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

Questionnaire response 52

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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?

Reducing the unit cost of abatement and sequestration is important - it can enable both greater climate ambition, as well as other priorities. The amount of climate change that appears locked in is very serious; cheaper abatement would enable more to be avoided. The long term benefits of avoided climate change seem very large, but in the near term means are limited and tradeoffs are real.

Thinking about the alignment of abatement policies across domains has benefits including prompting explanation or justification where existing policies appear to have very high carbon values in one context versus others; or where no or very low carbon value is being considered.

The quest for cost discipline is necessary and honourable, but it does require some humility.

We should distinguish between policies that are intended to drive bulk abatement in the near term, where the priority should indeed be least-cost; and policies that aim to drive innovation and cost reduction to bring abatement options within reach of bulk-abatement instruments.

We should not place excessive weight on assessments like Marginal Abatement Cost (MAC) curves, which encourage far too static a view of costs and do not make a good match with economy-wide net zero goals.

Past analysis of the international costs of abatement, suggesting much higher costs in advanced economies and a strategy of deferring abatement within those nations in favour of land-based sequestration in developing countries, is unlikely to be correct given shifts in low carbon technology costs and the advanced economy advantage in cost of capital.

“Abatement cost” should be thought of as covering the whole sweep of transition, not just the cost of a point target along the way. Steps with high costs per tonne of near-term abatement can be well worthwhile over the longer term if they bring down future unit costs through learning-by-doing. Learning has proven to be extremely powerful in clean technology (see Way et al https://doi.org/10.1016/j.joule.2022.08.009), and has been mostly driven for solar and wind by technology specific mandates and subsidies – albeit often with market elements – rather than by technology neutral carbon pricing.

There is some basis for caution about direct linkages between abatement markets. Theoretically these linkages – such as fungibility of units between emissions trading

schemes – should increase efficiency. In practice they can bring risks that a problem in one market, commonly an oversupply of units related to regulator error in forecasting growth or keeping additionality rules up to date, leads to underperformance by all linked markets in delivering expected outcomes. Linkages can be worth pursuing, but with consideration of 'bulkheads' to limit the risks that a flood in one compartment sinks the policy ship.

Foresight is limited, both among market participants and governments. Both bet-making and bet-spreading are necessary.

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

Industrial emissions

Large industrial facilities are covered by the Safeguard Mechanism, but medium sized facilities are addressed only partially by State mechanisms including the NSW Energy Security Safeguard and Victorian Energy Upgrades (which to date have been dominated by simple residential upgrades), and by useful but limited grants programs including some administered by the Australian Renewable Energy Agency.

Process heat is an important focus for transition and more signals and support for investment and operational change would be useful in this area.

While some expansion of the Safeguard is worth considering, most facilities would never be suitable for direct inclusion given the administrative costs involved in radical expansion.

Ideas could include:

Indirect inclusion of more facilities through upstream Safeguard coverage of fuel combustion (though this would be controversial and impacts on trade exposed industries would need close consideration);

Expansion and harmonisation of ESS, VEU and other white certificate schemes to more meaningfully cover industry;

Expansion and harmonisation of renewable gas schemes (with consideration of how to provide comparable support for electrification options);

Expansion of public support for early deployment of plausible industrial abatement technologies;

Electricity emissions

These are currently only valued through the influence of the National Energy Objectives on economic regulation decisions; and through the Victorian Energy Upgrades program.

Electricity emissions may be taken into account in requirement definition and bid

assessment in the auctions under the long term investment mechanism being developed in the NEM Wholesale Review.

One way or another, it is important to address these emissions. While bulk energy is likely to switch from coal to renewables anyway, driven by economics and age more than policy, carbon signals will still be needed. This is particularly important to govern choices between gas and lower-carbon fuels in investment and operations over the longer term.

Pricing domestic Scope 2 emissions would also be necessary if a potential Australian border carbon adjustment were to consider adjusting for Scope 2 emissions, since such an adjustment must respect the WTO principle of not discriminating between imports and the treatment of domestic production.

Policy options could include:

Expansion of the Safeguard Mechanism. Ai Group has previously proposed general expansion to cover the Scope 1 emissions of generation facilities. However, it could alternatively be possible to expand more selectively, to cover the Scope 2 emissions of already-covered facilities – such as those in sectors prioritised for a future border adjustment.

Consideration of emissions in the evaluation process for the Long Term Investment Mechanism being developed by the NEM Review

Transport emissions

Currently bulk abatement is addressed via the New Vehicle Efficiency Standard, which covers light road vehicles only, and the Safeguard Mechanism, which covers very large transport networks only. There are also some innovation and mainstreaming projects for heavy freight being supported by ARENA.

There is a significant gap in support for decarbonisation of freight and logistics below Safeguard scale. It will be important to address this gap as this is otherwise set to be a major remaining component of residual emissions. However solutions such as battery electric heavy trucks are only just starting to become meaningfully available to commercial operators, and are unfamiliar to most.

Policy options could include:

Continuing and strengthening the role for grants and incentives for innovation and mainstreaming of heavy freight decarbonisation technologies;

Expanding the Safeguard Mechanism. Direct coverage of a significant portion of the freight and logistics sector may carry significant administrative costs. Indirect coverage - via ascription of downstream fuel combustion emissions to upstream fuel suppliers - would be unwelcome to fuel users, especially in the near term. A longer term expectation of coverage could be useful to signal for nearer term private investment and readiness.

Adjustments to fuel excise and/or fuel tax credits to reflect carbon value. These could include:

Boosting fuel excise to reflect carbon (including exempting renewable fuels from the boost) alongside the long-term introduction of distance-based road use charges on vehicles including electric vehicles (noting that heavy trucks of all sorts are covered by an existing road user charge);

Reducing fuel tax credits for high-emissions fuels, and/or increasing them for low-emissions fuels;

Enabling fuel tax credit recipients to cash out a forward stream of credits to use towards the capital cost of low emissions vehicles. Channelling the tax expenditure in this way should not affect Commonwealth finances, but could make significant fuel cost savings achievable for eligible businesses.

Any and all options will need much greater debate and development given the embryonic status of heavy transport decarbonisation in Australia.

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

In general be before any streamlining we should be careful to determine whether a policy has a bulk abatement focus or is oriented towards longer-term cost reduction; and whether it addresses or reflects challenges beyond price.

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?

Yes, planning and approval processes are taking too long.

Transmission is held up by economic regulation processes, which have been slowed by their setup around the fear that transmission would be underutilised.

Governments have sought to speed this up by various means - the Integrated System Plan priority list; committing funding or cut-price finance; and setting up new short cut processes including the NSW Infrastructure Roadmap and VicGrid. However the short cuts have themselves taken significant time to establish (though they now appear to be hitting their stride).

The fear of asset underutilisation is less plausible these days, in the context of strong expectations of rising electricity demand and the likelihood that any available transmission capacity will draw in substantial generation and storage investment. However, inflation in the expected cost of transmission project delivery still requires careful scrutiny of the merits at the margin of transmission to centralised generation versus distributed generation

The scale of new energy demand is such that very substantial expansion of centralised generation and associated transmission will still be required. Economic regulation

decisions need to reflect this.

Wind, solar and battery projects take too long to receive approvals and conditions can be too onerous. Data prepared for the Clean Energy Investor Group highlights that NSW has taken extraordinary amounts of time to decide on development applications (3488 days for wind, 705 days for solar, 530 days for batteries). Victoria has taken 333-375 days in recent years, better but still terribly slow. Queensland does not consolidate data in a consistent way across technologies, but achieved average assessment times of 190 days for wind farms approved in 2019-2021.

NSW and Victoria are now making substantial efforts to speed up their processes. These are praiseworthy and need to be sustained. By contrast Queensland has recently substantially increased approval burdens for wind farms and is likely to do the same for other renewable energy projects, as well as retrospectively cancelling approval of one major wind farm. These are retrograde steps. Queensland has been notably better than other jurisdictions as a place to do business. It should be careful to avoid strangling its energy development. Expanding third party intervention opportunities significantly increases the burden both on project applicants and on assessors.

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

There are several potentially viable approaches.

Add more of the benefits of clean energy infrastructure, such as contribution to global efforts to fight climate change, to the matters that shall be weighed in approvals. A note of caution is warranted here; unless combined with other steps, adding even positive factors may inadvertently increase overall approval burdens.

Convert matters from reporting obligations or decision bases to guidelines or subjects for other processes. For instance, impacts on housing markets and use of infrastructure are not well assessed on an individual project basis, nor well suited to hard-and-fast approval conditions. These would be better addressed through Renewable Energy Zone-wide, state-wide or national plans and strategies.

Combine assessment processes. Reform to the national Environment Protection and Biodiversity Conservation Act is a major opportunity. The Samuel Review recommendations for national standards applied by accredited States could produce substantial improvements in decision timeline and administrative burdens. However, part of the accreditation process should include confidence that State processes function in a timely way.

Set time limits on decisions. This is a blunt solution, but fears of inadequate assessment can be addressed by ensuring adequate resources for decision makers and the use of broader regional assessments.

Limit opportunities for intervention or appeal by third parties. This will be controversial, but third party interventions are heavily misused and a major blocker.

Ensure development setbacks are limited and reasonable.

Required setbacks are currently 1km in Victoria and South Australia; 1.5km in QLD; and a formula that varies with turbine height in NSW but would translate to about 1.4km for a 220m tall turbine.

Expanding setbacks, or the definition of dwellings that trigger them (including dwellings planned after a development application begins), can easily render large swathes of land unavailable for development.

There are real issues to be managed via setbacks and other tools, including fire risk management for batteries; blade throw; and shadow flicker. Broader concerns about noise and visual amenity are likely to fade with familiarity, and potentially with the use of financial incentives for neighbours not directly hosting assets (though these come at a cost, ultimately to all energy users). After all, urban dwellers are well used to the much greater visual presence of tall buildings close by, and to the much higher noise of traffic.

Increase resources for assessors to assist them to make timely decisions. This is being tried by the Commonwealth and several other jurisdictions, and is very reasonable Another note of caution is warranted though – unless combined with other steps, extra resources may be consumed without sustained increase in decision throughput, if the depth and resolution of assessments increases, as it historically has.

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

This is a matter of pragmatic judgment rather than principle.

There is a broader issue of the speed of approval processes that needs to be addressed. Some changes would address both clean energy and broader project approvals, such as the Samuel Review recommendations to streamline approvals across the Federal EPBC and State processes.

However some issues are specific to clean energy, such as the approach to setbacks.

We are supportive of both broader reforms and specific efforts to speed clean energy development.

A note of caution: setting up new processes, even when intended as shortcuts, can be much more time consuming than anticipated.

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

The recommendations of the Community Engagement Review are sensible and should broadly be followed. These include reducing community overwhelm by more clearly indicating go / no-go zones in prior comprehensive system planning and regional assessment processes; and winnowing projects before deep consultation with landholders begins.

There has been substantial effort around financial incentives for affected neighbours and communities as well as direct landholder hosts. This is appropriate, though these incentives have costs that ultimately fall on energy users.

More effort is needed, from governments and energy users as well as the energy supply

industry, to increase understanding of the shared stake that all communities have in the addition of new infrastructure to sustain the security and reliability of electricity supply and contain its cost. A common narrative that 'the regions bear the costs of energy transition while the cities get the benefit' is deeply misguided. Regional energy prices and reliability will suffer as much as urban areas if new generation, storage and transmission cannot be constructed. Economic opportunities will be greater everywhere if Australia can build a new energy advantage.

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

Faster approvals and faster deployment are needed to deliver the existing central scenario of the Integrated System Plan, involving replacement of existing electricity supply and expansion of electricity demand with electrification of transport and buildings. Failing to deliver this scenario will entail some combination of:

lower reliability – noting the Value of Customer Reliability was agreed to be $41.48 per kilowatt hour in the NEM in 2024;

higher electricity prices, which threaten the viability of energy intensive and trade exposed industries; and

higher emissions, with a value somewhere between current Australian Carbon Credit Unit prices around $30 per tonne of CO2 equivalent and the hundreds of dollars per tonne that future mature direct air capture technology may cost (after extensive and expensive early deployment).

Vastly more deployment of renewable energy and industrial facilities would be needed if Australia is to play the substantial role in global markets for low emissions energy intensive products that is envisaged by many. The Superpower Institute's research (https://www.superpowerinstitute.com.au/work/the-new-energy-trade) puts this opportunity at the scale of hundreds of billions of dollars of future export revenue, contingent on several factors including Australia's ability to approve and deploy terawatts of renewable generation without high delay or cost relative to major customer economies.

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?

We welcome close attention to the productivity impacts of higher temperatures. Ai Group and our members are not heavily involved in the residential property sector and have limited comment on it. However members have already experienced significant problems with the cost and availability of insurance due to climate risk and the impact of major climate-driven events on global reinsurance costs. (https://cdn.aigroup.com.au/Reports/2020/Insurance_Problems_Report_Oct_2020.pdf)

We also believe that the governance of the Australian Building Code Board and the National Construction Code is not fit for purpose in ensuring that Australian houses are resilient to the effects of climate change.

With respect to adaptation and resilience challenges:

There are distinct problems with a lack of knowledge of, and underlying uncertainty over, long term temperature outcomes, and the speed of their onset.

Broad knowledge of region-specific climate impacts appears very poor and vague. It is very unlikely that homebuyers, or even most homebuilders, are currently able to factor much climate change into their decisions, except in the most obvious cases of new seafront development.

The pace of future expected climate change remains subject to wide uncertainty because of:

Continued uncertainty on the underlying sensitivity of the climate to greenhouse gas concentrations; while the best estimate value in the most recent IPCC Assessment is an increase of 3C per doubling of GHG, the 'very likely' range still extends from 2C to 5C.

The extent of future emissions is subject to major political and market uncertainty, with long term commitments and learning rates for key technologies suggesting 2C may be achieved, while currently implemented policies, medium term targets and the continued growth of global emissions suggest 3C or more.

Developing understanding of the cooling impacts of air pollutants, especially sulfate aerosols, and changes in their prevalence. Recent improvements in control of these pollutants, necessary to protect human health from low air quality, appear to have had a greater effect than anticipated in taking the brakes off global warming.

In light of this, it is probably prudent to take decisions with long-term consequences for resilience on the basis of higher warming scenarios. But this will be costly, both in terms of the costs of investments made and the opportunity cost of investments foregone. The more that can be done to increase confidence in lower-temperature future scenarios, the more cost Australia can avoid.

Households might find it difficult to make well-informed decisions about investing in climate resilience. People may lack trusted and easily accessible information on the risks they face and worthwhile climate resilience investments. We are interested in the ways that information might be improved to support good decision-making.

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?

   No comment

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?

   Upgrading Australia's housing stock for climate resilience will be an immense task, and coincides with - and may assist - the equally immense task of upgrading the stock for energy transition. It is attractive to deliver both objectives at once, though there is also

risk of overcomplicating programs.

Delivery constraints in Australia's construction sector and trades will be significant, though they will also vary with the economic cycle and efforts to lift capacity. There is attraction in policies that can scale support for upgrades countercyclically.

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

   No comment

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?

   No comment