



TASMANIAN RENEWABLE ENERGY ACTION PLAN



Contents

**TASMANIAN RENEWABLE
ENERGY ACTION PLAN**
DECEMBER 2020

Minister's foreword

1 Tasmania's renewable energy future – Why we need a Renewable Energy Action Plan
Page 3

2 Vision and priorities
Page 6

3 What has been achieved so far
Page 10

4 Our Tasmanian Renewable Energy Action Plan – Actions
Page 15

5 Making it happen – How we will deliver on our Renewable Energy Action Plan
Page 52

Minister's foreword



Tasmania is the renewable energy powerhouse of Australia. Our renewable energy resources and expertise in developing renewable energy is a 21st century competitive advantage. Tasmania is blessed with natural assets, we have world leading water and wind resources. By seizing Tasmania's immense potential, renewable energy can grow our economy, attract investment, create jobs and support Australia's transition to renewable supply.

As a result of COVID-19, there are unprecedented challenges facing Australian households and industries. Throughout 2020, the Tasmanian Government took decisive action to safeguard our energy supply as the pandemic unfolded. As we look to the future, our renewable energy developments will form an important part of rebuilding our economy.

Tasmania is Australia's leading renewable energy state. We have reached our goal to be self-sufficient in renewables, two years ahead of our 2022 target. We are the first state in Australia, and one of the first jurisdictions in the world, with 100 per cent renewable energy generation. This confirms our status as a world leader in clean energy generation.

Complementary to our renewable energy goals is a firm commitment to achieving the lowest regulated electricity prices in Australia for residential and small business customers by 2022. We are well on track to achieve this target, but we can and will do more.

We have legislated our target to double our installed renewable generation capacity with a target of 200 per cent of our current needs by 2040. Our Tasmanian Renewable Energy Target, or 'TRET', is a world leading goal. Far beyond our sister Australian states and territories, our goal is unmatched globally.

The opportunity to double our already significant renewable energy production, injecting billions into our economy and creating thousands of local jobs, improving energy security and placing downward pressure on electricity prices, will largely be realised through our nationally significant Project Marinus and Battery of the Nation projects.

Our \$50 million renewable hydrogen industry development support package is the largest out of all Australian states and territories. This will kick-start the renewable hydrogen industry in Tasmania, creating hundreds of additional jobs and injecting further billions into our economy.

Renewable hydrogen has the potential to be Tassie's superpower and, underpinned by our nation leading renewable energy generation credentials, is a competitive advantage we are seeking to maximise to create a new growth sector for the state.

Tasmania aspires to lead the way as a region for new and expanded industrial developments on-shore – where manufacturing, commercial and industrial operations can directly access our low cost, reliable and clean electricity resources.

In fact, we will continue our strategy of utilising renewable energy as a key economic driver that benefits all Tasmanians through job creation, investment and economic development.

Tasmanians can be proud that our renewable energy generation is at the heart of Tasmania's nation leading climate action plans, helping to reduce our emissions and those of the nation.

We have achieved our target of net zero emissions four years in a row and we still have the lowest per capita emissions of all states and territories.

Proudly, we are also one of the lowest net emitters of carbon dioxide on the planet, having reduced emissions by 95 per cent from 1990 levels.

Renewable energy is consistent with our pure, fresh and natural Tasmanian 'brand' which is best represented by our low cost, reliable, clean energy.

It cannot be ignored that we produce nearly a quarter of Australia's renewable energy, while Tasmanians consume just two per cent of the nation's energy.

We remain committed to continuing to promote and develop Tasmania's renewable energy brand both nationally and globally, ensuring we become an example for the rest of the world to follow.

Importantly, Tasmanians come first and are central to our goal to deliver Tasmanian residents and small businesses the lowest possible regulated electricity prices. As the energy market undergoes rapid transformation and technological change, we will ensure that Tasmanian customers are empowered to manage their energy needs and take advantage of new technology and market offerings.

This version of the Tasmanian Renewable Energy Action Plan articulates our vision and a suite of actions to develop renewable energy generation in Tasmania over the coming twenty years.

Our plan will define the pathway to securing a renewable energy future, creating thousands of local jobs, strengthening our economy and ensuring energy remains affordable and accessible.

This is the beginning of a new era of renewable energy expansion for Tasmania – one to rival the immense achievements of our past. This will be achieved in context of the deep challenges facing the Australian energy sector as it transitions to one based on renewable energy generation sources.

The Tasmanian Renewable Energy Action Plan will establish the platform to transform Tasmania from being Australia's renewable energy powerhouse into a world leading provider of clean, reliable and affordable energy.

Importantly, the Tasmanian Renewable Energy Action Plan will be a dynamic and living document that will be regularly reviewed to ensure relevancy to the broad transition facing the Australian Energy sector as well as changing needs of our community

We welcome the opportunity to share our vision, and I encourage you to engage with the exciting opportunities and initiatives that our Tasmanian Renewable Energy Action Plan presents.

Hon Guy Barnett MP
Minister for Energy



I. Tasmania's Renewable Energy Future

Why we need a Renewable Energy Action Plan

Tasmania has some of the best renewable energy resources in the world. Energy systems in Australia and globally are currently undergoing a rapid transition from fossil fuels to renewables-based energy generation. Nationally, all Australian states and territories have set ambitious renewable energy or emissions reduction targets to drive investment in renewables and move to clean energy. This shift in energy production represents a significant economic opportunity for Tasmania.

Tasmania is Australia's only state, and one of the few locations globally, that has achieved 100 per cent self-sufficiency in renewable energy generation. This means Tasmania now has the installed capacity to meet our annual electricity needs from on-island renewable energy generation. Tasmania is now generating, on average, over 10,700 gigawatt hours (GWh) per year.

This status, backed by our long history of investment in renewable electricity generation, gives Tasmania a significant competitive advantage as an investment destination for major renewable energy projects, nationally and globally. Tasmania is blessed with an abundance of competitively priced, reliable and clean renewable energy which is underpinned by our world class wind and water resources.

Tasmania's renewable energy sector is undergoing unprecedented growth and expansion. Nationally significant projects such as Project Marinus and Battery of the Nation are being actively progressed and there has been major expansion in wind farm investment. Tasmania is also pursuing the opportunity to become a leader in the emerging global renewable hydrogen industry. The Government's *Tasmanian Renewable Hydrogen Action Plan* sets out a pathway to ensure our growing renewable energy resources can underpin the quest to become a leader in large-scale renewable hydrogen production. There are also opportunities to develop the state's emerging biomass and ocean energy sectors.

To drive investment and expansion of the renewable energy sector, the Government has recently legislated the Tasmanian Renewable Energy Target (TRET). The TRET will increase the state's renewable energy output equivalent to 200 per cent of renewable electricity generation levels (set at a baseline of 10,500 GWh). This means that by 2040, Tasmania will produce twice as much renewable electricity as the 10,500 GWh baseline.

As part of this journey, the Government has also set an interim target of 15,750 GWh of electricity generation from renewable energy sources by 2030 (a target of 150 per cent). The TRET goes far beyond other Australian states and is unmatched globally.

In early 2021, the Government will publish for consultation its Renewable Energy Coordination Framework (the Framework) which sets out the actions to support the renewable energy growth required to achieve our TRET. Central to the Framework is ensuring that the benefits from renewable energy projects, such as jobs and investment, are maximised for local communities. It will also ensure that local communities are listened to, and fully consulted when large scale renewable energy developments are proposed.

With Tasmania's renewable energy sector growing as never before, now is the time to set a clear pathway for Tasmania.

The Tasmanian Renewable Energy Action Plan (TREAP) details the Government's vision for our renewable energy future. It sets clear targets and actions designed to build on Tasmania's natural competitive advantages and attract large scale investment to significantly grow and expand Tasmania's renewable energy sector into the future.

With Tasmania's
renewable energy sector
growing as never before,
now is the time to set
a clear pathway for
Tasmania.





Tasmania is in a unique position as a leader in renewable energy given our history of development and our world class energy resource.



2. Vision and Priorities

The Tasmanian Government has identified renewable energy as a key economic driver for the future. The Tasmanian Renewable Energy Action Plan (TREAP) will be key to the Government's vision of utilising renewable energy to benefit all Tasmanians through job creation, helping our environment and driving investment and economic growth.

Our TREAP will deliver for Tasmanians in three key priority areas:

Tasmania is in a unique position as a leader in renewable energy given our history of development and our world class energy resources. In Tasmania, we have the potential to build a truly sustainable, prosperous, 21st century economy based on affordable reliable, clean energy that will create jobs and also play a major role in reducing carbon emissions across Australia.

1 **Transforming Tasmania** into a global renewable energy powerhouse

2 **Making energy work** for the Tasmanian community

3 **Growing the economy** and providing jobs



Stakeholder & Community Consultation

MAY 2020 CONSULTATION

In May 2020, the Government published its Draft TREAP and a consultation period was held from 22 May 2020 to 11 September 2020. Thirty-three consultation responses were received from stakeholders, ranging from Government-owned energy businesses, wind farm operators, academic and research institutions, business organisations, community groups, and members of the public. The key message from the consultation was overwhelming support from respondents for the expansion and growth of Tasmania's renewable energy sector. Copies of submissions can be found under Consultation at:

www.renewabletasmania.tas.gov.au

SNAPSHOT OF KEY ISSUES RAISED DURING CONSULTATION

Tasmanian Renewable Energy Target (TRET) Overwhelming support for the 200 per cent Renewable Energy Target.

Development of a renewable hydrogen industry

Strong support for a renewable hydrogen industry. The potential for hydrogen to decarbonise major industries and transport were identified as key opportunities.

Engaging with local communities

The need to undertake a best practice approach to engaging with communities when large scale renewable energy developments are planned to secure community support was identified as a high priority.

Project Marinus

Project Marinus was identified by a number of stakeholders as being central to Tasmania achieving its renewable energy objectives and, in particular, the TRET. Ensuring that Tasmanians only pay an appropriate and equitable cost for Project Marinus was identified as a key issue.

In these challenging times with the impacts of the COVID-19 crisis continuing, it is more important than ever to build resilience into our economy.

As part of the wider post COVID-19 economic recovery strategy, the Tasmanian Government has committed to focus on the role that the renewable energy sector can play in boosting jobs and investment. The TREAP will be key to this goal and describes a comprehensive strategy to drive and support the long-term growth of our renewable energy sector.

Establish Renewables Tasmania

The importance of Renewables Tasmania's role in renewable energy development was recognised with particularly strong support for its establishment from the University of Tasmania (UTAS) and Cradle Coast Authority.

Development of Bioenergy opportunities

A number of stakeholders identified opportunities for bioenergy including the production of biofuels, biogas and converting waste streams into bioenergy.

Skills and Training

Ensuring that Tasmanian workers have access to the skills and training that an expanding renewable energy sector will require, was identified as an action of key importance.

CHILDREN'S AND YOUNG PEOPLE'S CONSULTATION

In addition to the formal consultation on the TREAP, the Department of State Growth partnered with the Commissioner for Children and Young People (CCYP), to undertake a dedicated consultation with young people on the TREAP and produced a young people and child friendly version of the TREAP. The children's and young people's consultation on the TREAP commenced on 22 September 2020 and closed on 22 October 2020.

This is the first time that the Government has specifically sought to directly engage with, and seek the views of, young people in relation to a major policy initiative.

Representatives from the Department also attended the Commissioner's State-wide Ambassadors Event on 25 September 2020 and received a number of submissions from the young Ambassadors on the day. The Department received 82 submissions from young people and children, attesting to the importance they place on issues, such as climate change and renewable energy.

SNAPSHOT OF KEY ISSUES RAISED DURING THE CHILDREN'S AND YOUNG PEOPLE'S TREAP CONSULTATION

Overwhelming support for the 200 per cent target – respondents saw the TRET as an important mechanism to ensure the Government is accountable and shows leadership in achieving it.

High level of support for turning waste streams into bioenergy and producing biofuels were identified as key opportunities.

High level of support for major renewable energy projects (although some respondents raised concerns about the cost implications and the affordability of electricity prices).

Overwhelming support for electric vehicles.

Overwhelming support for renewable energy as part of the Tasmanian 'Brand'.

Listening to our stakeholders – Consultation response and actions

The Government is highly appreciative of the number of responses it has received from both the May 2020 consultation and from the Children and Young People's consultation on the draft TREAP. The submissions and other discussions have been extremely helpful in assisting the Government refine and finalise the TREAP. The new ideas and recommendations raised during the consultation have played a key role in developing a number of new Actions which have been added to the final Plan. These new Actions are identified as NEW ACTIONS in the Plan. More details on these Actions are provided in Section 4.



3. What has been achieved so far

KEY ACHIEVEMENTS AND HIGHLIGHTS SINCE THE MAY 2020 PUBLICATION OF THE DRAFT TREAP

Achieving 100 per cent self-sufficiency in renewable energy generation before 2022

One of the Tasmanian Government's key election commitments in 2018 was that Tasmania would become 100 per cent self-sufficient in renewable energy by 2022.

On 27 November 2020 the Government announced that Tasmania has met its target well ahead of 2022 and is 100 per cent self-sufficient in renewable energy, confirming Tasmania's status as a world leader in renewable energy generation.

Tasmania is the first state in Australia and one of only a handful of jurisdictions in the world to achieve this target. Further information is available under 100% target achieved at

www.renewablestasmania.tas.gov.au

Legislation of the world-leading Tasmanian Renewable Energy Target (TRET) of 200 per cent of our 2022 baseline of 10,500 GWh of renewable energy generation by 2040, has been passed by the Tasmanian Parliament

Legislation to formalise the world leading TRET passed in both Houses on 18 November 2020. The legislation will establish the TRET and an interim renewable energy target. Legislating the TRET will provide confidence for investment in new renewable energy projects, ranging from distributed energy resources (generation units that are located on the consumer's side of the meter and include rooftop solar PV units, battery storage, electric vehicles and chargers) to large scale hydro, wind and solar generation.

Legislating the TRET represents one of the first major achievements in implementing the TREAP.

Establishment of Renewables Tasmania

The draft TREAP committed the Government to establish Renewables Tasmania to better plan, coordinate and promote the development of renewable energy in Tasmania.

In December 2020, the Department of State Growth launched the Renewables Tasmania website (www.renewablestasmania.tas.gov.au). Renewables Tasmania will spearhead communication of the State's renewable energy opportunities as work continues with key stakeholders to drive the Government's renewable energy policy agenda.

Facing page: Tanya Dennison from Cradle Coast Authority's Future Energy Hub at Lake Cethana

Renewables Tasmania will also deliver efficient, transparent regulation of the Tasmanian energy sector; oversight of energy security under the Risk Response Framework, and support the Tasmanian Government in influencing national energy policy.

Implementation of the Tasmanian Renewable Hydrogen Action Plan – Completion of initial funding round

The centrepiece of the Tasmanian Renewable Hydrogen Action Plan is the Tasmanian Government's \$50 million Tasmanian Renewable Hydrogen Industry Development Funding Program (Funding Program). This program is the largest out of all Australian states and territories.

The Funding Program was launched in May 2020. In November 2020, the Tasmanian Government announced that \$2.6 million of the Tasmanian Renewable Hydrogen Fund was being allocated to support feasibility studies for three large-scale renewable hydrogen projects in Tasmania. The Government will support the progression of the feasibility of these large-scale projects and other hydrogen investment projects through the Office of the Coordinator-General.

Bilateral Energy and Emissions Reduction Agreement with the Australian Government

On 15 December 2020, the Tasmanian and Australian Governments signed a Memorandum of Understanding (MoU) Bilateral Energy and Emissions Reduction Agreement. Key elements in the MoU include a commitment that the Australian and the Tasmanian Governments will work towards finalising governance, ownership and funding arrangements to progress Project Marinus to a final investment decision.

Under the MoU, the Governments will jointly provide a further \$132.9 million, comprising \$39 million from the Tasmanian Government and \$93.9 million from the Australian Government, to set up a Special Purpose Vehicle to progress Project Marinus to a Final Investment Decision. The MoU also includes a commitment from the Australian Government to consider the inclusion of the Tarraleah Power Station upgrade as part of its considerations in the first half of 2021, to underwrite Hydro Tasmania's Battery of the Nation projects. As part of the MoU signing, the Minister for Energy announced that Cethana was the preferred pumped hydro site and further work will be progressed on this site.



Key achievements at a glance



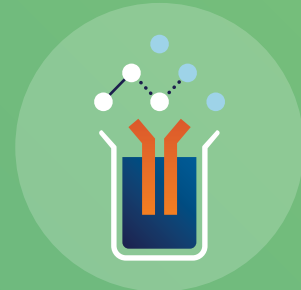
TARGET

Achieved 100% self-sufficiency in renewable energy generation before 2022



LEGISLATION

Legislated the world-leading Tasmanian Renewable Energy Target of 200% of our current needs by 2040



HYDROGEN

Implementation of the Tasmanian Renewable Hydrogen Action Plan – completion of initial funding round



MoU

Signed Bilateral Energy and Emissions Reduction Agreement with the Australian Government to further progress Project Marinus and the Battery of the Nation initiatives

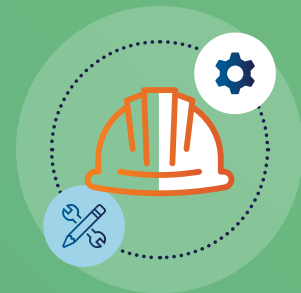


RENEWABLES

Established to coordinate all elements of the Government's renewable energy policy agenda and to continue to oversee the management and regulation of our energy sector

Launched


www.renewablestasmania.tas.gov.au



SKILLS & TRAINING

Rollout of Energising Tasmania's skills and training initiative

The Australian Government has also committed to 'fast track' Project Marinus approvals process under the Australian Government's "JobMaker" infrastructure plan. The Australian Government's 'Technology Investment Roadmap' discussion paper (which is a strategy to accelerate development and commercialisation of low emissions technologies) has also identified Project Marinus and Battery of the Nation as critical energy developments for further pumped storage and interconnection in the National Electricity Market.



The Tasmanian Government has recently set a target to transition 100 per cent of the Government's vehicle fleet to electric vehicles by 2030.

Rollout of Energising Tasmania's skills and training initiative

Skills Tasmania is responsible for administering the \$16.1 million Energising Tasmania skills and training initiative with the Australian Government. This four-year program will support Tasmania to develop a skilled workforce equipped with the expertise needed for the Battery of the Nation initiative, Project Marinus, a Tasmanian renewable hydrogen industry, and other related projects in Tasmania. Energising Tasmania is now fully underway.

The Tasmanian Energy and Infrastructure Workforce Advisory Committee was established to oversee the implementation of the Energising Tasmania initiative.

In December 2020, an industry-led workforce development plan (Stage 1) was released with the intention of informing and driving priority training, and identifying actions that will support necessary workforce development. The workforce development plan maps out the skills and training requirements across major energy projects in Tasmania for the next seven years.

Rollout of state-wide electric vehicle charging network

The Tasmanian Government is facilitating the rollout of a state-wide electric vehicle charging network, including the installation of 14 fast charging stations at 12 strategic locations around the State. Leading by example, the Tasmanian Government has recently set a target to transition 100 per cent of the Government's vehicle fleet to electric vehicles by 2030.







4. Our Tasmanian Renewable Energy Action Plan Actions



**In November 2020,
Tasmania achieved
its status of being
100 per cent self-sufficient
in renewable electricity
generation.**



PRIORITY ONE

Transforming Tasmania into a global renewable energy powerhouse

KEY TARGETS



TARGET 1

In November 2020, Tasmania achieved its status of being 100 per cent self-sufficient in renewable electricity generation



TARGET 2

By 2040 we will double our renewable electricity generation – with a target set of 200 per cent of our baseline of 10,500 GWh per year



TARGET 3

From 2030, Tasmania is a producer and exporter of renewable hydrogen

ACTIONS

STATUS

I.1	Tasmanian Renewable Energy Target Implementation Program	New Action
I.2	Introduce a Tasmanian Renewable Energy Guarantee of Origin Scheme	New Action
I.3	Implement the Tasmanian Renewable Hydrogen Action Plan	Substantially Progressed
I.4	Develop a Tasmanian policy framework to coordinate the renewable energy growth required to achieve the Tasmanian Renewable Energy Targets and to support Tasmanian large-scale renewable energy projects (the “Renewable Energy Coordination Framework”)	Substantially Progressed
I.5	Continue to progress Project Marinus and Battery of the Nation	Substantially Progressed
I.6	Undertake community consultation on an ambitious Net Zero Emissions Target	Commenced
I.7	Scoping study for the development of a Renewable Energy Centre of Excellence	Commenced
I.8	Develop Bioenergy Vision	Commenced
I.9	Reducing Transport Emissions Pathway	Substantially Progressed
I.10	Listening to, and engaging with, young Tasmanians on renewable energy developments	New Action
I.11	Renewable Energy Education Program	New Action
I.12	Gas Decarbonisation Pathway Study	New Action

OBJECTIVE

The Tasmanian Government is committed to transforming Tasmania into a global renewable energy powerhouse.

In 2018, the Government under its Tasmania-First Energy Policy, committed Tasmania to becoming 100 per cent self-sufficient in renewable energy generation by 2022. Tasmania has reached this milestone fully two years ahead of schedule.

This achievement sets the baseline for doubling our renewable energy generation to 21,000 GWh per annum by 2040. The TRET, in terms of its ambition, is unmatched globally.

The TRET is vitally important. It signals Tasmania's vision to produce more renewable energy than needed on island to export back to mainland Australia via the existing Basslink interconnector and new interconnection and supporting on-island transmission upgrades (Project Marinus).

As the key cornerstone of this objective, the Government will continue to support and progress major national renewable energy projects such as Battery of the Nation, Project Marinus, and existing and future wind farm developments, as well as the opportunities presented by our emerging ocean and biomass resources.

Using Tasmania's natural advantages and existing renewable resources, the Tasmanian Renewable Hydrogen Action Plan will ensure Tasmania is perfectly placed to benefit from the emerging global renewable hydrogen industry and we will continue to promote Tasmania as a premier destination for investment in clean energy projects.

However, the Government recognises that community support for large scale developments is necessary to ensure that renewable energy works for, and benefits the communities in the areas that these developments take place. The Government places a high priority on best practice stakeholder engagement, maximising local community benefits, and sound environmental practices. As such we are developing our Renewable Energy Coordination Framework, to be published in early 2021, to ensure that local communities are properly consulted with, their views taken into consideration and that community benefits are maximised when large scale renewable energy projects occur.

Tasmania will also continue to take a leadership role in efforts to respond to climate change. In 2021, this will include the Tasmanian Government undertaking an independent review of the *Climate Change (State Action) Act 2008*; and conducting a detailed analysis of the pathway Tasmania would need to take, to achieve a target of net zero emissions prior to 2050.



200%

1.1 Tasmanian Renewable Energy Target Implementation Program



STATUS: NEW ACTION

A key milestone for the implementation of the TREAP was achieved when legislation to implement the TRET, along with an interim target, was introduced into the Tasmanian Parliament in November 2020 and was passed by both Houses on 18 November 2020.

The Energy Co-ordination and Planning Amendment (Tasmanian Renewable Energy Target) Bill 2020 establishes the Tasmanian Renewable Energy Target (TRET) and interim target, setting the baseline 100 per cent self-sufficiency at 10,500 GWh and then the following goals that:

- by 31 December 2030, 15,750 GWh of electricity generated by equipment connected to the National Electricity Market in Tasmania, in at least one calendar year, is to be generated by utilising renewable energy sources; and
- by 31 December 2040, 21,000 GWh of electricity generated by equipment connected to the National Electricity Market in Tasmania, in at least one

calendar year, is to be generated by utilising renewable energy sources.

The key mechanism for delivering the TRET will be our Renewable Energy Coordination Framework (the Framework). The Framework will coordinate, support and drive the new investment in renewable energy needed to reach our 200 per cent target.

Open and transparent reporting on the progress of implementing the TRET is a key priority. As part of this process, the Director of Energy Planning will report regularly on the State's progress in meeting its renewable energy targets. Key elements in this reporting process will include:

- the progress made towards meeting the renewable energy targets (interim target and 200 per cent); and
- the performance of any schemes that are developed to drive investment and achieve our renewable energy targets.

The Director of Energy Planning will report on the progress of achieving the TRET as part of the Director's Annual Report. The Report is to be provided to the Minister for Energy by 31 October each year.

1.2 Introduce a Tasmanian Renewable Energy Guarantee of Origin Scheme



STATUS: NEW ACTION

Renewable energy is one of Tasmania's great competitive advantages. We are Australia's renewable energy powerhouse producing and exporting renewable energy into the

National Electricity Market (NEM) as well as being the first Australian State to achieve 100 per cent self-sufficiency in renewable energy generation. However, at present, the majority of Tasmania's hydro-electricity is considered 'below-baseline' under the Australian Government's Renewable Energy

Target, and does not attract renewable energy certificates that can be traded as a form of renewable energy currency. It also means that a proportion of hydro-electricity generated is unable to be traced to the customer. This major competitive advantage associated with Tasmania in being 100 per cent self-sufficient in renewable energy cannot be fully realised until our 'below baseline' renewable energy can be verified.

Working with the Clean Energy Regulator, Renewables Tasmania will develop an interim Tasmanian Renewable Energy Guarantee of Origin Scheme that will allow traceability and verification of all Tasmanian renewable energy generation. This scheme will appropriately recognise Tasmania's strong history of investment in renewable energy, and cement our competitive advantage as we seek to attract energy intensive industries

for which affordable, reliable and clean renewable energy is a key requirement. This is particularly important in relation to the development of a renewable hydrogen industry in Tasmania, representing a key first step towards a hydrogen certification scheme.

Whilst the Tasmanian Government continues to work with the Australian Government Department of Industry, Science, Energy and Resources (DISER) to develop a national hydrogen certification scheme, this scheme may not be operational until 2022 or 2023. The interim Tasmanian Renewable Energy Guarantee of Origin Scheme will become operational during 2021, ensuring that proponents seeking to establish projects in Tasmania have certainty that their project's renewable credentials are appropriately recognised.

ACTION

1.3 Implement the Tasmanian Renewable Hydrogen Action Plan



STATUS: SUBSTANTIALLY PROGRESSED

The global supply and use of energy is dramatically shifting as countries are looking to use cleaner, renewable forms of energy to decarbonise their economies. The use of hydrogen, produced from renewable energy, is emerging as a means of achieving these goals. Tasmania is in a unique position where a large-scale renewable hydrogen industry could be developed using competitively-priced existing and new renewables, including high capacity factor wind firmed by hydropower generation. Tasmanian renewable hydrogen could supply both domestic markets and export markets with local use providing valuable economic energy security and environmental benefits by reducing dependence on imported fossil fuels.

The Tasmanian Renewable Hydrogen Action Plan (TRHAP) is available at:

www.renewablestasmania.tas.gov.au

To achieve the vision and goals set out in the TRHAP, the Tasmanian Government is delivering \$50 million over 10 years for a comprehensive package of renewable hydrogen support measures that include:

- \$20 million Tasmanian Renewable Hydrogen Industry Development Fund;
- \$20 million in concessional loans;
- \$10 million worth of support services including competitive electricity supply arrangements and payroll tax relief;
- assistance for developing offtakes for hydrogen end-use; and
- facilitating land and infrastructure access.

These support measures are essential to “kick-start” the development of this emerging industry in Tasmania, and are expected to leverage significant private sector investment. An initial Funding Program that opened on 19 May 2020 is now closed. An independent Assessment Panel assessed the applications and made recommendations to Government. One of the recommendations was that the Government now advance a study on how a hydrogen offtake market can be developed in Tasmania. This study is due to be completed by the end of Q1 2021, and is expected to provide options on potential smaller scale projects that can demonstrate the production and end-use of renewable hydrogen in Tasmania. This will provide important information and analysis that can be used to streamline the implementation of future projects, and will also provide opportunities to increase public awareness and acceptance of producing and using hydrogen in Tasmania.

On 17 November 2020, the Tasmanian Government announced that \$2.6 million of the Tasmanian Renewable Hydrogen Industry Development Fund was being allocated to support feasibility studies for three large-scale renewable hydrogen projects in Tasmania. The studies being funded are:

- Origin Energy’s export scale green hydrogen and ammonia plant producing around 420,000 tonnes of green ammonia per annum, expected to be located at the Bell Bay Advanced Manufacturing Zone;
- ABEL Energy’s 100MW green hydrogen and methanol for export project at the Bell Bay Advanced Manufacturing Zone; and
- Grange Resource’s 90–100MW renewable hydrogen project to provide process heat for its industrial facility located at Port Latta.

The Government also announced the Fortescue Metals Group’s potential development of a 250MW hydrogen and green ammonia production facility at Bell Bay, which is targeted for an investment decision in 2021. The progression of the feasibility of these and other large-scale projects will be supported through the Office of the Coordinator-General.

More information about these projects can be found here:
www.renewabletasmania.tas.gov.au





This \$650 million redevelopment would unlock up to 220MW of flexible hydropower capacity and create around 250 jobs during peak construction.

ACTION

1.4 Develop a Tasmanian policy framework to coordinate the renewable energy growth required to achieve the Tasmanian Renewable Energy Targets and to support Tasmanian large-scale renewable energy projects (the “Renewable Energy Coordination Framework”)



STATUS: SUBSTANTIALLY PROGRESSSED

The Renewable Energy Coordination Framework is a policy framework to coordinate and support the renewable energy growth required to achieve our TRET. The policy focuses on efficiently delivering large-scale renewable energy projects, including the new transmission needed to bring about large scale generation projects and drive investment within our highly prospective Renewable Energy Zones.

The Department of State Growth will conduct a wide-ranging public consultation into the development of the Framework.

Community acceptance is essential to the support of the renewable energy vision.

The Framework will consider the issues that matter to local communities and identify ways to maximise the local benefits like local employment and business opportunities resulting from these projects. The focus will be on delivering best practice stakeholder engagement, community benefits, and accessibility of information.

We will also undertake a review of our regulatory approval and policy processes. This review will look at opportunities to encourage renewable energy development in appropriate locations, minimise land use conflict, and to provide Government interdepartmental coordination and consistency.

The draft Framework will be released for consultation early in Q1 2021.

ACTION

1.5 Continue to progress Project Marinus and Battery of the Nation



STATUS: SUBSTANTIALLY PROGRESSSED

Project Marinus and Battery of the Nation are two nationally important renewable energy projects that will be key to Australia's efforts to transition from fossil fuels to clean energy and reduce the nation's CO2 emissions. Since the publication of the May 2020 draft TREAP, the Australian and Tasmanian Governments have taken major steps in progressing both projects.

For Marinus Link, \$56 million has been committed from the Australian Government

through the Project Agreement for Marinus Link to progress the design and approvals phase of the project. This has been progressing since early 2020 with significant developments underway including completion of some surveys, technical design work, scoping of phase costs, resourcing of the project team, and progression of Regulated Investment Test for Transmission activities, stakeholder engagement, and a range of other critical activities.

For Battery of the Nation, Hydro Tasmania has committed up to \$30 million to identify the top pumped hydro site in Tasmania.

The feasibility work to-date has identified the top three pumped hydro sites being Cethana, Rowallan, and Tribute power stations. On 15 December 2020, the Minister for Energy announced that Cethana was the preferred pumped hydro site and work will be progressed on this site. Project Marinus is a proposed 1500MW capacity undersea electricity connection between Tasmania and Victoria. The two 750MW links and on-island transmission upgrades will allow Tasmania to export more of our renewable, reliable and dispatchable energy resources into the national electricity grid. Economic analysis indicates that in addition to delivering substantial energy market benefits, the project will deliver significant broader economic contributions from the development, construction, and operation of the Marinus interconnector and supporting transmission in Tasmania and Victoria. This includes economic value forecast of up to \$1.4 billion and 1,400 jobs in Tasmania and \$1.5 billion and 1,400 jobs in Victoria during peak construction. In addition, up to 2,350 jobs in Tasmania will also be created from further renewable energy and storage development over the life of the Project Marinus.

The combined investment in Marinus Link and new renewable energy developments will inject up to \$7.1 billion into the Tasmanian economy over the coming years.

In July 2020, the Australian Energy Market Operator (AEMO) released its 2020 Integrated System Plan (ISP). The ISP sets out a roadmap for the achievement of the NEM's future energy needs. The ISP identifies "actionable" projects that will help Australia's transition to clean energy generation. As a significant milestone, the ISP identified Project Marinus as "actionable" and absolutely required as part of the future NEM's optimal development pathway.

The ISP outlines that the first 750MW link of Project Marinus could be required from as early as 2028–2029, and the second link from as early as 2031–2032.

The actionable status of Project Marinus is subject to 'Decision Rules' including legislating the TRET and resolution of how the costs of the project will be recovered. The Tasmanian Government has taken action to progress both of these issues. Legislation to implement the TRET along with an interim target, was passed in the Tasmanian Parliament in November 2020.

The Australian Government is leading a national reform package with jurisdictions, including Tasmania, to determine a fair cost allocation for transmission infrastructure, such as Project Marinus. A fair cost methodology is a vital requirement to ensure that Tasmanians only pay their fair share for Project Marinus, noting that the benefits from Project Marinus largely flow to customers in mainland Australia.

Battery of the Nation

Hydro Tasmania's *Battery of the Nation* project looks at how the State's hydropower potential and pumped hydro opportunities can be unlocked through further interconnection. The first 750MW Marinus Link cable will unlock up to 500 megawatts of latent, available capacity in the existing hydropower system and make it available to the NEM. It will also trigger repurposing



elements of the existing hydro fleet, augmenting current assets to increase the megawatt capacity in the current schemes. The second 750MW Marinus Link cable creates the opportunity to develop the first Tasmanian pumped hydro project.

The Australian Government has committed to developing an underwriting mechanism for *Battery of the Nation*. The Australian Renewable Energy Agency (ARENA) has supported *Battery of the Nation* project studies with \$5.0 million in funding as part of its Advancing Renewables Program.

Power system upgrades – Tarraleah Scheme

The Tarraleah Scheme was built in the 1930s and is a critical part of the Tasmanian hydropower system. With appropriate financial and underwriting support, the first Marinus Link cable presents an opportunity to redevelop the Tarraleah Scheme to provide greater benefits for the NEM of the future. This \$650 million redevelopment would unlock up to 220MW of flexible hydropower capacity and create around 250 jobs during peak construction.

Commonwealth-Tasmania Bilateral Energy and Emissions Reduction Agreement Memorandum of Understanding (MoU)

The Australian and Tasmanian Governments have signed a MoU for the Energy and Emissions Reduction Agreement that recognises and further builds on the value of Tasmania's renewable energy opportunities. The MoU recognises the existing commitments made to Tasmanian energy projects, but importantly, also provides significant new commitments from both Governments to take our critically important Project Marinus and Battery of the Nation projects forward.

The MoU provides for the following:

Project Marinus

- The Governments will jointly provide a further \$132.9 million, \$39 million from the Tasmanian Government and \$93.9

million from the Australian Government, to set up a Special Purpose Vehicle (SPV) to progress Project Marinus to a Final Investment Decision. The target date for the SPV to be operational is 1 July 2021.

- The Governments have also agreed under the MoU to work together to achieve a fair cost transmission outcome for the Project.
- These commitments will ensure that the Design and Approvals (D&A) phase for Project Marinus can be completed, with a view to the Project being commissioned as early as 2027–28, consistent with the timing identified for the project under the Australian Energy Market Operators 2020 Integrated System Plan.
- The support in the MoU is in addition to the \$56 million grant provided by the Australian Government in 2019 through the Project Agreement for Marinus Link to commence the D&A phase.
- The MoU also includes a commitment from the Australian Government to consider the inclusion of the Tarraleah Power Station upgrade as part of its considerations in the first half of 2021 to underwrite Hydro Tasmania's Battery of the Nation projects.

Battery of the Nation (BotN)

- The State Government will provide a scoping document on the BotN projects by February 2021.
- The Governments will scope out initial underwriting options for the BotN projects by Q1 2021.
- The Australian Government will finalise options to provide adequate underwriting and/or financing support to enable a commercial final investment decision(s) on the agreed BotN hydropower projects.
- The Australian Government will consider a capacity upgrade of Tarraleah power station as part of its work program for BotN.

1.6 Undertake community consultation on an ambitious Net Zero Emissions Target



Tasmania has a unique greenhouse gas emissions profile in comparison with other Australian jurisdictions, due to the longstanding investment in renewable energy and the carbon sink in our forests.

In 2015, Tasmania became the first Australian jurisdiction to achieve net zero emissions, which was a significant achievement. Based on the latest available data, Tasmania has achieved its commitment of net zero emissions by 2050 for the fourth year in a row.

By continuing to take action to reduce on-island emissions and support Australia's transition to a low-carbon future, Tasmania can maintain its status as a global leader on climate change action.

The Tasmanian Government recognises that there is the opportunity to set a more ambitious net zero emissions target for the State. In 2021, the Government will conduct a detailed analysis of the pathway Tasmania would need to take to achieve a target of net zero emissions prior to 2050, with consideration given to the potential challenges and opportunities on industries and employment. The review of the target will be informed by a strong scientific and economic evidence base, and community consultation. Developing practical options to further reduce emission across Tasmania's economy will be key to this work. The Tasmanian Government will work with the Australian Government, local Government, Tasmanian businesses and major industry, to further drive and enhance the State's emission reduction strategies.

Consultation on the options to set a more ambitious net zero emissions target will be undertaken in 2021 as part of the next independent review of the *Climate Change (State Action) Act 2008* (the Act). The broad focus of this review will be to strengthen Tasmania's legislative framework for taking action on climate change, and ensure it provides a sound foundation for our climate change mitigation and adaptation initiatives. The review of the Act will also inform Tasmania's next Climate Change Action Plan for 2021 onwards.

The views and opinions of young people will be sought through broad community consultation and also through engagement with the Premier's Youth Advisory Council.



1.7 Scoping study for the development of a Renewable Energy Centre of Excellence



STATUS: COMMENCED

Tasmania already has world class renewable energy research and development capabilities through the University of Tasmania's Centre for Renewable Energy and Power Systems (CREPS), the Blue Economy Cooperative Research Centre (Blue Economy CRC), the Australian Maritime College and the significant skills and knowledge base of the State's energy businesses and associated sectors. Tasmania's expertise in renewable energy generation is already sought after by international markets, with commercial partnerships underway in the Indian subcontinent, South East Asia and the South Pacific amongst others.

A future Renewable Energy Centre for Excellence would seek to harness these existing resources and capabilities through

a partnership between industry, the research sector, academic institutions and Government. A Tasmanian Renewable Energy Centre for Excellence has the potential to establish a world class centre for innovative research, training and collaboration required to support growth in the renewable energy sector.

There is also an opportunity to interact or partner with other Tasmanian-based initiatives that have alignment with renewable energy development. The Department of State Growth has consulted with key stakeholders including UTAS and the Blue Economy CRC in relation to the scope and objectives of a potential Renewable Energy Centre for Excellence and will commission a formal scoping study to test the viability of the concept in Q1 2021.

1.8 Development of a Bioenergy Vision for Tasmania



STATUS: COMMENCED

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

Tasmania has an abundance of underutilised industrial, municipal, agricultural and forestry waste and the Tasmanian Government is seeking to accelerate the adoption of bioenergy.

The Department of State Growth has consulted with, and received advice from industry experts such as Bioenergy Australia and participated in the Australian Biomass for Bioenergy Assessment Project. A range of scientific publications, including the Tasmanian Government's 2016 Indofur Report, have also identified significant potential for bioenergy in Tasmania. The Government has listened to these experts and will develop a Bioenergy Vision in consultation with industry and stakeholders over the next 12 months. The Bioenergy Vision will identify how the State can unlock private sector investment in bioenergy in Tasmania,

increasing employment, reducing waste and greenhouse gas emissions while producing more Tasmanian renewable energy. Renewables Tasmania will explore options to use bioenergy to decarbonise by displacing fossil fuels used in heat generation and the production of transport fuels. Renewables Tasmania will also examine the feasibility of replacing boilers in Government buildings that currently run on fossil fuels, with renewable energy sources including boilers that use biomass as their feedstock.

In developing the Bioenergy Vision, the Government will also consider where bioenergy provides a waste solution supporting the circular-economy, as well as how bioenergy can support the agricultural and forestry sectors to grow and become more competitive. Importantly, the development of a Bioenergy Vision will focus on using waste and residues.

The Bioenergy Vision will be completed in Q4 2021.

ACTION

1.9 Reducing Transport Emissions Pathway



STATUS: SUBSTANTIALLY PROGRESSED

Transport is a significant source of Tasmania's greenhouse gas emissions and vehicle fleet costs are a considerable expense for the Tasmanian Government, local government, the private sector and the community.

Tasmania is ideally placed to benefit from a growing electric vehicle market. When powered by locally-produced renewable energy they have the potential to improve the efficiency of the State's vehicle fleet, through reduced transport costs and emissions. Electric vehicle uptake reduces Tasmania's dependence on imported liquid fossil fuels and increases demand for our clean renewable energy.

The Tasmanian Government has made significant progress to support electric vehicle uptake, in partnership with the cross-sectoral Electric Vehicle Working Group. This includes facilitating the rollout of a state-wide electric vehicle charging network. Since 2018, the Tasmanian Government has provided over \$600,000 in funding through the ChargeSmart Grants Program to support a state-wide electric vehicle charging network including 14 fast chargers across Tasmania, and 23 workplace and destination chargers.

This new infrastructure will provide a convenient charging network for locals, as well as tourists who wish to travel around the State in electric vehicles.

The Tasmanian Government has supported a variety of events to increase community awareness of electric vehicles, including community electric vehicle 'try and drive' events, electric bike expos and a driverless electric bus demonstration. The Government has also supported vehicle fleets to prepare for electric vehicle uptake through the Smarter Fleets Program, including local government fleets and Tasmanian Government agency fleets.

As a key next step, the Tasmanian Government has committed to continue its proactive leadership approach by transitioning the Tasmanian Government fleet to 100 per cent electric vehicles by 2030. The target will be underpinned by the development of a new strategy which will incorporate broader actions to improve the efficiency of the Tasmanian Government vehicle fleet.

Incorporating electric vehicles into the Tasmanian Government fleet will stimulate demand for the technology locally, raise community awareness through exposure, and contribute to the second-hand electric vehicle market in the State.



Metro Tasmania will also trial zero emissions buses in the State (battery electric or hydrogen), to explore opportunities for the State's public buses to be powered by locally generated renewable energy. This will see a northern and southern trial of zero emissions buses underway within the next two years. Supporting electric vehicle uptake aligns with the Tasmanian Government's commitment to generate 200 per cent of the State's electricity needs from renewable energy by 2040, and fast-track a renewable hydrogen industry.

Tasmania's Renewable Hydrogen Action Plan identifies the value to the transport industry of a thriving 'green hydrogen' sector in Tasmania. To this end, the Tasmanian Government will investigate opportunities for the use of hydrogen transport technologies in the State, with an initial focus on 'return-

to-base' transport activities, such as buses, fleet vehicles, freight (including road and rail) and marine applications (such as ferries and barges). The optimised deployment and use of hydrogen refuelling infrastructure will also be investigated.

To bring all these initiatives together, the Government will consult with the community in 2021 to develop Tasmania's next whole-of-government Climate Change Action Plan which will consolidate current and new actions to reduce emissions from the transport sector. This will include a focus on supporting electric vehicle uptake (battery electric and hydrogen fuel cell) and biofuels. The Tasmanian Government will continue to utilise the cross-sectoral Electric Vehicle Working Group to develop a coordinated approach to support electric vehicle uptake.

ACTION

1.10 Listening to, and engaging with, young Tasmanians on renewable energy



STATUS: NEW ACTION

The Government recognises that climate change is one of the most important issues for young people. This became clear when we undertook a dedicated consultation with young people on our plans for Tasmania's renewable energy future and produced a young persons and child friendly version of the TREAP. We received over 80 responses from young Tasmanians who commented not just about renewable energy but a range of other related climate change issues. One clear message from the consultation was that Government needs to more fully engage and listen to young people on the issues of importance to them.

The Government has listened, and recognises the importance of seeking out the views of young people. As a new Action in the TREAP, the Tasmanian Climate Change Office will work with existing youth networks, like the Premier's Youth Advisory Council (PYAC), as part of the consultation process for developing the next Climate Change Action Plan.

The Department of State Growth will commit to providing regular updates to the PYAC on energy issues.

1.11 Renewable Energy Education Program



STATUS: NEW ACTION

In September 2020, the Government undertook a targeted consultation with young people on its plans and reasons for growing and expanding Tasmania's renewable energy sector. The responses and feedback revealed young Tasmanians are highly engaged and passionate about climate change, sustainability issues, the role renewable energy can play in our economy, community and helping build a more sustainable future. As the Government has identified renewable energy as key to Tasmania's future, it is important that we continue our engagement and conversations with young people.

To support broader conversations on renewable energy, the Department of State Growth will work with the Department of Education to develop a Renewable Energy Education Pack for Tasmanian schools. The Renewable Energy Education Pack will provide an overview of the TREAP and information sheets explaining the different forms of renewable energy, as well as how renewable energy is addressing climate change, creating jobs and growing our economy. Understanding how pumped hydro works, what Project Marinus can achieve, and what a future Tasmanian renewable hydrogen industry could look like, will be some of the topics that the Renewable Energy Education Pack will provide information on for young Tasmanians.

1.12 Gas Decarbonisation Pathway Study



STATUS: NEW ACTION

Decarbonisation means reducing greenhouse gas emissions into the atmosphere, through the replacement of fossil fuels with a renewable or no-carbon energy source. Tasmania's energy generation is dominated by renewable energy. However, other energy sources play an important part of the State's energy mix. The Tasmanian Government recognises the role natural gas plays in our economy, supplying both domestic consumers and as a key input for major industrial customers.

While Tasmania's gas sector is far smaller than in other Australian States, there are significant opportunities to decarbonise our natural gas networks. In Tasmania, we have the potential to decarbonise our gas networks via

two key pathways – the utilisation of locally produced renewable hydrogen; and, through the production of biogas. Biogas consists of methane and can be produced from raw materials such as agricultural waste, municipal, waste, plant waste and sewage. Biogas emits net zero CO₂ and is classified as part of the natural carbon cycle under the Australian National Greenhouse Gas Accounting Framework.

Tasmania has already taken the first steps to progress the development of these two renewable gasses with the implementation of our \$50 million Tasmanian Renewable Hydrogen Industry Development Funding Program and the development of a Tasmanian Bioenergy Vision. A key action under the renewable Tasmanian Renewable Hydrogen Action Plan is to work with Tasmania's natural gas distribution



network infrastructure owner to explore opportunities for hydrogen blending at 10 per cent and to investigate potential trials of higher hydrogen blends.

The development of a Tasmanian Bioenergy Vision will also include an analysis of the potential for production of biogas as an energy fuel. Renewables Tasmania will leverage these two workstreams and conduct additional analysis as part of its work on the future of the gas industry in Tasmania, to understand what a gas decarbonisation pathway would look like. This study will identify the key opportunities, barriers, network infrastructure and regulatory issues to set out a potential pathway to decarbonise Tasmania's gas sector.

The gas decarbonisation pathway study will be delivered in Q4 2021.

Amongst the challenge of the pandemic, the Government's commitment to lowering the cost of living for Tasmanians has continued.

2

PRIORITY TWO

Making energy work for the Tasmanian community

KEY TARGETS



TARGET 1

Ensure regulated electricity prices remain affordable with the target to achieve the lowest regulated electricity prices in the NEM by 2022



TARGET 2

Maintain and further strengthen Tasmania's energy security framework



TARGET 3

Ensure Tasmanian customers have the tools and information required to manage their electricity use, lower their bills where possible and access new products and services

ACTIONS

STATUS

2.1	Support electricity consumers during COVID-19	Ongoing
2.2	Establish a wholesale pricing framework that results in affordable electricity prices for Tasmanian consumers	Substantially Progressed
2.3	Manage Tasmania's Energy Security Risk Response Framework in response to COVID 19	Ongoing
2.4	Customer Empowerment Blueprint	New Action
2.5	Continue rollout of On-Farm Energy Initiatives	Substantially progressed
2.6	Continue support for energy efficiency programs	Ongoing
2.7	Empower consumers through influencing the National Energy Policy Agenda	Ongoing

OBJECTIVE

Ensuring Tasmanians have access to reliable, secure and affordable energy is a key Government priority.

Currently there are unprecedented challenges facing Australian households and industries as a result of COVID-19. The Government has taken action to safeguard Tasmania's energy supply as the COVID-19

pandemic continues to pose challenges for the Tasmanian community. As part of the TREAP, the Government will maintain Tasmania's energy security framework against any future energy security challenges.

Amongst the challenge of the pandemic, the Government's commitment to lowering the cost of living for Tasmanians has continued. Regulated power prices decreased by 1.38 per cent from 1 July 2020, ensuring

Tasmanians continue to experience some of the lowest regulated prices in the nation according to the Tasmanian Economic Regulator's July 2020 report on the national comparison of standing electricity prices.

The Government has commenced a review into wholesale electricity prices to minimise

volatility in prices which will assist in meeting its target to deliver the lowest regulated electricity prices in the NEM by 2022.

Ensuring that Tasmanian customers are empowered to manage their energy needs and take advantage of new technology and market offerings will also be a key priority.

ACTION

2.1 Supporting electricity consumers during COVID-19



STATUS: ONGOING

The Tasmanian Government has taken decisive action to support electricity customers during COVID-19.

During the COVID-19 pandemic, the Government provided relief on electricity bills, including a 100 per cent waiver to eligible small business customers and community service organisations. The Government also provided support to customers in embedded networks and is continuing to help small businesses with a second round of \$1,000 one-off grants available to support eligible business customers to help meet their energy costs.

The Tasmanian Government recognises the ongoing impact of public health restrictions on our hospitality sector, which is why it will continue to provide temporary and targeted support for this industry, which employs thousands of Tasmanians across the State. It has **delivered** \$10 million in additional support for hospitality businesses, to ease cost of business pressures, and will provide a reimbursement up to a capped amount to help pay their energy bills – electricity and gas – from 1 July 2020 to 30 September 2020.

The Government continues to work alongside regulators and retailers alike to ensure that customers are protected during COVID-19 and it welcomes the Australian Energy Regulator (AER) 'Statement of

Expectations of Energy Businesses: Protecting consumers and the energy market during COVID-19'. The AER's Statement of Expectations extends important protections for energy customers who are worried about paying their bills, and the Government notes that major retailers in Tasmania have already committed to follow these expectations. The Statement of Expectations has been extended to apply until 31 March 2021.

Aurora Energy acted early in the pandemic to assist its 280,000 residential and small business customers, as well as the broader Tasmanian community. This included establishing a COVID-19 Customer Support Program underpinned by a \$5 million fund, specifically to help residential and small business customers impacted by the pandemic. The COVID-19 Customer Support Program provides an array of payment relief mechanisms, including freezing debt, waiving fees and charges, and helping customers to manage their ongoing consumption through subsidised payment plans.

Aurora Energy also increased its support for Tasmania's community organisations. This included expanding its Community Fund and extending its Digital Capacity Building Grants, which were targeted to enable not-for-profits and community groups to purchase equipment needed for remote working. Aurora Energy has since launched another round of Community Grants funding, focussed on keeping communities connected.

ACTION

2.2 Establish a wholesale pricing framework that results in affordable electricity prices for Tasmanian consumers

 STATUS: SUBSTANTIALLY PROGRESSED

In 2018, as part of its Tasmania-First Energy Policy, the Tasmanian Government acted to protect electricity consumers from the volatility in wholesale contract prices. This was achieved via a combination of setting the wholesale price for regulated small customers, and through Government-funded rebates for larger customers through the retail market.

At the same time, the Government also instigated a review of the Tasmanian Wholesale Electricity Market Regulatory

Pricing Framework. Given high cost pressures coming from the Victorian market at that time, the Tasmanian Government committed to investigating options to remove price volatility caused by factors external to the State.

The Department of Treasury and Finance (Treasury) is undertaking a targeted consultation on potential reform options and models for the Wholesale Electricity Market Regulatory Pricing Framework

The results of this consultation and advice to Government on the final prepared model will be prepared by Treasury and presented to the Government by Q2 2021.

ACTION

2.3 Manage Tasmania's Energy Security Risk Response Framework in response to COVID-19

 STATUS: ONGOING

As a result of COVID-19, there are unprecedented challenges facing Australian households and industries. The Government has taken action to safeguard Tasmania's energy supply as the COVID-19 pandemic continues.

The resilience of our energy supply sector to deal with COVID-19 is very strong.

Tasmania has a proven and well-established framework in which to prepare for, respond to and manage potential and actual threats to energy security across all energy sectors. This framework enabled us to respond to the COVID-19 promptly and effectively,



with heightened awareness and increased monitoring across all energy sectors – electricity, natural gas, and liquid fuels. Under the framework, the Tasmanian Economic Regulator plays an important role as the designated Monitor and Assessor and, among other things, is responsible for providing independent oversight and transparent public reporting on the status of the State's energy security.

The statutory role of Director of Energy Planning has a pivotal role, and continues to be deeply engaged with industry participants to monitor and prepare for any COVID-19 impacts. Together, with active engagement in a number of national emergency forums during the pandemic, the operation of our energy security preparedness and heightened monitoring ensured that there were no disruptions to energy supplies in Tasmania. In addition, the Director of Energy Planning continues to perform the additional statutory role of the Energy Security Co-ordinator under the Energy Security Risk Response Framework. The Energy Security Co-ordinator has responsibility for coordinating responses to manage electricity supply risks when water storages are near or below an identified energy security reserve level, including reviewing any recovery plans provided by Hydro Tasmania to the Assessor.

As part of its role in maintaining Tasmania's energy security supply (electricity, natural gas and liquid fuels), the Department of State Growth has undertaken the following measures:

- liaised with Tasmanian energy suppliers to ensure robust continuity arrangements are in place to protect the delivery of these essential services;
- participated in national electricity, gas and liquid fuels groups focused on addressing energy sector COVID-19 related issues;
- contributed to the development of work health and safety assessments for energy sector COVID-19 safe workplaces;
- assisted with the assessment of energy related essential worker traveller requests; and
- contributed to government response planning for the pandemic.

The Tasmanian Government will continue to work with all levels of government and industry to continually review events surrounding all potential and actual threats to energy security, including COVID-19, as they develop. We will ensure that the Government's energy security framework and its energy businesses continue to be prepared to respond in an appropriate and timely manner to any and all threats to energy security.



2.4 Customer Empowerment Blueprint



STATUS: NEW ACTION

The Tasmanian Government will develop an “Energy Customer Empowerment Blueprint” to ensure Tasmanian customers are empowered to manage their energy needs and take advantage of new technology and market offerings.

The direct benefits of customer empowerment can be:

- increased knowledge of day to day energy usage patterns and behaviours;
- ability to shift and/or change energy usage behaviours;
- reduced customer bills through changed energy behaviours and selection of appropriate energy plans and services; and
- greater knowledge of energy services that fit customer profiles.

The Blueprint will be a four-year plan designed to enhance customer’s capacity and capability to be dynamic with their energy use and undertake greater participation in the Tasmanian energy sector.

Customer empowerment also benefits the energy sector as a whole. These benefits may include:

- customers are more likely to take advantage of better deals and prices from retailers which can lead to more efficient and timely use of energy. This allows for greater management and maintenance of the network; and
- customers with advanced technology can also inform network operators of any problems and outage locations in a timely manner.

To ensure the Energy Customer Empowerment Blueprint is delivered, a wide range of parties from regulators, retailers, distributors and broader community organisations will be consulted and engaged. Key performance indicators will be developed to assess the success of the Energy Customer Empowerment Blueprint in the form of a customer empowerment scorecard.

A critical element of customer empowerment is the use of advanced meters. The Government will continue to monitor the rollout of advanced meters across the State to ensure a smooth transition from the old analogue meters to the new advanced meters. In undertaking this monitoring, the Government is mindful of the benefits that advanced meter functionalities, such as remote reading of meters can bring to an electricity sector affected by COVID-19.

Since December 2017, Aurora Energy has coordinated the installation of over 75,000 advanced meters across Tasmania. As the result of Aurora Energy’s Pay As You Go (PAYG) system coming to the end of its usable life, over 20,000 customers on this product were among the first Tasmanians to have their basic meters exchanged with an advanced meter. Aurora Energy will continue to proactively prioritise the installation of advanced meters where it can enhance Tasmanian customers’ energy experience.

2.5 Continued roll-out of On-Farm Energy Initiative



STATUS: ONGOING

The Government is taking action specifically for farmers to provide them with affordable and predictable power prices including supporting improved on-farm energy efficiency as part of the \$6.25 million Energy on Farms Policy.

The State's electricity transmission and distribution network provider, TasNetworks has implemented emPOWERing Farms Trial, which is designed to help TasNetworks understand agricultural customers' energy needs and explore opportunities to maximise the use of the network as customers increasingly invest in new technology.

The five specific focus areas identified during the Trial were:

- Pricing
- New challenges, new needs
- Knowledge barriers

- Communication
- Connection process.

TasNetworks is currently prioritising the Communication and Knowledge Barriers focus areas, including developing a new online engagement platform. This platform will "go live" in December 2020 and provide customers with both updates on the status of the emPOWERing Farms Trial, and the ability to directly ask questions of TasNetworks. The portal will continue to add agricultural content over the first quarter of 2021, providing customers with network connection and pricing advice. TasNetworks is planning a "Load Assessment Trial", where customer consumption profiles will be captured and tariff analysis reports provided to the customers. These reports will help educate customers about how they use electricity and the best tariff options available to them.

TasNetworks will report the progress of the Load Assessment Trial at the end of Q1 2021.

2.6 Continue support for energy efficiency programs



STATUS: ONGOING

Improving energy efficiency is one of the most cost-effective ways for households to take control of their energy use, reduce their energy bills, improve their health and help take action to combat climate change. Improved energy efficiency also increases productivity for businesses.

The Tasmanian Government will continue the State's highly successful Energy Saver Loan

and Subsidy Program, run in conjunction with Aurora Energy and No Interest Loans (NILS) Tasmania.

As part of its COVID-19 response, the Government will be providing an extra \$1 million to increase the provisions of NILS to 2023–24. The increase in funding will enable further loans to be provided to Healthcare Card recipients

The NILS program provides a significant subsidy (of up to 50 per cent) toward the cost to purchase new energy efficient

appliances in conjunction with the no-interest loans scheme. Through the continued operation of the Energy Saver Loan and Subsidy Program, the Government will continue to help low income households lower their electricity bills by helping them invest in energy efficiency products for their homes.

The Tasmanian Government has also taken action with a range of targeted schemes to help Tasmanians improve their energy efficiency, and reduce cost of living pressures. These schemes include:

- Power\$mart Businesses provided support for Tasmanian small and medium-sized businesses, through co-funded energy efficiency audits, to identify opportunities to improve energy efficiency, and to reduce their power bills and emissions.
- \$15 million will be allocated for public housing heating and energy efficiency initiatives, which will ease the cost of living pressures for our public housing tenants. These funds will:
 - complete the Government's program of replacing inefficient direct electric heating and gas heating in all public housing stock with energy efficient heat pumps;
 - A second program will also begin to progressively replace the ageing existing standard electric hot water systems in public housing stock, with new heat pump hot water cylinders. This program will focus on replacing the oldest systems first, in around 1,200 public housing properties.

Together, these programs will increase energy efficiency and decrease operating costs both for tenants and in respect to ongoing maintenance. This investment will lead to lower power bills for Housing Tasmania tenants, reduce emissions and importantly, this investment also means more local jobs for Tasmanian suppliers and installers in every region of our State.

To support businesses looking to reduce their emissions, on 13 November 2020 the Government announced a \$10 million no-interest loan scheme for large Tasmanian greenhouse gas emitting businesses and industries to trial existing clean technologies or test new innovative production processes that will lead to reduced emissions.

The Government will continue to help low income households lower their electricity bills by helping them invest in energy efficiency products for their homes.



2.7 Empower consumers through influencing the National Energy Policy Agenda



STATUS: ONGOING

Technological advances, including digitalisation, are changing Australia's energy markets. Increasing digitalisation will facilitate more advanced customer engagement in energy markets and the development of new energy-related products and services. Enabling customers to access their energy data is key in allowing customers greatest choice of energy deals to find the best savings and deals and help lower emissions in the national electricity system through more efficient energy usage.

A significant part of the national work program is being undertaken by the Energy Security Board (ESB), known as Post 2025 Market Design. The ESB's post 2025 market design project will look at whether any changes to the NEM are required to accommodate the technological shift to a lower emissions electricity system.

The ESB is developing advice on how the national market design can be changed to enable the provision of the full range of services to customers necessary to deliver a secure, reliable and lower emissions national electricity system at least-cost.

One of the major workstreams under this project is to provide enhanced demand side participation. This is designed to unlock the potential benefits for customers so that they can better realise the benefits of technological change via increased participation in the market.

The work of the Post 2025 Market Design Project will analyse what regulatory changes need to occur to ensure the NEM can meet the increase in distributed energy resources, such as rooftop solar. The Tasmanian Government will continue to work with the

Australian and other state and territory governments to influence the national policy agenda for the benefit of Tasmanian energy consumers.

The Post 2025 Market Design Project model is due for consideration by Energy Ministers in July 2021.

There are also a number of other policy initiatives being developed at the national level. In line with the growth of technology and customer empowerment. One of these initiatives that the Government has strongly advocated for, is the implementation of the regulatory sandboxing. This framework will allow for the testing of innovative business models, which could include a new regulatory approach to peer-to-peer trading. On 26 March 2020, the Australian Energy Market Commission (AEMC) released its Final Report with its advice on rules required to implement regulatory sandbox arrangements in the national electricity and gas markets. This report can be found at:

www.aemc.gov.au

Other significant and emerging national reforms relate to the development of a framework for Stand Alone Power Systems, which have the potential to provide greater flexibility for network operators, reflect customer choice, and reduce the overall cost of networks. This has the potential to drive down network costs, for the benefit of all customers.





Tasmania offers a strong cost-competitive case for energy intensive industries wishing to establish themselves in an environmentally sustainable location.

3

PRIORITY THREE

Growing the economy and providing jobs

KEY TARGETS



TARGET 1

Grow Tasmania's renewable energy 'brand' nationally and globally



TARGET 2

Attract new load and energy intensive industries to Tasmania



TARGET 3

Create thousands of new jobs and realise up to \$7 billion of new investment in the renewables sector by 2030

ACTIONS

STATUS

3.1	Develop a new load growth attraction strategy for Tasmania.	Commenced
3.2	Continue to promote Tasmania as a premier investment destination for business wanting competitively priced, reliable clean energy	Ongoing
3.3	Maximise renewable energy development opportunities for Antarctic nations under the Antarctic Gateway Strategy	Commenced
3.4	Skills Tasmania rollout of Energising Tasmania Skills and Training Initiative	Substantially Progressed
3.5	Maximise local Tasmanian business and employment opportunities for renewable energy projects	New Action
3.6	Promote and develop Tasmania's Ocean and Tidal Renewable Energy Resources	New Action

OBJECTIVE

Continuing our strategy of utilising renewable energy as a key economic driver that benefits all Tasmanians through job creation, investment and economic growth is a key priority for the Tasmanian Government. The Government will act to ensure that Tasmanians can get the skills and training they need to take advantage of the employment opportunities that Tasmania's expanding renewable energy sector will provide. The Government will also leverage Tasmania's 100 per cent self-sufficient renewable energy generation status and continue to promote and develop Tasmania's renewable energy 'brand' both nationally and globally.

3.1 Develop a new load growth attraction strategy for Tasmania



STATUS: COMMENCED

Tasmania offers a strong cost-competitive case for energy intensive industries wishing to establish themselves in an environmentally sustainable location. Globally businesses are increasingly seeking to establish their environmental credentials through operating in a low emissions or carbon-neutral environment. Tasmania has a long history of major industrial development powered by renewable energy and there are significant opportunities for the establishment of jobs-rich, large scale energy intensive enterprises in the State. In particular, renewable hydrogen production presents a key load growth opportunity. The Office of the Coordinator-General is actively promoting these opportunities through direct

engagement with potential investors and through the promotion of energy investment opportunities nationally and globally.

Tasmania has now achieved the status of being one of the few jurisdictions in the world to be 100 per cent self-sufficient in renewable energy generation. Additionally, with the development of our Tasmanian Renewable Energy Guarantee of Origin Scheme, we will be able to offer investors the certainty that the energy they use, should they locate to Tasmania, is produced from 100 per cent renewable resources. This renewable certification, along with our 100 per cent self-sufficient in renewable energy generation status, gives Tasmania a crucial competitive advantage as we seek to attract large energy intensive industries for which low cost, reliable, clean energy is a key requirement. The Office of the Coordinator-General will actively promote these advantages through a targeted strategy of attracting high energy use industries and investors to the State.

Tasmania has now achieved the status of being one of the few jurisdictions in the world to be 100 per cent self-sufficient in renewable energy generation.





ACTION

3.2 Continue to promote Tasmania as a premier investment destination for businesses wanting competitively priced, reliable and clean energy



STATUS: ONGOING

Tasmania has a natural competitive advantage in renewable energy with its proven hydro and wind and its emerging ocean, and biomass resources.

The State also has significant renewable energy knowledge and capabilities, as well as high quality industrial precincts available for potential investors. Renewables Tasmania has commenced working with the Clean Energy Regulator to develop a Tasmanian renewable energy guarantee of origin scheme, which will allow traceability and verification of Tasmanian renewable energy generation.

Tasmania is Australia's only state, and one of the few locations globally that is 100 per cent self-sufficient in renewable energy generation.

This represents a significant branding opportunity for major energy users seeking to achieve sustainability targets and lower their emission profiles through the use of renewable energy. Working with Hydro Tasmania, the Tasmanian Climate Change Office, Brand Tasmania, the Department of State Growth and the Tasmanian community, the Government will further develop and promote the Tasmanian renewable energy brand as a model for innovation and sustainability.

The Government through Brand Tasmania will celebrate this milestone achievement through a major public campaign that highlights Tasmania's leadership and innovation in renewable energy generation. The 'Renewable Energy Opportunity' in Tasmania will continue to be a key strategic focus of future investment missions supported by a targeted renewable energy investment strategy.

3.3 Maximise renewable energy development opportunities, including exploring the use of renewable hydrogen for Antarctic nations under the Antarctic Gateway Strategy



STATUS: COMMENCED

Over 42 nations operate seasonal or year-round research stations (bases in Antarctica). Currently these bases depend largely on the use of fossil fuels for electricity. There is an increasing international trend towards pursuing renewable energy initiatives in Antarctica to mitigate emerging energy and environmental challenges. Significant opportunities exist in Antarctica to install renewable energy systems to replace the current dependence on fossil fuels.

As Antarctic nations seek clean energy solutions, wind and solar systems are currently in use and being trialled by a number of countries, and there are also significant opportunities for the development of hydrogen-based energy systems. This presents a valuable opportunity to build upon Australia's well established environmental credibility in Antarctica at the international level.

Tasmania is ideally positioned to facilitate the use of hydrogen-based renewable energy systems to provide power and fuel requirements for Australia's Antarctic program as well as potentially the research operations of other nations.

The Department of State Growth has been working with the Australian Antarctic Division (ADD) to understand Australia's current energy usage and fuel types used for different activities and anticipated future energy requirements, with a particular focus on the potential for the deployment of renewable hydrogen as a future fuel source.

Working with the ADD and key stakeholders, the Department of State Growth will draft a scoping study that will identify the key opportunities and challenges associated with hydrogen use on the continent, including strategic, technical, legal/regulatory, environmental, safety and industry considerations. The scoping study intends to map out a pathway forward in collaboration with key stakeholders to support the future planning of renewable hydrogen projects in Antarctica. The scoping study will be delivered in Q4 2021.



3.4 Skills Tasmania rollout of Energising Tasmania Skills and Training Initiative



Skills Tasmania, on behalf of the Tasmanian Government, is responsible for administering the \$16.1 million *Project Agreement for Energising Tasmania (Project Agreement)* with the Australian Government. This four-year commitment will support Tasmania to develop a skilled workforce equipped with the expertise needed for the Battery of the Nation initiative, Project Marinus, renewable hydrogen industry, and related projects in Tasmania.

There are a number of key activities now underway as part of Energising Tasmania:

- a. Establishment of the Tasmanian Energy and Infrastructure Workforce Advisory Committee (TEIWAC). TEIWAC consists of key industry, education and training stakeholders, including: TasNetworks, Hydro Tasmania, UPC/AC Renewables, TasTAFE, University of Tasmania, Department of Education, Civil Contractors Federation, Engineers Australia and the Department of State Growth. TEIWAC held its first meeting in June 2020. The Energising Tasmania Training Fund will deliver up to 2500 fully funded training places (and support for non-tuition costs) in areas of identified skills needs relative to renewable energy and related sectors in Tasmania. The Fund opened in March 2020 and has subsequently been extended to close in June 2021. Future iterations of the Energising Tasmania Training Fund will be made available over the duration of the *Project Agreement*.
- b. The Energy and Infrastructure Training Market Development Fund has been developed to support the capacity building of training providers (including trainer recruitment, upskilling trainers, supporting trainers to relocate) as well as developing courses and delivery methods that meet the needs of the sectors. The Fund opened in October 2020 and will close in February 2021. Future iterations of the Training Market Development Fund will be made available over the duration of the *Project Agreement*.
- c. The Energy and Infrastructure Workforce Development Fund has been developed to support industry-endorsed training and workforce development activities as recommended by TEIWAC. The first iteration of the Workforce Development Fund opened in October 2020 and will close in December 2020. Future iterations of the Workforce Development Fund will be made available over the duration of the *Project Agreement*. The first stage of workforce development planning activity for the Tasmanian energy sector commenced in June 2020 and was finalised in October 2020. The Tasmanian Energy Industry Workforce Development Plan – Stage 1 was released in December 2020. It is expected that the second stage of workforce development planning will commence in 2021.

3.5 Maximise local Tasmanian business and employment opportunities for renewable energy projects



STATUS: NEW ACTION

Tasmania currently has a number of large-scale renewable energy projects under development and the Government wants to significantly expand and grow our renewable energy sector into the future. Ensuring the widest participation by Tasmanian businesses in renewable energy projects is a key priority for Government, which was recently identified in the Premier's Economic and Social Recovery Advisory Council Interim Report July 2020. That means ensuring that renewable energy projects where possible will generate employment and opportunities for local businesses.

To further drive local content in renewable energy projects, Renewables Tasmania will work with stakeholders and undertake the following actions:

- Tasmania's Renewable Energy Coordination Framework will set out the actions to support the renewable energy growth required to achieve our Tasmanian Renewable Energy Target. The Framework will have as a key action to undertake analysis on what mechanisms and actions Government can take to ensure maximum opportunities for Tasmanian workers and local businesses to supply goods and services for renewable energy projects.
- Work with industry bodies to establish a 'Tasmanian Renewable Supply Chain Directory'. The goal of the Directory will be to identify and detail Tasmanian businesses and companies currently operating, or with the capability to work on and supply, renewable energy projects. The Directory will aim to increase the use of Tasmanian goods and services in

future renewable energy projects to grow industry capability and capacity and further increase local participation and content in the renewables economy.

- Undertake a feasibility study into the potential for Tasmanian manufacturers to supply components for wind farms and other renewable energy projects. The study would examine markets trends, barriers to entry, local industry opportunities and make recommendations to Government.
- Develop a 'Tasmanian Renewable Energy Local Content Charter' – working with stakeholders, Renewables Tasmania will develop an industry charter for renewable energy developers that will communicate proponents commitment to support the local economy by providing local employment and procurement opportunities wherever possible. In developing such a Charter, the Department of State Growth would examine inter-state mechanisms and policies e.g. 'Local Jobs Advocates' to assess their effectiveness and applicability to Tasmania.
- With a rapidly changing energy sector, the Department of Treasury and Finance will undertake a review of the effectiveness of the Government's current 'Buy Local' policies being implemented by Government-owned energy businesses to ensure they are maximising employment and business opportunities for Tasmanian businesses and workers.
- Develop a Local Content section on Renewables Tasmania website – listing all Government energy businesses' procurement policies, along with the local industry participation programs operated by renewable energy proponents.

3.6 Promote and develop Tasmania's Ocean and Tidal Renewable Energy Resources



STATUS: NEW ACTION

Tasmania has some of the best off-shore renewable energy resources in Australia. The Australian Wave Energy Atlas project, led by CSIRO Marine Laboratories (Hobart) found that Australia has arguably the largest wave energy resource in the world. The wave energy resource off Tasmania's West Coast has been identified as one of the most potentially highly productive areas for wave energy generation.

There is also significant potential for tidal energy. A study by the UTAS Australian Maritime College found that Tasmania's Banks Strait tidal energy resource alone could generate 350MW from tidal energy annually. Tasmania also has world class ocean energy research organisations such as the Blue Economy Cooperative Research Centre (BECRC) and UTAS/Australian Maritime College.

The BECRC is actively exploring the potential for deploying innovative offshore infrastructure powered by sustainable, affordable renewable energy including hydrogen. Offshore renewable energy systems also offer the potential to develop renewable remote area power systems that traditionally rely on fossil fuels.

Renewables Tasmania and Office of the Coordinator General will work with key ocean energy stakeholders such as Blue Economy Cooperative Research Centre (BECRC), Australian Energy Ocean Group (AEOG) and UTAS/Australian Maritime College, to develop Tasmanian Ocean and Tidal Energy investment attraction resources and identify future investment opportunities in the sector.







5. Making it happen

How we will deliver our Renewable Energy Action Plan

The TREAP sets out the Tasmanian Government's strategy to turn Tasmania into a renewable energy powerhouse. The TREAP describes a comprehensive set of Actions designed to drive the long term growth, investment and expansion of our renewable energy sector. Renewables Tasmania will be responsible for the management and the delivery of the TREAP.

A Steering Committee comprised of representatives from key Government Departments, including the Department of State Growth and the Department of Premier and Cabinet will oversee the implementation of the TREAP and ensure co-ordination with relevant Government policies and timely delivery. It will be chaired by the Executive Director of Renewables Tasmania. Other Government departments will be involved as necessary noting that the TREAP is a dynamic and living document.

The Steering Committee, through the Chair, will report to the Minister for Energy on matters relating to the implementation of the TREAP. Informing the Tasmanian community and our stakeholders on the progress and success of the implementation of the TREAP's Actions will be achieved through regular reviews and the publication of an Annual Progress & Status Report by 31 October each year. This Report will be published on the Department of State Growth's website.

