

Renewable Energy Industrial Precincts

WWF Australia and Beyond Zero Emissions |
2021-22 Pre-Budget Submission

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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 an 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

	2021-22	2022-23	2023-24	2024-25	Total
Cost of proposal (\$m)	110	320	570	500	1500
Stream 1: Infrastructure and coordination funding (\$m)	60	120	120	100	400
Stream 2: Renewable manufacturing precinct upgrade funding (\$m)	50	200	450	400	1100

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

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 a 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](#) and [GFG Alliance](#), 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.¹

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.

¹ Roy Morgan survey, September 2020

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.

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, Karen Andrews, who spoke last year about the Government’s aim “to secure our nation’s economic sovereignty by building an even stronger local manufacturing sector”.²

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 aluminum 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: <ul style="list-style-type: none"> ● \$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.

²

www.minister.industry.gov.au/ministers/karenandrews/speeches/national-press-club-address-canberra

Table cont.

Federal policy/strategy	Aim of policy/strategy	How Renewable Energy Industrial Precincts align with policy/strategy
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.
<i>Various federal schemes to incentivise training and apprenticeships</i>	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.³ The grant fund is proposed to be split into two funding streams:

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

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.

³ Note the program could be expanded to support at least one precinct in each state.

- 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, inline 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 they signal 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 federal 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).

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.⁴ 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 ⁵	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](#) (including Hunter Valley Case Study), Beyond Zero Emissions & WWF-Australia, September 2020.

⁴ This is a conservative estimate based on current job figures proposed by different research and industry players. For example, the Grattan Institute's *Start with Steel* showed there could be 45,000 jobs created in just two industries powered by renewable energy: green steel and ammonia; while Andrew Forrest recently suggested Australia could create 40,000 jobs in a green steel industry alone.

⁵ Manufacturing jobs data from the Labour Market Information Portal. <https://lmip.gov.au/default.aspx?LMIP>.

