# WWF-Australia 2021-22 Budget Submission

The World Wide Fund for Nature-Australia (WWF-Australia) welcomes the opportunity to make a submission to the 2021-22 Federal Budget.

WWF-Australia is part of the WWF International Network, the world's largest independent conservation organisation. WWF’s global mission is to ‘stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature’. WWF-Australia has approximately one million financial and non-financial supporters.

Included within this submission are eleven budget proposals across a range of government departments and agencies. Each proposal has been drafted by experts, grounded by good science and prioritised due to the value they yield for both people and nature under an agenda to Regenerate Australia. The table below provides a summary of the proposals, the relevant department/agency and the total funding commitment over the forward estimates.

If you require further information, please contact Quinton Clements, Head of Policy and Horizon Scanning, WWF-Australia on QClements@wwf.org.au or 0419 626 268.

## Proposal Catalogue

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Proposal** | **Sub-Proposal** | **Department/Agency** | **Funding** |
| 1 | Koala Conservation Plan |  | Department of Agriculture, Water and the Environment | $105 million over four years |
| 2 | Out of the Net: Supporting Cape York nature-based tourism opportunities. |  | Department of Agriculture, Water and the Environment | $5 million over four years |
| 3 | Forests as Nature-based Solutions |  | Department of Agriculture, Water and the Environment | $380 million over four years |
| 4 | Forests as Land Sector Carbon Stores |  | Department of Industry, Science, Energy and ResourcesClean Energy Regulator | $10 million over four years |
| 5 | Aboriginal and Local Solar Stimulus |  | Department of Industry, Science, Energy and Resources | $400 million over two years |
| 6 | Modernising Manufacturing | 6.1 Asset write-offs to support energy upgrade investment | Australian Taxation Office | $280 million over one year |
| 6.2 Energy fit program for critical supply chains | Department of Industry, Science, Energy and Resources | $220 million over three years |
| 6.3 Industry energy knowledge and capacity building | Department of Industry, Science, Energy and Resources | $20 million over two years |
| 7 | Battery Nation | 7.1 Home and small business battery scheme | Department of Industry, Science, Energy and ResourcesClean Energy Finance Corporation | $245 million over four years |
| 7.2 Battery commercialisation and scaling | Australian Renewable Energy Agency | $120 million over four years |
| 7.3 Battery recycling infrastructure grant | Department of Infrastructure, Transport, Regional Development and Communications | $120 million over three years |
|  |  | 7.4 Battery innovation | Commonwealth Science and Industrial Research Organisation (CSIRO)Office of the Chief Scientist | $24 million over four years |
| 8 | Electric Bus Revolution | 8.1 Electric Bus Grant Program and E-Bus Strategy | Department of Infrastructure, Transport, Regional Development and Communications | $205 million over three years |
| 8.2 Electric bus innovation fund | Australian Renewable Energy Agency | $35 million over two years |
| 9 | Strengthening the Pacific Tuna Industry through Technology-Enabled Transparency |  | Department of Foreign Affairs and Trade | $17 million over four years |
| 10 | Indigenous Rangers Program Expansion |  | National Indigenous Australians Agency | $767 million over four years |

Additional Joint Submission with *Beyond Zero Emissions* (BZE):

|  |  |  |  |
| --- | --- | --- | --- |
| 11 | Renewable Energy Industrial Precincts | Department of Industry, Science, Energy and Resources | $1.5 billion over four years and $2 billion over five years |

# Proposal 1: Koala Conservation Plan

**Affected Agency:** Department of Agriculture, Water and the Environment

**Financial Implications:** $105 million over four years

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
| Cost of Proposal ($m) | *24* | *41* | *23* | *17* | *105* |
| 1a | Great Koala National Park ($m) | *15* | *20* | *10* | *5* | *50* |
| 1b | Farmers For Koalas ($m) |  *5* |  *10* |  *5* | *5* | *25* |
| 1c | Koala Count ($m) | *1* | *7* | *4* | *2* | *14* |
| 1d | National Chlamydia vaccination program ($m) |  *1* |  *1* |  *1*  | *1* | *4* |
| 1e | National Koala Recovery Plan ($m) |  *2*  |  *3*  |  *3*  | *4* | *12* |

**Outline of proposal:**

Saving the koala from extinction in the wild across eastern Australia is a national priority. This package will allocate $105 million to help stabilise and increase koala populations in the states where koalas are being assessed for listing as an endangered population (Queensland, NSW and ACT):

* *Protect strategic koala populations:* $50 million to purchase and retire wood supply agreements covering 50,000 hectares of priority state forests on the NSW mid north coast identified by the NSW environment agency to support creation of the Great Koala National Park,[[1]](#footnote-1) enable economic diversification and new regional jobs in forestry towns and grow nature and cultural tourism.
* *Farmers for Koalas:* $25 million in environmental stewardship payments through the Agriculture Stewardship Package[[2]](#footnote-2) to support landowners to manage priority koala habitat on the east coast to enter into conservation agreements, manage invasive species, survey koalas, store carbon in regrow vegetation, and do ecological burns.
* *Koala Count and health assessment:* $14 million to extend the $2 million two-year national koala census[[3]](#footnote-3) to support koala population surveys in priority regions, including using innovative thermal drones, scent detection dogs, genetic mapping and citizen science to develop post-bushfires a comprehensive national koala survey and genetic health assessment. Of this, $4 million would fund establishment of a national data warehouse to receive, curate and communicate information on koalas using standardised data collection and analyses.
* *National Chlamydia vaccination program:* $4 million for research and monitoring on chlamydia.
* *National koala recovery plan:* $12 million to lead implementation of actions agreed with states to recover koala populations, identify areas with greatest resilience to climate change, and monitor implementation. The plan will become even more significant if the east coast populations are uplisted from ‘vulnerable’ to ‘endangered’.

**Strategic Policy Alignment:**

This policy aligns with:

* Implementation of a national koala recovery plan (in draft).
* Potential federal uplisting of the koala population to ‘endangered’ in Queensland, NSW and the ACT.
* Recommendations contained in the 2012 Report of the Senate Environment and Communications Committee *Inquiry into the status, health and sustainability of Australia's koala population*.
* Listing Advice in 2011 to the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities from the Threatened Species Scientific Committee regarding adding koalas in Queensland, NSW and the ACT as a vulnerable population under EPBC Act.
* Internationally recognised iconic species identified as ‘vulnerable on the IUCN Red List
* Koalas are identified as a priority species for urgent conservation intervention by the *Wildlife and threatened species bushfire recovery Expert Panel.*
* NSW Upper House inquiry into *Koala populations and habitat in New South Wales[[4]](#footnote-4)*
* Koala strategies and policies established by the NSW[[5]](#footnote-5) (new strategy expected in February 2021) and Queensland[[6]](#footnote-6) governments.

**Rationale:**

Koalas are a national icon and yet are projected to become extinct in the wild as early as 2050 in east coast states on current trajectories.

Koala populations are estimated to have declined by 50% in Queensland since 2020, and by up to 62% in NSW over the same period.

The 2019-20 bushfires impacted an estimated 61,000 koalas.

Once finalised, the draft national koala recovery plan presents an opportunity to coordinate implementation of actions to slow and reverse the decline of koala populations, particularly in the bushfire regions of Queensland and NSW.

Expansion of the protected areas network is necessary to prevent further decline of koala populations. To assist government, WWF-Australia commissioned the *Koala Habitat Conservation Plan[[7]](#footnote-7)* which identified Koala Habitat Priority Areas to be the focus of this policy:

* More than 400,000 hectares of state forests, Crown land and other government lands by inclusion within the reserve system or provided with in perpetuity protection.
* Approximately 500,000 hectares of freehold land that require in perpetuity protection or purchase or additions to the reserve system.

Chlamydia infection represents the number one reason koalas are presented to wildlife hospitals. Small scale vaccination trials are underway, with increasingly effective success rates. Due to resourcing only very small numbers of koalas are able to be vaccinated. These vaccination programs need to be scaled up to deliver effective increases in koala survival rates in populations with high rates of chlamydia infection.

**Implementation:**

The package will be administered through the Department of Agriculture, Water and the Environment. This will enable the Department to take a lead role, in coordination with jurisdictions in koala range states.

In NSW, increased funding and technical assistance for landholders is urgently required for communities and businesses seeking to reforest koala habitat across over-cleared landscapes through existing programs, such as the NSW Biodiversity Conservation Trust.

Chlamydia vaccination trials being implemented through organisations like Taronga and Currumbin Wildlife Sanctuary can be upscaled to increase the number of koalas being vaccinated.

## Proposal 2: Out of the Net: Supporting Cape York nature-based tourism opportunities.

**Affected Agency:** Department of Agriculture, Water and the Environment

**Financial Implications:** $5 million over four years

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
| Cost of Proposal ($m) | *0.75* | *2.25* | *1* | *1* | *5* |

**Outline of proposal:**

This proposal seeks two outcomes:

* To create a new haven for threatened species in the northern section of the Great Barrier Reef World Heritage Area (GBRWHA);
* Enable new opportunities for Traditional Owners in eastern Cape York to better manage their sea country and create new commercial fishing and tourism opportunities.

*Background:*

WWF-Australia has long been concerned about the impact the East Coast Inshore Finfish Fishery has on the conservation values of the Great Barrier Reef. We applauded the recent initiative of the Australian Government to suspend the World Trade Organisation export approvals under the EPBC Act to force the Queensland Government to improve their management of this fishery.

After years of consistently highlighting concerns about this fishery with minimal progress WWF-Australia asked for our supporters’ help to enable us to purchase commercial fishing licenses as a way of directly reducing the amount of effort available in the fishery and therefore the amount of net that could entangle and drown vulnerable marine wildlife. We successfully removed two latent N4 offshore (shark) fishing licences that were on the open market which could have been reactivated to catch hundreds of tonnes of shark a year. We then asked for our supporters’ help again to purchase the last active barramundi net fisher operating in the Princess Charlotte Bay (PCB) Special Management Area. The removal of this licence and its associated GBRMPA Special Management Area permit automatically created a 380 square kilometre net free zone in PCB – an area abounding with dugong, inshore dolphins and the critically endangered Byzant River shark.

*Proposal detail:*

This proposal seeks to expand this net free zone to encompass the northern quarter of the GBR, an area the size Tasmania, as a global stronghold for a range of protected species that have important cultural ties for many coastal communities across eastern Cape York.

Furthermore, it proposes work with traditional owner groups to increase local employment opportunities to offset any potential aspirational involvement in commercial gill netting enterprises.

WWF-Australia’s commercial fishing licence holdings place it in a unique situation where it, along with the licences it holds, and the associated quota to be allocated, enables it to work with community groups that want to engage in commercial fishing activities for mud crab and value adding for inshore finfish species by developing markets for high end sustainably line caught products. The licence holder from PCB has expressed an interest, and has the appropriate training qualifications, to provide commercial fishing related training to Cape York Communities interested in becoming involved in commercial line and crab fishing sectors.

WWF-Australia has also undertaken considerable engagement and consultation with Traditional Owners on the Cape and has recognised the strong support for the removal of commercial fishing nets from their sea country and strong desire for increased tourism and fishing opportunities. The consultation report is available on request.

**Strategic Policy Alignment:**

1. *Reef 2050 plan:* The Out of the Net proposal will help deliver on a number of actions that are included in the Reef 2050 plan to protect species of conservation concern in the GBRWHA. These species include marine turtles, inshore dolphins and dugongs. Increased protection will be achieved through reduction in direct mortality caused by net entanglement and vessel strike while also reducing the cumulative impacts these vulnerable species face. Further, a key goal of the Reef 2050 plan is to strengthen the engagement and participation of Traditional Owners in managing their sea country – another outcome this proposal enables.
2. *Sawfish and river shark recovery plan:* The proposal contributes to this recovery plan by reducing bycatch rates by commercial fishers and helping enable the improvement of fishery monitoring programs to provide accurate (validated) data on the nature and extent of fishery interactions with sawfish and river shark species.
3. *Traditional Owner Sea Country management:* The proposal assists in broader government policies and programs such as Indigenous Land and Sea Rangers and Closing the Gap by providing new management and economic opportunities.

**Rationale:**

The far northern quarter of the Great Barrier Reef Marine Park is a global bastion for a range of threatened species including dugong, sawfish, inshore dolphins, river sharks and 6 of the world’s seven marine turtle species. All of these species, in particular dugongs and inshore dolphins are threatened by large mesh gill netting by any one of the 240 Queensland net licence holders who can operate in this area.[[8]](#footnote-8)

WWF-Australia and its supporters removed the last full-time operator in the entire far northern section of the marine park, and the last remaining GBRMPA SMA permit holder.

Closing a quarter of GBRMPA protects the best strongholds of a number of protected species whose populations have been impacted by gill net fishing in the southern parts of the GBR and further south. This closure would provide protection from gill netting that has been identified by GBRMPA to be a key threatening process. It provides a ‘breathing space’ for these populations while appropriate management is introduced for the gill net fishery in the southern area of the Queensland. This includes regionalisation of the fishery, regional quotas and the introduction of an observer program that can quantify the impacts of gill net fishing on species of conservation interest.

The creation of Net Free North (NFN) provides protection for the populations of protected species that have global recognition and are central to local customary values.

NFN would provide even greater incentive for recreational usage of the region which provides a mechanism for on-country based employment for resource owners. In additional to removing commercial netting from this area, this proposal seeks to work further WWF-Australia’s work with Traditional Owner groups to identify their priorities for development including nature and culture-based tourism ventures, improved cattle and feral animal management to improve water quality and reduce predation of marine turtle eggs.

**Implementation:**

Four-year project commencing with removal or compensation to the last remaining part time or quota holders operating in the far northern section. This would include:

* Commonwealth removal of N4 licences (one of which holds a significant grey mackerel quota for the region);
* Commonwealth support to WWF-Australia for quota trading as a market driven approach to offset the remaining licence holders with far northern quota units. This would be in the form of either direct buyback of far northern quota units or trading far northern units for units in one of the southern quota regions for operators wanting to retain their historical catch levels.

In parallel to this process, WWF-Australia would expand their engagement with Traditional Owner groups to identify community-based development priorities. WWF-Australia is well placed for this type of engagement having conducted similar tourism scoping studies in the Pacific[[9]](#footnote-9), establishment of climate smart SME training, and the establishment of community based natural resource management plans and monitoring programs. Furthermore, WWF-Australia is well placed to provide support for indigenous business opportunities like tourism, bush tucker and art to reduce market chains and ensure higher returns to indigenous businesses compared to traditional western market approaches.

**Value for Money:**

A small investment of $5 million could:

1. Remove industrial size gill nets from the GBRWHA;
2. Create a haven for protected species the size of Tasmania;
3. Support the creation of new Indigenous on-country business opportunities.

WWF-Australia has significant experience in this space and is confident of both the popularity of measure to reduce commercial net fishing in the Reef’s waters and the benefits such action brings to local communities and marine wildlife.

The Australian Government would not be starting from scratch – WWF-Australia and its supporters from around the globe have already invested heavily to reduce the threats from industrial size N4 nets and have removed of the last SMA permit in PCB.

These three licences hold the potential for future indigenous commercial fishing related businesses.

WWF-Australia staff have extensive experience in industry fisheries buybacks and the development of coastal community based sustainable business opportunities.

WWF-Australia also has strong relationships with the Queensland Government and could assist facilitate a joint action plan to progress this proposal.

Finally, WWF-Australia has been working with Cape York communities for more than a decade and has helped them developed a number of applications to State Government funding sources.

# Proposal 3: Forests as Nature-based Solutions

**Affected agency:** Department of Agriculture, Water and the Environment

**Financial Implications:** $385 million over four years

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
| *Cost of Proposal ($m)* | *85* | *110* | *95* | *95* | *385* |
| 3a | Transition to plantations ($m) | *5* | *10* | *5* | *5* | *25* |
| 3b | Protected areas expansion ($m) | *30* | *50* | *40* | *40* | *160* |
| 3c | Extended bushfire recovery fund ($m) | *50* | *50* | *50* | *50* | *200* |

**Outline of proposal:**

The package will allocate:

* $25 million to review, reform and enhance implementation of the Australian Government program *Growing a Better Australia – A Billion Trees for Jobs and Growth* to plant 1 billion plantation trees by 2030.[[10]](#footnote-10)
* $160 million to support expansion of the National Reserve System to support biodiversity conservation, assist bushfire recovery and sequestration of land carbon.[[11]](#footnote-11) This would align with the growing momentum for a target under the Convention on Biological Diversity to protect 30% of lands and seas. The funds would leverage funds for land acquisition by State Governments, create regional jobs in land management, support new Indigenous Protected Areas, fundraising by private land conservation organisations for new wildlife sanctuaries, and support farmers who enter into *in perpetuity* conservation covenants.
* $200 million to build upon the Australian Government’s commitment of $200 million over two years from July 2020 in support for wildlife and habitat to recover from the 2019-20 bushfires.[[12]](#footnote-12) The funds would support farmers, Indigenous communities, states, researchers and conservation agencies to assist recovery efforts in bushfire regions.

**Strategic Policy Alignment:**

* The $25 million in support of reviewing and extending the Government’s 1 Billion Trees plantations policy would review progress to date, identify and address barriers to new plantations, such as in higher rainfall areas, identify cleared land for new plantations, and expand the scope of the program to support climate and biodiversity outcomes. The package would expand the plantation estate to create new jobs in wood production and downstream processing in regional areas, hasten the transition out of native timber harvesting, and support climate policies to maintain carbon stocks and flows in native forests.
* Expansion of the protected areas network aligns with Objective 5 of *Australia’s Nature Strategy for 2019-2030: Improve conservation management of Australia’s landscapes, waterways, wetlands and seascapes.[[13]](#footnote-13)* It would also underpin a commitment by the Australian Government to increase the extent of the protected areas estate in support of the 2030 biodiversity targets under the Convention on Biological Diversity.
* Extension of funding for wildlife and habitat to recover from the 2019-20 bushfires would align with the Government’s funding for bushfire recovery.[[14]](#footnote-14) The additional funds would support management of weeds and feral animals, support farmers who manage regrowing forests, fund ecological research and encourage revegetation.

**Rationale:**

Forests provide critical nature-based solutions to the climate and biodiversity extinction challenges, which were worsened by the 2019-20 bushfires and preceding record droughts.

The package would support farmers, the forest products sector, conservation organisations and Indigenous traditional owners to recover from the 2019-20 bushfires and record droughts, create jobs in post-fire land management, enhance efforts to conserve threatened species habitats, and store forest carbon.

**Implementation:**

The package would be administered through the Department of Agriculture, Water and the Environment. The package should be developed and delivered through different partnerships with the forest products sector, Australian Land Conservation Alliance, Carbon Market Institute, Wildlife and threatened species bushfire recovery Expert Panel, and State Government environment agencies.

**Value for Money:**

Protection and restoration of forests and woodlands provides opportunities for lower cost abatement of emissions, bushfire recovery and conserving wildlife.

# Proposal 4: Forests as Land Sector Carbon Stores

**Affected agency:** Department of Industry, Science, Energy and Resources

Clean Energy Regulator

**Financial Implications:** $10 million over four years

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
| *Cost of Proposal ($m)* | *2* | *3* | *4* | *1* | *10* |

**Outline of proposal:**

$10 million to develop and implement a national monitoring system to detect and report deforestation and reforestation, and resulting land sector emissions, to support compliance regarding threatened species habitat (EPBC Act), monitoring and reporting national emissions (Paris Agreement), and native vegetation regrowth (carbon farming).

**Strategic Policy Alignment:**

The investment would build upon and improve the state-wide land cover and tree study (SLATS) approaches used in Queensland[[15]](#footnote-15) and NSW,[[16]](#footnote-16) improve accuracy of land carbon modelling (vis a vis forest cover detection of the National Carbon Accounting System[[17]](#footnote-17)) and support increased land sector emissions abatement under the Paris Agreement.

**Rationale:**

Monitoring and modelling of abatement and sequestration in the land sector carbon is underpinned by remote sensing data and technologies that provide for highly accurate reporting of deforestation and reforestation. Uncertainties and errors associated with the current state-based monitoring of land clearing and regrowth, and forest cover change detection of the National Carbon Accounting Systems, hamper carbon accounting, carbon markets and confidence in Australia’s reporting of emissions under the Paris Agreement.

**Implementation:**

The package would be administered by the Clean Energy Regulator.

The package should be developed through consultation and collaboration with:

* Department of Agriculture, Water and the Environment
* State agencies responsible for monitoring changes in native vegetation, particularly the Queensland Herbarium which oversees the SLATS program
* Researchers with experience in developing and refining the forest cover detection module in the National Carbon Accounting System
* The private sector involved in developing innovative and accurate remote sensing systems for detecting forest cover change
* Carbon Market Institute

# Proposal 5: Aboriginal and Local Solar Stimulus

*Aboriginal and Local Solar Stimulus* will cut the cost of energy for thousands of community organisations, freeing up funds to spend on core services. Kindergartens, country fire stations, Aboriginal communities, public halls, sports clubs, schools, hospitals, and Councils will all benefit from the biggest local solar roll-out Australia has ever seen.

* $400 million in Government investment.
* Up to 20,000 community and public buildings fitted with solar, cutting energy costs right around Australia.
* Up to 3,000 jobs created.
* Potential to leverage up to $390 million in community investment.

The *Aboriginal and Local Solar Stimulus* program aims are to:

* Create 3,000 jobs;
* Reduce power bills for community organisations and state and local governments delivering public services.

**Affected Agency:** Department of Industry, Science, Energy and Resources

**Financial Implications:** $400 million over two years

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2020-21 | 2021-22 | 2022-23 | 2023-24 | Total |
| Cost of Proposal ($m) | *150* | *250* | - | - | *400* |
| 5a | Aboriginal Solar Stimulus ($m) | *35* | *35* | *-* | - | *70* |
| 5b | Local Solar Stimulus ($m) | *165* | *165* | - | - | *330* |

**Outline of proposal:**

This package provides funding from $1,000 to $20,000 to not-for-profit and community groups to install solar panels on the roofs of buildings. It is proposed to be in two streams, one directed to Aboriginal and Torres Strait Islander communities and a second directed at not-for-profit organisations in the wider Australian community. While the program can fund up to 100% of the project costs, we recommend that the grant round encourages and prioritises applications that install medium size systems (around 30kw) and contribute funding to the project.

The package will also include resourcing a steering group to support overall program design and outreach.  The funding will cover feasibility, capacity building and capital works for Aboriginal and Torres Strait Islander community solar projects.

**Strategic Policy Alignment:**

This package extends and scales the *Energy Efficient Communities Program – Community Energy Efficiency and Solar Grants 2020*. It will also complement the $53.6 million for the Microgrid Program announced in October 2020.[[18]](#footnote-18) It would also expand on the $24 million to fund building upgrades and reduce energy costs for community groups ($12 million) and for small and medium hotels ($12 million).

The *Solar Grants* program offered funding to install two energy efficient projects in each Federal electorate. The available grant of $12,500 for up to 100% of costs could be expected to install a small, 10kw system. Through the Aboriginal and Torres Strait Islander communities stream it could provide solar power to essential community buildings or in some cases, depending on scale, community wide installations. In the second stream, Government could quickly deploy an average of 65 projects per electorate, big enough to power a small community building such as a kindergarten, community hall, rural fire station or library.

**Rationale:**

Solar is also a great economic stimulator. In 2019, roof-top solar systems accounted for 13,070 jobs, while large-scale solar accounted for 4,740 jobs.[[19]](#footnote-19) Solar projects can be delivered quickly, with systems under 100 kw delivered in four to five months, and megawatt projects delivered in eight to ten months.[[20]](#footnote-20) Local solar projects also generate demand in the local economy, with the Reserve Bank of Australia identifying spill-over top domestic firms, citing some contracts suggesting local content accounts for 25 - 40% of total costs.[[21]](#footnote-21)

**Implementation:**

This package will be delivered by establishing two new funding rounds of the *Energy Efficient Communities Program – Community Energy Efficiency and Solar Grants 2020* (administered by the Department of Industry, Science, Energy and Resources). The first round would be directed at Aboriginal and Torres Strait Islander communities. The second open to all not-for-profit community groups across Australia. There may be opportunities to refine the grant program design to reduce the administration burden for grantees.

The Department of Industry, Science, Energy and Resources, should seek the advice of the National Indigenous Australians Agency in establishing the steering group and program design and delivery of the first funding round. The steering group will also work with Aboriginal and Torres Strait Islander communities to design a longer-term remote solar program that incorporates the knowledge and experience gathered during this grant round.

**Value for Money:**

This package has the potential to generate up to $390 million in community investment. The initiative will create up to 3,000 installer jobs for tradespeople spread across every Federal electorate in the nation.

Solar cuts the cost of energy. For community facilities that operate during the day, like kindergartens, health care centres, country fire authorities and clubs, solar can make a big difference to the bottom line, freeing up funds for core activities. A total of 160kW of solar photovoltaic systems installed across six Aboriginal communities in the west Kimberley will save each community up to $40,000 a year.[[22]](#footnote-22)

Small megawatt solar farms can reduce the power bills of local governments. The $8 million Newcastle solar farm makes good use of a closed landfill and will save Council around $9 million over its 25-year lifespan.[[23]](#footnote-23)

# Proposal 6: Modernise Manufacturing

*Modernising Manufacturing* will boost the competitiveness and resilience of our critical manufacturing sector by slashing costs and creating new jobs. The program will position Australian manufacturers as global leaders in the renewable, advanced manufacturing revolution.

* $520 million Commonwealth investment over three years;
* $1 billion of industry investment in energy modernisation;
* More than 22,000 jobs created;
* Energy costs of manufacturers slashed through tax investment incentives, grant funding for critical industries, and increasing the energy knowledge and capabilities of manufacturers.

This proposal would build and provide an additional focus for the $1.3 billion *Modern Manufacturing Initiative* announced in October 2020.[[24]](#footnote-24) It would particular strengthen the recycling and clean energy priority of the National Manufacturing Priorities.

The *Modernising Manufacturing* program aims are to:

* Significantly improve the energy productivity of Australian manufacturers, reducing their costs, boosting profits, and creating jobs;
* Build domestic manufacturing capacity and resilience across supply chains;
* Accelerate the uptake of clean technology and renewable energy across the manufacturing sector;
* Strategically position Australia as a global clean energy manufacturing hub that leverages climate aligned investment.

This program will invest $520 million to protect our existing 914,000 jobs in manufacturing and create 22,000 more.

**Total Financial Implications:** $520 million over three years

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
| Cost of Proposal ($m) | *120* | *356* | 44 | - | *520* |
| 6.1 | Asset write-offs to support energy upgrade investment ($m) | - | *280* | - | - | *280* |
| 6.2 | Energy fit program for critical supply chains ($m) | *110* | *66* | *44* | - | *220* |
| 6.3a | Capacity building programs ($m) | *8* | *8* | - | - | *16* |
| 6.3b | Manufacturing energy productivity strategy ($m) | *2* | *2* | - | - | *4* |

## Proposal 6.1

**Proposal Title:** *Modernising manufacturing: Asset write-offs to support energy upgrade investment*

**Affected Agency:** Australian Taxation Office (ATO)

**Financial Implications:** $280 million over one year

**Outline of proposal:**

This proposal is to extend the COVID-19 instant asset write-off threshold of $150,000 (for an annual turnover of less than $500 million) for through to 2021-22 targeted at the purchase energy modernisation equipment, for example, energy productivity measures, electrical heating technologies like industrial heat pumps, solar panels and battery storage. Instant cash write-offs deliver immediate investment support for businesses.

**Strategic Policy Alignment:**

Write-offs are streamlined, easy to access and significantly reduce the time and administrative burden of grant funding support. Instant asset write-offs provide quick and uncomplicated investment support for businesses, and the current program has been warmly welcomed by peak groups including the Australian Industry Group and the Australian Chamber of Commerce and Industry. This package also complements the Federal Government’s generous *Backing Business Investment* initiative.

**Rationale:**

There are proven and commercialised energy efficiency and fuel switching technologies, but the capital investment cost can be a disincentive to investment. Extending the instant asset write-off program for energy upgrades will support businesses to invest in new equipment that will deliver immediate cost savings.

**Implementation:**

Instant assets write-offs will be delivered through the 2021-22 budget process by the ATO.

To be eligible for instant tax write-offs, businesses need to provide evidence of purchasing energy modernisation equipment. To ensure clarity, an approved list of equipment should be prepared and published by the ATO.

The Australian Industry Group has developed a proposed list including:

Electrification of processes, such as heat pumps, electric induction furnaces and renewable heat such as solar thermal;

Energy management systems, such as sub metering and data analysis, data acquisition system integration and technology that enables demand response.

**Value for Money:**

It is estimated this package would realise $1 billion in industry investment, saving businesses $280 million.[[25]](#footnote-25)

## Proposal 6.2

**Proposal Title:** *Modernising manufacturing: Energy fit program for critical supply chains*

**Affected Agency:** Department of Industry, Science, Energy and Resources

**Financial Implications:** $220 million over three years

**Outline of proposal:**

This investment will provide grants for up to 1,000 manufacturers in industries identified by the Government as critical for sovereign industrial capability. The grants will support manufacturers to modernise energy processes. Grant recipients can access grant funding for capital upgrades that increases energy productivity and fuel switches to renewable electricity (for example, industrial heat pumps, refrigeration upgrades, solar and battery storage, waste avoidance and recovery to reduce energy costs associated with waste). Grant recipients can use grant funds for developmental costs, installation of equipment and associated staff training. The program will also fund program leaders and outreach officers to ensure this national building investment is strategically deployed to achieve long-term growth and resilience of these industries. The grant program can be matched by innovative finance options, such as the Sustainable Finance Fund (underwritten by Bank Australia) that provides low cost, long-term finance for environmental and building upgrade projects.[[26]](#footnote-26)

**Strategic Policy Alignment:**

COVID-19 has highlighted the risks of international interdependence across supply chains. The Australian Government has signalled plans for increasing Australia’s economic sovereignty, and Australian businesses are forecast to increasingly place greater value on domestically manufactured production inputs across all supply chains. Ensuring production output in these critical industries are matched with energy upgrades and fuel switching will maximise the productivity and resilience across supply chains.

**Rationale:**

Building energy productivity and renewable energy into expanded manufacturing for critical supplies - like food and pharmaceuticals - will build an energy fit supply chain that cuts energy costs, freeing up funds for innovation and job creation. Supporting targeted, strategic sectors over the long-term will deliver productivity gains across an entire national supply chain as the lessons learnt, user experience with energy fit processes and supply of equipment is mainstreamed across an entire sector (and not limited to sporadic case studies). The Federal Government’s recent support for the newly established Reliable Affordable Clean Energy for 2030 Cooperative Research Centre (RACE for 2030 CRC) provides the perfect catalyst for this national building initiative.

*“…it is so important that we work together with industry and researchers to deploy the right technology when and where it is needed for cheaper bills and lower emissions.”*

 The Hon Angus Taylor,

Minister for Minister for Energy and Emissions Reduction

Launch of RACE for 2030 CRC[[27]](#footnote-27)

**Implementation:**

The Department of Industry, Science, Energy and Resources’ successful *Modernising Manufacturing Fund* can be extended to deliver the Energy Fit program.

To be considered for a grant, businesses will need to demonstrate that the investment will increase energy productivity and lead to job creation. Businesses must also demonstrate that they will prioritise local procurement of equipment, where available.

Energy transformation outcomes and outputs of the grant should be co-designed with leaders of the nominated critical industries, energy productivity experts and peak groups, and the RACE for 2030 CRC. Slight adjustments to co-funding requirements and milestone payments may be needed to ensure grant funding can unlock private investment. This adjustment should be developed in close consultation with industry peak groups. The implementation should be steered by an expert advisory committee. It should also be coupled with a supply chain capacity program to ensure the grants achieve long-term gains in energy productivity.

**Value for Money:**

Levering existing program grant infrastructure will save administrative costs and time. Following the recent *Modernising Manufacturing Fund* grant round structure, small projects could receive 50% of project costs up to $100,000, and large projects between $100,000 and $1 million could access funding for 25% of project costs.

## Proposal 6.3

**Proposal Title:** *Modernising Critical Manufacturing: Industry energy knowledge and capacity building*

**Affected Agency:** Department of Industry, Science, Energy and Resources

**Financial Implications:** $20 million over two years

**Outline of proposal:**

This package will scale the leadership and capacity of state and territory governments, industry groups and other training providers to deliver knowledge and capacity building programs for industry. Entities seeking funding will be encouraged to put forward program proposals that can quickly leverage existing program infrastructure and industry relationships to ensure programs can add value to businesses in the short-term.

The package also provides funding to develop a national strategy for increasing the energy literacy of manufacturers. This is an essential precondition for Australia to move from being the most energy inefficient, to one of the most competitive and productive sectors in the world.

**Strategic Policy Alignment:**

The doubling of energy prices since 2014 has made energy use and procurement a complex and strategic business decision. Manufacturers (from executives, workers, engineering consultants to electricians and plumbers) don’t always have all the knowledge they need to transform energy use. They are also time poor, making it a challenge to invest in new energy skills and capacity building.

The Government’s recent JobMaker program includes a strong focus on skills development and driving greater alignment of skill with business and industry needs. This initiative aligns with the skill required for a modern manufacturing sector.

**Rationale:**

Successful State government programs show that energy mentoring and capacity building can make a positive difference for businesses.

Existing initiatives that could be scaled include:

* Capacity building projects like NSW’s *Sustainable Advantage[[28]](#footnote-28)* program and the Australian Industry Group’s *Energy efficiency mentoring program.[[29]](#footnote-29)*
* Circular economy programs that reduce energy via recycling, like the ASPIRE program that uses an online marketplace to match businesses with potential remanufacturer, purchases or recyclers of waste materials.[[30]](#footnote-30)
* Learning and networking events, such as those convened by the Australian Alliance for Energy Productivity, industry groups like Diary Australia and the Energy Efficiency Council.
* Developing and delivering TAFE programs for energy efficiency and electrical heating technology, like the Victorian *Advanced Diploma of Engineering* Technology[[31]](#footnote-31)and the Certificate IV in *Energy Management and Control*.

**Implementation:**

The funding opportunity for capacity building programs will be administered by the Federal Department of Industry, Science, Energy and Resources, who will call for proposals and allocate program funding to providers.

The energy productivity strategy will be led by the Department of Industry, Science, Energy and Resources in partnership with the Energy Efficiency Council, Australian Industry Group, RACE for 2030 CRC, State and Territories, and other industry peak groups.

Program providers must be able to demonstrate that their proposals:

* Leverages existing program infrastructure, capabilities, and relationships, and can be scaled and delivered quickly;
* Will involve business and industry groups to ensure content and delivery will add value for businesses;
* Will use energy experts that are suitably experienced and qualified (for example, are certified to deliver energy audits).

**Value for Money:**

Supporting state and territory governments and peak groups to expand their capacity building programs will quickly add value for manufacturers by leveraging existing relationships, program infrastructure and aligned grants. The NSW Sustainable Advantage program has engaged 500 businesses, and their combined actions are saving $95 million every year.[[32]](#footnote-32)

There is also the opportunity to deliver sector-wide, long-term energy capacity by partnering with peak groups to develop and deliver a strategic reform project that lifts the energy productivity of Australian manufacturers.

# Proposal 7: Battery Nation

*Battery Nation* will position Australia as a leading global battery manufacturer, leveraging our minerals and industrial capabilities to increase value and jobs rights across the supply chain.

* $500 million Government investment over three years plus $240 million in low-cost finance.
* Delivers:
	+ 100,000 home battery installs;
	+ 5 small battery manufacturing plants;
	+ New infrastructure to recycle 6,000 tonnes of waste every year;
	+ 2 large-scale battery manufacturing plants;
	+ 1 lithium refinery plant.
* Creates 4,500 ongoing manufacturing jobs and 2,300 installer and construction jobs.
* Leverages:
	+ $1 billion private investment in home batteries by 2024;
	+ $5 billion industry capital investment in heavy industry by 2030.
* Positions Australia as a leading global battery manufacturer ensuring procurement leads to local battery manufacturing and incentives for lithium refining, battery recycling and reprocessing and battery innovation.

The *Battery Nation* program aims are to:

* Create nearly 7,000 jobs by 2030;
* Increase the value capture of Australia’s lithium resources to 25% by 2030 (up from 0.53% in 2017);
* Increase lithium-ion battery recycling to 25% by 2025;
* Lower power bills by accelerating battery uptake across Australia.

**Financial Implications:** $500 million over three years plus $240 million in low-cost finance.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
| Cost of Proposal ($m) |  |  |  |  |  |
| 7.1a | Home and small business battery scheme **–** grants($m) | *100* | *100* | *40* | - | *240* |
| 7.1b | Home and small business battery scheme **–** loans($m) | *3* | *4* | *2* | *-4* | *5* |
| 7.2 | Battery commercialisation and scaling ($m) | *30* | *30* | *30* | *30* | *120* |
| 7.3 | Battery recycling infrastructure grant ($m) | *60* | *40* | *20* | - | *120* |
| 7.4a | CSIRO new battery research projects ($m) | 4 | 4 | 4 | 4 | 16 |
| 7.4b | National battery strategy ($m) | 2 | 2 | - | - | 4 |

## Proposal 7.1

**Proposal Title:** *Battery Nation: Home and small business battery scheme*

**Affected Agency:** Department of Industry, Science, Energy and Resources

Clean Energy Finance Corporation

**Financial Implications:** $245 million over four years

**Outline of proposal:**

This package will allocate $480 million:

* $240 million in grants over three years will provide battery subsidies for households and small businesses;
* $240 million in low-cost finance over four years will be made available through the Clean Energy Finance Corporation (CEFC).

The subsidises will contribute to 100,000 small battery installations for households and small businesses (under $1 million turnover). This proposal would complement the $1.3 billion, *Modern Manufacturing Initiative* announced in October 2020.[[33]](#footnote-33)

To incentivise rapid uptake in the first year of the program and generate the scale needed to attract new manufacturing plants, the first participating 20,000 households and / or small businesses will receive a $4,000 subsidy.[[34]](#footnote-34) All remaining 80,000 participants will receive a $2,000 subsidy.

**Strategic Policy Alignment:**

The program aims to create:

* 500 new installer jobs;
* 1200 new manufacturing, technical support, and sales jobs;
* 300 construction jobs

The increased market demand generated by the subsidies and low interest loans will attract new battery manufacturers to Australia. The program will have a target of attracting at least five new small battery manufacturers, generating 1,200 direct new jobs in total. Building these new plants will generate at least 300 construction jobs. This package will unlock $1 billion in private investment from households.

**Rationale:**

Smart Government support that encourages home battery uptake will incentivise battery manufacturers to invest in Australia by creating market demand. This in turn will grow jobs on the factory floor and across the supply chain. The South Australian Government has shown what smart investment and a simple, streamlined program can do. After just 18 months SA has attracted 2 new battery manufacturers to Adelaide, creating 350 jobs. Sonnen has set up in the former Holden Factory and has recruited former Holden workers into their business.

Home batteries will lower power bills, and by using smart technology, can be linked to create virtual power plants that secure energy supply across the grid. The 2020 Australian Battery Market report found that, “Home energy storage systems are still the main game for most battery manufacturers, wholesalers and retailers.”[[35]](#footnote-35) In 2019 more than 22,000 small-scale batteries were installed across Australia, providing more than 1 GWh in capacity,[[36]](#footnote-36) and this is projected to grow to 28,000 batteries in 2020.[[37]](#footnote-37)

**Implementation:**

The package will be administered through the Department of Industry, Science, Energy and Resources. This will ensure a rapid start-up, while also strategically linking the program to aligned industry development programs across the Federal Government. Only the South Australian Government has an extensive home battery program. Consulting with the South Australian Government will ensure the two programs align to offer maximum value for SA residents and battery providers. Other state and territory programs are smaller in scale. Households and small businesses will only be able to access one subsidy program and will not be able to ‘double up’ by accessing both a federal and state government subsidy.

The program will recruit a panel of approved battery providers, and by using these providers households and small businesses will be able to receive subsidies and access low interest loans.

To become a battery provider for the program, four threshold conditions must be met:

* Demonstration of financial and technical competency;
* Battery must be able to participate in a Virtual Power Plant;
* A Clean Energy Council accredited supplier;
* A demonstrated commitment to install batteries assembled or made in Australia.

**Value for Money:**

The increased market demand generated by the subsidies and low interest loans will attract new battery manufacturers to Australia. The program will have a target of attracting at least five new small battery manufacturers, generating 1,200 direct new jobs in total. It is also assumed building these new plants will generate at least 300 construction jobs. This package will unlock $1 billion in private investment from households.

## Proposal 7.2

**Proposal Title:** *Battery Nation:* *Battery commercialisation and scaling*

**Affected Agency:** Australian Renewable Energy Agency (ARENA)

**Financial Implications:** $120 million over four years

**Outline of proposal:**

This package provides support for establishing new high value-add lithium industries across Australia. Funding and market incentives will focus on two priorities, mineral refining and battery manufacturing. It would be a complement to the additional $1.62 billion funding to ARENA, particularly the $95.4 million for the *Technology Co-Investment* Fund and $74.5million for the *Future Fuels Fund* announced in September 2020.[[38]](#footnote-38)

This package will provide targeted investment to support the commercialisation and scaling up of large processing and manufacturing facilities. The package aims to create at least one new refinery and two new large-scale battery plants.

An expert panel of industry leaders will be formed to advise Government on high-value industry ventures to support, and to provide on-going advice and facilitation for funded projects to ensure long-term success.

**Strategic Policy Alignment:**

The critical parts of advanced battery manufacturing can all be made in Australia. The Australian Trade and Investment Commission has identified that the current lack of advanced battery manufacturing is a critical gap in the Australian lithium supply chain.[[39]](#footnote-39) Accelerating the uptake of home batteries is the key to establishing Australian battery manufacturing plants that can quickly scale up and generate high quality manufacturing jobs.

In turn, this growing market will generate demand for downstream lithium processing, boosting the business case for investing in new refinery plants. In line with the Commonwealth Government’s Critical Minerals Strategy and a commitment to “*promoting investment in Australia’s critical minerals sector and downstream processing*”,[[40]](#footnote-40) Australia should aim to capture between 15 to 25% of the anticipated $662 billion global lithium market growth by 2040. Targeted Government support now will unleash a global battery powerhouse that drives investment and jobs right across the value chain from mining, refining, making, and recycling.

**Rationale:**

Global energy storage is set to boom by 2040 and this represents a $662 billion investment opportunity.[[41]](#footnote-41) Experts anticipate that Australia is one of only ten countries able to secure three-quarters of this global market.[[42]](#footnote-42) The global electric vehicle market alone is predicted to consume 2.7 million tonnes of lithium by 2025. For context, the world currently makes around half a million tonnes, and new lithium refining capacity currently planned for Australia will only double world supply to 1 million tonnes.[[43]](#footnote-43)

Now is the time to assertively position Australia as the world’s leading battery nation. Australia has all the pre-conditions to capture the full value of the battery supply chain: minerals, an excellent investment destination, outstanding industrial capacity, an attractive market for small and big scale batteries, world-class infrastructure, and proximity to Asia. But we are not doing enough to make sure that the full economic value of our resources benefits Australia. While we have outstanding reserves of lithium most of our activity is limited to mining and exporting. This is a problem because most of lithium’s economic value is in refining, processing, and battery manufacturing. In 2017 Australian lithium realised $213 billion in the global market, but only 0.53% ($1.13 billion) of this wealth stayed in Australia.[[44]](#footnote-44) Most of Australia’s lithium (spodumene) is exported to China for processing. After that it is sent to Japan and Korea where it is transformed into battery packs, which are then imported to Australia and other countries.[[45]](#footnote-45)

**Implementation:**

ARENA will deliver investment in battery commercialisation and scaling and will convene the expert panel of industry leaders to advise on funding allocation.

This package should be designed and delivered in partnership with the Future Battery Industries Cooperative Research Centre, the Chief Scientist, the Battery Stewardship Council, industry leaders and state and territory governments.

All investors, new market entrants and manufacturers set to benefit from federal government investment support and grant funding must demonstrate that their proposal:

* Supports local content procurement, to maximise the value of investment into regional economies;
* Complies with the National Battery Stewardship Scheme;
* Creates new job opportunities for Australians;
* Excellence in environmental management;
* Supports strong economic empowerment for Traditional Owners, including trade opportunities with Aboriginal owned enterprises and job opportunities.

**Value for Money:**

Scaling up lithium refining, processing and battery manufacturing will keep the high value parts of the battery supply chain in Australia. Increasing our lithium value capture from 0.53% to 25% would boost the annual economic value from $1 billion, to $54 billion.

## Proposal 7.3

**Proposal Title:** *Battery Nation:* *Battery recycling infrastructure grant*

**Affected Agency:** Department of Infrastructure, Transport, Regional Development and Communications

**Financial Implications:** $120 million over three years

**Outline of proposal:**

This package proposes a three-year infrastructure grant program to increase domestic battery recycling infrastructure and processing. This is a key support package to ensure the success of the Battery Product Stewardship Scheme. For the battery recycling grant, it is recommended that a design of 25% federal funding, 25% state funding and 50% commercial funding be adopted.

This package will provide targeted investment to support the commercialisation and scaling up of large processing and manufacturing facilities. The package aims to create new battery recycling infrastructure that recycles 5,000 tonnes (25% of annual battery waste) within 5 years.

**Strategic Policy Alignment:**

The critical parts of advanced battery manufacturing can all be made in Australia. The Australian Trade and Investment Commission has identified that the current lack of advanced battery manufacturing is a critical gap in the Australian lithium supply chain.[[46]](#footnote-46) Accelerating the uptake of home batteries is the key to establishing Australian battery manufacturing plants that can quickly scale up and generate high quality manufacturing jobs. This proposal would complement the $1.3 billion, *Modern Manufacturing Initiative* and the National Manufacturing Priorities announced in October 2020, particularly the recycling and clean energy priority. [[47]](#footnote-47)

In turn, this growing market will generate demand for downstream lithium processing, boosting the business case for investing in new refinery plants. In line with the Commonwealth Government’s Critical Minerals Strategy and a commitment to “*promoting investment in Australia’s critical minerals sector and downstream processing*”,[[48]](#footnote-48) Australia should aim to capture between 15 to 25% of the anticipated $662 billion global lithium market growth by 2040. Targeted Government support now will unleash a global battery powerhouse that drives investment and jobs right across the value chain from mining, refining, making, and recycling.

**Rationale:**

Global energy storage is set to boom by 2040 and this represents a $662 billion investment opportunity.[[49]](#footnote-49) Experts anticipate that Australia is one of only ten countries able to secure three-quarters of this global market.[[50]](#footnote-50) The global electric vehicle market alone is predicted to consume 2.7 million tonnes of lithium by 2025. For context, the world currently makes around half a million tonnes, and new lithium refining capacity currently planned for Australia will only double world supply to 1 million tonnes.[[51]](#footnote-51)

The Battery Stewardship Council of Australia has developed an industry-led battery stewardship scheme, which will drive responsible management across the entire battery supply chain, importantly increasing recycling rates[[52]](#footnote-52). The scheme is currently awaiting approval from the Australian Competition and Consumer Commission. There are positive developments in lithium refining and battery manufacturing, but they need to be scaled up and coordinated to ensure we build a competitive and world leading industry.

**Implementation:**

The Department of Industry, Science, Energy and Resources will administer the battery recycling grants.

This package should be designed and delivered in partnership with the Future Battery Industries Cooperative Research Centre, the Chief Scientist, the Battery Stewardship Council, industry leaders and state and territory governments.

All investors, new market entrants and manufacturers set to benefit from federal government grant funding must demonstrate that their proposal:

* Supports local content procurement, to maximise the value of investment into regional economies;
* Complies with the National Battery Stewardship Scheme;
* Creates new job opportunities for Australians;
* Excellence in environmental management;
* Supports strong economic empowerment for Traditional Owners, including trade opportunities with Aboriginal owned enterprises and job opportunities.

**Value for Money:**

Ramping up battery recycling will maximise the value of our lithium. CSIRO estimates that today’s lack of battery recycling represents a lost economic opportunity of $813 million to $3 billion.[[53]](#footnote-53)

## Proposal 7.4

**Proposal Title:** *Battery Nation: Battery innovation*

**Affected Agency:** Commonwealth Science and Industrial Research Organisation (CSIRO) and the Office of the Chief Scientist

**Financial Implications:** $24 million over four years

**Outline of proposal:**

The package boosts CSIRO’s capacity to deliver research and commercialisation of new battery technologies. It also funds the Chief Scientist to develop a national battery strategy.

The national battery strategy should consider:

* how to maximise Australian lithium value capture across the full supply chain;
* the target scale and size of the industry, including full investment, jobs, and export potential;
* a series of incentives to attract new metal refineries, small- and large-scale battery manufacturers and recyclers to Australia.

**Strategic Policy Alignment:**

This package will ensure Australia is a global leader in advanced manufacturing and battery innovation though developing a national battery strategy and supporting innovation across the battery supply chain.

**Rationale:**

The Federal Government’s recently announced *National Hydrogen Strategy* and aligned funding packages have excited industry and generated investor interest. Australia can also be at the forefront of battery storage, exporting its batteries and expertise to the world. Exciting innovations include light-weighting batteries to power electric buses that hold more passengers, electric planes, and electric road trains, and graphene batteries in a car which could be refuelled while stopped at traffic lights.[[54]](#footnote-54) Developing a national battery strategy and supporting Australian innovation will position us at the forefront of global battery economy.

**Implementation:**

The CSIRO will deliver new battery research projects. The COAG Energy Council will commission the strategy, which will be delivered by the Chief Scientist. Both programs should be delivered in partnership with the Future Battery Industries Cooperative Research Centre.

**Value for Money:**

The CSIRO has a long history of investment in the development of battery technology, including successful launch for the commercialisation for patented intellectual property technology. Further investment in this research has significant ongoing opportunity for the development of new business opportunities in Australia. In addition, this package will support long term job creation highlighted in Proposal 7.2 by ensuring the right market incentives are in place to grow Australia’s manufacturing and battery export potential.

# Proposal 8: Electric Bus Revolution

*Electric Bus Revolution* will fast-track electric buses in our cities and build a national manufacturing sector that supplies electric buses to the world.

* $240 million Government investment over three years that puts 500 new, Australian made buses on the road.
* Leverages $233 million of industry investment in electric buses and depots.
* Grant funding puts 500 new electric buses on the road and builds associated charging infrastructure.
* More than doubles Australia’s existing bus manufacturing workforce of 10,000 people by 2030 with a two-pronged approach – a grant program and innovation fund - to create:
	+ 3,000 new jobs by 2023 through public transport bus procurement and depot upgrades;
	+ 8,000 new jobs by 2030 through kickstarting an e-bus export industry.

The Electric Bus program aims are:

* More than double Australia's existing bus manufacturing workforce, reaching over 20,000 by 2030;
* Deploy at least 500 Australian made electric buses across our major cities within three years;
* Develop an electric bus manufacturing strategy that aims to supply 5% of anticipated global electric bus sales by 2030.

**Financial Implications:** $240 million over three years

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2020-21 | 2021-22 | 2022-23 | 2023-24 | Total |
| Cost of Proposal ($m) | *105* | *95* | 40 | - | *240* |
| 8.1a | Bus Grant Program ($m) | *80* | *80* | *40* | - | *200* |
| 8.1b | E-Bus Strategy ($m) | 3 | 2 | - | - | 5 |
| 8.2 | Electric bus innovation fund ($m) | *20* | *15* | *-* | *-* | *35* |

## Proposal 8.1:

**Proposal Title:** *Electric Bus Revolution:* *Electric Bus Grant Program* *and E-Bus Strategy*

**Affected Agency:** Department of Infrastructure, Transport, Regional Development and Communications

**Financial Implications:** $205 million over three years

**Outline of proposal:**

This package allocates $205 million in grant funding over three years. This proposal would complement the $1.3 billion, *Modern Manufacturing Initiative* announced in October 2020.[[55]](#footnote-55)

*Electric Bus Grant Program*

The Electric Bus Grant Program will provide $200 million in grants to public transport authorities to incentivise them to go to market for service contracts that use Australian made electric buses. Funding will support early uptake of up to 500 electric buses, contributing to the current cost difference between diesel and electric buses. Funding can also be used to support depot upgrades and charging equipment.

*E-Bus Strategy*

$5 million will be allocated to develop a national e-bus manufacturing strategy and implementation plan. Electric buses are proven technologies, but to ensure Australia gets the maximum value from electrifying buses and building new manufacturing industries a strategy and coordinated approach is needed.

**Strategic Policy Alignment:**

This has the potential to create nearly 3,000 jobs:

* 300 new manufacturing jobs, by establishing three new electric chassis manufacturing plants
* 1,700 manufacturing jobs in bus body manufacturing
* 900 construction jobs to build electric charging depots.

It could also create at least 50 construction jobs created to construct 40MW solar or wind farms to power the 500 buses.

Bus manufacturing is an important Australian industry with a workforce of around 10,000 people.[[56]](#footnote-56) There is a need to support industry to ensure the switch to electric buses maintains and grows these jobs. Bus industry experts advise that strong policy support for electric buses combined with procurement will incentivise local manufacturing and assembly of electric buses in Australia.

**Rationale:**

While global demand for electric buses is growing, markets outside of China are still small. Transitioning Australia’s bus manufacturing sector to electric bus manufacturing will help ensure Australia is shovel ready to sell high quality buses to the world when the expected price tipping point is achieved in 2025.

The drivers for making the switch to e-buses include:

* *Healthier cities* – diesel buses release harmful pollutants. New York City is transitioning its fleet of 5,700 buses to electric, and it is estimated that each electric bus will save $150,000 per year in reduced health care costs.[[57]](#footnote-57)
* *Cheaper to run* – electric buses have much lower operating costs (based on total cost ownership) than conventional buses.[[58]](#footnote-58) Even the most expensive 350 kWh electric bus can realise around $130,000 in savings over a 15-year lifetime.[[59]](#footnote-59)
* *Cost parity* – By 2030 it is projected that electric buses will reach upfront cost parity with diesel buses. Accelerated demand could bring this forward to 2025.[[60]](#footnote-60)

Today, there are around 425,000 electric buses worldwide. Bloomberg New Energy Finance projects that by 2040, 81% of all municipal (public transport) bus sales will be electric.[[61]](#footnote-61) Twenty-six global cities have committed to only buy electric buses by 2025 –a procurement potential of 80,000 buses.[[62]](#footnote-62)

In Australia, NSW has committed to a fully electric bus fleet. In December, the NSW Government announced the purchase of 120 electric buses in 2021 as the first step to transitioning the entire 8,000 bus fleet by 2030.[[63]](#footnote-63) Brisbane City Council recently entered into contract for 60 electric buses, and the Victorian and ACT Governments each are trialling an e-bus with success.

Nexport currently imports electric bus chassis. They are working to set up an electric chassis manufacturing plant in Australia that would create 100 jobs but need a minimum order of 150 buses (delivered over three years) to make it viable.[[64]](#footnote-64) Transit Systems operates 830 diesel and CNG buses in Sydney. Switching just 10% of Sydney’s fleet would be enough to attract commercial opportunities for bus manufacturers and equipment suppliers.[[65]](#footnote-65) Making electric buses for Australian cities is just the first step to growing manufacturing jobs.

Australia can leverage its existing industry to scale-up and provide electric buses for the global market. If Australia aimed to supply just 5% of the anticipated global market by 2025, more than 8,000 new jobs could be created.

**Implementation:**

*Electric Bus Grant Program*

The grant program will be administered by the Department of Infrastructure, Transport, Regional Development and Communications. Two funding rounds will be offered over 2 years, which will provide flexibility for different bus service contracts and end dates. Funding rounds will also be allocated proportionality across states and territories.

To win grant funding, state and local government public transport authorities must:

* Go to market for at least 50 new electric buses per contract;
* Include local content and manufacturing requirements in their tenders;
* Demonstrate that mechanisms will be put in place to run the buses with renewable electricity;
* Demonstrate that state bus service contracts have been updated to reflect new technologies;
* Demonstrate they have been partnering with the bus operators to design a bus network with the capability of accommodating new technologies and service practices;
* Demonstrate how they will provide practical support for investors and commercial operators looking to establish local manufacturing operations;
* Accelerate bus replacement program, bringing the contract life of service buses down to 15 years (from current 25 years) and prioritising the replacement of high floor buses (elderly and mobility impaired people cannot use these services).

*E-Bus Strategy*

The e-bus strategy will be delivered by the Transport and Infrastructure Council and will nominate a state to lead the strategy on behalf of the Council. It will focus on:

* Designing the retrofit of urban bus networks to fully electric services, exploring how proven, advanced technologies can be best adopted and adapted to existing bus networks;
* Bus and battery innovation, manufacturing, and deployment, to put Australia at the forefront of technology and advanced manufacturing across the entire bus supply chain;
* Vehicle to grid optimisation, to ensure electric bus roll-out provides strategic grid benefits such as demand management and storage.

**Value for Money:**

An investment of $200 million of federal government funding will leverage an additional $233 million investment in buses and charging depots by public transit authorities and commercial operators. This investment will also reduce operating costs for public transport operators and contribute to better air quality and amenity for our cities.

## Proposal 8.2:

**Proposal Title:** *Electric Bus Revolution: Electric bus innovation fund*

**Affected Agency:** Australian Renewable Energy Agency

**Financial Implications:** $35 million over two years

**Outline of proposal:**

This package will invest $35 million over two years in zero emission innovation and investment. This innovation fund will support bus operators and manufacturers to commercialise Australian e-bus innovation and to strategically scale up manufacturing to target the international market. It would be a complement to the $74.5million for the *Future Fuels Fund* announced in September 2020.[[66]](#footnote-66)

**Strategic Policy Alignment:**

This will build industry capacity to make and export electric buses, targeting 4,000 buses and 8,000 new jobs by 2030. It is designed to complement the investment in the *Electric Bus Grants Program* to stimulate innovation in the bus manufacturing industry to be export ready for the expected global expansion of demand by 2025.

**Rationale:**

Electric buses are proven technologies, but to ensure Australia gets the maximum value from electrifying buses and building new manufacturing industries alongside investing in domestic procurement and an industry strategy (outlined in Proposal 3.1) there needs to be ongoing industry innovation.

The fund is modelled on the New Zealand *Low Emission Vehicle Contestable Fund,[[67]](#footnote-67)* wherekey objectives are to:

* Increase the supply and variety of electric and other zero emission buses;
* Improve the availability of charging and servicing infrastructure;
* Increase demand for low emission vehicles;
* Develop innovative products and systems for vehicles.

**Implementation:**

The Electric Bus Innovation Fund will be administered by ARENA. Industry funding recipients must demonstrate how their project will create jobs and significantly upscale bus manufacturing.

**Value for Money:**

This investment will also reduce operating costs for public transport operators and contribute to better air quality and amenity for our cities. $35 million is a modest investment to stimulate innovation in an industry which is seeing growth in domestic demand and significant export potential which could support 8,000 new manufacturing jobs by 2030.

**For More Information the renewable energy proposals (proposal 5, 6, 7 and 8) see:**

[*Australia renewable export COVID-19 recovery package*](https://www.wwf.org.au/ArticleDocuments/843/Renewable%20Export%20COVID_June2%20NI%20%281%29.pdf.aspx?OverrideExpiry=Y)*,* WWF-Australia, June 2020.

[*Delivering economic stimulus through renewables*](https://www.wwf.org.au/ArticleDocuments/843/Renewable_stimulus_programsJune2_-_Public_Policy_Paper.pdf.aspx?OverrideExpiry=Y)*,* WWF-Australia, June 2020.

# Proposal 9: Strengthening the Pacific Tuna Industry through Technology-enabled Transparency

**Affected agency:** Department of Foreign Affairs and Trade

**Financial implications:** $17 million over 4 years

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
| *Cost of Proposal ($m)* | *1* | *2* | *7* | *7* | *17* |

**Outline of proposal:**

The aim is to increase the value of Pacific Island Countries and Territories’ (PICT) industrial tuna catch, facilitate sustainable management of tuna stocks, improve working conditions on fishing vessels, and reduce illegal, unreported, unregulated (IUU) fishing in PICT waters.

These objectives will be achieved by applying cost-effective digital technologies to monitor fishing and track tuna from ‘bait to plate’, building on recent experience of using these technologies successfully on a commercial scale in two major Australian fisheries (Patagonian toothfish and Northern Australian prawns).

Automated verification of fishing practices and working conditions, combined with tamper-proof digital traceability of tuna products, would facilitate access of Pacific producers to high value export markets. The same technologies will generate real-time data for fisheries management authorities, improving recovery of taxes and royalties while allowing enforcement efforts to focus more efficiently on IUU fishing.

Australia has excellent relations with Fijian government agencies and the Fijian tuna industry, as well as regional bodies, all of which recognise the need for improved monitoring and traceability and integration of digital technology in Pacific fisheries.

Based on previous experience and policy alignment, we suggest beginning with long-line tuna fishing operations based in Fiji and then expand to other Pacific fisheries. $3 million would bring most of the Fiji tuna fleet on board within 24 months, with $7 million per year in the final two years of the forward estimates, and an additional $28 million investment required to roll out the solution in other PICT nations over the following 4 years.

**Strategic Policy Alignment:**

*Australian Government:*

Australia has a long-standing interest in the success of its near neighbours. For our Pacific island neighbours, economic success depends heavily on the management of fisheries, especially tuna, which accounts for a major share of economic output, government income and export revenue. The sustainable management of offshore fisheries is a strategic priority for the Government of Fiji and other Pacific Island Countries and Territories (PICTs). The importance of fisheries looms even larger in the aftermath of the COVID-19 pandemic, which has decimated the tourism industry, another major pillar of many PICT economies.

This proposal supports key priorities identified by DFAT in *Partnerships for Recovery: Australia’s COVID-19 Development Response[[68]](#footnote-68)* in responding to COVID-19 related challenges in the region:

1. Revitalising export markets,
2. Re-establish markets and global value chains,
3. Foster greater value chain diversification.

In the Australian Government’s broader policy agenda:

* *Deregulation:* widespread adoption of digital technology in the PICT fisheries sector would help to automate monitoring and enforcement of fisheries regulations, thereby reducing compliance costs to government and business, while also increasing recovery of fishing royalties, license fees and taxes.
* *Economic recovery:* The technology solutions outlined in this proposal can help ensure that PICTs remain competitive in global seafood markets, while also securing the fishery resources on which they depend.
* *Regional security:* As Australia’s ​Foreign Policy White Paper n​otes​, “​depleted fish stocks in neighbouring regions degrade our own stocks and can motivate illegal fishing in Australian waters.”[[69]](#footnote-69) By supporting implementation of a blockchain-enabled solution for Pacific tuna fisheries, the Australian Government will ensure that any new blockchain platform that operates within Pacific EEZ fisheries is transparent, fair and aligns with regional interests. In addition, it will ensure that this will be an Australian-led initiative that will ultimately bolster Australia’s regional security objectives, particularly given other expanding interests and influence in this region.

*Fiji Government:*

This proposal aligns with and supports the Fiji Ministry of Fisheries Strategic Development Plan 2019 – 2029, which includes the following short-term priorities:

1. Develop a sustainable and profitable Tuna industry,
2. Improve service delivery through technology,
3. Develop ‘hook to fork’ traceability.

*Forum Fisheries Agency (FFA):*

This proposal addresses key challenges and priorities identified in the recent Pacific Islands FFA draft Annual Report for 2019-20, notably:

1. Limited data on bycatch from longline fisheries,
2. Need for robust traceability mechanisms,
3. Aim to evolve technology and standards to meet future demands.

**Rationale:**

Tuna is a critical and under-valued economic resource in the Western Pacific. Australia has significant capabilities and plays a major role in helping our Pacific Island neighbours succeed. In addition to public development finance, Australia brings technical and managerial know-how, market power, defence and law enforcement capability and global political influence to support PICTs. With respect to the sustainable management of Pacific fisheries, Australia supports the efforts of PICT governments to reduce illegal, unreported and under-reported (IUU) fishing and human rights abuses in the fishing industry, to increase local value added, develop export markets, and adapt to a changing climate. For all these goals, Australia can also bring its significant technical expertise to bear. COVID has disrupted the industry - but increased consumer focus on provenance and sustainability is an opportunity.

*Technology for sustainable fisheries*

There is a technology solution to transparency - started in 2017-18 in Fiji breaking ground with digital tuna traceability.[[70]](#footnote-70) The technology is now proven at scale - commercially deployed in two Australian commercial fisheries.[[71]](#footnote-71) Like many other industries, fisheries around the world are evolving in response to consumer preferences and improved technology. One area that is rapidly advancing, and where Australia is leading the way, is the application of digital technology in fisheries and seafood. In some developed country fisheries, low-cost digital identification and blockchain-enabled traceability have been deployed successfully at scale to verify the provenance of seafood. New technologies are also being developed to track fishing vessels, including on the high seas, to monitor compliance with social and environmental standards and fisheries management regulations.

*Barriers to technology adoption in the Pacific*

New technologies for sustainable fisheries management have been tested successfully in the West Central Pacific, but wider uptake has been slow. Barriers to uptake include:

* Limited institutional capacity of PICT governments and regional bodies to develop and enforce fisheries management regulations;
* Low mastery of new digital technologies by local fisheries service providers, as well as by existing voluntary social and environmental standards bodies (e.g. Marine Stewardship Council);
* Inability to access market demand (in key export destinations) for digital verification of the production practices and provenance of Pacific seafood; and
* Up-front cost of installing equipment and training fisheries workers to use the latest technologies (e.g. electronic vessel monitoring, RFID scanners and reusable tags, remote sensing data, Artificial Intelligence, blockchain, etc).

*The need for change*

PICTs cannot assume that fisheries resources will remain resilient to fishing effort, especially in the context of climate change and increasing pressure from IUU operators. Neither can PICTs rely on consumers in local and export markets continuing to purchase Pacific tuna and other seafood exports without stronger evidence of social and environmental responsibility. There is an urgent need for PICT fisheries to catch up with current technology in order to secure their fishery resources and maintain or grow access to major export markets. This is a recognised priority of PICT governments and regional bodies in the Pacific.

**Implementation:**

Building on technology and capacity developed by OpenSC, an Australian headquartered company, the proposal involves deploying a range of modern technologies to provide a robust transparency solution for Pacific tuna fisheries:

* Low-cost RFID (radio frequency identification) and QR (quick response code) technologies are used to attach a unique identification code to each individual fish.
* Scanners are used to record the exact time and location of those fish (or fish cuts) at various points in the supply chain.
* Data science and machine learning technologies are used to process large volumes of data and verify responsible production claims in real-time.
* Decentralized ledgers (including blockchain) are used to store data in tamper-proof and trustworthy ways.

**Value for Money:**

The technology is now proven ‘at scale’ in commercial Australian fisheries, with the research and development costs borne by corporate entities outside of the Pacific.

Whilst our overall ambition is for a region-wide initiative, covering all Pacific long line tuna fisheries, Fiji is a smart and cost-effective place to begin. Advantages include:

* *Robust regulatory ecosystem​:* Fiji continues to make great strides in fisheries management and has a strong framework upon which further innovation can build.
* *Experience with Fiji’s tuna fishing fleet:​* ​Our consortium of partners has experience and good working relationships with Fiji’s leading tuna fishing companies and its fishing authorities, providing an immediate launch-pad for the project.
* *Scale and access:​ ​*Fiji’s domestic fleet is comprised of 71 vessels dedicated to longline tuna fishing, ensuring the pilot can achieve adequate coverage of the industry and generate learnings applicable to scaling regionally.

The estimated economic, environmental and social benefits for Fiji are substantial, based on a model developed by the Boston Consulting Group (BCG). The model estimates direct and indirect contributions to GDP, as well as expected improvements in tax revenue collection, reduced over-fishing and reduced forced labour on fishing vessels.

The modelling results show total benefits of approximately USD 16 million per year for Fiji or 100 million+ over 10 years, under the mid-range scenario. When subsequently scaled across the Pacific, at an estimated cost of $28 million over four years (FY 2024 to 2027), the estimated mid-range benefits are USD 324 million per year or USD 2 billion+ over 10 years.

# Proposal 10: Indigenous Rangers

**Affected Agency:** National Indigenous Australians Agency

**Financial Implications:** $5 million over four years

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| --- | --- | --- | --- | --- | --- | --- |
|  |  | 2021-22 | 2022-23 | 2023-24 | 2024-25 | Total |
| *Cost of Proposal ($m)* | *23.7* | *137.7* | *251.7* | *354* | *767* |
| 10a | Indigenous Ranger Program expansion ($m) | *12* | *126* | *240* | *354* | *732* |
| 10b | Women Ranger Support Network ($m) | *1.7* | *1.7* | *1.7* | *-* | *5* |
| 10c | Healing Country program ($m) | *10* | *10* | *10* | *-* | *30* |

**Outline of proposal:**

* Increase the *Indigenous Ranger Program* to fund 2,000 full-time equivalent Indigenous ranger positions by 2022-23 with a long term goal of 5,000 rangers by 2025-26.
* Commit $5 million over three years to support the expansion and operation of a women rangers support network that provides leadership, mentoring programs, and training opportunities to women rangers across Australia.
* Commit funding of $30 million over three years to support the implementation of a Healing Country program to assist urban Indigenous communities to deliver cultural and conservation outcomes in large population centres.

The proposal also recommends broadening the distribution of the *Indigenous Ranger Program* with rangers located in areas facing the greatest environmental challenges such as the Great Barrier Reef, south west Australia, the Murray-Darling Basin and areas of biodiversity significance still recovering from the 2019-20 bushfires. The expansion would also assist in increasing the representativeness of the *Indigenous Ranger Program*, and allow the target large urban and regional centres with the highest populations of Indigenous people including Sydney, Melbourne, and Brisbane.

**Strategic Policy Alignment:**

The Australian Government currently funds around 895 Indigenous ranger positions through its *Indigenous Ranger Program*. These rangers are predominantly distributed across northern Australia and in central Australia.

The Indigenous Ranger Program has been an unqualified success and provides significant social and community benefit in remote and isolated communities. However, the program remains very small in south-eastern Australia where the largest populations of Aboriginal and Torres Strait Islanders live.

In 2020 the Australia Government committed to extending the program until 2028. This commitment along with the new Murray-Darling Basin Indigenous River Rangers Program demonstrates this is a long-term policy commitment for the Government.

**Rationale:**

For more than a decade, WWF-Australia has partnered with Indigenous ranger groups to co-design and deliver conservation and sustainable land and sea management outcomes. We have seen first-hand the significant environmental, social and economic benefits of properly resourced, Indigenous-led traditional management approaches and have been encouraged by the increased interest in traditional land management practices, particularly during and in the immediate aftermath of the 2019-20 bushfires. While there is significant conservation need, and a desire from Indigenous communities to participate, there are not currently enough ranger positions available to meet this demand.

The 2020 commitment to extend *Indigenous Ranger Program* funding for the next seven years has provided much-needed job security for currently employed rangers. This, along with the new Murray-Darling Basin Indigenous River Rangers Program are welcome developments but are insufficient to get Australia closer to the 5,000 ranger positions needed by 2025.

Moreover, the extension of existing funding and support for approximately 20 new ranger positions in the Murray-Darling Basin will do little to address gender inequality within the *Indigenous Ranger Program*. While gender disaggregated data is not available, it has been estimated that women represent less than one third of people in paid Indigenous ranger positions.

To date, investment by the Australian Government in women rangers has been slow, smaller and less reliable than for men, and funding that is specifically for women rangers is relatively recent and small. This vulnerability contrasts with the great benefit women bring to their work on country as well as to their communities. The special responsibilities of Indigenous women rangers include heritage management (looking after sites or places significant for women or associated with women’s stories), assisting with public education, environmental monitoring, collecting bush tucker, collecting and propagating plants and recording traditional knowledge.

There is an excellent opportunity for the Australian Government to significantly expand the already highly successful Indigenous ranger program, with a particular focus on women rangers.

While enthusiastic and highly motivated, urban Indigenous communities have been overlooked in relation to natural resource management programs. These urban communities still face many of the Closing the Gap challenges as more remote and isolated communities but are not afforded a similar level of attention. By working alongside local governments and NGOs, these urban communities could support ranger groups that focus on issues such as waterway and bushland restoration, wetland rehabilitation, threatened species conservation, and cultural site maintenance.

**Implementation:**

Each of these proposals is an extension of the existing programs and would be implemented through the National Agency for Indigenous Australians in conjunction with the Department of Agriculture, Water and the Environment.

It is proposed that in 2021-22 the program be increased from 895 rangers to 1,000 and planning commence to reach the target of 5,000 rangers by 2025-26 through adding 1,000 rangers each year.

To assist in increasing the number of women rangers, it is proposed to conduct women ranger only funding rounds in order to increase the number of women rangers in the Indigenous Ranger Program to 2,500 rangers (50%) by 2025-26.

**Value for Money:**

There are many benefits provided by Indigenous rangers. Indigenous rangers bring a depth of cultural attachment and unique land management skills to the nationally and internationally important task of ‘Caring for Country’. Indigenous ranger programs provide real jobs for Indigenous people to be proud of and are one of the few Indigenous programs to have shown significant measurable improvements in the health and well-being of participating Indigenous communities. A 2016 Federal Government-commissioned report found that for every $1 invested in the Girringun Indigenous Protected Area, approximately $2.2 of social, economic, cultural and environmental value has been created.

# Proposal 11: Setting up Renewable Energy Industrial Precincts

### A joint proposal from WWF-Australia and Beyond Zero Emissions

**Overview**

Low-cost electricity is the key to sustaining and reviving our manufacturing sector. It is well established that renewables offer the lowest-cost option for new electricity generation, and it is increasingly clear they will soon be cheaper than existing fossil fuel alternatives, where they are not already. Australian industry is acutely aware of this, with major employers positioning themselves to take advantage of the low-cost, clean energy offered by Australia’s world-leading renewable energy resources.

Now is the time for the Australian Government to support and leverage these efforts to modernise, re-energise and expand our manufacturing and industrial sector through the establishment of Renewable Energy Industrial Precincts (REIPs). REIPs will support the development of advanced manufacturing clusters powered by low-cost renewable energy. They are the key to retaining existing manufacturing capacity, reskilling our workforce, creating new jobs in emerging industries, and ensuring our economy is more resilient to shocks and global trends over the coming decades

**Key components:**

* $2 billion in Commonwealth investment over five years to catalyse five Renewable Energy Industrial Precincts
* Leverage $7 billion in private sector investment
* Secure over 46,000 jobs and create an additional 46,000 jobs
* Delivered by a Renewable Energy Industrial Precincts Taskforce in the Department of Industry, Science, Energy and Resources

**Proposal Title:** Renewable Energy Industrial Precincts

**Affected Agency**: Department of Industry, Science, Energy and Resources

**Financial Implications:** $1.5 billion over the forward estimates period and $2 billion over five years

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| --- | --- | --- | --- | --- | --- | --- |
|  |  | **2021-22** | **2022-23** | **2023-24** | **2024-25** | **Total** |
| **Cost of proposal ($m)** | *110* | *320* | *570* | *500* | *1,500* |
| *11a* | *Stream 1: Infrastructure and coordination funding ($m)* | *60* | *120* | *120* | *100* | *400* |
| *11b* | *Stream 2: Renewable manufacturing precinct upgrade funding ($m)* | *50* | *200* | *450* | *400* | *1,100* |

**Outline of proposal:**

Renewable Energy Industrial Precincts support a cluster of manufacturers powered by 100% renewable energy. These precincts are either located within Renewable Energy Zones or connected to renewable energy generation through high-voltage transmission lines. They also have access to clean heat and renewable hydrogen production, skills development and export infrastructure, including good transport links. Businesses within these precincts are eligible for dedicated government support including funding.

The Renewable Energy Industrial Precinct program aims are to:

* Establish five Renewable Energy Industrial Precincts across Australia;
* Create and secure thousands of jobs in manufacturing;
* Ensure Australia capitalises on growing global demand for zero-carbon products;
* Position Australia as a global leader in zero-carbon sustainable manufacturing.

The Renewable Energy Industrial Precinct program would provide $2 billion in total funding for two grant schemes designed to leverage private sector investment:

* $500 million for Infrastructure and coordination funding;
* $1.5 billion for Renewable manufacturing precinct upgrade funding.

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| **Where could Renewable Energy Industrial Precincts be located?**Renewable Energy Industrial Precincts will be located in regional Australia in existing industrial areas with supporting infrastructure such as transport connections (port, rail and road), brownfield land and technically skilled workforce. Example locations could include, but are not limited to the Hunter Valley, the Illawarra, Bell Bay, Portland, Latrobe Valley, Whyalla, Port Augusta, Gladstone, Townsville, Collie, Darwin, the Pilbara and Kwinana. It could be argued that now Tasmania is powered by 100% renewable electricity, Bell Bay is on its way to becoming Australia’s first Renewable Energy Industrial Precinct, although greater infrastructure investment, including continued support for the production and use of renewable hydrogen and other zero emissions heat solutions are required for this potential to be fulfilled. |

**Rationale:**

Australia has always relied on a competitive advantage of affordable and reliable energy but today our intensive manufacturers are at a global disadvantage due to high energy prices and high emissions intensity of our electricity production.

Today renewable energy can provide low-cost, low-emissions energy. Australia has some of the best and most abundant renewable resources in the world, and this can give Australia's manufacturers a global edge. We need to capture the benefits of cheaper renewable power and to capitalise on the opportunity to produce low-carbon products that are increasingly in demand in Australia and internationally.

Hundreds of corporations have pledged to tackle emissions related to their supply chains. This includes global car makers such as Toyota, VW and Mercedes that have committed to carbon-neutral production and are already prioritising suppliers with low emissions. Major Australian employers, like [Fortescue Metals](https://www.theaustralian.com.au/business/leadership/oils-time-up-hydrogen-will-power-the-future/news-story/5013b8f8092a73e783535f9e36f299f5) and [GFG Alliance](https://www.afr.com/companies/manufacturing/gupta-plans-1b-overhaul-of-whyalla-steelworks-20200609-p550uv), have seen the opportunity and are aggressively positioning themselves to seize it.

Australian manufacturers will need support to prepare for these developing markets as well as incentives to site production in Australia rather than overseas. Other countries are already providing such support. For example, the EU is helping its manufacturers to decarbonise through its Industrial Strategy, an integral part of Europe's Green Deal, and the UK is subsidising zero-carbon industrial clusters (see box below). While Australia’s extensive land and high-quality renewable resources mean we have the ability to produce some of the lowest cost zero emissions electricity and hydrogen in the world, we are at risk of being outspent by other countries, squandering our comparative advantage.

Renewable Energy Industrial Precincts are the mechanism through which Australian industry can capitalise on our exceptional potential to generate renewable energy. These precincts will help Australian manufacturers capitalise on the growing global demand for low-emissions products. They will also be popular with the electorate, with 89% of Australians believing Australia should be manufacturing more products domestically following the COVID-19 pandemic.[[72]](#footnote-72)

Renewable Energy Industrial Precincts will help secure the presence of existing manufacturers and attract new ones. They will be attractive locations for energy-intensive businesses such as aluminium smelting, steel and other metals processing; hydrogen production; chemicals production including pharmaceutical supply chains; recycling, advanced manufacturing and data centres. They could also provide a home for companies making clean technologies such as wind turbines; batteries; electric vehicle chargers; electric buses and mining equipment.

Renewable Energy Industrial Precincts will:

* Attract businesses and investors, support local industries, secure existing jobs and create new jobs.
* Provide access to cheaper infrastructure and energy (electricity and heat) shared across multiple large energy users will lower energy bills and production costs, making Australian manufacturing competitive in a global economy that is increasingly committed to net zero emissions by 2050.
* Provide access to a skilled workforce that is trained in the development and operation of efficient, zero emission industrial processes.
* Provide an opportunity to commercialise new technologies and solutions onshore, by attracting start-ups to co-locate with established industry players.
* Increase the likelihood that energy intensive manufacturers will remain in Australia.
* Become hubs for the development of innovative zero emissions and circular economy technologies and solutions that Australia can sell to the world.

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| **UK Government’s low carbon Industrial Clusters**The UK Government has set out an *Industrial Clusters mission* which aims to reduce the country’s industrial emissions as part of its net-zero by 2050 target. The Industrial Clusters mission will establish the world’s first net-zero carbon industrial cluster by 2040 and at least one low-carbon cluster by 2030.To achieve this mission the UK has committed £170 million through its multi-billion-pound Industrial Strategy Challenge Fund towards helping industrial clusters to decarbonise by deploying low carbon technologies. This investment is expected to be matched by funding of up to £261 million from industry.The Industrial Decarbonisation Challenge Fund provides funding over two phases to businesses to develop and implement decarbonisation plans:* In phase one, UK businesses can apply for up to £1 million to either develop plans for decarbonising an industrial cluster (competition 1) or for their journey to achieving low carbon and net zero industrial clusters (competition 2).
* In phase two, successful applicants from the competition 1 will compete for up to £131 million for projects that will deliver, or support delivery of, significant emissions reductions in a UK industrial cluster by 2030. Successful applicants from the competition 2 will compete for up to £8 million to develop industrial cluster decarbonisation roadmaps for major UK industrial clusters. These must set out how a cluster could be decarbonised to net-zero levels.
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**Strategic Policy Alignment:**

The table below shows how the Renewable Energy Industrial Precinct program will complement existing Federal Government policies and strategies related to energy, industry and employment. It also aligns with public statements by the Federal Ministers, such as the Minister for Industry, Science and Technology, Hon Karen Andrews MP, who spoke last year about the Government’s aim “to secure our nation’s economic sovereignty by building an even stronger local manufacturing sector”.[[73]](#footnote-73)

|  |  |  |
| --- | --- | --- |
| **Federal policy/strategy** | **Aim of policy/strategy** | **How Renewable Energy Industrial Precincts align with policy/strategy**  |
| Technology Investment Roadmap  | Accelerate development and commercialisation of low emissions technologies. | Incentivise development of priority technologies, especially low-emissions steel and aluminium and renewable hydrogen. |
| Bilateral energy and emissions reduction agreements | Improve energy reliability and affordability and support the transition of energy markets to lower-emissions technologies. Examples include:* $2billion deal with NSW announced January 2020
* Deal with Victoria to support VNI West transmission project
* Development of an SPV with the Tasmanian Government to progress Marinus Link and Battery of the Nation
 | Create major new source of demand for low-emissions energy which can also improve energy reliability. |
| Modern Manufacturing Strategy | Create strong, resilient, thriving and internationally competitive manufacturing businesses, focussing on six National Manufacturing Priorities. | Support industries to thrive in global markets for low-emissions products, including National Manufacturing Priorities: Critical Minerals Processing, Food & Beverage, Recycling & Clean Energy. |
| National Hydrogen Strategy | To position Australia as a major player in global hydrogen production and exports | Accelerate Australia’s hydrogen industry beyond demonstration-scale to commercial scale hydrogen production, use and export. |
| Hydrogen Hub | To enable the development of a regional hydrogen export hub | A hydrogen export hub is likely to be one component of a Renewable Energy Industrial Precinct. This broader program will unlock the full range of renewable export industry opportunities including but not limited to hydrogen. |
| Infrastructure investment program | 10-year funding program to improve Australia’s infrastructure | Incentivise infrastructure such as ports, freight rail, transmission and hydrogen pipelines. |
| JobMaker | Create new job opportunities for young job seekers. | Create new jobs and training schemes, targeting skills essential to what industry needs now and for the upcoming decades, particularly in regional areas. |
| *Various federal schemes to incentivise training and apprenticeships* | Upskilling workforce and increasing participation of younger and older workers | Many of the jobs created in these precincts will be technical jobs that lend themselves to apprenticeships and re-training. |

In addition, the Renewable Energy Industrial Precincts program will align with the establishment of Renewable Energy Zones (REZs) by state and federal governments, as identified in the AEMO Integrated System Plan. It is assumed, the establishment of REZs occurs through programs such as Bilateral Agreements, rather than this program, although they are complementary and transmission connecting Precincts to the nearest REZ is essential.

**Implementation:**

The Renewable Energy Industrial Precincts Program will be a new $2billion grant program to deliver, in collaboration with state governments, at least five Renewable Energy Industrial Precincts around Australia.[[74]](#footnote-74) The grant fund is proposed to be split into two funding streams.

*Stream 1: Infrastructure and coordination funding - $500 million*

This funding would be tendered for and matched by up to five state governments, to support them to deliver the necessary strategic land use and infrastructure planning and coordination of precinct development in line with local social, economic and environmental needs. State governments could also use this funding to pay for early works of the critical infrastructure required for successful precincts, including:

* Transmission connections to sufficient renewable energy generation most likely through nearby Renewable Energy Zones;
* Hydrogen production and pipelines and a shared industrial heating network, where relevant
* Water, waste and recycling;
* Connections to port, rail and road logistics.

It would also include developing programs that grow market demand for zero and low emissions products. State Governments would work with Austrade to ensure this includes access to export markets.

*Stream 2: Renewable manufacturing precinct upgrade funding - $1.5 billion*

This funding, administered by the states in collaboration with the Federal Government would be tendered for by geographical clusters of manufacturing and industry players, backed by investors and research partners. The funding would be available to one precinct per participating state. Applicants would use the funds to achieve the timetable of reaching 100% renewable energy use according to the principles outlined above. For example, this could cover:

* Process and equipment upgrades to support existing manufacturers to adapt to the use of renewable electricity and renewable heat.
* The establishment of new businesses and manufacturing processes, including but not limited to renewable hydrogen production and material recycling facilities.
* Ensuring reliable power supply through the establishment of firming capacity such as storage and flexible demand programs and technologies.
* Skilled labour and training programs tailored to the needs of the precinct.
* Innovation programs including incubator, accelerator, and/or R&D processes to help fill industry ecosystem gaps, create more jobs and establish new businesses.
* Procurement of low-cost renewable energy supported by government underwriting, for example through contracts for difference.

The renewable manufacturing precinct upgrade funding would be matched by state governments and the consortiums of companies applying. It could also be supported by additional financing through the Clean Energy Finance Corporation and the Modern Manufacturing Fund. We recommend that the tender and grant oversight process be administered by state governments and that the process have an EOI stage, with some funding made available to consortiums who pass this stage to develop their full tender.

*Governance*

The proposed program design is similar to the National Water Infrastructure Development Fund, in that grant funding is provided by the Commonwealth to state governments to progress priority infrastructure projects. We propose establishing a special taskforce in the Department of Industry, Science, Energy and Resources and participating state governments to design the Renewable Energy Industrial Precincts Program. We also recommend establishing an expert advisory body to support this process. The funding could then either be governed through establishing a National Partnership Agreements or by expanding the growing program of bilateral agreements on energy and decarbonisation. We recommend that state governments be empowered to deliver the competitive tender process and select successful bids, in line with the agreed program goals and funding agreement.

We also recommend that the Renewable Energy Industrial Precincts Program work closely with the Clean Energy Finance Corporation to help unlock low-cost finance for these precincts. A delivery model that leverages CEFC finance and government grant funding in one process similar to both the NSW Empowering Homes Program and the ARENA Large Scale Solar Program could be developed.

*Principles of Renewable Energy Industrial Precincts*

Renewable energy industrial precincts will be established according to sustainable principles. The overarching principle is that eligible participants use renewable energy. This means:

* new projects must use 100% renewable energy (electricity plus heat energy) at the outset;
* existing businesses must commit to 100% renewable electricity within 5 years;
* existing businesses must commit to 100% renewable energy (electricity plus heat) within 10 years.

Renewable Energy Industrial Precincts should be developed in line with the United Nations’ Sustainable Development Goals. The nine as listed below are relevant to REIP program. Adhering to these SDG principles and embedding them in the program design and assessment would set clear and globally recognised parameters for REIPs. Companies and investors value such parameters as these signals they are meeting market demands for sustainability.

* *Affordable Clean Energy*: committed to a timetable for 100% renewable energy as described above.
* *Sustainable Cities and Community*: Close proximity to universities and R&D and Innovation hubs, training programs to ensure surrounding communities and cities reap the benefits.
* *Decent Work and Economic Growth*: Commitment to employ local workers and content including a commitment to upskilling the workforce in highest environmental practice, waste and management processes, recycling, energy systems and manufacturing.
* *Climate Action*: precinct infrastructure and industry will be built for future climate conditions.
* *Industry, Innovation and Infrastructure*: Committed to advancing, testing and rolling out new energy technologies and manufacturing processes, with an emphasis on making these resources widely available to neighbouring industrial zones and their supply chains.
* *Responsible consumption and production*: Committed to transitioning linear forms of consumption (energy, waste, recycling, economy) into circular zero waste economies.
* *Gender Equality*: precinct investors will be required to have fair access to work protocols in place to ensure diverse opportunities for employment.
* *Partnerships*: Committed to building sustainable partnerships between communities, industries and governments, both locally and globally.
* *Life on land*: precincts and their supply chains are committed to the protection and restoration of local biodiversity.

**Value for Money:**

For each Commonwealth grant, State Governments and participating businesses will be required to contribute funds. The table below shows the potential contributions from each funding source and that this program could catalyse $7 billion in private investment, based on a proposed program design where the private sector is required to contribute 70% of the cost towards establishing an REIP. This equates to a leveraging of 3.5 for each dollar of federal funding. This is similar to the leveraging achieved by ARENA (3.2) and the large-scale Modern Manufacturing Fund (4.5).

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| **Funding source** | **Total amount** |
| Australian Government  | $2 billion |
| State governments | $1 billion  |
| Consortiums of eligible businesses | $7 billion  |

Renewable Energy Industrial Precincts will provide a major boost to manufacturing employment in Australia. The table below shows how the sector already employs 46,500 workers in just five of the industrial areas that may be suitable for a Renewable Energy Industrial Precinct. Many of these jobs would be made more secure through the provision of low-cost, renewable energy.

Renewable Energy Industrial Precincts will also create thousands of new jobs. Successful precincts could generate at least one new manufacturing job for each existing one.[[75]](#footnote-75) For the locations listed in the table, this would mean the creation of 46,500 new manufacturing jobs. Thousands more workers will be required to build new infrastructure for the precincts such as renewable energy, transmission lines, hydrogen pipelines and new industrial facilities.

|  |  |  |
| --- | --- | --- |
| **REIP location** | **Current regional** **manufacturing jobs[[76]](#footnote-76)** | **Additional REIP jobs** |
| Gladstone, QLD | 12,000 | 12,000 |
| Hunter Valley, NSW | 17,000 | 17,000 |
| Bell Bay, TAS | 4,500 | 4,500 |
| Collie, WA | 10,000 | 10,000 |
| Darwin, NT | 3,000 | 3,000 |
| **TOTAL** | 46,500 | 46,500 |

**For More Information:**

[*Renewable Energy Industrial Precincts Briefing Paper*](https://www.wwf.org.au/ArticleDocuments/843/WWF-BZE%20Renewable%20Energy%20Industrial%20Precincts.pdf.aspx?OverrideExpiry=Y) *(including Hunter Valley Case Study),* Beyond Zero Emissions & WWF-Australia, September 2020.

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