

# Recharging the Territory: How \$1.5 billion can create energy security and sustainable jobs for the NT



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**Nature  
needs us,  
now**



**We acknowledge the Traditional Owners of Country** and their continuing connection to land, waters and community. **We pay respect to their Elders past and present** and to the pivotal role that First Nations Peoples continue to play in **caring for Country across Australia.**

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## About this report

This report is a publication of the Australian Conservation Foundation and the Environment Centre Northern Territory.

Author: Springmount Advisory.

Published: September 2025.

Acknowledgements: Thank you to everyone who reviewed the draft report and provided invaluable feedback.

### Environment Centre Northern Territory

ECNT is the peak community sector environment organisation in the Northern Territory. We are building a movement of people to defend the Northern Territory's world class natural and cultural values and secure a liveable future for people and nature here amidst the climate crisis. For more information, visit [www.ecnt.org.au](http://www.ecnt.org.au)

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ACF is Australia's national environment organisation. We are more than half a million people who speak out for the air we breathe, the water we drink, and the places and wildlife we love. We are proudly independent, non-partisan and funded by donations from our community. For more information, visit [www.acf.org.au](http://www.acf.org.au)

Cover. Solar photovoltaic renewable energy facility in the Northern Territory of Australia Photo. Joe Ferrer / Shutterstock



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# Contents

<b>Recommendations</b>	<b>4</b>
<b>Introduction: The right plan, the right time</b>	<b>5</b>
Key developments since the original report	6
More for less - cost changes since the original report	6
<b>Renationalising the Port of Darwin</b>	<b>8</b>
Applying the principles of free, prior and informed consent to future development	9
Economic and national security	9
<b>Building big battery capacity</b>	<b>10</b>
Expanding renewable microgrids	11
<b>Hitting 50% renewables and beyond by 2030</b>	<b>12</b>
How much renewable energy is needed to get to 50% by 2030?	12
The pathway to 50% and beyond	12
Renewable energy projects are getting built faster than ever	12
Rewiring the NT	13
Renewables will cut the Territory's gas debt burden	14
More renewables will eliminate the risk of gas shortages	15
<b>Skills and training centre of excellence</b>	<b>16</b>
<b>Solar and low-income home upgrades</b>	<b>17</b>
Solar upgrades	17
Climate smart housing upgrade package	17
Public housing cost of living package	17
<b>Remaining funding</b>	<b>18</b>
<b>Conclusion</b>	<b>18</b>
<b>Appendices</b>	<b>19</b>
Appendix A: Cost and other changes since the original report for the Recharging the Territory Package	19
Appendix B: Impact of two Darwin Renewable Energy Hubs on renewable share (% and GWh) and associated fossil fuel reduction and cost of gas for power generation	20
<b>References</b>	<b>21</b>

# Recommendations

**The 'Recharging the Territory Package' is a three-step plan to recharge the Northern Territory (NT) and exceed 50% renewables by 2030.**

## **1. Renationalise the Port of Darwin**

- Invest \$490 million to buy out the depreciated lease value of the Port of Darwin (including a \$35 million contract cancellation goodwill payment to Landbridge).
- Renationalise the Port of Darwin to restore public ownership of this key northern asset and deliver genuine, sustainable industrial growth at East Arm.

## **2. Build a big battery and solar farm to hit 50% renewables and beyond by 2030**

- Invest \$254 million to construct 150 MW / 600 MWh of new big battery capacity in the Darwin-Katherine Interconnected System.
- Contract the Darwin Renewable Energy Hub to be built within the national average speed of 21 months (construction to completion) at its full 210 MW capacity, to achieve 50% renewables by 2030.
- Commission a second Darwin Renewable Energy Hub to achieve even greater renewables capacity by 2030 (77%).
- Increase renewable energy share to decrease electricity gas demand to between 8.5 PJ and 10.8 PJ - this is less than the six-year 12 PJ supply contract the NT government signed with Central Petroleum.
- Invest \$50 million to expand regional microgrid investment construction projects.

## **3. Invest in skills and households**

- Invest \$25 million in a four campus Northern Australia Renewable Energy Training Centre of Excellence and provide \$15 million in subsidies for remote trainees.
- Invest \$51 million into a Top End Solar program to add solar on 17,000 more homes in the NT.
- Invest \$225 million into a Climate Smart Housing Upgrade program for every low-income household in the NT.
- Invest \$119 million to install solar, insulation and a modern air conditioning system in every single public housing dwelling in the NT.
- Use the \$272 million remaining from the redeployed Middle Arm gas hub funding to:
  - expand the Remote Housing Investment Package, or;
  - invest in infrastructure upgrades at East Arm, or;
  - deploy towards a second Darwin Renewable Energy Hub.

# Introduction: The right plan, the right time

**In 2024, the Environment Centre Northern Territory (ECNT) published *Recharging the Territory*, a landmark report outlining an economic vision for the Territory that tackles the cost-of-living crisis, while creating energy security and thousands of sustainable, future-ready jobs.<sup>1</sup>**

The report explained how this could be achieved by redeploying the Federal Government's \$1.5 billion equity investment in the proposed Middle Arm gas and petrochemical hub into a 'Recharging the Territory Package'.<sup>2</sup>

The Federal Government's \$1.5 billion equity investment to convert the Middle Arm peninsula into a major gas and petrochemical export hub would transfer public money into the hands of offshore gas companies with little benefit for Territorians, or for a competitive, clean economy future. The Government's investment would fund wharves to export fossil gas, methanol and petroleum, the dredging of Darwin Harbour and the Elizabeth River, and the clearing of woodlands and mangroves on Middle Arm. The Government would be subsidising infrastructure for gas companies already banking record profits.

Funding the Middle Arm gas hub would also come at a significant cost to residents. The Institute for Energy Economics and Financial Analysis found that the "business model underlying the plan is not viable" and that the precinct relies on "unrealistic policy and financial assumptions".<sup>3</sup> Meanwhile, doctors have warned in an open letter to the Prime Minister that the project poses "unacceptable health risks to local communities" and that the associated fracking of the Beetaloo Basin presents "risks to children and communities living in the region from exposure to heavy metals, carcinogens, and other toxic chemicals".<sup>4</sup>

There is a better way. The 2024 *Recharging the Territory Report* showed that redeploying the Federal Government's \$1.5 billion Middle Arm equity investment into the Recharging the Territory Package would deliver more high-quality jobs for locals, directly tackle the NT's cost-of-living crisis, and provide the foundation for a strong and diverse new industry sector. Through the Recharging the Territory Package, the Federal Government has the opportunity to create high-quality jobs for locals, and provide the energy security and workforce skills that industry requires to invest and grow. Additionally, it will cut the cost of living for Territorians, secure the supply of clean, low cost energy and enable completed solar farms to connect to the grid, and underpin investment in solar, remote microgrids and home construction.

Rapid technology developments, significant geopolitical shifts and the cost of living crisis have reshaped the domestic economic and security environment since the launch of the *Recharging the Territory Report* in 2024. This report published by ECNT and the Australian Conservation Foundation (ACF), *Recharging the Territory 2025*, provides an update to the original analysis that factors in new developments, technology advancements, and the growing upside to the NT from acting fast. The new research shows falling technology costs mean the package can deliver more jobs, skills and lower bills for Territorians - especially if coupled with plans to get the NT back on track for 50% renewables.

## Key developments since the original report

Since the release of the original Recharging the Territory Report in 2024, the Northern Territory's energy policy has gone backwards. The NT is blessed with the highest average levels of solar irradiance on earth, yet in March 2025, the Territory Government repealed the NT's renewable energy target.<sup>5</sup> In June 2025, they then scrapped the Territory's 2030 emissions reduction promise, made just six weeks out from the 2024 Territory Election.<sup>6</sup>

In 2024, the Senate Inquiry into Middle Arm exposed a range of unacceptable risks to climate, health, and the environment associated with the proposed Middle Arm gas hub.<sup>7</sup> An evaluation of the business case for the precinct released in early 2025 put the project in further doubt. The analysis by Professor Bruce Mountain found the project is likely to become a "white elephant" that could result in severe budgetary pressure for the Northern Territory.<sup>8</sup> These and other developments since the original report was published in February 2024 make the case for implementing the Recharging the Territory Package even stronger. A \$1.5 billion equity investment to gas companies at the proposed Middle Arm gas hub never made sense, but certainly not in 2025.

Developments include:

- Huge drops in solar and battery prices
- Growing demand for skilled energy workers
- Cross-party support for renationalising the Port of Darwin
- Rising cost of living pressures on all households
- Climate extremes growing the urgency of low-income home upgrades
- The Territory Government abandoning its target of 50% renewables by 2030 and its 2030 emissions reduction target.

In addition, gas projects are becoming more expensive,<sup>9</sup> genuine sustainable proponents are unlikely to progress projects at Middle Arm,<sup>10</sup> and the Territory Government's economic case for Middle Arm continues to receive a fail mark from Infrastructure Australia.<sup>11</sup> *Recharging the Territory 2025* shows how the Federal Government's \$1.5 billion can be invested in a new economic deal for the NT, forged on the principles of clean industrial development, national security, and social and climate justice for workers and low-income households most affected by rising energy costs and climate change.

## Recharging the Territory will deliver



**8,632**  
job years



Port  
renationalisation



At least  
**50%**  
renewables by 2030



**53,000**  
homes upgraded  
or solar added

## More for less - cost changes since the original report

Reallocating the Federal Government's \$1.5 billion proposed Middle Arm equity investment to the Recharging the Territory Package will create more jobs, directly tackle the Territory's cost-of-living crisis and provide the foundations for a strong and secure economy. In 2025, given various changes in costs, these actions make even more sense. It is imperative that the Federal Government maximises these opportunities, as rising gas prices are driving the NT's \$13 billion debt higher and the multiple benefits of energy upgrades are not being felt by most Territorians.

**Table 1: Cost and other changes between Recharging the Territory 2024-25**

	Recharging the Territory 2025	Recharging the Territory 2024	Change
<b>Renationalise the Port of Darwin (East Arm)</b>	a) \$455M remaining depreciated lease value (plus \$35M contract cancellation payment = \$490M total) b) Bipartisan support for renationalisation	a) \$460M remaining depreciated lease value b) Bipartisan support of Landbridge lease	a) A further \$5M reduction in the depreciated lease value of the Port of Darwin b) Broad cross-party support for renationalisation
<b>Build 150MW/600 MWh of Big Battery storage to stabilise the grid and connect more renewables</b>	\$254M expected install price	\$328M expected install price	\$74M less for the same sized storage capacity due to rapid battery technology advances
<b>Establish an Energy Skills Centre of Excellence and study scholarships</b>	Same proposal, but the demand and skill shortages are growing	\$25M four campus Centre of Excellence \$15M of study support	Jobs and Skills Australia now estimates there will be a national shortfall of 32,000 electricians by 2030
<b>Microgrid Investment</b>	\$50M for microgrid expansion	\$50M for microgrid expansion	Reducing technology costs means \$50M will expand solar and storage microgrids further
<b>Top End Solar program</b>	\$51M (\$3000 solar subsidy to 17,000 households)	\$116M (\$6,000 solar subsidy to 19,300 households)	Reducing the subsidy will achieve the same result for \$65M less
<b>Solar and energy upgrades for all public housing</b>	\$119M	\$126.5M	Falling solar and air conditioning costs saves \$7.5M
<b>Climate smart housing investment for all low-income households</b>	\$225M	\$225M	No change
<b>Remote Housing Investment or Port Upgrades or Darwin Renewable Energy Hub v.2</b>	\$272M	\$120M	Cost savings in other areas means there is \$152M more that can be invested

See Appendix A for more information.

Note: Different housing upgrades may be applied to the same dwelling.

# Renationalising the Port of Darwin

*The Port of Darwin should “be in Australian hands” - Prime Minister Anthony Albanese, April 2025<sup>12</sup>*

The Port of Darwin should never have been privatised in 2015 by the Giles-led NT Government.<sup>13</sup> The \$506 million, 99-year lease continues to generate ongoing concerns due to its status as Australia’s most important northern port and naval base, and a critical export facility. Renationalising the Port of Darwin is the pragmatic course of action that would support genuine, sustainable industrial growth at East Arm and restore public ownership of this key northern asset.

The remaining depreciated value of the lease is now calculated at just \$455 million - plus \$35 million compensation costs for Landbridge (totalling \$490 million). Concerns about the financial viability of the Port, which was “scrambling to offload assets and pay down debt to stave off creditors and avoid a forced

sale of its key Australian asset” in November 2024, underscores the importance of returning the Port of Darwin to public ownership.<sup>14</sup> Public ownership will provide job security, stabilise this critical infrastructure asset for Northern Australia and unlock the potential of the East Arm industrial precinct to capitalise on the opportunities presented by the Future Made in Australia program. The Middle Arm precinct only makes sense for large gas exporters, not local business. East Arm and the Port of Darwin is the logical location which will allow the Territory to capitalise on the growth opportunities of zero emissions industries and diversify its economy away from dependence on fossil gas extraction.

**Table 2: Port of Darwin (East Arm) is superior to Middle Arm for clean industrial development**

	Port of Darwin - East Arm	Middle Arm Precinct
Rail mounted bulk minerals ship loader	✓	✗
Heavy lift capabilities	✓	✗
Berrimah Rail Freight Terminal and Truck Central <sup>15</sup>	✓	✗
Existing hardstand and common user facilities	✓	✗
Darwin Ship Lift	✓	✗
Proximity to Darwin and Palmerston	✓	✗



## Applying the principles of free, prior and informed consent to future development

The principles of free, prior and informed consent should be embedded in future planning and decision-making regarding further industrialisation of East Arm or expansion of the Port of Darwin. Larrakia people have been excluded from planning and decision-making processes regarding the industrialisation of the Darwin region, which has resulted in direct and indirect damage to Larrakia cultural and natural heritage sites.<sup>16</sup> Meaningful engagement of Larrakia people in planning and decision-making processes is necessary both to ensure the future integrity of cultural and natural heritage values and to uphold the rights of the Larrakia people as Traditional Owners of these lands and waters.

Renationalising the Port of Darwin would facilitate greater opportunities for Larrakia Traditional Owners to engage in decision-making about future developments and to ensure the application of the principles of free, prior and informed consent. Additionally, it would generate an opportunity to further advance First Nations' economic self-determination through a co-ownership structure, the possible pathways to which should be the subject of further discussion.

## Economic and national security

Renationalising the Port of Darwin will align with the National Interest Framework laid out in the Future Made in Australia Act. A publicly owned port will build Australia's economic resilience and security and enable the investment required to unlock the Port of Darwin's potential.<sup>17</sup> The Port is critical to Northern Australia in terms of its vulnerability to supply disruption, and the essential nature of the Port for imports and exports across the Territory. The facility is also a vital export hub for critical minerals (including lithium) which are being supported via the Critical Mineral Production Tax Credit scheme within the Future Made in Australia initiative.<sup>18</sup>

After a decade of private operations, lack of demonstrated investment, and recent questions about the solvency of the operation, it is clear that the private sector does not have the interest or capability to upgrade the Port of Darwin in the absence of public investment.<sup>19</sup> The East Arm Port of Darwin Expansion project has been rated as "Investment Ready" by Infrastructure Australia since 2011.<sup>20</sup> Renationalisation will allow the upgrades the Port requires to compete and thrive.

*Below.* The city of Darwin in the Northern Territory, Australia  
*Photo.* JohnCarnemolla



# Building big battery capacity

*Large-scale 4-hour battery costs have dropped 23% since 2023 - Commonwealth Scientific and Industrial Research Organisation (CSIRO)* <sup>21</sup>

Since 2023, large-scale storage prices have fallen dramatically, while failing gas generators, rising gas prices and higher rates of rooftop solar have made the need for large-scale storage more urgent. A big battery today is an even smarter investment in the Territory’s energy future - with virtually all upside and no downside to the investment. A true no-regrets opportunity. The Darwin-Katherine Interconnected System (DKIS) needs an estimated 150MW / 600MWh of big battery capacity.<sup>22</sup> Since 2023, the price of installing big batteries has dropped from \$546 to \$423 (\$ / kwh).<sup>23</sup> Bringing down the cost by 22.5%, to a current expected investment of \$254 million. However, while the rest of the nation is speeding ahead with large-scale storage deployment, the NT is floundering.

When the *Recharging the Territory 2024 Report* was released, installed storage capacity (MW) in Western Australia (WA) was already 3 times larger than the NT in 2024.<sup>24</sup> Today, it’s 25 times larger, with the Territory failing to grow.<sup>25</sup>

Installed large-scale storage capacity (MW)			
	NT	WA	Multiple
2023	35	100	3 x capacity
2024	35	885	25 x capacity

Likewise, the volume of large-scale storage has grown even faster. In the *Recharging the Territory 2024 Report*, WA had 6 times the storage volume.<sup>26</sup> Today, it’s 96 times the storage volume.

Installed large-scale storage duration (MWh)			
	NT	WA	Multiple
2023	35	227	6 x duration
2024	35	3367	96 x duration

The city of Broome, with a population little more than a tenth of Darwin and Katherine, is set to get a battery with more than twice the current projected capacity of the DKIS.<sup>27</sup> Building the announced second NT ‘big battery’ sized at 70 MW / 70MWh is a good start but falls short of the 150MW, 600 MWh required to properly Recharge the Territory.<sup>28</sup> The lack of grid storage is holding back household solar installation rates and preventing investors from building the new large scale renewable projects the NT needs to secure its economic future. Pressing ahead with a big battery build out in the NT is a no-regrets option that should proceed as fast as possible, enabling faster solar deployment and commissioning.



Above. Engineer standing in front of solar panels  
Photo. Big Shot Theory / Shutterstock



## Expanding renewable microgrids

The Federal Government's Regional Microgrids Program expires in December 2025.<sup>29</sup> Allocating \$50 million from the \$1.5 billion Middle Arm funding would enable this program to be extended and help reduce energy costs in remote regions, including the 72 communities serviced by Indigenous Essential Services.<sup>30</sup>

At a minimum, funding should be allocated to advance the NT Remote Power System Strategy with a target of 70% renewable electricity generation for Indigenous Essential Service communities.<sup>31</sup> This proposal is currently stuck at the "Early Stage Proposal" assessment level with Infrastructure Australia. Alternatively, funding should be made directly to communities so that more remote locations can build their own renewable and battery storage systems. Noting that review of the policy, technical and commercial barriers to community-level projects is necessary to understand the reform tasks ahead for the NT Government to unlock future investment in community-scale renewable energy.

Expanding renewable microgrid investments will enable more solar to be installed in remote communities and reduce the \$35 million per annum cost of supplying diesel to remote and regional mini-grids.<sup>32</sup> The investment will increase energy security and have associated health benefits for the 7,500 remote community households that rely on pre-paid electricity and experience over 10 disconnections each year.<sup>33</sup> It will also remove a poverty premium experienced by homes with larger energy use.<sup>34</sup> These problems are only growing with climate change and increasing heat, leading to more cooling requirements and greater energy use.



*Right.* Hidden gem in the Northern Territory of Australia. Natural hot springs at Mataranka. *Photo.* Inne Wagemans



# Hitting 50% renewables and beyond by 2030

*Building large scale solar to exceed 50% renewables by 2030 is highly achievable with the right policy settings and firming support.*

Although the NT Government has officially abandoned the target of 50% renewable energy by 2030, the goal is still highly achievable within the runway left to 2030. Currently, 15.5% (Q1 2025) of the NT's grid energy mix is from renewables, and with political will and the right market opportunities, it will only take the construction of one to two modern-sized renewable energy projects to reach and exceed 50% by 2030.<sup>35</sup> Unlocking this investment would slash energy costs to households, business and the Government, and open up opportunities for investment into green industrial development in the NT. Importantly, a rapid deployment of renewable energy will reduce exposure to unpredictable gas supply, and high cost emergency gas supply from LNG exporters, which is currently driving the NT's debt higher.<sup>36</sup>

## How much renewable energy is needed to get to 50% by 2030?

Power and Water Corporation (PWC) forecasts that grid demand will reach 1,758 GWh of energy in 2030, which means achieving 50% or higher will require renewables to deliver at least 880 GWh per annum.<sup>37</sup> Generating this volume of power will require 388 MW of large-scale solar generation.<sup>38</sup> This is roughly equivalent to the Western Downs Green Power Hub in QLD (460MW), Stubbo Solar in NSW (400MW), the Algoda Solar Farm in QLD (380MW) or a little over half the size of New England Solar in NSW (720MW).<sup>39</sup> Building large scale solar at this size is achievable with the right policy settings and firming support. Already PWC estimates there is 175 MW of solar connected to the Darwin-Katherine grid from rooftop and large scale solar installations, meaning only an additional 213 MW of solar generation will be required to meet the target.<sup>40</sup> Firming support by big battery storage will also be required to level out the supply and demand dynamics, as well as provide ancillary grid stability services. The proposed 150 MW / 600 MWh of battery storage in the previous section will meet this need.

## The pathway to 50% and beyond

The NT Government's commitment to building the Darwin Renewable Energy Hub<sup>41</sup> puts the NT on the right track.\* If the 180-210 MW solar and battery project is built to full scale at an appropriate site, it would put the NT on track to at least achieve 45%, and a second project of this size would put the NT on track for 77% renewables by 2030 - almost equal to the national target of 82%. Ensuring that site selection is informed by a coherent and strategic framework, environmental impacts are minimised and principles of free, prior, and informed consent are embedded in the proposal will enable faster deployment and higher levels of community acceptance.

*See Appendix B for more information.*

## Renewable energy projects are getting built faster than ever

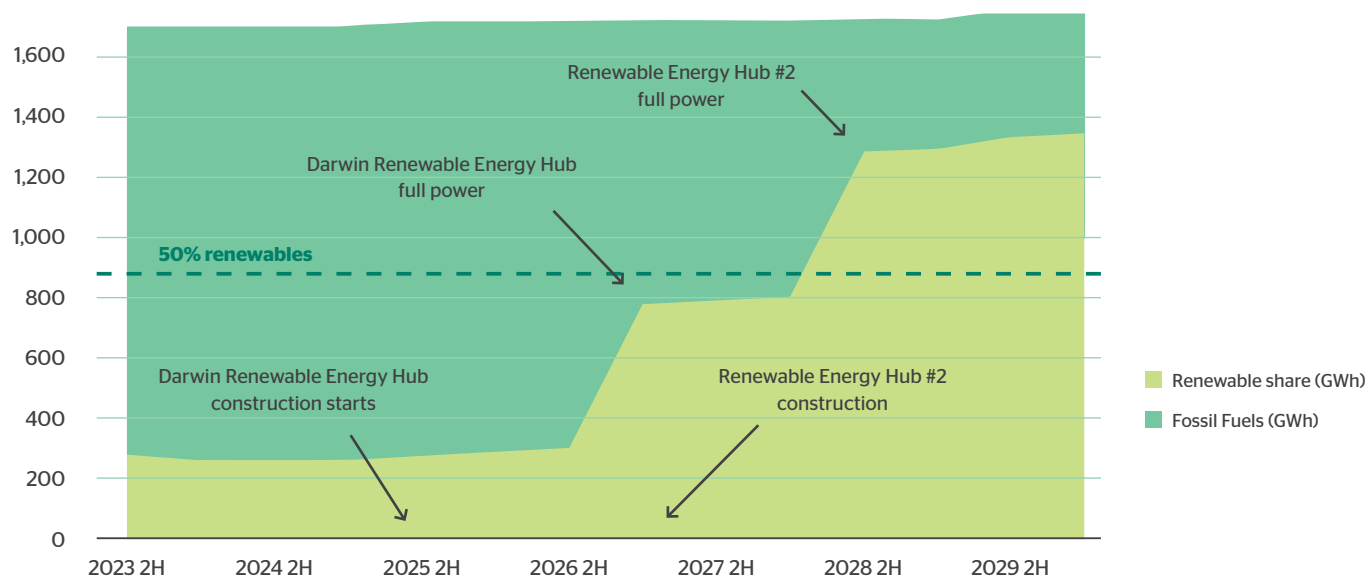
Recent analysis by the Australian National University and Western Sydney University found build times for renewable energy projects have halved between 2010-2020, and that the build time for solar farms is now just 21 months measured from construction start to final commissioning.<sup>42</sup> If the Darwin Renewable Energy Hub (due to start construction this year) is delivered at this speed, the NT could construct the hub plus an equivalent-sized project before 2030, so long as construction starts this year.

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\* ECNT has raised concerns about the site selection for the Darwin Renewable Energy Hub as currently proposed, and notes that greater community consultation is needed to address concerns regarding the project's likely impacts. Renewable energy project sites should be selected transparently, strategically, and in accordance with a coherent strategic framework and principles of free, prior and informed consent for First Nations peoples. ACF supports this position, and further notes that renewable energy projects should be built in low biodiversity areas.



## The NT's path to 50% renewables and beyond



Source: Appendix B

\* Created with Datawrapper

## Rewiring the NT

The NT Utilities Commission has called for significant upgrades to the energy transmission network across the Territory and explained that significant investment is required regardless of the energy source.<sup>43</sup> The DKIS plan estimated a transmission connection cost for a Renewable Energy Hub at \$80 million in 2020 dollars.<sup>44</sup> The Federal Government's Rewiring the Nation fund pledged \$250 million for supporting major NT transmission projects and increasing grid strength.<sup>45</sup> This funding should be used to make the grid renewables ready for the large solar and battery projects needed to achieve 50% renewables and beyond.

## Renewables will cut the Territory's gas debt burden

The cost of gas weighs heavily on the NT budget, with NT Minister for Energy and Renewables, Gerard Maley, noting that energy utilities currently account for 29 per cent of the Territory's debt.<sup>46</sup> The NT has the highest debt per capita ratio in Australia, with total debt currently at \$13 billion, expected to rise to \$15 billion within 4 years.<sup>47</sup>

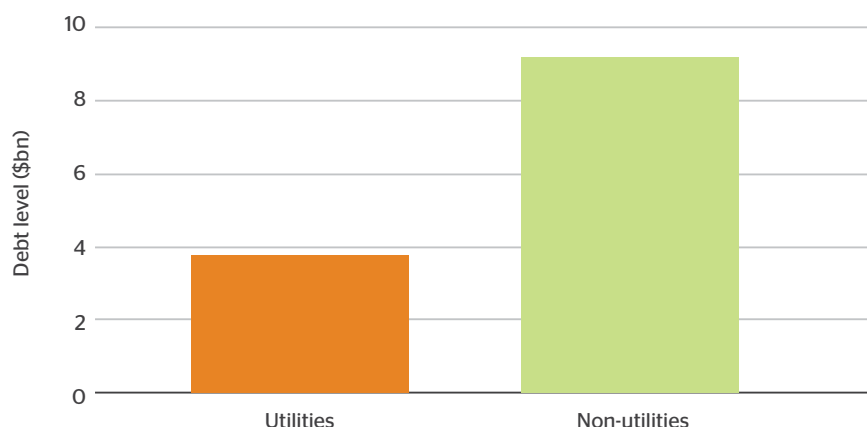
Long-term high-cost gas contracts, short-term high-cost emergency gas supply, and the subsidisation of gas generation for electricity production all likely contribute to the growing debt. For example, the estimated cost of the three main gas contracts entered into recently by the NT Government is between \$3-4 billion over the next 6 to 10 years, while the cost of accessing emergency gas from LNG exporters is unknown.<sup>48</sup>

This is compounded by the cost of subsidising electricity generated from expensive and ageing gas plants, with the NT Government providing an 11.5c subsidy per kWh equivalent to \$1,200 per householder per year.<sup>49</sup> If the NT increased the renewable share in its energy mix from 16.5% to 50% and beyond, it would slash the volume of gas burnt to generate electricity each year

and free up government expenditure for higher-value activities. Greater access to low-cost renewable energy would enable utilities to reduce costs and no longer require bill subsidisation, potentially saving the NT Government up to \$102 million annually.<sup>50</sup> Instead of lining the pockets of gas companies, Territorians could be harnessing the sun.

*See Appendix B for more information.*

## Northern Territory debt (2025)



Source: ABC, NT Budget 2025

# More renewables will eliminate the risk of gas shortages

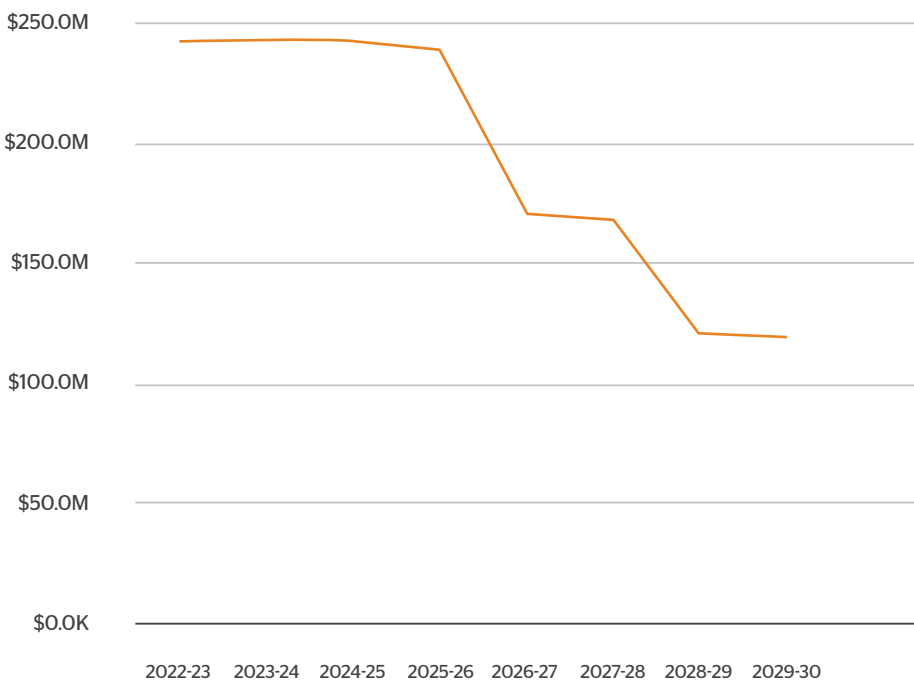
Achieving 50% renewable energy by 2030 will allow the NT to slash the quantity of gas used for electricity generation. If the Darwin Renewable Energy Hub and a twin project are built at the national average speed, the level of gas required by the Territory would fall from 18.1 PJ per annum down to an estimated 8.9 PJ in 2030. Reducing gas consumption from 18.1 PJ down to 8.9 PJ by 2030 would reduce recurrent annual expenditure by at least \$124.4 million per annum - assuming a wholesale gas price equivalent to July 2025 prices in QLD.<sup>51</sup> In both scenarios, the 12 PJ per annum supply contract that the NT Government signed with Central Petroleum, which runs for six years from 2025 to 2030, will more than cover the NT’s gas demand.<sup>52</sup> More renewable energy will mitigate the risks of failing gas reserves and expensive emergency gas procurement for events like the 2023 Blacktip supply failure, with Power and Water Corporation estimating the cost of securing emergency gas at up to \$90 million per year.<sup>53</sup>



Solar panel Photo. SimonSkafar/ iStock

## Achieving 77% renewables by 2030 would slash annual gas expenditure

Forecast annual gas costs (\$13.48/GJ)



Source: Appendix B





## Skills and training centre of excellence

*Recharging the Territory will require training a new generation of electricians, electrical engineers and line workers.*

Jobs and Skills Australia estimates there will be a national shortfall of 32,000 electricians by 2030.<sup>54</sup> The domestic and global shortage of these skilled electrical workers is an opportunity for the Northern Territory to build a world-class Northern Australia Renewable Energy Training Centre of Excellence with four campuses throughout the Northern Territory.

A \$25 million investment could establish a primary campus for the Northern Australia Renewable Energy Centre of Excellence in Darwin/Garramilla (\$15M) at Charles Darwin University, plus three regional campuses at the Intyalheme Centre for Future Energy in Alice Springs/Mparntwe (\$7M), as well as Katherine (\$2M) and Tennant Creek (\$1M) to ensure all Territorians can receive world-class electrical training.

Investing in a Centre of Excellence modelled upon the successful Asia Pacific Renewable Energy Training Centre at Federation University in Victoria and the Electro Group Training Centre in Queensland will enable the Northern Territory to capitalise on its established higher education sector and equip local workers with the skills needed to prosper in the growing energy economy.

Establishing a Centre of Excellence will position Darwin as a dedicated training hub providing first-class education services for energy specialists across northern Australia and neighbouring countries.

Wangi Falls in Litchfield National Park in Northern Territory, Australia  
Photo. pespiero / iStock



# Solar and low-income home upgrades

*“Territorians have some of the highest electricity bills in the country due to extreme temperatures, poor-quality housing and the effects of climate change. Many low-income households cannot afford the energy they need, resulting in unmanageable power bills and frequent disconnections.” - Northern Territory Council of Social Service (NTCOSS), 2025<sup>55</sup>*

Housing upgrades cut bills, create jobs and make for a healthier more productive society. Investing in a Better Homes Upgrade program will create good quality, ongoing work for trades workers throughout the Territory, provide more Territorians with solar energy and directly tackle the rising cost of living. Importantly, this initiative will capitalise on the existing workforce strengths and capabilities within the NT, providing jobs for locals and mitigating the negative impacts on house prices and rents caused by dependency on FIFO workers.

## Solar upgrades

Darwin has the highest solar irradiance of any capital city in Australia, and the Northern Territory as a whole has higher rates on average than anywhere else in the country.<sup>56</sup> In the original *Recharging the Territory 2024 Report*, we recommended a \$115 million investment program to add solar to an extra 19,300 NT households. Since then, 2,300 households have added solar,<sup>57</sup> while solar costs have continued to reduce and the Federal Government has announced a household battery program.<sup>58</sup> Providing a still generous \$3,000 subsidy to 17,000 households would deliver on the original target, but at a cost of just \$51 million. This would lift the rate of solar closer to the state averages in Queensland and Western Australia which have similar housing stock and climates. If each house installed a 7.3 kW system this would see 124 MW of solar being connected to the grid.

## Climate smart housing upgrade package

The cost of the NT’s power bill subsidies rose by \$71.1 million to a total cost of \$161.3 million in 2023-24.<sup>59</sup> Despite these subsidies, experts say they will do little to help those in social and remote housing who

must use pre-paid meters for their electricity supply.<sup>60</sup> A \$225 million dollar Climate Smart Housing Upgrade package could turn this situation around for thousands of households in the Territory. The Climate Smart Housing Upgrade program would provide efficiency upgrade grants of up to \$10,000 in value for all low-income households in the entire Northern Territory.<sup>61</sup> The program could be used for the installation of insulation, air conditioning and other energy efficiency upgrades for households with an equivalised income less than \$1,000 a week. This would improve the quality of households across the Territory, cut the cost of living for low-income households, and reduce future health impacts from the changing climate. If all eligible households received an upgrade, this program would create an estimated 4494 job years worth of employment for local tradespeople.

## Public housing cost of living package

In addition to the Climate Smart Housing Upgrade program, there is an urgent need to upgrade the portfolio of 10,348 public housing dwellings in the NT overseen by the Department of Territory Families, Housing and Communities. A \$119 million Public Housing Cost of Living Upgrades program would deliver a 4kW solar system, insulation and a new split system air conditioning system for every single public housing dwelling in the Northern Territory.<sup>62</sup>

Since the original *Recharging the Territory 2024 Report*, installing a 4kW solar system has dropped from \$7,210 at the start of 2024 down to \$6,780 today and installing a quality 5kW air conditioner has also dropped in price from \$2,050 to \$1,700.<sup>63</sup> This reduces the cost of the upgrade program by \$7.5 million compared to the original report. This program would deliver 41.3 MW of additional solar added to the NT grid and provide a degree of energy independence for all public housing residents. In addition, it would meet the call from NTCOSS for all solar on social housing.<sup>64</sup> The Alice Springs Public Housing Solar and Battery Trial in 2024 saw the installation of rooftop solar panels and battery systems at 15 public housing homes. The program delivered electricity bill savings of 50-75% each week for the participants demonstrating the benefits of a mass upgrade scheme for public housing in the Territory.<sup>65</sup>



## Remaining funding

In the original report, after all the above activities were funded, there remained \$120 million from the \$1.5bn Middle Arm gas precinct equity investment funding. Due to technology cost reductions, the end balance is now \$272 million.

The expanded pool of funding could be used:

- as proposed in the original report, to expand the Federal contribution to the Remote Housing Investment Package which is improving Aboriginal housing in remote communities.<sup>66</sup> This would help address the shortfall of more than 5000 three-bedroom homes in remote communities as calculated in the Northern Territory Housing Strategy.<sup>67</sup>
- to invest in infrastructure upgrades at the Port of Darwin including upgrades to ship loaders, overland conveyor systems, bulk material stackers or rail infrastructure improvements.
- towards a second Darwin Renewable Energy Hub to push the Northern Territory even closer to the national target of 82% renewable energy by 2030.

## Conclusion

The Australian Government has a clear choice to make. It can choose to invest \$1.5 billion into the Recharging the Territory Package and in doing so maintain its commitment to invest taxpayer funds in the Northern Territory in a way that benefits all Territorians and creates jobs that help decarbonise and reduce energy costs. Alternatively, it can spend this public money on a discredited and unpopular proposal to subsidise the expansion of the gas sector, dredge Darwin Harbour and open up exploitation of the Beetaloo Basin - resulting in a substantial increase in Australia's emissions. The financial price for both options is the same, but the outcomes and benefits for the Territory are vastly different. The choice should be easy.



# Appendices

## Appendix A: Cost and other changes since the original report for the Recharging the Territory Package

Recharging the Territory Package	2025 cost	2024 cost	Difference	Job years
<b>Port Renationalisation</b>				
Port of Darwin renationalisation*	\$455M	\$460M	\$5M	N/A
Landbridge compensation* *Renationalisation path rather than strategic development	\$35M	\$35M	None	N/A
<b>Cost subtotal</b>	<b>\$490M</b>	<b>\$495M</b>		
<b>Energy and skills</b>				
Darwin Big Battery (150MW/600MWh) <sup>68</sup>	\$254M	\$328M	\$74M	84
Establish a four campus Northern Australia Renewable Energy Training Centre of Excellence <sup>69</sup>	\$25M	\$25M	None	116
Energy skills package <sup>70</sup>	\$15M	\$15M	None	70
Regional Microgrids Program <sup>71</sup>	\$50M	\$50M	None	128
<b>Cost subtotal</b>	<b>\$344M</b>	<b>\$418M</b>		
<b>Homes and cost of living</b>				
Top End Solar program <sup>72</sup>	\$51M (\$3000 solar subsidy to 17,000 households)	\$116M (\$6,000 solar subsidy to 19,300 households)	\$65M	534
Public housing cost of living upgrades <sup>73</sup>	\$119M (10,500 households)	\$126.5M (10,500 households)	\$7.5M	758
Climate Smart Housing Upgrade Program <sup>74</sup>	\$225M (22,500 households)	\$225M (22,500 households)	None	4494
Remote Housing Investment Package top up funding <sup>75</sup>	\$272M (3000 households)	\$120M (1,300 households)	\$152M	2448
<b>Cost subtotal</b>	<b>\$667M</b>	<b>\$587.5M</b>		
<b>Total cost for the Recharging the Territory Package: \$1.5 billion.</b>				

## Appendix B: Impact of two Darwin Renewable Energy Hubs on renewable share (% and GWh) and associated fossil fuel reduction and cost of gas for power generation

Year	2023	2024		2025		2026		2027 - Darwin Renewable Energy Hub 1		2028 - Darwin Renewable Energy Hub 2		2029		2030
Half year	2H	1H	2H	1H	2H	1H	2H	1H	2H	1H	2H	1H	2H	1H
Total (GWh) <sup>76</sup>	1,702	1,702	1,705	1,705	1,717	1,717	1,722	1,722	1,721	1,721	1,726	1,726	1,758	1,758
Renewable share (%)	16.41 <sup>77</sup>	15.30 <sup>78</sup>	15.30	15.50	16.25*	17.00*	17.75*	45.42 *+***	46.17*	46.92*	74.39 *+***	75.14*	75.89*	76.64*
Fossil Fuels (GWh)	1,423	1,442	1,444	1,441	1,438	1,425	1,416	940	926	914	442	429	424	411
Renewables (GWh)	279	260	261	264	279	292	306	782	795	808	1,284	1,297	1,334	1,348

\* Applied half year increase of .75% renewables growth.

\*\*Darwin Renewable Energy Hub - Full power: additional 476 GWh per annum renewables (calculated generation of 210 MW of solar in NT).

### Impact on fossil fuel use for energy production (by financial year)

Renewable share (%) (repeated from same named row above, 1H)	15.30	15.50	17.00	45.42	46.92	75.14	76.64
Fossil fuel share (%)	84.70	84.50	83.00	54.58	53.08	24.86	23.36
% reduction fossil fuel		0.20	1.50	28.42	1.50	28.22	1.50

### Impact on gas use and cost for power generation (by financial year)

PJ per annum	18.1 <sup>79</sup>	18.06	17.8	12.7	12.5	9.0	8.9
Cost of gas***	\$244.0M	\$243.5M	\$239.8M	\$171.7M	\$169.1M	\$121.4M	\$119.6M

\*\*\* Based on the average East Coast gas price of \$13 GJ, as the NT cost is not publicly available.<sup>80</sup>



# References

- <sup>1</sup> Springmount Advisory and T Quinn (2024) *Recharging the Territory Report*, Environment Centre Northern Territory <https://www.ecnt.org.au/recharging>
- <sup>2</sup> For an explanation of the Federal Government's funding commitments, see: Senate Environment and Communications References Committee (2024) 'Chapter 3 – Funding' in Middle Arm Industrial Precinct Report [https://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Environment\\_and\\_Communications/MiddleArm/Report/Chapter\\_3\\_-\\_Funding](https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/MiddleArm/Report/Chapter_3_-_Funding)
- <sup>3</sup> T Sanzillo et al (2023), *Middle Arm Gas and Petrochemicals Hub: Combination of Problems Makes It Unprofitable for Business and a Red Flag to the Public*, Institute for Energy Economics and Financial Analysis [https://ieefa.org/sites/default/files/2023-08/Middle%20Arm%20Gas%20and%20Petrochemicals%20Hub\\_June%202023.pdf](https://ieefa.org/sites/default/files/2023-08/Middle%20Arm%20Gas%20and%20Petrochemicals%20Hub_June%202023.pdf)
- <sup>4</sup> Health professionals' letter to the Prime Minister - in support of NT paediatricians (2023); R Yin and K Barraclough (2023), 'Health professionals urged to join fight against harmful developments in the Northern Territory', Croakey - sources cited in note 1, p 6.
- <sup>5</sup> ABC (27 March 2025), 'NT government abandons target of 50 per cent renewables by 2030' <https://www.abc.net.au/news/2025-03-27/nt-government-abandons-target-of-50-per-cent-renewables-by-2030/105101626>
- <sup>6</sup> J Hislop (18 June 2025), 'NT government backflips on 2030 emissions reduction target promise', ABC News <https://www.abc.net.au/news/2025-06-19/nt-clp-government-2030-emissions-reduction-target-election/105432640>
- <sup>7</sup> D Pocock (9 April 2024), 'Senate Committee scrutinises Middle Arm health & environmental impacts' [https://www.davidpocock.com.au/senate\\_committee\\_scrutinises\\_middle\\_arm\\_health\\_environmental\\_impacts](https://www.davidpocock.com.au/senate_committee_scrutinises_middle_arm_health_environmental_impacts)
- <sup>8</sup> B Mountain (14 April 2025), *Expert review of the business case for the Middle Arm gas hub*, Environment Centre NT [https://www.ecnt.org.au/middlearm\\_businesscase](https://www.ecnt.org.au/middlearm_businesscase)
- <sup>9</sup> S Parry (30 July 2025), 'NT's only power provider turns to east coast gas to keep the lights on', ABC News <https://www.abc.net.au/news/2025-07-30/nt-power-and-water-corporation-northern-gas-pipeline-reversal/105586778>
- <sup>10</sup> See note 8, pages 7-8.
- <sup>11</sup> O Chaseling (14 April 2025), 'Federal MP casts doubt over NT's controversial planned Middle Arm industrial hub', ABC News <https://www.abc.net.au/news/2025-04-14/marion-scrymgour-middle-arm-industrial-hub-nt-funding-doubts/105156444>
- <sup>12</sup> E Wind (5 April 2025), 'Albanese declares Chinese-controlled Port of Darwin should 'be in Australian hands'', The Guardian <https://www.theguardian.com/australia-news/2025/apr/04/anthony-albanese-says-chinese-lease-port-of-darwin-should-return-to-australia>
- <sup>13</sup> ABC News (13 October 2015), 'Chinese company Landbridge to operate Darwin port under \$506m 99-year lease deal' <https://www.abc.net.au/news/2015-10-13/chinese-company-landbridge-wins-99-year-darwin-port-lease/6850870>
- <sup>14</sup> R Mizen and J Wiggins (27 November 2024), 'Darwin Port's Chinese owner scrambles to stave off forced sale', Australian Financial Review <https://www.afr.com/politics/federal/darwin-port-s-chinese-owner-scrambles-to-stave-off-forced-sale-20241126-p5kto2>
- <sup>15</sup> Land Development Corporation NT, 'Truck Central' <https://landdevcorp.com.au/project/truck-central/>
- <sup>16</sup> E Fejo, Larrakia Elder (10 April 2024), 'Submission to Middle Arm Inquiry' <https://www.aph.gov.au/DocumentStore.ashx?id=7c0d8ef9-2c6e-4a8d-9b03-4b60d4b09b7c&subId=749898>
- <sup>17</sup> The Treasury, Australian Government (14 May 2024), *Future Made in Australia National Interest Framework Supporting Paper* <https://treasury.gov.au/sites/default/files/2024-05/p2024-526942-fmia-nif.pdf>
- <sup>18</sup> Department of Industry, Science and Resources, Australian Government (14 February 2025), 'Critical Minerals Production Tax Incentive' <https://www.industry.gov.au/mining-oil-and-gas/minerals/critical-minerals/critical-minerals-production-tax-incentive>
- <sup>19</sup> See note 14.
- <sup>20</sup> Infrastructure Australia, Australian Government (17 February 2021), 'Darwin Port' <https://www.infrastructureaustralia.gov.au/evaluations/darwin-port>
- <sup>21</sup> P Graham, J Hayward and J Foster (July 2025), *GenCost 2024-25 Final Report*, p 90, CSIRO [https://www.csiro.au/-/media/Energy/GenCost/GenCost-2024-25-Final\\_20250728.pdf](https://www.csiro.au/-/media/Energy/GenCost/GenCost-2024-25-Final_20250728.pdf)
- <sup>22</sup> See note 1, p 22.
- <sup>23</sup> See note 21.
- <sup>24</sup> See note 1.
- <sup>25</sup> B Peacock (29 November 2022), 'NT to get 'grid forming' big battery as Darwin site hits construction milestone', pv magazine <https://www.pv-magazine-australia.com/2022/11/29/nt-to-get-grid-forming-big-battery-as-darwin-site-hits-construction-milestone/>
- <sup>26</sup> The Superpower Institute (2025), 'Western Australia (SWIS)', Open Electricity <https://explore.openelectricity.org.au/energy/wem/?range=7d&interval=30m&view=discrete-time&group=Detailed>
- <sup>27</sup> G Parkinson (12 May 2025), 'Broome to get big solar farm and six hour battery to replace gas and diesel contract', Renew Economy <https://reneweconomy.com.au/broome-to-get-big-solar-farm-and-six-hour-battery-to-replace-gas-and-diesel-contract/>
- <sup>28</sup> G Parkinson (5 March 2024), 'Darwin to treble big battery plans as rooftop PV makes its mark on Top End grid', Renew Economy <https://reneweconomy.com.au/darwin-to-treble-big-battery-plans-as-rooftop-pv-makes-its-mark-on-top-end-grid/>
- <sup>29</sup> Australian Renewable Energy Agency, Australian Government (25 August 2023), 'Regional Microgrids Program' <https://arena.gov.au/funding/RMP/>

- <sup>30</sup> Power and Water Corporation, 'About Power and Water' <https://www.powerwater.com.au/about#locations>
- <sup>31</sup> Infrastructure Australia, Australian Government (8 December 2020), 'Northern Territory remote community power generation program' <https://www.infrastructureaustralia.gov.au/ipl/northern-territory-remote-community-power-generation-program>
- <sup>32</sup> Indigenous Essential Services, Power and Water Corporation (30 September 2024), *Indigenous Essential Services Annual Report 2023-24*, p 39 [https://www.powerwater.com.au/\\_data/assets/pdf\\_file/0031/376654/PWC\\_IES-Annual-Report\\_23-24.pdf](https://www.powerwater.com.au/_data/assets/pdf_file/0031/376654/PWC_IES-Annual-Report_23-24.pdf)
- <sup>33</sup> T Longden and S Quilty et al (2022), 'Energy insecurity during temperature extremes in remote Australia', *Nature Energy*, 7(7), 43-54 <https://www.nature.com/articles/s41560-021-00942-2>
- <sup>34</sup> B Riley and M Klerck et al (2025), 'The prepay "poverty premium": Perspective on Australia's Northern Territory prepayment tariff', *Energy Research & Social Science*, 127 (2214-6296), 1-10 <https://www.sciencedirect.com/science/article/pii/S2214629625002701>
- <sup>35</sup> Northern Territory Electricity System and Market Operator (2025), *Northern Territory Renewables Report 7 April 2025 - 6 July 2025* [https://ntesmo.com.au/\\_data/assets/pdf\\_file/0035/407789/Northern-Territory-Renewables-Report-7-Apr-2025-6-Jul-2025.pdf](https://ntesmo.com.au/_data/assets/pdf_file/0035/407789/Northern-Territory-Renewables-Report-7-Apr-2025-6-Jul-2025.pdf)
- <sup>36</sup> D Fuller (27 July 2025), 'Opinion: Territory Gas deal failures substantially add to debt and stifle development', *NT Independent* <https://ntindependent.com.au/opinion-gas-deal-failures-substantially-add-to-debt-and-stifle-development/>
- <sup>37</sup> Power and Water Corporation (2023), *Statement of Corporate Intent 2024-25*, Table 6.2 [https://www.powerwater.com.au/\\_data/assets/pdf\\_file/0013/350050/2024-25-Power-and-Water-Statement-of-Corporate-Intent-SCI.pdf](https://www.powerwater.com.au/_data/assets/pdf_file/0013/350050/2024-25-Power-and-Water-Statement-of-Corporate-Intent-SCI.pdf)
- <sup>38</sup> Assuming similar generation from existing NT solar farms: Power Technology (21 October, 2024), 'Power plant profile: Manton Dam Solar PV Park, Australia' <https://www.power-technology.com/data-insights/power-plant-profile-manton-dam-solar-pv-park-australia/>; Power Technology (21 October 2024), 'Power plant profile: Batchelor Solar PV Park Australia' <https://www.power-technology.com/data-insights/power-plant-profile-batchelor-solar-pv-park-australia/>
- <sup>39</sup> Neoen Australia (2025), 'Western Downs Green Power Hub' <https://westerndownsgreenpowerhub.com.au/>; ACEN Australia (2025), 'Stubbo Solar' <https://acenrenewables.com.au/project/stubbo-solar/>; Acciona (2025), 'Aldoga Solar Farm' <https://www.acciona.com.au/aldoga>; ACEN Australia (2025), 'New England Solar' <https://acenrenewables.com.au/project/new-england-solar/>
- <sup>40</sup> See note 37, p 30.
- <sup>41</sup> Infrastructure Partnerships Australia, 'Darwin Renewable Energy Hub' <https://infrastructurepipeline.org/project/darwin-renewable-energy-hub>
- <sup>42</sup> L Thomas (1 February 2024), 'Renewable projects are getting built faster – but there's even more need for speed', *ANU Institute for Climate, Energy & Disaster Solutions* <https://iced.s.anu.edu.au/news-events/news/renewable-projects-are-getting-built-faster-%E2%80%93-but-there%E2%80%99s-even-more-need-speed>
- <sup>43</sup> D Fitzgerald (28 June 2024), 'Utilities Commission warns of blackouts unless investment in NT electricity grid increases', *ABC News* <https://www.abc.net.au/news/rural/2024-06-28/utilities-commission-warns-of-potential-blackouts-nt-grid/104031734>
- <sup>44</sup> Territory Renewable Energy, Northern Territory Government (11 October 2021), 'Darwin-Katherine Electricity System Plan', p 40 [https://www.powerwater.com.au/\\_data/assets/pdf\\_file/0024/130497/darwin-katherine-electricity-system-plan-web.pdf](https://www.powerwater.com.au/_data/assets/pdf_file/0024/130497/darwin-katherine-electricity-system-plan-web.pdf)
- <sup>45</sup> S MacNamara (29 July 2024), 'Major \$250M investment for NT renewables', *Energy Magazine* <https://www.energymagazine.com.au/major-250m-investment-for-nt-renewables/>
- <sup>46</sup> G Parkinson (27 March 2025), 'Renewable target scrapped as CLP goes all in on ageing gas plant, and is warned of blackout risks', *Renew Economy* <https://reneweconomy.com.au/renewable-target-scrapped-as-clp-goes-all-in-on-ageing-gas-plant-and-is-warned-of-blackout-risks/>
- <sup>47</sup> L Rangiah (4 February 2025), 'NT government scraps \$15 billion debt ceiling to avoid public service cuts', *ABC News* <https://www.abc.net.au/news/2025-02-04/nt-government-to-scrap-15-billion-debt-ceiling/104895350>
- <sup>48</sup> The estimated cost of the three main gas contracts was calculated by taking the contracted volume amount 40 TJ/day multiplied by the value amount listed in the contracts with the three companies (Tamboran, Central Petroleum and Empire Energy - now Beetaloo Energy Australia). Amount of supply (40 TJ a day): S Dick et al (23 April 2024), 'NT government signs deal with Tamboran Resources to buy Beetaloo Basin gas', *ABC News* <https://www.abc.net.au/news/2024-04-23/nt-beetaloo-basin-power-nt-generators/103757000>. Value of contracts: (1) Beetaloo Energy Australia (formerly Empire Energy) contract and Central Petroleum contracts estimated between \$10.5 to \$14 a GJ - Market Screener (25 July 2024), 'Empire Energy Group Ltd Signs Gas Sales Agreement with NT Government' <https://www.marketscreener.com/quote/stock/EMPIRE-ENERGY-GROUP-LIMIT-13919276/news/Empire-Energy-Group-Ltd-Signs-Gas-Sales-Agreement-with-NT-Government-47475452/>; (2) Tamboran contract details - Corporate Connect (5 December 2023), 'Tamboran Resources Ltd Company Update' <https://www.tamboran.com/wp-content/uploads/2023/12/TBN-06.12.23-FINAL1.pdf>
- <sup>49</sup> See note 46.
- <sup>50</sup> \$102 million figure calculated by multiplying the number of NT households (85,000 dwellings) by the \$1,200 per householder per year subsidy (see note 46): Australian Bureau of Statistics (28 June 2022), 'Snapshot of Northern Territory' <https://www.abs.gov.au/articles/snapshot-nt-2021>
- <sup>51</sup> Average price of \$13.48/GJ (Brisbane and SEQ): Australian Energy Regulator (1 July 2025), 'Gas market prices' <https://www.aer.gov.au/industry/registers/charts/gas-market-prices>
- <sup>52</sup> Central Petroleum Limited (18 September 2024), *Central Petroleum 2024 Annual Report*, p 3 <https://centralpetroleum.com.au/wp-content/uploads/2024/09/CTP-2024-Annual-Report-V7-Clean.pdf>

- <sup>53</sup> D Fitzgerald (9 June 2023), 'Blacktip supply issues to continue, forcing Power and Water to use emergency gas', ABC News <https://www.abc.net.au/news/rural/2023-06-09/blacktip-gas-supply-issues-continue-nt-electricity/102450530>
- <sup>54</sup> Jobs and Skills Australia, Australian Government (2023), *The Clean Energy Generation: Workforce needs for a net zero economy*, p 165 [https://www.jobsandskills.gov.au/sites/default/files/2023-10/The%20Clean%20Energy%20Generation\\_0.pdf](https://www.jobsandskills.gov.au/sites/default/files/2023-10/The%20Clean%20Energy%20Generation_0.pdf)
- <sup>55</sup> Northern Territory Council of Social Service (2025), '2025 Federal Election Priorities' <https://ntcoss.org.au/wp-content/uploads/2025/04/NTCOSS-2025-Federal-Election-Priorities-FINAL-COMPRESSED.pdf>
- <sup>56</sup> Bureau of Meteorology, Australian Government (2020), 'Average daily solar exposure maps' <http://www.bom.gov.au/climate/maps/averages/solar-exposure/>
- <sup>57</sup> Clean Energy Regulator, Australian Government (21 July 2025), 'Small-scale installation postcode data' <https://cer.gov.au/markets/reports-and-data/small-scale-installation-postcode-data>
- <sup>58</sup> Department of Climate Change, Energy, the Environment and Water, Australian Government (25 July 2025), 'Cheaper Home Batteries Program' <https://www.dcceew.gov.au/energy/programs/cheaper-home-batteries>
- <sup>59</sup> See note 1, p 26.
- <sup>60</sup> Northern Territory Council of Social Service (27 April 2023), 'Northern Territory government promises power bill subsidy worth \$71 million' <https://ntcoss.org.au/media-releases/northern-territory-government-promises-power-bill-subsidy-worth-71-million/>
- <sup>61</sup> Australian Bureau of Statistics, 'Region summary: Northern Territory' <https://dbr.abs.gov.au/region.html?lyr=ste&rgn=7>
- <sup>62</sup> The cost assumes that every single public housing unit requires solar, insulation and a split system air conditioner, and that a more competitive rate could not be negotiated via a bulk purchase contract. Public housing dwelling figure taken from: Territory Families, Housing and Communities (2024), *Annual Report 2023-2024* <https://families.nt.gov.au/media/documents/tfhc-shared-documents/tfhc-annual-report-2023-24.pdf>
- <sup>63</sup> Darwin Cooling (2025), 'Air conditioning' [https://darwincooling.com.au/collections/air-conditioning/5-0kw?srltid=AfmBOorAmde1z3v0QWe8invkDqpHUIVupTkcs9sDIg431qxoNImx\\_X3](https://darwincooling.com.au/collections/air-conditioning/5-0kw?srltid=AfmBOorAmde1z3v0QWe8invkDqpHUIVupTkcs9sDIg431qxoNImx_X3)
- <sup>64</sup> Northern Territory Council of Social Service (2024), 'NTCOSS urges parties to commit to solar on social housing' <https://ntcoss.org.au/media-releases/ntcoss-urges-parties-to-commit-to-solar-on-social-housing/>
- <sup>65</sup> P Sangha and H Farrow (2023), 'Lessons learnt: Public Housing Solar and Battery Trial', Alice Springs Future Grid <https://alicespringsfuturegrid.com.au/knowledge-bank/lessons-learnt-from-the-public-housing-solar-and-battery-trial>
- <sup>66</sup> Northern Territory Government (30 June 2024), 'Program progress overview', Our Community. Our Future. Our Homes <https://ourfuture.nt.gov.au/accountability-and-reporting/program-progress>
- <sup>67</sup> Northern Territory Council of Social Service (24 April 2023), 'NTCOSS Cost of Living update shows utilities, transport and housing unaffordable for many households' <https://ntcoss.org.au/news/ntcoss-cost-of-living-update-shows-utilities-transport-and-housing-unaffordable-for-many-households/>
- <sup>68</sup> J Rutovitz, E Gerrard, H Lara and C Briggs (2024), 'The Australian Electricity Workforce for the 2024 Integrated System Plan: Projections to 2050' Race for 2030 <https://utsd8.prod.acquia-sites.com/sites/default/files/2024-09/NEM%202024%20Workforce-FINAL.pdf>
- <sup>69</sup> Nous Group and Centre for Policy Studies (2020), 'Economic Impact of the Regional Universities Network' Regional Universities Network [https://run.edu.au/wp-content/uploads/2025/02/RUN\\_Findings\\_Report\\_final.pdf](https://run.edu.au/wp-content/uploads/2025/02/RUN_Findings_Report_final.pdf)
- <sup>70</sup> Ibid.
- <sup>71</sup> Guidehouse (2021), *The Renewable Energy Economic Benefits of Microgrids*, Civil Society Institute [https://static1.squarespace.com/static/5472abbae4b0859145039552/t/6193d0e801c64e39c1662e1d/1637077225523/CSI+Final+Report\\_FINAL+%2811-16-21%29.pdf](https://static1.squarespace.com/static/5472abbae4b0859145039552/t/6193d0e801c64e39c1662e1d/1637077225523/CSI+Final+Report_FINAL+%2811-16-21%29.pdf)
- <sup>72</sup> See note 68.
- <sup>73</sup> Insulation savings based on: Green Energy Markets (2019) *Energy Efficiency Employment in Australia*, Energy Efficiency Council and Energy Savings Industry Association <https://www.eec.org.au/uploads/Projects/Energy%20Efficiency%20Employment%20in%20Australia%20-%20full%20report.pdf>; Water heating savings based on: UTS Institute for Sustainable Futures (2020) *Renewable Energy Employment in Australia: Methodology*, Clean Energy Council <https://www.uts.edu.au/globalassets/sites/default/files/2020-06/RE-Employment-methodology-FINAL.pdf>
- <sup>74</sup> Department of Industry, Science, Energy and Resources, Australian Government (2021) *Pathways to scale: Retrofitting One Million + Homes - Final report* Race for 2030 [https://climate-kic.org.au/wp-content/uploads/2021/12/One-Million-Homes\\_Final-Report-9.12.21-1.pdf](https://climate-kic.org.au/wp-content/uploads/2021/12/One-Million-Homes_Final-Report-9.12.21-1.pdf)
- <sup>75</sup> National Housing Finance and Investment Corporation, Australian Government (2020), *Building Jobs: How Residential Construction Drives the Economy* <https://www.housingaustralia.gov.au/research-data-analytics/building-jobs-how-residential-constructions-drives-economy>
- <sup>76</sup> See note 37.
- <sup>77</sup> Estimates Committee, Parliament of the Northern Territory (17 June 2024) Transcript of the Parliamentary Estimates Committee <https://parliament.nt.gov.au/committees/previous/estimates-2024/transcripts2/Estimates-Committee-17-June-2024.pdf>
- <sup>78</sup> Northern Territory Electricity System and Market Operator (2025) <https://ntesmo.com.au/data>
- <sup>79</sup> Department of Climate Change, Energy, the Environment and Water, Australian Government (22 August 2025), 'Australian Energy Update 2025', Table F <https://www.energy.gov.au/publications/australian-energy-update-2025>
- <sup>80</sup> Australian Energy Regulator, Australian Government (2025), 'Gas market prices' <https://www.aer.gov.au/industry/registers/charts/gas-market-prices>





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