Investing in cheaper, cleaner energy and the net zero transformation inquiry

Questionnaire response 34

Name: Centre for Policy Development

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1. Reduce the cost of meeting carbon targets

1. What could be done to improve the cost-effectiveness and alignment of policies to reduce emissions across the industrial, electricity and transport sectors?

To improve the cost-effectiveness of policies to reduce emissions, the federal government should take steps to frontload investment so that the outputs of clean industries come down their cost curves. Way et al. (2022) use probabilistic forecasting of technology costs to show that the transition can be achieved at low cost, and that a rapid transition will likely result in trillions of dollars in net savings as compared with a slow transition. Global capital markets are not well equipped to deal with the dynamics of this transition, and subsequently allocate an inefficient amount of capital to developing and deploying new technologies.

The federal government is taking steps towards supporting the early stages of new industries through the Future Made in Australia agenda, including through tax credits for renewable hydrogen and processing critical minerals and the Green Iron Investment Fund. These steps align with our Green gold: A strategy to kickstart Australia's renewable industry future report, which highlights the necessity of government support for first movers in the iron, alumina, aluminium and ammonia industries. While the government's progress is welcome, it is unlikely to be sufficient. Green Gold estimates that at least $60-100 billion of policy support will be necessary over the next twenty years to bridge the cost difference between clean products and emissions-intensive incumbents, while Future Made in Australia is a $22.7 billion policy package. The government can further support key industries through reforming government procurement to send clear demand signals, and reforming specialist investment vehicles to more aggressively catalyse new economic activity.

Governments can take steps to frontload investment in clean industries by making changes to procurement frameworks to send a clear demand signal to investors. Current Australian government procurement does not systematically incorporate climate-related considerations, as we demonstrate in our Green goods: Strategies for decarbonising government purchasing in Australia report. Instead, the federal government could take steps like committing to ensure that specific proportions of the construction materials (e.g. low-carbon cement and steel) it buys are green by a 5, 10 and 15-year deadline. Governments should consult with suppliers about likely cost premiums to devise these targets and avoid excessive costs.

The federal government should also focus on increasing spending on the earlier stages of the innovation process (e.g. R&D and technology scale-up) as opposed to the commercialisation of new technologies where there is already a considerable degree of private sector investment. Our Ideas to industries: How to get the most out of public money for industrial development report identified that only 31% of public sector funding by the federal government for industries that mitigate greenhouse gas emissions is spent

on the early stages before a technology is at scale. The rest is spent on commercialisation.

The Commonwealth Government should increase spending on the early stages both by increasing the amount of funding available for R&D, which is quite low compared to many other OECD nations and to measures of optimal spending, and investing more in projects after the R&D stage and before they become commercially viable. The federal government could allocate more funding to entities such as ARENA and the Industry Growth Program to rebalance the allocation of capital. While the expansion of ARENA funding under the Future Made in Australia package is a welcome development, the government can take further steps to support early-stage innovation funding.

There are also opportunities to reform the CEFC and NRF to encourage more aggressive financing of projects at the margins of commercial viability, and therefore earlier on in the innovation process. The CEFC and NRF's return mandates should be amended to simply cover the government's cost of capital plus agency operating costs, rather than also requiring them to make a 2-3% profit. Changing the wording of their mandates would also help the CEFC and NRF to invest in slightly earlier stages of the innovation process. The terms "acceptable but not excessive level of risk" should be amended to "acceptable but not excessive level of risk in pursuit of catalysing new economic activity". In other words, the institutions should take the risks necessary to achieve their policy objectives.

Alongside frontloading investment to encourage clean innovations to move down their cost curves, greater cost-effectiveness can be achieved through expanding the Safeguard Mechanism and making progress towards an economy-wide carbon price. We discuss the Safeguard Mechanism as well as internal carbon pricing for government departments and entities in the next section.

Aligning policies to reduce emissions can be made easier by government efforts to set a clear strategic direction for industrial policy and create a diverse policy mix to support this direction, as we discuss in our Setting direction: A purposeful approach to modern industry policy report. To this end, we welcome efforts such as the Future Made in Australia agenda and the NSW Industry Policy. Further efforts should be made to avoid duplication between different organisations and initiatives and streamline efforts under policy objectives.

R Way et al., 'Empirically grounded technology forecasts and the energy transition', Joule, 2022.
T Phillips, Green gold: A strategy to kickstart Australia's renewable industry future, CPD, 2023. https://cpd.org.au/work/green-gold-renewable-industry-future/
T Phillips, M Hammerle and D Venning, Green goods: Strategies for decarbonising government purchasing in Australia, CPD, 2024. https://cpd.org.au/work/green-goods-strategies-for-decarbonising-government-purchasing-in-australia/
M Hammerle, T Phillips and A Dibley, Ideas to industries: How to get the most out of public money for industrial development, CPD, 2024. https://cpd.org.au/work/ideas-to-industries-how-to-get-the-most-out-of-public-money-for-industrial-development/
T Phillips and E Koh, Setting direction: A purposeful approach to modern industry policy, CPD, 2024. https://cpd.org.au/work/setting-direction-a-purposeful-approach-to-modern-industry-policy/

2. Are there gaps in the emissions-reduction policies in the industrial, electricity and transport sectors which should be addressed?

The Safeguard Mechanism seeks to reduce the direct emissions from industrial facilities in line with Australia's emissions targets. However, changes to the Safeguard Mechanism are needed to ensure that it is able to meaningfully reduce emissions from Australia's highest greenhouse gas emitting facilities.

The Safeguard Mechanism should be expanded until it functions as an economy-wide carbon price. An obvious extension is to expand the Mechanism to facilities that emit less than 100,000 tonnes of CO_2 equivalent per year, which in 2023-24 was only 219 facilities. The government could also lower the baselines set for different entities more quickly over time to capture more emissions. Alternatively, the Mechanism could apply to projects when they are proposed rather than functional. Currently, there is no need to assess proposed facilities against Safeguard baselines, meaning they can be developed even when they will exceed the emissions budget.

Other changes to how the Safeguard Mechanism operates would also be beneficial. Currently, the Safeguard Mechanism regulates the electricity sector differently than other industries. Rather than individual companies having their own emissions baselines, the electricity industry has a single, sector-wide limit that applies to all generators connected to Australia's main electricity grids. As long as total emissions from these generators remain below the overall limit, individual facilities do not need to reduce their emissions or purchase offsets. Moving from this sector-wide approach to individual baselines for each facility would more closely align the electricity sector with the broader Safeguard Mechanism and could streamline emissions reductions under a consistent policy framework. Given that the existing sector-wide baseline is relatively generous, introducing facility-specific limits could incentivise deeper emissions reductions in the sector.

There is also a need to tackle the problem of low-quality offsets used by facilities to meet their baselines under the Safeguard Mechanism. For the scheme to be effective, the offsets—Australian Carbon Credit Units (ACCUs)—must be credible, meaning they should reflect genuine emissions reductions that wouldn't have occurred without the offset project. One approach to further improving offset integrity is to encourage facilities to prioritise direct, on-site emissions reductions, such as transitioning to cleaner energy resources. Offsets should compliment – not substitute – legitimate emissions reduction. The Australian Government could pursue this by making offsets less financially attractive after a certain quantity threshold. For example, once a facility exceeds a specific amount of purchased offsets (say, they have already surrendered ACCUs or Safeguard Mechanism Credits that amount to 10% of their baseline), any additional offsets would attract a reduced rate, say only 70% of their full value. This would increase the cost of relying heavily on offsets and therefore incentivise less use.

Alongside the Safeguard Mechanism, the federal government could demonstrate leadership by covering their own emissions via internal carbon pricing. Internal carbon pricing can incentivise public procurers to purchase more environmentally-friendly options by placing a monetary cost on greenhouse gas emissions. Internal carbon charges involve a fiscally-neutral internal transfer: the charge comes off of the balance sheet of the agency, department or business unit procuring the emissions-intensive option and goes back onto the balance sheet of the treasury, finance department or

whatever facility is established to receive the internal transfer. Internal carbon pricing can support different types of public procurement processes, e.g. contracts for professional services (which often involve many flights), procurement for public transport fleets, and tendering for electricity consumed in government buildings.

3. Are there any duplicative emissions-reduction policies in the industrial, electricity and transport sectors which could be streamlined?

The participant did not respond to this question.

2. Speed up approvals for new energy infrastructure

1. Are planning and approvals processes for large energy infrastructure taking too long? If so, what causes the most delay?

(Q4) Planning and approvals processes for large energy infrastructure can take many years. Research by Lachlan Clapin and Thomas Longden (2024) examined lead times for onshore wind and solar projects completed between 2000 and 2023 in Australia. They found that wind farms now take around 53 months to complete while solar projects need about 41 months. According to AEMO, it is also taking longer to build transmission lines; in 2023, AEMO added 2 years to their lead time categories so that a “medium” lead time is now 6-7 years (it was previously 4-5 years).

Since 2000, there has been a reduction in completion times for generation projects, driven mainly by a shorter timeframe needed for designing the project and gaining initial approvals (pre-construction). South Australia now has considerably shorter pre-construction lead times than other states, likely due to their streamlining of approvals through the Hydrogen and Renewable Energy Bill, which we discuss in response to Q5. On the other hand, the time taken for construction to completion has increased by about 3 months on average due to regulatory changes. Delays overall can come from project proponents needing to seek approvals from multiple authorities and having difficulties in accessing and connecting to the grid. While the research offers valuable insights into what is driving lead times for renewable energy projects, the analysis does not break down the stages into different processes, for example the amount of time needed to gain community buy-in versus working through environmental approvals versus raising capital. Insights into these issues would enable a more detailed understanding of where government efforts are most needed.

L Clapin and T Longden, ‘Waiting to generate: An analysis of onshore wind and solar PV project development lead-times in Australia’, Energy Economics, 2024.
AEMO transmission expansion options report, AEMO, 2023.

2. How can planning and approvals processes be sped up without unduly compromising regulatory standards?

(Q5) A key issue with many types of planning and approvals processes in Australia is that they are very complicated, involving many steps, overlapping decision-makers and developers can easily be sent back to square one. As mentioned above in response to Q4, South Australia has taken steps towards streamlining approvals for hydrogen production and renewable energy projects over their lifespans from the early research and feasibility stage through to closure of facilities. It is the first state to do so in Australia. The Hydrogen and Renewable Energy Act creates a single end-to-end regulatory framework that works through issues including environmental impacts, land

access and native title rights. The Act recognises that project proponents often have difficulties in navigating low-emissions projects due to the complexity of the legislation applicable over a project's lifetime. It merges six different Acts into one, which cuts red tape for potential investors. Other states should look to South Australia to learn lessons from experiences with introducing this legislation and understand how similar processes can be streamlined around the country.

As part of streamlining processes, approval procedures should be revised to avoid duplication wherever possible.

First, state governments could undertake some parts of the initial project approvals process themselves to avoid duplication in efforts between individual project proponents, for example for environmental assessments. In South Australia, the government is assigning access to specific release areas for renewable energy developments based on consultation with Native Title groups, landowners, representative organisations and communities. Once areas are released, there will be a competitive tender process to find the best projects and proponents. These differ from renewable energy zones as their geographical boundaries are smaller and the government is making publicly-owned land available. In the EU, the European Commission has called on member states to identify "renewable acceleration areas", which are geographical regions where specific types of renewable energy are not expected to excessively harm the environment.

Second, governments should minimise the number of "new" projects that developers need to complete applications for, freeing up capacity in planning departments. For example, suitable projects near existing projects could be assessed as expansions rather than new developments. While authorities allow developers to do this when building grid-scale batteries next to solar farms, other types of projects could be treated similarly. Likewise, repowering existing projects such as wind farms should not be treated as new projects, involving considerable costs and the need to re-negotiate connection agreements with AEMO and potentially regain landowner and community buy-in. In the EU, environmental impact assessments for repowering are limited to new additional impacts of the projects making the procedure much faster.

Third, steps should be taken to ensure national approvals processes do not duplicate state approvals. For energy infrastructure, the Samuel Review noted a key criticism of the EPBC Act is its duplication of state and territory regulatory processes for assessing and approving new developments. We agree with its recommendation that the federal government instead delegates approval processes to states that must apply nationally agreed environmental standards.

Streamlining processes and avoiding duplication wherever possible will help ensure that demands on government staff for approvals are not overly onerous. The Samuel Review identified a skills shortage within government agencies that work on approvals, e.g. DCCEEW and the state and territory regulatory agencies. Alongside a general uplift in skills across the board, streamlining processes should make it easier for government agencies to keep up with the demand for approvals.

3. Should clean energy projects be treated differently to other projects for the purpose of environmental and other approvals? If so, how?

Yes, given the importance of the energy transition to the future economic and social prosperity of Australia, planning and approval processes should treat renewable energy projects differently than other projects. Approval processes should place greater weighting on climate impacts in decision-making for large-scale energy projects. As a starting point, greenhouse gas emissions impacts could be one of the factors that must be considered when it comes to deciding whether to go ahead with a project under the EPBC Act. Currently, the EPBC Act makes it impossible to approve or reject projects on the basis that they will lower emissions. More ambitiously, governments should consider viewing the climate change impacts of renewable energy projects as a more important consideration than some other factors in deciding whether to approve a project. In Europe, the revised Renewable Energy Directive (2023) presumes that the energy transition has an "overriding public interest". By February 2024, and until net-zero emissions are achieved, EU member states should ensure that in granting permits, renewable energy infrastructure, including new generators, storage assets, and grid connections, is prioritised and expedited. When balancing different legal interests for individual projects, the law dictates that renewable energy projects have priority over other environmental and nature concerns. In Australia, approving renewable energy infrastructure under frameworks like the NSW (Critical) State Significant Infrastructure guidelines would have similar outcomes, this time by enabling projects to circumvent certain approvals and authorisations and making it more difficult to stop projects from being carried out.

The approvals process should be sped up for renewable energy developers by establishing a one-stop-shop for each of Australia's main electricity grids. Currently, a hodge-podge of different government agencies results in an overly complicated approval process in many parts of Australia, with various frameworks being applied at the local, state and federal levels and government agencies having overlapping priorities resulting in duplication of efforts. While some states, including South Australia, have comparatively more streamlined approvals processes for large-scale projects, other states require consultants to navigate the, at times conflicting, requirements across the different levels of governance. A one-stop-shop would help reduce complexity for project developers and speed up permitting processes. A good example is the Danish Energy Agency. The Agency issues permits and approvals for offshore wind projects, including planning, commissioning and decommissioning, and coordinates with all relevant authorities to obtain the necessary permits. In the Netherlands, the Dutch Environment and Planning Act creates a digital environment that connects government agencies and functions as a one-stop-shop for permitting applications for general infrastructure projects.

Australian state and federal governments should also consider setting maximum times for granting permits for key stages of the development process, as has been done in the EU. The EU Renewable Energy Directive 2018/2001 dictates that the maximum time allowed for granting permits for building, repowering and operating renewable energy storage facilities and connecting them to the grid should not exceed two years. More recently, there has been an amendment to this Directive, and permitting in "renewable acceleration areas" – where renewable energy developments can be developed faster and with streamlined permitting processes – should not exceed a year for new projects.

4. What can be done to build local community support for new energy infrastructure projects?

A lack of local community support has proven to be incredibly problematic for getting projects off the ground. Local opposition and resistance against renewable energy projects are among the most significant challenges developers face as they incur significant costs and delays that may jeopardize entire projects. A major consideration in optimising for the development of new energy projects should be to build near communities that want the new projects or at least are less resistant to the idea. According to research for Farmers for Climate Action, 70% of people in renewable energy zones support clean energy projects on farms in their communities, with key perceived benefits being extra income, investment in the local economy, and more reliable energy for the community. On the other hand, there are regular news reports about members of rural communities protesting against new energy infrastructure being built near them. There is evidently considerable divergence in support both between and across communities.

More broadly, governments and project developers should identify more creative ways to incentivise local communities to support new energy infrastructure projects. Benefit sharing ranges from providing direct payments to local households through subsidised energy bills to investing in the adaptive capacity of communities. Adaptive capacity is the ability of communities to adjust to and thrive in the face of change. In CPD's report Making our way: Adaptive capacity and climate transition in Australia's regional economies, we introduce seven dimensions of regional adaptive capacity for transition-exposed regions: the existing economic diversity of a region, how intensively the region is engaged in innovation and entrepreneurship, how well the region is geographically connected to other regions, the financial capital, workforce skills and social capital of its residents, and a region's access to public services including schools and healthcare. While we have applied these dimensions to transition-exposed regions, they are useful to understand the general adaptive capacity of rural communities. Targeted and visible investments in adaptive capacity is a clear way to give communities a share in the benefits from new infrastructure.

Providing benefits to local communities in the form of local jobs and training pathways is likely to increase social license and the adaptive capacity of many rural communities. Government policy frameworks should incentivise companies to use local apprentices and offer on-the-job training pathways. These incentives would work to prevent project operators wholly sourcing labour from other regions when the skills are not present in the local workforce, effectively denying the local community access to the most direct economic benefit: employment. Government incentives should also award firms that provide reskilling programs in transition-exposed regions and offer opportunities for First Nations communities, women and those from low SES backgrounds to ensure that inequalities present in the energy workforce are not repeated in low-carbon industries. To encourage an equitable roll-out of renewable energy projects, the USA's Inflation Reduction Act provides higher tax incentives to projects that use apprentices, local content, and set up in communities facing disadvantage or that are particularly exposed to the transition.

Ensuring that local communities benefit from a share of the economic profits can also improve social license. Community members would benefit from some degree of direct ownership of new energy projects. Denmark and Scotland both have policy frameworks

that explicitly encourage community co-ownership. In Denmark, from 2009-2020, any government-supported solar or wind project had to offer a minimum of 20% equity to local residents for co-investment. Scotland is viewed as a world leader in community energy for wind developments that provide widespread benefits for local communities. The Scottish Government aims to have community projects own at least 2GW of renewable energy by 2030 and has established a Community Renewable and Energy Scheme to provide free expert advice and funding support to organisations interested in community energy. While there are examples of community ownership in Australia, the concept is still relatively new and policy frameworks do not explicitly incentivise it. Moreover, community ownership in Australia is often in the form of local community members rather than community-owned trusts purchasing equity in community projects, meaning that they benefit individual interests rather than the whole community.

The rapid expansion of renewable energy projects can present both benefits for local communities but may also have adverse impacts, including increasing pressures on local infrastructure such as roads, schools and health services, reducing housing supply and available water resources, and increasing difficulties for local SMEs to source labour. While this “demand shock” problem will be spread across the whole community, only some households will benefit directly from the development of new industries. Those households with the least economic resources will also be the least able to adapt to change in their community. To increase the attractiveness of new energy infrastructure projects broadly, renewable energy project proponents should manage the impacts on the most vulnerable groups in the community for example by deliberately including them in deliberative or consultative processes, or by contributing funds to expand the supply of critical services.

Investment by project proponents in local communities should be tailored to the unique needs of different regions, as the types of investments that deliver the most benefits will vary from place to place. To ensure the investment has the highest chance of being effective and equitable, plans should be developed in close consultation with local communities. Engagement with local residents should start early and continue throughout all stages of a renewable energy project to increase the chance of success and prevent opposition. Frameworks such as the NSW Benefit-Sharing Guideline provide a useful model for encouraging community engagement and ensuring that benefits are fairly distributed.

To encourage local decision-making, governments can require renewable energy developers to contribute funds directly to local authorities and community groups. In France, local authorities receive tax revenues from renewable energy projects. In Ireland, all renewable electricity generation projects must set up Community Benefit Funds to invest in climate action such as local renewable energy.

89 Degrees East, Renewable energy in farming communities, Farmers for Climate Action, 2024.
M Hammerle and T Phillips, Making our way: Adaptive capacity and climate transition in Australia’s regional economies, CPD, 2023. https://cpd.org.au/work/making-our-way/

5. Please outline any evidence showing the productivity benefits of faster approvals for energy projects.

The participant did not respond to this question.

3. Encourage adaptation by addressing barriers to private investment

1. What are the barriers and enablers impacting decisions by owner-occupiers, landlords and developers about how housing is built and updated over time so that it is resilient to the effects of climate change?

   The participant did not respond to this question.

2. What information do people need to make decisions about where to live, how to build and how to upgrade their homes to appropriately factor in climate change?

   The participant did not respond to this question.

3. What are the most cost-effective retrofitting options for improving the resilience of Australia's existing housing stock? What are their costs and benefits?

   The participant did not respond to this question.

4. What role might minimum standards play in ensuring the resilience of Australia's housing stock?

   The participant did not respond to this question.

5. The impacts of climate change are being factored into the regulation of where and how houses are built in different ways around Australia. What does leading practice look like? Where is there room for improvement? Are there lessons we can learn from other countries?

   The participant did not respond to this question.