manage their energy needs and get the best deals. Helping Tasmanian households become more energy efficient will help people save money on their energy bills. It is one of the key ways we can all reduce our energy use and use energy more sustainably.



Key targets

- Maintain and further strengthen Tasmania's energy security framework.
- Ensure Tasmanian customers have the tools and information they need to manage their electricity use, lower bills, and access new products and services.

ACTION:
Continue support for energy efficiency programs.

Improving energy efficiency is one of the best ways for households to take control of their energy use, reduce their energy bills, improve their health and use their energy more wisely.

The Tasmanian Government will continue to help households and those on low incomes who need help making their homes more energy efficient so that they can save money on their power bills. We will also help small business improve their energy efficiency.

ACTION:
Monitor, evaluate and rollout smart meters to Tasmanian households.

Smart meters are the new digital version of the traditional meter boxes that are attached to houses to work out how much electricity a household is using, and the size of its electricity bill. Installing smart meters will give electricity customers more control and better understanding of how they use their electricity. Aurora Energy has already installed over 50 000 smart meters across Tasmania.

If customers better understand how much electricity they use at home, they can use their electricity more efficiently and help save money.

**ACTION:
Manage Tasmania's Energy
Security Risk Response Framework
in response to COVID-19.**

Tasmanians can be assured the Government has taken action to safeguard Tasmania's energy supply as the COVID-19 pandemic continues to unfold. The ability for our energy supply sector to deal with COVID-19 has proven to be very strong.

This means that we have enough water in our dams, and energy from other sources, to power our homes and businesses during COVID-19.

We will continually review events surrounding COVID-19 as they develop to ensure the Tasmanian Government's energy framework is protected. This includes monitoring the supply of fuels such as petrol and diesel used in our cars and transport vehicles.

**ACTION:
Helping consumers use
new technologies.**

Technology advances, including digitalisation, are changing the way households and businesses use energy.

New technologies will help customers to access better information about how they use energy in their home or business. For example, how much energy they are using, at what time and at what price. This information may help customers save money and/or use less energy.

The Tasmanian Government is supporting the introduction of new technologies through reviewing national laws as well as through energy companies like TasNetworks and Aurora Energy.

Growing the economy and providing jobs (Priority 3)

Objectives

The Tasmanian Government is focussed on using renewable energy to benefit all Tasmanians through job creation, investment and economic growth. Growing Tasmania's renewable energy 'brand' nationally and globally will help create jobs for Tasmanians because it will help attract new renewable energy projects to Tasmania.

An important part of this is making sure Tasmanians can get the skills and training they need to find new jobs in the renewable energy sector.

Key targets

- Grow Tasmania's renewable energy 'brand' nationally and globally.
- Attract new energy intensive (high use) industries to Tasmania.
- Create thousands of new jobs and create up to \$7 billion of new investment in the renewables sector by 2030.

ACTION:
**Promote Tasmania as
a great place for clean,
low cost, energy.**

In the near future, Tasmania will be producing enough renewable energy for all of the houses and businesses in the state. This means Tasmanians will be able to say we are 100 per cent renewable.

Not many locations in the world can make this claim! It presents a great branding opportunity for Tasmanian businesses who want to show they are part of a sustainable energy system that helps keep the environment clean. The Government will further develop and promote the Tasmanian energy brand as a model for innovation and sustainability.

ACTION:
**Skills and training for
Tasmania's workforce.**

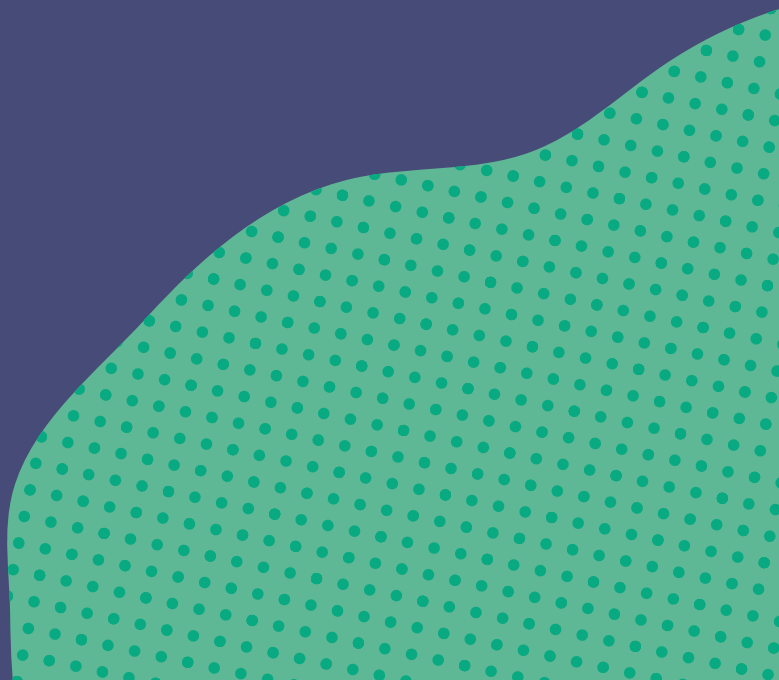
The Tasmanian Government wants to boost skills in Tasmania's renewable energy sector through a program called Energising Tasmania. Tasmania already has access to a highly skilled workforce in its renewable energy industries. Building on these skills will help the development of a renewable hydrogen sector, and provide training in key areas such as engineering, project management, civil construction and trades.

Creating a workforce with the right skills and training in renewable energy will also assist in creating a more efficient and sustainable energy sector in Tasmania and create jobs for the future.

Working with others

To help implement the Tasmanian Renewable Energy Action Plan, the Tasmanian Government will work with the Tasmanian community, including young people, and a range of other state and territory governments, industry, research organisations and community groups.

At the national level the Tasmanian Government is working to influence national energy policy.





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