



# **A clean-energy economic recovery plan for the Northern Territory**

**July 2020**

The Territory's Clean Energy Economic Recovery Plan is a rapid-response report showing how clean energy can help lead the NT out of the economic crisis. It highlights key renewable energy-generation projects, infrastructure and development models that can underpin the growth of fairer, more resilient and prosperous communities and economies.

We show case studies exploring how these solutions can kickstart and grow our economy and create additional benefits like greater Aboriginal economic participation, reduced running costs for households and businesses, the creation of a new skilled labour force in solar energy and the revitalisation of our regions.

## **INTRODUCTION**

As the Northern Territory begins the task of rebooting our economy on the other side of the Covid-19 health crisis, there are possibilities for that economic recovery to be based on a transition to clean, low cost energy and climate action that can set Territory communities up for the future.

By harnessing our own abundant, world class solar resources, and with proper planning and coordination, the Territory has the potential to not just rebuild, but to rapidly expand our economy to meet the needs of current and future generations of Territorians while also delivering a fair and just transition for existing energy industry workers.

A reorientation of our energy policies, from reliance on expensive and polluting greenhouse gas emitting gas and diesel-fired generation towards harnessing the transformative potential of clean energy recovery will enable us to meet both the challenges of an economic and climate crisis and rebuild a stronger, more resilient and fairer Territory for all.

## **WHY A CLEAN ENERGY RECOVERY?**

The scale of the economic recovery required following the Covid-19 shock provides a rare opportunity to invest in the future we want and the energy systems to get us there.

A long-term ambitious strategy is more important than ever to guide this unprecedented investment towards the Territory becoming a clean energy superpower. While the UN climate conference has been delayed to 2021, most major economies are providing blueprints for green stimulus packages to help recover their economies from the Covid crash that we can learn from.

This move makes sense. Studies show renewables projects are where the *immediate* jobs and efficiencies are, along with a clean energy future. One recent report, authored by leading economist and Nobel prize winner Joseph Stiglitz and climate economist Nicholas Stern, found stimulus spending on new green energy projects creates twice as many jobs per dollar than investments in fossil fuel projects<sup>1</sup>.

The NT Government's own Economic Reconstruction Commission Green Paper identifies these opportunities by basing economic recovery on the need to:

- Build critical enabling infrastructure, including the solar transformation of energy supply to remote communities', as well as
- Priority Strategic Enabling Infrastructure – specific projects that will support the development and viability of regions, communities and industries

The NT Government has committed itself to a renewable energy target of 50% by 2030. Over the same period its NT Economic Reconstruction Commission Green Paper states a goal of averaging 5% annual economic growth across the 2020s, reaching \$40 billion Gross State Product by 2030.

To achieve a \$40 billion economy by 2030 would require the creation of 35,000 more jobs and generating new economic output of \$1.3 billion every year<sup>2</sup>.

The Territory's solar power resource is our strategic energy advantage and can form the cornerstone of a prosperous and resilient economy. With well-targeted investment in infrastructure and a model of development that focuses on enhancing local capacity, ownership and generation of our clean energy production, we can re-enter the global economy in a much stronger position than in previous decades and far ahead of other advanced renewable energy generation in Australian and international regions.

By contrast, the current Federal Government's focus on a gas-fired recovery threatens to lock the Territory into decades of high energy prices in a volatile and shrinking market. As well as locking the NT into costly carbon emissions obligations.

As the COVID crisis has shown, the business model of gas extraction and export is highly vulnerable to international price shocks, restrictive labour arrangements reliant on fly in, fly out workforces, and unreliable transport routes. Gas projects are subject to significant international political and market volatility, making secure, long-term employment opportunities an impossibility.

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<sup>1</sup> "Renewable energy projects create jobs, save money, say top economists", *The Sydney Morning Herald*, 5 May 2020, <https://www.smithschool.ox.ac.uk/publications/wpapers/workingpaper20-02.pdf>

<sup>2</sup> [https://business.nt.gov.au/\\_\\_data/assets/pdf\\_file/0010/885358/operation-rebound-green-paper.pdf](https://business.nt.gov.au/__data/assets/pdf_file/0010/885358/operation-rebound-green-paper.pdf)

Investing further public money into gas risks locking in huge investment losses, stranded assets and environmental harm. A recent study showed that development of the NT's fledgling fracking industry has so far cost taxpayers over \$100 million this decade, with no royalty returns and few local jobs to show for it<sup>3</sup>.

Emissions from the extraction, processing and export of gas have been the main driver behind Australia's lack of emissions reduction in the last decade. By contrast, the Territory's economic recovery has the potential to drive the creation of jobs in clean energy, energy efficiency and climate resilience. This report sets out a pathway to achieve these fundamental energy and economic policy reforms.

## **WHY “LOCALLY OWNED AND GENERATED” MATTERS**

There is significant opportunity for economic development and job creation in the Northern Territory directly linked to the availability of low-cost electricity.

Renewable energy electricity generation offers an ideal opportunity to supply the lowest cost electricity to the NT, while simultaneously reducing local pollution and emissions from gas and diesel fired generation and alleviating chronic energy poverty for regional and remote populations. For example, global investment giants BlackRock Inc. demonstrate the future of investment is in sustainable industry by now incorporating climate risk into their their funding assessment criteria<sup>4</sup>.

There is also significant economic benefit that the owners of the renewable energy generators can reap over the life of the plant as well as the jobs that are created in and by such projects.

The concept of jobs growth and economic development, founded on the significant potential for renewable energy generation in the NT, should be the focus of economic recovery following the COVID 19 downturn. This initiative was proposed as the main conclusion of the Roadmap to Renewables Report in 2017, but carries even greater significance today given the speed and scale of the global transition to renewable energy.

From data centres to a range of manufacturing opportunities, from hydrogen production to water desalination, low cost electricity is the universal tool that can underpin these opportunities. By generating this reliable, low cost, environmentally responsible renewable electricity, the NT can become a world leader in many fields and create a wide variety of new jobs.

### **Investment:**

The NT has the abundant solar resource and low sovereign risk to attract investment partnerships with local communities and government to build renewable energy projects.

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<sup>3</sup> <https://www.tai.org.au/content/frackers-are-slackers-94-million-subsidies-onshore-gas-territory>

<sup>4</sup> <https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter>

What is required is a vision of the practical pathway forward by Government to align all agencies and undertake foundational actions to enable partnerships to build and own the generation assets.

### **Land access:**

Fundamental to the building of large scale renewable energy generation in the NT is access to significant tracts of land suitable for solar farms and the transmission infrastructure to deliver the electricity to manufacturing hubs.

These developments should prioritise the partnership or ownership of local host communities, and must be subject to the Free Prior and Informed Consent of the Traditional Owners and custodians of those lands.

### **Prioritising local and Aboriginal community benefits:**

Many Aboriginal people including in remote and regional areas, outstations and homelands are experiencing energy poverty where the costs of energy, mostly electricity and diesel are unaffordable. Power in households is regularly being cut off, meaning food goes off, but also cooling can be limited. This can be extremely dangerous especially as the number of days over 35°C in many places in the NT will increase in just 10 years to 137 days over 35°C. Community organisations and land councils have increasingly been working towards energy efficient and climate safe housing.

Central to the vision of economic growth for the NT is the transformative potential of clean, low cost energy to underpin economic development for Aboriginal communities and communities where chronic energy poverty impacts individual's health, social and economic wellbeing, as well as stifles wider economic activity.

Aboriginal people have title to over 50 percent<sup>5</sup> of the land in the Northern Territory, including much of the most prospective regions identified for renewable energy generation capacity to be built. It is this ownership that offers these communities a real opportunity to create jobs and income.

There is a new project under development at Borroloola that demonstrates the potential of locally owned and generated solar to underpin economic development for Territory communities (see case study below). The Borroloola Project is an Aboriginal-owned solar company preparing to build and manage solar generation technology for the Borroloola community.

We need to invest in locally designed and driven clean energy, often solar programs, that deal with these energy shortages, create meaningful local employment opportunities and are not contributing to climate change. A project like this could provide an example and learnings for what could be achieved elsewhere in the NT.

Aboriginal community members own the land required for solar generation. This fact alone should drive the economic benefits of a future founded on renewable energy generation of low-cost electricity, toward the community members. Aboriginal communities like Borroloola, with secure land title, can be at the centre of building new

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<sup>5</sup> 50% under inalienable freehold title and about 20% is under native title (non-exclusive) possession

energy generation assets. The long-term financial return on these assets can flow directly to the communities and ensure they benefit from the clean energy transition while a properly staged deployment of renewables could provide a steady supply chain of work for both local manufacturing opportunities and meaningful traineeships and apprenticeships.

## **‘TERRITORY CONNECT’:**

### **A HDVC CABLE TO HARNESS OUR SOLAR POTENTIAL**

Large scale solar generation opportunities lie to the south of Darwin where suitable land is available and the risk of cyclone damage is reduced. Less cloud cover and resultant higher yields are also a feature of moving south from the tropical coast.

Darwin and Katherine (300km to the south) are currently linked by a 132 kV powerline. Locations close to this transmission asset have already been selected by developers of solar generation projects. Projects are in development at Manton Dam, Batchelor and Livingston. A 25 MW solar farm has been constructed just north of Katherine. The 132 kV line has power limitations but it demonstrates the advantage of linking transmission and renewable energy project development.

The area south of Katherine enjoys high levels of direct solar radiation and could prove valuable for solar thermal as well as solar PV generation.

From Katherine to Alice Springs the solar resource is amongst the best in the world. This Aboriginal land, across the centre of the Territory, can be used for solar PV power generation if permission and benefits sharing arrangements are agreed to by the Traditional Owners. It is an important asset for supporting local Aboriginal communities by creating multiple small corporations to develop and own the solar generation plants.

The key to developing the Territory’s world-class solar resources is a central transmission link connecting the NT’s existing electricity grids of Darwin/Katherine, Tennant Creek and Alice Springs.

### **This transmission link was a key recommendation of the 2017 Roadmap to Renewables report which proposed a HVDC link between Darwin and Alice Springs.**

If the HVDC line was constructed then widely dispersed, large solar generation assets could be built to supply both communities along the transmission line route and northern and central Australian industry hubs.

With transmission of the regionally generated solar energy to the north and central Australian manufacturing hubs the low-cost electricity can drive new manufacturing initiatives. These will create numerous jobs and drive economic growth for the whole Territory.

This vision is a wholistic solution for all Territorians. An uplifting of Aboriginal community economic standing founded on one of the few real business opportunities available to the

remote communities and the supply of low cost electricity to drive new manufacturing and industry in the north and centre of the Territory.



**Image:** The proposed 'Territory Connect' HVDC transmission link connecting Darwin to Alice Springs.

### **HVDC Power Link Design considerations:**

Typically HVDC cables are used to move large amounts of power from one location (generation site) to another (consumption site). The financial return calculations centre on the volume of power transmitted. A “wheeling charge” is levied for each MW transmitted along the cable.

The cable proposed by the Expert Panel in the Roadmap Report envisioned a complex model of mixed generation and consumption. To evaluate the optimal design, feasibility, and economics of such a cable the Roadmap Report proposed a design study. This model would examine the energy flow and technical requirements for such a cable.

The supply of electricity from the dispersed solar generators and the link between Darwin and Alice Springs would also go a long way toward overcoming intermittency and provide a secure and reliable energy supply. Significant energy storage and even solar thermal generation that includes inherent storage could be constructed.

It is envisioned that the HVDC line from Darwin to Katherine would be of a higher capacity than the longer line from Katherine to Alice Springs.

The proposed Darwin to Alice line would be different to conventional HVDC power cables. The line would support a mixed collection of generation and demand assets and the cable may achieve a much higher value, at a significantly lower rated capacity, than a traditional cable.

There are many examples of HVDC cables longer than the 1500km Darwin to Alice link and it is anticipated that HVDC will be the technology of choice. However, the complete list of options needs to be considered. Fortunately in the NT we have the world's leading company in HVDC transmission, ABB.

Located in the Smart Energy Hub in Berrimah, ABB has extensive experience in the design and implementation of such line technology as well as the high power inverter and rectifiers needed to step up and down to the distribution voltages.

The concept of connecting distributed large scale solar generators along the proposed HVDC link is closely related to the initiative of creating competitive renewable energy zones (CREZ) that is taking place around the world.

The design study, as proposed in the Roadmap to Renewables report, needs to include the following tasks:

1. Identify Renewable Energy Generation Levels and Locations
  - a. Establish the locations and scale of generation
  - b. Establish the power transfer capability needs of the transmission line
2. Evaluate the various AC Transmission options

- a. Variations to be examined include voltage levels, number and location of terminal and intermediate substations and number of circuits
  - b. Line rating, line voltage, need for line reactors, need for series compensation.
3. DC transmission options
  - a. Voltage levels
  - b. Configurations such as monopolar, bipolar and double bipolar lines
  - c. Potential for multi-terminal DC configurations
  - d. Power flow and dynamic stability studies to determine the impacts of different configurations
4. Renewable Energy Production studies
  - a. Simulations of various options of generation and consumption
  - b. Power delivery, system reliability, CO2 and NOx emissions
  - c. Power production costs

## **EXAMPLES OF PROJECTS THAT WOULD BENEFIT FROM THE “TERRITORY CONNECT” HVDC LINK**

The following examples illustrate the way that a clean energy future plan could be constructed that would encourage private investment and generate community benefit. The proposed HVDC link cable is a tool to open investment in community based projects. The following active projects demonstrate the reality of this proposal.

Both the Livingston solar farm and the Borroloola Project, discussed below, are showing the way forward for the vision of a decentralised clean, low cost electricity supply. This supply offers a driver for Territory manufacturing and the jobs associated with this. These active projects also demonstrate that regional solar farms, owned and operated by the Aboriginal communities who own the land on which they would be built, are credible.

The HVDC cable is simply the link between the community projects and the manufacturing hubs they would serve.

### **LIVINGSTON SOLAR FARM**

The well-advanced Livingston solar farm is a 55MW DC solar farm being developed by a group of Darwin-based investors. It is planned to connect to the existing 132kV line between Darwin and Katherine.

The Livingstone Solar Farm will be the largest solar farm in the NT and will generate approx. 5% of the electricity of the Darwin Katherine Grid. Close to the township of Berry Springs, the Livingstone Solar Farm will provide a significant boost to the local economy.

The construction period will require substantial semi-skilled and unskilled labour in both civil works and array installation with additional trades and services required in fencing, road works and landscaping. Up to 200 people will be employed over the 9-month construction period. Permanent local employment and subcontracting opportunities to operate and maintain the facility will be available in the ensuing decades. The project proponents, who are Territorians, have a commitment to the development of a viable and skilled local renewable energy industry workforce.

This project is a direct example of solar generation located outside the Darwin city limits that will supply low cost electricity to the Darwin-Katherine network. More and larger solar plants could be built south of Katherine to achieve the same supply. The regions around Tennant Creek and across the Barkly are ideal for solar plant construction.

Projects of this scale are credible targets for community engagement across the NT.

## **BORROLOOLA SOLAR PROJECT**

Borroloola is a small remote Aboriginal township situated within the Nawimbi Land Trust in the Northern Territory's Gulf of Carpentaria.

Since the early 1910s the region, its people, waterways and environment have been subjected to the damaging impacts of mining. These activities have resulted in contaminated river systems and drinking water for some of the town living areas, putting at risk potential local industries like fishing, farming and tourism.

In recent years the NT Government and fracking companies have begun targeting Borroloola and surrounding regions as part of a new 'unconventional gas rush', exploring and acquiring land for high-risk shale fracking gas fields. Fossil fuels are a significant driver of new greenhouse gas emissions for the NT, putting Australia's climate commitments well beyond reach.

Traditional Owners and the Borroloola community are embracing the transformative potential of a clean energy transition in their region to re-power opportunities for people to live and work on country, adapt to climate change impacts, and create new employment and economic opportunities.

The experience of chronic energy poverty and unreliable energy supply in Borroloola significantly undermines the community's economic development aspirations and could be addressed by a program to expand access to locally generated, low cost, renewable energy for all residents. Acknowledging that projects need to be identified and agreed upon by local people.

The community are seeking to develop and implement a pilot program for a zero-emissions electricity system for the township of Borroloola, to build a case study for

other remote Aboriginal communities to aspire to take part in and expand the reach of the clean energy revolution.

The Borroloola Community Solar Project plans to construct a solar PV micro-grid in addition to the existing Borroloola diesel/solar hybrid power station, including development of:

1. Feasibility study for micro grid
2. Local project management team capable of working on outstation solar installation and roof top solar in the interim

The project is driven by the community, including consultation with representatives from the Mara, Gudanji, Garrawa and Yanyuwa local Aboriginal clan groups, with support from expert consultants as required. Our aim is to ensure the results of this project can be replicated by other Aboriginal communities wishing to pursue clean energy project partnerships.

There will be a staged community consultation process to consolidate residents' input and support and to ensure the project aligns with community and proponent's requirements. This will involve engaging community on the research project, determining the project governance model, resolving access to buildings for solar installation and land access arrangements, and developing project financial plans to ensure benefits of the project are delivered to the community in the form of electricity savings, training and employment opportunities and environmental outcomes from a diesel and gas phase out.

## **PROJECT BENEFITS**

1. Caring for country: Our communities should be able to care for country as our old people have for generations. This means being able to decide what kind of economic development occurs on country, and to keep in mind the sustainability of the land for generations to come. As our climate changes our communities need to be able to work towards clean and sustainable ways to power our homes.

*“We want to see people back on their land. When the homelands are occupied and land is looked after properly, then it can come to life again. Right now homelands struggle for reliable power, we have to travel to fill up jerry cans for diesel generators.”*

*“Electricity costs too much for our homes, making heating and cooling hard and health conditions worse. We get so much sunlight every year, solar energy could easily power remote communities, allowing people back on country to maintain the balance of life.”*

Scott McDinny, Yanyuwa/Garrawa Traditional Owner from Borroloola.

2. Reliance on diesel-fired electricity generation is costly and polluting: This project aims to assist the NT and Federal Government to meet its greenhouse gas emissions reduction targets and renewable energy targets through the replacement of diesel with solar-powered electricity generation in the community of Borroloola. As well as investigate

whether there is potential to earn Australian carbon credit units (ACCUs) for emissions reductions from the Clean Energy Regulator and Emissions Reduction Fund.

3. Economic benefit: The price of electricity is already unaffordable to so many in remote communities. People are having to live in extreme heat, and many are simply unable to keep the power on for basic household necessities including the use of fridges, air conditioners, washing machines and other appliances. This project will test what electricity and financial models can deliver the most efficient economic returns to government and community, ensuring maximum benefit to all involved. Electricity is an essential service, especially in a warming climate with increasing numbers of heat waves and high temperature days expected. Vulnerable communities such as Borroloola require high reliability supply and affordable energy options. In Borroloola, as with many remote NT communities, households are reliant on the NT Government's pre-paid power card system for service. Yet pre-paid meter users are paying the highest electricity tariffs of any consumer in the Territory, exacerbating energy poverty.

5. Job creation: We want to ensure as solar technologies become more accessible and available that Aboriginal people are the ones benefiting through employment.

6. Community ownership: Our experience has shown that when communities drive the solutions themselves and are responsible for initiating and managing a project it is more likely to be successful and sustainable. Genuine community engagement and participatory governance is necessary for community members to have buy in to a project like this. If the project is a community owned and run, assets will be properly maintained and training and employment outcomes will result in long-term jobs for Aboriginal people.

## **NT GOVERNMENT SUPPORT FOR A CLEAN ENERGY ECONOMIC RECOVERY**

The Roadmap to Renewables Expert panel made several recommendations to Government, in their Report tabled in September 2017, outlining specific proposals to achieve an efficient, reliable and low cost electricity supply for the Northern Territory.

The key elements of these proposals relevant to a clean energy recovery plan are:

- Endorsement, by Government of renewable energy as a “whole-of-government initiative towards Northern Territory economic development’. This will send a clear signal to industry that the NT is open for business.
- The establishment of a series of reverse auctions (with proven economic, community and social benefit safeguards) for renewable energy electricity projects. This would provide commercial tension needed under the proposed NTEM move toward a competitive market and a foundation for investment.
- The establishment of a time-of-day tariff for residential solar systems to drive energy efficient demand behaviour and reward advanced battery systems. This will grow the market for the embryonic domestic solar industry.
- Replace the aging gas turbines in the TGen fleet with renewable energy generation power systems funded through a combination of public and private investment.

This is a basic market capacity requirement because 190MW of gas turbines will be retired by 2030.

- Establish the most optimal delivery of Systems Control and Networks to provide a transparent and independent foundation for private development projects in the DKIS system.
- Establish a Capacity and Energy market design. This will drive investment in energy and ancillary services projects.
- Complete a dynamic model of the network to enable renewable energy project assessment and connection in a timely manner. This is required to facilitate new energy projects and design the required energy storage systems..
- Establish the Ancillary Services market to support battery and other projects in the DKIS. This will drive private funding of the infrastructure needed by Systems Control to manage the network.

These initiatives are needed to create a level playing field that is transparent, competitive and least cost. If Government achieves the above in the near future it will assist private funding to underpin a range of new energy projects. There are several generation projects currently stalled because the above initiatives have not been actioned.

It is not the case that public funds should be required to advance these renewable energy projects; instead ample private funding available. However, the Government does need to address failings in the present system that are creating barriers to the inflow of private funds to build these new low-cost generation assets.

## **ECONOMIC BENEFITS FOR THE HVDC LINE**

Such a strategic asset as a North South HVDC interconnector will require serious consideration by Government about maximising the economic interests for the Territory not just from a build and construct perspective but also from the future utilisation of the asset.

While the project could proceed through any combination of models, including private, public or a combination of both the asset must remain under majority public ownership and control by the Northern Territory Government and be operated under the principle of no consumer or generator being restricted from accessing the asset once constructed.

Notwithstanding the above, establishing an open and transparent priority assessment methodology for considering connections should be developed which ensures first connections which deliver social benefits such as;

- Projects which address energy poverty or reduce costs for households and business
- Projects which deliver system strength and stability
- Projects which enhance or secure advanced manufacturing cost and emissions competitiveness

To ensure that economic benefit is primarily derived by current and future generations of Territorians, best practice principles for renewable energy development should be applied including:

- Adhere to principles of Environmental Social Governance.
- Procurement policies which guarantee opportunities for Territory workers, businesses and communities.
- Any competitive tender process for work associated with the feasibility, procurement and construction of the HVDC link should prioritise Northern Territory expertise, labour and ownership.
- Project procurement assessed through a whole of Territory economics benefits test.

## **AN ACTION PLAN TOWARD A SOLAR-POWERED ECONOMIC RECOVERY**

### **Project - TERRITORY CONNECT**

- Commissioning the HVDC Transmission Line from Alice Springs to Darwin design study.
- Plan the construction of the HVDC cable as a Nation building initiative that will transform the lives of communities across the NT and drive manufacturing and industry in Darwin and Alice Springs.
- Grant Major Project status to the HVDC proposal to create a clear vision of the future founded on clean, low cost energy and regional community benefit.
- Granting Major Project status to projects such as the Livingston solar farm to remove institutional barriers and move toward construction
- Prioritising assistance to Aboriginal and community-owned solar projects such as the Borroloola project, helping to reduce energy poverty and assist Aboriginal, regional and remote economic development.
- Undertake a competitive process to achieve least cost Power Purchase Agreements for renewable energy generation funded by the private sector
- Introduce a Time of Day Tariff to improve energy efficiency and reliability in NT electricity networks and encourage network integrated household battery systems
- Reform of the Government Owner Corporations as proposed by the Roadmap to Renewables Report to achieve a coordinated approach toward the energy transition to a clean future.

### **IMPLEMENTATION OF THIS PROPOSAL**

It is important to note that the proposed feasibility study of the HVDC line is different to a conventional transmission line. It is not defined by the movement of large volumes of electricity from generation source to consumption source.

Instead, it is a combined distributed demand and generation model with embedded system security, stretching across the inland of the Northern Territory, where solar resources are abundant. As such, it is necessary for the design study to focus its attention on the full spectrum of economic and social benefits for regional and remote communities, and local industry including mining, agriculture, tourism and service provision along its route.

For example, power generated from a regional solar farm may well be utilised to assist heavy industry such as mining or agriculture in proximity to where it is generated. It is

clear that the economic benefit of this proposal is bound in a variety of value-adding ways beyond the industrial hubs at the Darwin and Alice Springs ends that it will also feed.

To achieve this, the design study must be clearly specified and the selection of agencies to participate have a good understanding of the particular nature of this proposal. To this end, it is necessary for the consulting agencies to be locally-based, understanding that these skills *do* exist within the Territory.

What is needed is a holistic commitment from Government to direct Agencies to assist the investigation and planning of the initiatives set out in this report. Close oversight of this study could be undertaken by an appropriately qualified agency such as the NT Government Office of Sustainable Energy. The NT Government may also consider establishing a dedicated agency resource to the planning, coordination and deployment of renewables similar to the CleanCo model established in Queensland or the newly created centralised renewable agency in NSW.

Subsets of the broad intent of this report in the form of the Borroloola Project and Livingston solar farm are underway. These signposts should be followed and the Roadmap to Renewables Report recommendations taken up to map out this world leading, 'Territory Connect', initiative.

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This report has included input from a range of stakeholders who share this vision for the Northern Territory including Aboriginal communities, pastoralists, health practitioners, unions, land councils, renewable energy experts and academics. We envisage any substantial policy development in this area would need to involve further consultation with these stakeholders.

Original Power is a not for profit organisation registered as a DGR Public Benevolent Institution.

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