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**Energy Efficiency Council submission to the ACT
Government's Integrated Energy Plan position
paper**

12 September 2023

Overview

The Energy Efficiency Council (EEC) welcomes the opportunity to make a submission to the Government's consultation on ACT Government's Integrated Energy Plan. The EEC is Australia's peak body for energy efficiency, energy management and decarbonisation.

The EEC strongly supports and commends the ACT Government's policy leadership in seeking to develop an orderly plan for the phase out of fossil fuel usage within the Territory. The ACT Government's indicated strategy of electrification where feasible is a sound approach, consistent with an emerging consensus of energy policy experts around the world.

The EEC broadly supports the Integrated Energy Plan position paper and the principles of the proposed transition. However, there are a number of issues associated with the plan which require further consideration. These include:

- The imperative to ensure that additional electricity demand is reduced through high-quality, efficient electrification;
- The need for a clear plan for several sectors, including:
 - Rental dwellings
 - Apartment buildings
 - Commercial and industrial gas users that cannot feasibly replace gas usage with current technology;
- The risk of skill shortages or supply chain constraints, leading to consumers or businesses being unable to electrify operations optimally; and
- The potential for customer-led disconnection from the gas network to proceed more quickly than anticipated.

The EEC appreciates that the Government's policies are still under development, but these matters will require substantial policy attention to have the best chance of an orderly transition away from fossil fuel energy at an acceptable cost.

1. Efficient electrification must underpin the transition from fossil fuels

The ACT Government has rightly identified electrification as the most practical, least cost pathway for the ACT to transition away from fossil fuels. As identified in the EEC's report [Clean Energy, Clean Demand](#), electrification is the lowest cost, most readily available solution to decarbonise building operations, light duty transport and light commercial operations. Using electricity allows primary energy to be delivered from a wide range of fuel sources and harness low-cost renewable energy generation.

Electrification has an added efficiency dividend – that is, using electricity to undertake a task almost always results in lower energy use compared to using fossil fuel for the same task. Electric vehicles use one-third to one-quarter as much energy as internal combustion engines, and heat pump space and water heating can be 500% more efficient than using a gas burner. This means that to achieve the same output, far less primary energy is required when the task is electrified.

Nonetheless, the avenue of electrification is likely to create additional demand on the electricity grid. There are a range of scenarios for this additional demand. In a low-quality electrification scenario, inefficient appliances operate with little reference to grid conditions or coordination, placing significant extra demand on the grid at times when cost or emissions are high. Alternatively, in a high-quality electrification scenario, efficient appliances place low demands on the grid, are able to operate flexibly to take advantage of times of abundant renewable energy and low network congestion, and can be coordinated to deliver the maximum possible benefit at lowest possible cost.

To realise the benefits of a high-quality journey to electrification, the ACT Government should deliver clear policy signals to encourage investment in highly efficient appliances. The EEC notes that the ACT Government has already developed policy mechanisms to assist households in making the transition to electric appliances such as the Energy Efficiency Improvement Scheme and the Sustainable Household Scheme. The EEC suggests that the ACT Government consider adding energy performance benchmarks to all Government incentivised schemes to ensure that households are provided with energy upgrades that will deliver the greatest possible benefits both to the householder and the community.

Similarly, the EEC suggests that the ACT Government consider creating additional incentives to encourage the development and operation of demand flexibility in the territory to help facilitate electrification with the least additional investment in new energy infrastructure. This would ensure the process of electrification can be completed at least cost to consumers, the community and the ACT Government.

Recommendation

The ACT Government should provide strong policy signals to encourage efficient, high-quality electrification to expedite the transition to a low-emissions energy system at lowest cost.

2. Create clear sectoral electrification plans

Around the world, governments are understanding the value of creating sectoral plans to deliver guidance to businesses and households to help them understand their path through the energy transition. In particular, sectoral plans can help guide investment by highlighting like technological pathways and timeframes, helping industry and individuals plan and prepare.

While sectoral plans are commonly applied to larger industrial sectors, there will be value in developing sectoral plans for the ACT electrification journey. In particular, there are sectors that will require additional guidance and assistance to successfully transition away from natural gas. These include:

Rental dwellings

Renters lack agency, resources and incentive to upgrade their dwelling to an electric-only building. Without a clear plan and staged transition, renters may be left to the end of the transition, meaning they could bear a high burden of cost as the number of users on the gas network declines.

A clear plan for renters – including financial assistance for landlords through the Sustainable Household Scheme, complemented by phased additions to the ACT Government's existing minimum rental standards – will be essential to ensuring that the transition for renters progresses at a comparable pace to the rest of the community.

Apartment buildings

Apartment buildings can introduce special challenges into the electrification journey. In some cases, the technical aspects of electrification can be challenging, particularly where buildings share some or all central services like water and space heating. In all cases, the additional complication of shared ownership through the body corporate can make choosing a time to implement electrification challenging.

Planning the electrification journey for each and every class 2 building is critical. Electrification plans should be advanced at the earliest possible opportunity, so that should equipment reach end of life or fail, a plan is in place to transition to electric equipment. Failing to plan in advance of these eventualities makes like-for-like replacement more likely, creating a risk of stranded gas assets that must be replaced again relatively soon.

The ACT Government could consider a program to help strata bodies identify and plan their transition to all-electric equipment, followed up with a phased-in requirement for bodies corporate to have an energy transition plan in place.

Commercial and industrial gas users

While electrification technologies are applicable to a wide range of commercial and industrial activities, as explored in the EEC/A2EP report [Harnessing Heat Pumps for Net Zero](#), there are some activities which will not be amenable to electrification in the near term. Decarbonising some of these activities will require development of fossil gas alternatives such as biomethane or hydrogen, however these energy sources are likely to be limited in scale and significantly more expensive than using electricity directly.

In the interim, a staged retention of parts of the gas network to service these customers will be unavoidable. Nonetheless, there are avenues that can reduce the reliance of these customers on gas, such as energy efficiency and partial electrification, and the EEC suggests the ACT Government consider how it might

assist businesses to reduce gas usage, even where there is no current alternative.

Recommendation

The ACT Government should develop sectoral plans to help guide the transition for several groups, including renters, apartment buildings and industrial and commercial customers who cannot decarbonise with existing technology.

3. Skills and supply chains

The ACT's early embrace of electrification is likely to stand it in good stead to reap the benefits of an early transition. However, the ACT is a relatively small jurisdiction, and is likely to be influenced by factors in supply chains and the availability of skilled workers that are beyond its control. Global competition for clean energy technologies, as well as expertise, is likely to create some headwinds in the journey to a zero emissions electric economy.

Nonetheless, there are a range of actions the ACT can take to give the best chances of a speedy and smooth transition.

Collaborate and harmonise with other jurisdictions

The small size of the ACT market presents challenges to creating economies of scale. However, increasing commonality between regulation across different jurisdictions, and increasing mutual recognition of worker skills and expertise can help reduce the challenges that can be experienced in a small market.

Collaborating with other jurisdictions to pursue harmonised national approaches to product standards and regulation can be particularly important to ensure Australians have access to a wide range of competitive, efficient appliances and other equipment.

Continue the commitment to safety and quality in the transition

The ACT Government's leadership in helping to pilot the refreshed Certified Insulation Installer program, which builds renewed confidence in the role of insulation in our path to net zero, is a template which can be applied to other parts of the transition. Safeguarding the interests of consumers – particularly vulnerable community members – is crucial to maintaining social licence for the transition. Lessons learned from previous energy efficiency programs should be incorporated into any ACT Government policies to help accelerate electrification.

There are a range of current gaps in ACT occupational training and licencing which could benefit from attention. Gaps include:

- The lack of a regime for licencing (or recognising licencing) of HVAC trades, which will be a key technology in the electric transition
- The need for a much greater cohort of plumbers to possess restricted electrical licences to enable one-visit changeover of water heaters from gas to electric
- Upskilling of trades and professions to support an increased focus on ensuring buildings perform as built, not just as designed.

Continuing to support training and upskilling of the ACT workforce is essential, as the ability of the ACT to attract skilled labour from elsewhere is likely to continue to be challenging in a generalised labour shortage.

Continue support for strategic technologies

The ACT Government's policy support for developing the insulation industry in the ACT has been an important driver in improving the standard of quality and safety in the industry. In the future, it's likely there will be additional technologies which can underpin strong electrification outcomes, such as embracing hydronic space conditioning that can take advantage of low-cost thermal to most effectively utilise renewable energy generation, or smart home technologies that can dynamically manage the loads they place on the grid.

As the ACT's transition to electrification progresses, we suggest the Government consider changing the technology mix supported by policies and programs, with a view to building a wide portfolio of electrification technologies available to the community at an affordable cost.

Recommendation

The ACT Government should continue to explore pathways to improving economies of scale for electrification technologies in the ACT, including through collaboration and harmonisation, promoting skills and quality through education and training opportunities, and supporting an appropriate range of strategic technologies.

4. Ensuring an orderly transition away from gas

As flagged in the position paper, it is likely that the ACT's transition away from fossil fuel will happen in stages, with the later stages proving the most challenging to manage in an equitable manner that neither places excessive burden on those remaining on the gas network in later stages, nor sees taxpayers paying excessively to prop up a network that serves a limited number of customers. Ultimately, government intervention and coordination will be required to ensure the later stages of the transition occur in an orderly way.

However, while there are a number of potential ways to manage the later stages of the transition, the EEC is concerned by the risk of the transition occurring more quickly than anticipated. Rapid consumer-led transition is a conceivable possibility in the ACT and could lead to the gas distribution network becoming unviable to maintain for small customers more quickly than currently expected. This could be expedited by lowering costs of complementary technologies, such as home energy storage systems.

The EEC strongly recommends the ACT Government develop a contingency plan that could implement an orderly transition away from gas across a range of timescales, at lowest cost to the community. Such a plan should clearly outline a plan for transitioning the last remaining homes off the gas network and assisting vulnerable energy users to navigate the electrification process. It is likely that a suburb-by-suburb approach will be needed to ensure the final stages of the transition can be effectively managed with minimal disruption and cost to households and businesses.

Recommendation

The ACT Government should develop gas transition plans that are robust across a range of transition trajectories. These plans should pay particular emphasis to managing the transition of vulnerable energy users and phasing down the gas network in manageable portions.

Consultation questions

1. Do you think the proposed Integrated Energy Plan principles to guide the ACT Government will support a successful transition to electrification in the ACT? Are there any areas missing?

The principles described in the position paper are broadly appropriate to guide the energy transition. We would suggest:

- prioritising a fair and equitable transition: Safeguarding vulnerable consumers is crucial to maintaining social licence for the transition; and
- an emphasis on establishing the ACT as a leader in research, development and innovation in the electric transition. There are a range of opportunities that could be captured, building on the education and research facilities available to the ACT.

2. What are the barriers to uptake of consumer energy resources and other technology, such as batteries, solar panels and electric vehicles?

There are a range of barriers that exist. A principal barrier is lack of interest and engagement with the electric transition, and continual efforts to engage and assist the community to be involved will be required. Once the threshold of interest, engagement and acceptance has been overcome, there are a range of economic barriers to uptake of these panels, including lack of suitable products or skilled workers, affordability and lack of capital. For around a third of the population that rent, lack of permission, agency and aligned incentives to make electric upgrades is also a very substantial barrier.

3. Would are the benefits of the ACT using a consumer-led approach during the first IEP (to 2030) to transition the ACT towards electrification? A consumer-led approach means the community will be encouraged to transition off gas at a time that suits them. Consumers will decide if and when they adopt consumer energy resources, such as solar and batteries, and electric vehicles.

a. Do you think there is any benefit for a staged transition approach following an initial consumer-led transition? What would be the barriers of such an approach? For example, after 2030, this could be a suburb-by-suburb staged transition approach.

b. Do you have a preference for any approach?

See section 4.

4. What can be done to further encourage electrification among those households that have the means to do so?

There is significant value in the demonstration effect amongst peers. In areas that have low penetration of electrification, it may be worth taking a more active role to create demonstration homes that allow visibility of electrification, as well as community outreach and engagement.

**5. Is there a role for regulation to support the community when choosing between gas and electric appliances?
a. How could point of sale information support consumers when replacing appliances or should gas assets be disclosed in a property transaction (sale or rental)?**

Disclosure of gas appliances should be contained within the ACT's existing energy efficiency report at point of sale. With the advent of the NatHERS whole of home rating, there is an opportunity to build on the ACT's successful disclosure regime to highlight the potential high energy costs associated with gas connections.

In the short term, there is a pressing need for point of sale information for some appliances – most particularly heat pump hot water systems – that the ACT could help expedite through the E3 program working groups. Presently, there is no easy way for consumers to evaluate the performance of these hot water systems, which is a significant gap in the ability of consumers to choose an appliance that will suit them.

6. Which members of the community are most at risk of being negatively impacted during the transition?

a. If we were to provide targeted support for low-income households or those who can't transition themselves, what could this be?

b. What specific actions could the government take to best support these households?

It is likely that as the later stages of the transition approaches, the ACT Government will need to take a more direct approach to ensuring renters, low-income and other vulnerable households are successfully transitioned to all-electric energy use. This could involve extending minimum rental standards, or arranging for direct procurement of upgrades for low-income houses to ensure the task is completed in time to support a staged phase-down of the gas network.

7. How can government work with industry and financiers (such as green finance and investors) to electrify complex buildings?

a. How can government work with community and community organisations to ensure a smooth transition for those living in complex buildings?

Government has a clear role in supporting the development of ecosystems of products and skills to catalyse markets. Government can help in a number of ways, particularly by using its own procurement policies to establish firm demand that will give the market confidence to invest in skills and supply chains for complex building upgrades. Useful policies can include specifying mandatory minimum requirements for government-owned or leased buildings, or piloting technologies for government use ahead of mainstream adoption.

8. What should be the role of body corporates in preparing for the transition?

See section 2.

9. What are the different transition challenges for small to medium business and how could existing programs be improved?

Small to medium business will face a range of challenges similar to households, but will also need to manage their ability to plan, design, implement and finance upgrades while continuing to trade in challenging conditions. The need for businesses to maintain their core business focus can often leave little attention to capitalise on opportunities for energy efficiency or electrification upgrades, so ensuring easy access to tailored advice is key.

10. How can we best transition industrial zones and infrastructure, and heavy transport away from fossil fuel energy?

The ACT's reliance on heavy transport from interstate is likely to limit its ability to champion fossil-fuel free transport. However, piloting opportunities where possible – such as the ACT's procurement of an electric bus fleet – is likely to help progress the national conversation which will be key to driving change in this area.

Transitioning industrial zones and infrastructure will require careful planning. In some instances, industry will require access to replacement fuels like biomethane or hydrogen, although these will not be cheap replacements. The ACT should consider designating precincts where energy-intensive businesses can concentrate, allowing the maintenance of a limited gas network at reasonable cost until it is possible to transition to renewable alternatives.

11. What are the research and innovation priorities to support business transition and development?

In the first instance, innovation in electrification is likely to mean innovation in business models, and scaling up deployment of existing technologies. The ACT can foster innovation by helping to create localised linkages between R&D capability resident in local higher education and research institutions and innovative local businesses to work on relevant small scale innovations.

The ACT should also endeavour to support national and global efforts to decarbonise business through R&D, noting that Australia is likely to need to import technology and expertise to complete the transition.

12. How can we increase the number of skilled workers in electrical trades?

There is likely to be a need for a wide range of skilled trades and professions in the transition, not just electrical trades. The Energy Efficiency Council continues to advocate for the development of a comprehensive Australian Energy Employment Report to inform the development of policies to attract the full range of necessary skilled workers, including electrical trades and professions.

13. What opportunities exist for industry wage and work conditions, that could assist with workforce attraction and retention?

The EEC has no comment on this question at this time.

14. How can we best support gas workers to transition their skills to be part of the net zero economy, for example in electrical trades, sustainable buildings and electric vehicle auto servicing?

The EEC, along with the Clean Energy Council, has developed an initial [Careers for Net Zero campaign](#) which is designed to attract workers at all career stages towards clean energy jobs, including energy efficiency and electrification. As a first step, highlighting the availability of clean energy jobs (and the pathways to them) will help widen the potential pool of workers, and demonstrate opportunities for those workers who may be considering transitioning away from gas-intensive trades.

15. Which indicator, or indicators, would provide the most meaningful updates on the progress?

There are a number of important indicators. These include:

- Number of remaining gas connections
- Rate of disconnection from the gas network
- Suburb-by-suburb rates of active gas connection penetration
- Number of low-income, vulnerable or rental households still to transition.

Tracking these indicators will demonstrate the magnitude of the task still to be achieved, and indicate where the ACT Government will need to step up efforts. Total gas volume or emissions are less useful indicators, as they do not substantially speak to the task of transition away from gas (which is expressed better in terms of remaining gas connections).

16. What may be some potential barriers associated with achieving the proposed ranges?

There are no particular barriers to achieving the ACT Government's proposed targets that have not been discussed elsewhere in this response.

17. Are there other indicators that you think would be useful to track the transition as part of the Integrated Energy Plan? For example, electric vehicle adoption or overall Territory emissions reductions.

While the ACT has for some years procured an amount of renewable electricity equivalent to 100% of the ACT's energy use, this does not mean that the ACT's electricity consumption comes exclusively from renewable sources. Consumption at different times of day is associated with different emissions intensities, and the next evolution in the ACT's electric future should be to ensure that energy use aligns as far as possible with availability of renewable energy – that it genuinely represents carbon-free electricity as far as possible. The EEC would encourage the ACT Government to track the emissions intensity of ACT electricity usage, and consider ways to incentivise demand flexibility to drive down the ACT's contribution to demand for emissions-intensive electricity generation.