Tackling climate change and energy affordability for low-income households

Australian Council of Social Service and Brotherhood of St Laurence

September 2018

About ACOSS

ACOSS is a national voice for the needs of people experiencing poverty, disadvantage and inequality and the peak body for the community services and welfare sector. Our vision is for a fair, inclusive and sustainable Australia where all individuals and communities can participate in and benefit from social and economic life.

ACOSS leads and supports initiatives within the community services and welfare sector and acts as an independent non-party political voice. By drawing on the direct experiences of people affected by poverty and inequality and the expertise of its diverse member base, ACOSS develops and promotes socially and economically responsible public policy and action by government, community and business.

About Brotherhood of St Laurence

The Brotherhood of St Laurence is an independent non-government organisation with strong community links that has been working to reduce poverty in Australia since the 1930s. Based in Melbourne, but with a national profile, the BSL continues to fight for an Australia free of poverty. We undertake research, service development and delivery, and advocacy with the objective of addressing unmet needs and translating the understandings gained into new policies, new programs and practices for implementation by government and others. The BSL's Energy, Equity and Climate Change program has been undertaking research, advocating for equitable policies and delivering programs to low income households since 2007.

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EXECUTIVE SUMMARY

Key Messages

- People on low incomes or experiencing disadvantage are more vulnerable to climate change impacts and a poorly managed transition to clean economy.
- Australia needs a credible, stable, low-cost and equitable emissions reduction mechanism for the energy sector (and the economy more broadly) to contribute to more affordable energy prices and limiting dangerous global warming.
- The modelling in this reports shows that, with the right settings, the National Energy Guarantee (or similar mechanism) could drive rapid emissions reductions in the electricity sector and put downward pressure on energy prices.
- Higher emissions reduction targets for the energy sector provides more "bang for your buck", producing significantly more emissions reductions than lower targets with similar savings to residential retail prices.
- The issue of equity needs to be better dealt with. Excluding Energy Intensive Trade Exposed Industries (EITEs) for the National Energy Guarantee would shift costs to other consumers. Where there is a need, highly vulnerable groups such as people on low incomes, affected workers and communities, and EITEs, should be supported to ensure they are not worse off.
- Alongside an emissions reduction mechanism, further opportunities exist, and should be implemented in parallel, to make energy bills more affordable and reduce the disproportionate burden on people with low incomes.

Background

The ACOSS and the Brotherhood of St Laurence (BSL) advocate to end poverty, inequality and exclusion, and create a more just, inclusive, equitable and sustainable nation. Climate change impacts; a slow, poorly managed transition to a clean economy; and unaffordable energy bills are major threats to achieving this vision.

People on low incomes and experiencing disadvantage spend disproportionately more of their incomes on essential services, making them more vulnerable to climate change impacts and a poorly managed transition to a clean economy, because they are less able to cope, adapt and recover.

The world needs to reduce its emissions rapidly. This can, and should, be achieved in a low cost, equitable and inclusive manner. There will be some costs as we manage the transition to a clean economy, but the costs will be far greater the longer we delay that necessary shift. Where there are costs, the most vulnerable people should be supported, including those on low incomes.

Despite at least 15 years of political effort, Australia still does not have an effective national policy framework that will ensure that we reduce our carbon emissions to responsibly tackle climate change. Emissions continue to rise and the impacts of climate change are being keenly felt in Australian communities, with global warming fuelling more intense and frequent extreme weather events such as fires, heat waves, drought, storms and flooding.[1]

At the time of commissioning this research, Council of Australian Governments (COAG) Energy Council was developing the National Energy Guarantee, with the aim of reducing emissions in the energy sector,

[1] Climate Council (2017): *Cranking up the intensity: climate change and extreme weather events.* https://www.climatecouncil.org.au/uploads/1b331044fb03fd0997c4a4946705606b.pdf

addressing the reliability of energy generation, and providing investment certainty to put downward pressure on wholesale prices, which have risen sharply over the past two years.

While ACOSS and BSL would have preferred other mechanisms previously considered by governments, we welcomed the intent of the National Energy Guarantee. However, we wanted to ensure it would deliver in the best interests of people living with low incomes or experiencing disadvantage i.e. that it would drive rapid emissions reduction in a low-cost and equitable manner.

Our major concerns with the proposed National Energy Guarantee related to the proposal to:

- Exclude Energy Intensive Trade Exposed Industries (Energy Intensive Trade Exposed (EITE)) from the 'emissions guarantee' – the requirement to reduce emissions. The exclusion would result in other consumers having to do more of the heavy lifting to achieve the total emissions reduction; and
- Set the emissions reduction target at only 26% below 2005 levels by 2030, which would result in a slow transition to clean energy and make it harder to reach the goal to limit global warming as set out in the Paris Agreement.

ACOSS and BSL engaged Frontier Economics to model the exclusion of EITEs and a range of reduction levels (26%, 45% and 65% reductions on 2005 levels by 2030), in order to weigh up their impacts on residential retail prices and emissions reduction.

At the time of releasing this report (September 2018), the Australian Government has set aside the National Energy Guarantee – or at least the 'emissions guarantee' component while proposing to keep the 'reliability guarantee' component – and has stated it will instead focus just on affordability and reliability.

ACOSS and BSL believe the idea that we need to choose between cheaper energy prices and limiting global warming is misleading and short-sighted, and does a huge disservice to our community, especially to people on low incomes.

The majority of price increases over the past decade have resulted from overinvestment in networks (poles and wires), high retailer costs, and high gas prices. In addition, scrapping the carbon price and reducing the Renewable Energy Target (RET) resulted in a shortage of power-plants and uncertainty about what to invest in, which has contributed to reliability issues and recent price rises in the wholesale energy market (generation).[2]

We cannot rein in energy prices unless we address the issues across the whole supply chain, including investment in generation.

Summary of Results[3]

➢ Energy prices will fall with investment in clean energy

Under all four emissions reduction target scenarios modelled (business as usual (BAU), 26%, 45% and 65%), the residential retail price (cents per kWh) decreases from current levels (including and excluding EITEs).

[2] See for example analysis provided by Finkel (2018*): Independent Review into the Future Security of the National Electricity Market – Blueprint for the Future* https://www.energy.gov.au/publications/independent-review-future-security-national-electricity-market-blueprint-future; ACCC (2018*): Restoring electricity affordability & Australia's competitive advantage* https://www.accc.gov.au/publications/restoring-electricity-affordability-australias-competitive-advantage; and Australian Energy Council (2018)*: Media Release: Energy industry concerned by policy shift* https://www.energycouncil.com.au/news/energy-industry-concerned-by-policy-shift/.

[3] Note: the results exclude policy recommendations from the ACCC report. The study only considered residential retail price outcomes for Queensland, Victoria, New South Wales and South Australia.

Savings in 2030 from today's residential retail prices vary by state. However if we take the residential retail price for 2030 for each of the four states and create an average[4], the modelling finds (including EITES):

- under the business as usual (BAU) scenario, an average saving of 18.5%
- under the 26% scenario, an average saving of 20.8%
- under the 45% scenario, an average saving of 18.3%
- under the 65% scenario, an average saving of 15.0%.

➢ More bang for your buck with higher emissions reductions

The modelling forecasts substantial differences in the emissions reductions achieved between 2018 and 2030 in the National Energy Market (NEM) + Western Australian Wholesale Electricity Market (WEM) under each emissions reduction scenario:

- under the BAU scenario, emissions are reduced by 32 Mt
- under the 26% scenario, emissions are reduced by 33 Mt
- under the 45% scenario, emissions are reduced by 66 Mt
- under the 65% scenario, emissions are reduced by 89 Mt

The modelling indicates that if all sectors are covered by the National Energy Guarantee (i.e. EITEs are not excluded), you get more 'bang for your buck' with higher emissions reduction target. For example, the 45% scenario achieves double the emissions reductions of BAU with approximately the same impact on electricity bills (averaged across the four states).

A strong emissions reduction target coupled with additional energy affordability reforms as suggested by the Australian Competition and Consumer Commission (ACCC), for example, would make more ambitious emissions reduction targets even more affordable.

➢ Excluding EITEs hurts households

The modelling found that excluding EITEs from the 'emissions guarantee' results in lower savings on the residential retail price from the National Energy Guarantee; moreover, this impact on the price worsens each year as higher emissions reductions are achieved. Residential retail prices will still be lower than today's prices, but households will not benefit as much, if the EITEs are excluded. Wholesale prices are unaffected.

The results demonstrate that households will be subsidising big, mostly multinational, businesses if the EITEs are excluded from the National Energy Guarantee. This will impact on low-income houses in particular as they spend disproportionately more of their incomes on electricity. The cross subsidy goes against the ACCC's advice to cease applying subsidies though electricity bills and to find more progressive ways to fund industry support.[5]

Summary of Recommendations

This modelling demonstrates that with the right settings, the National Energy Guarantee (or similar mechanism like an Emissions Intensity Scheme) could drive more rapid emissions reductions in the electricity sector and put downward pressure on energy prices.

[4] A simple average, unweighted by state demand.
[5] ACCC (2018): *Restoring electricity affordability & Australia's competitive advantage* https://www.accc.gov.au/publications/restoring-electricity-affordability-australias-competitive-advantage

Lower residential retail prices are achieved under all emissions levels we tested. Most compelling was that higher emissions reductions provides more "bang for your buck", resulting in significantly greater emissions reductions from business as usual, but with similar savings.

However, we need to better deal with the issue of equity. Three groups could face detrimental impacts as we transition: low income households; displaced workers and their communities; and emissions-intensive, trade-exposed industry (EITE). The National Energy Guarantee only dealt with one group (EITEs), and to the detriment of low-income households. The interests of these groups should not be in conflict, and public policy can and should ensure that they are not unduly negatively impacted by the transition.

In parallel, governments also need to be implementing additional policies to reduce energy stress, including lowering energy prices, reducing the size of bills and improve people's capacity to pay. As outlined in the recommendations below, ACOSS and BSL support many of the reforms recommended by the ACCC in their report *Restoring electricity affordability: Australia's competitive advantage*.[6] We also support additional reforms specifically to assist people on low incomes or experiencing disadvantage.

ACOSS and BSL recommend the following:

1. The Australian Government must urgently implement policies to reduce emissions across our economy and energy sector. Whether the policies are economy-wide or sector-specific is less important, so long as the policies are credible, stable, low-cost and equitable.
2. Increase the 2030 emissions reduction target to at least 45% on 2005 levels. In the energy sector higher targets coupled with energy affordability reforms could be achievable and are desirable.
3. Ensure the emissions reduction target-setting process is at least consistent with the Paris Agreement:
    - include a no-backsliding provision;
    - an ability to modify the emissions reduction target outside set review periods, to take into account changes to international commitments, climate change science, technology changes and community expectations; and
    - give the relevant federal minister discretion to change the target in consultation with the public.
4. Take up further opportunities to make energy bills more affordable and reduce the disproportionate burden on people with low incomes.

    ACOSS and the BSL support the principles of many of the reforms recommended by the ACCC and we urge progress to be made on the recommendations in consultation with the community sector, in particular on:

    - a fairer regulated retail price (recommendation 30);
    - a shift to percentage-based concessions (recommendation 37);
    - restricting conditional discounts, such as pay-on-time discounts which do not reflect true costs (recommendation 33);
    - introduce a grant scheme for consumer and community organisations to provide targeted support to vulnerable consumers (recommendation 38);
    - provide a mechanism to offer demand response to the market (recommendation 21);
    - remedy past overinvestment in networks, through write-down of regulated asset base in Queensland and Tasmanian; and rebates on network charges in New South Wales (recommendation 11);
    - shifting solar schemes away from electricity bills to government budget (recommendation 25); and

[6] ACCC (2018): *Op cit*

- give greater powers for the Australian Energy Regulator (recommendation 3).

ACOSS and BSL research finds additional reforms are needed specifically to assist people on low incomes or experiencing disadvantage to reduce the size of their bills and improve their capacity to pay, including:

- Increase Newstart and related allowances is also an urgent, essential step to help those struggling on less than $40 a day to put a roof over their head and food on the table and heat their home in winter and cool it in summer.
- Energy efficiency measures are critical to reduce the size of energy bills and improve health and wellbeing. Measures may include mandatory energy efficiency standards for rental properties, supported by tax incentives for landlords.
- Retaining the Energy Supplement for new recipients of income support, which equates to between $4.40 and $7 per week.

5. In developing an economy-wide or sector-specific emissions reduction mechanism(s), a review of the impact of low and high emissions reductions on vulnerable groups such as low-income households, workers, affected communities and EITE industries, should be undertaken and appropriate equity measures to address those impacts should be implemented.
6. Further, include in target-setting legislation a requirement that before new targets are issued or amended, the Minister must issue a report that:
    - estimates the expected impacts of the new or amended targets on low-income households, workers in vulnerable industries and trade-exposed industries; and
    - considers the adequacy, equity and effectiveness of assistance measures to address those impacts.

    In preparing the report the Minister must undertake wide consultation with the community and industry, and consider independent expert advice.

BACKGROUND AND CONTEXT

Australia is a signatory to the global Paris Agreement, which aims to limit global warming to well below 2 degrees Celsius and pursue a limit of 1.5 degrees above pre-industrial levels. The Australian Government has committed to reduce Australia's economy-wide emissions by 26-28% from 2005 levels by 2030, and must implement strategies to achieve this and longer-term targets in line with the Paris goal.[7]

The Australian Council of Social Service (ACOSS) and the BSL support the goals of the Paris Agreement. People who experience poverty and disadvantage will be most affected by climate change impacts as they are least able to cope, adapt and recover. Australia has already experienced an increase in the number and intensity of extreme weather events fuelled by global warming, which is having a detrimental impact on people, the economy and environment. Climate change is a social justice and intergenerational equity issue.

We believe that as a developed nation, Australia has a responsibility to lead by responding more rapidly than less developed countries.

The electricity sector has access to more affordable clean technology therefore can and should do more to reduce its emissions than other sectors. If other sectors that do not have access to affordable technology are required to achieve the same level of emissions reductions, this would come at a greater price which could flow through to consumers.

There will be some costs to achieve the kind of transition needed to limit global warming to 1.5 degrees C, but the costs will be far greater the longer we delay that necessary shift.

We are concerned that if the transition to a clean economy is poorly managed and inequitable, people who experience poverty and disadvantage will be worse off, because they pay disproportionately more of their incomes on essential services and have less choice and control to reduce costs.

The transition therefore must be least-cost and where costs are incurred, they should be shared equitably, with people on low incomes protected from paying more.

At the time of commissioning this research, COAG Energy Council were developing the National Energy Guarantee, with the aim of reducing emissions in the energy sector, addressing the reliability of energy generation, and to provide investment certainty to put downward pressure on wholesale prices which has risen sharply over the past two years.

The National Energy Guarantee would have been integrated into the National Electricity Market (NEM) and implemented though the National Electricity Law (NEL), though state-based legislation. The legislation would have needed to be approval by the Commonwealth and all NEM States and Territories (excluding WA and NT). Embedding an emissions reduction mechanism in the NEL would have provided more policy stability as it would require all relevant Commonwealth, States and Territories to repeal it.

The National Energy Guarantee would impose an 'emissions guarantee' requiring retailers (and large users) to meet their electricity requirements at a specified average intensity level. The level would be set annually based on an emissions reduction target to be set by the Commonwealth Government. The 'reliability guarantee' would impose an obligation on retailers and large users to meet a percentage of their electricity

[7] Independent international analyst Climate Tracker find Australia's target is "Insufficient", with a level of ambition that—if followed by all other countries—would lead to global warming of over 2°C and up to 3°C. In addition, if all other countries were to follow Australia's current policy settings, warming could reach over 3°C and up to 4°C ("highly insufficient") https://climateactiontracker.org/countries/australia/

load requirements with flexible and/or dispatchable resources if a reliability gap has been identified and triggered.

Like other emissions reductions mechanisms, the design of the National Energy Guarantee and its emissions reduction target would impact the wholesale and retail prices of electricity, as well as the quantity of emissions reduced in the electricity sector over time.

ACOSS and BSL wanted to ensure the National Energy Guarantee would deliver in the best interests of people on low income or experiencing disadvantage, i.e. that it would drive rapid emissions reduction in a low cost and equitable manner.

Our major concerns with the proposed National Energy Guarantee related to the proposal to:

- Exclude Energy Intensive Trade Exposed Industries (EITEs) from the 'emissions guarantee"– the requirement to reduce emissions. The exclusion would result in other consumers having to do more of the heavy lifting to achieve the total emissions reduction; and
- Set the emissions reduction target at only 26% below 2005 levels by 2030, which would result in a slow transition to clean energy and make it harder to reach the goal to limit global warming as set out in the Paris Agreement.

With respect to EITEs, the Commonwealth Government had indicated that they would be exempted from the 'emissions guarantee'. EITEs are predominately large multinationals, including gas producers, aluminium smelters, cement producers, paper manufacturers and animal rendering firms.[8] It was argued that, given they were exempted under the Renewable Energy Target (RET), the same policy should exist under the National Energy Guarantee. However, the RET is a very different mechanism, which paid a premium for renewable energy, leading to a small increase in retail electricity prices. The National Energy Guarantee is a technology-neutral mechanism, with modelling suggesting it would reduce retail electricity prices. No analysis was provided as to why EITEs need to be excluded. The exclusion of EITEs under the RET shifted costs to other consumers.[9] It is also likely this would be the case under the National Energy Guarantee but no analysis has been provided.

With respect to targets, the Commonwealth Government indicated the emissions reduction target for 2030 would be set at 26% reduction on 2005 levels, the same as Australia's current economy-wide target. According to international analysis by Climate Action Tracker, Australia's current economy-wide target of 26-28% is among the weakest of any advanced economy.[10] A 26% by 2030 reduction target for the electricity sector would place a greater burden and cost on other sectors which are less equipped to reduce their emissions and would have flow through effect to people and communities. The Federal Labor party has indicated that they would increase the 2030 economy-wide target to 45% reduction on 2005 levels (and they have suggested the electricity sector could be more ambitious). The Climate Change Authority had

[8] Activities eligible for exemption under the RET http://www.cleanenergyregulator.gov.au/RET/Scheme-participants-and-industry/Industry-assistance/Activities-eligible-for-exemption Exemption certificates issued in 2017 under the RET http://www.cleanenergyregulator.gov.au/RET/Scheme-participants-and-industry/Industry-assistance/Industry-assistance-published-information/Issued-partial-exemption-certificates/Issued-exemption-certificates-for-2017

[9] The Climate Institute has found that EITE firms pay only eight per cent of the RET's costs while consuming around 25 per cent of Australia's electricity. Households, meanwhile, consume 29 per cent of electricity but pay 35 per cent of the costs of the RET. Over the life of the RET, this transfers approximately $7 billion in costs from EITE businesses to non-EITE businesses ($4.4 billion) and households ($2.7 billion). http://www.climateinstitute.org.au/verve/_resources/TCI_RETReview_ClimateChangeAuthority_Submission_19September2012_web.pdf

[10] Climate Action Tracker: https://climateactiontracker.org/countries/australia/

also recommended a 2030 economy-wide target of between 45-65%.[11] However there was no analysis that showed the impact higher targets would have on electricity retail prices under the National Energy Guarantee.

ACOSS and BSL engaged Frontier Economics to model the exclusion of EITEs from the 'emissions guarantee' and a range of emissions reduction levels (26%, 45% and 65% emission reductions on 2005 levels by 2030), so we could better understand and weigh up their impact on residential retail prices and emissions reduction.

ACOSS and the BSL determined the scenarios that were modelled, in consultation with Frontier Economics. Frontier Economics produced this modelling on a *pro bono* basis.

Results for residential retail prices were only available for Victoria, New South Wales, Queensland and South Australia.

[11] Climate Change Authority (2015): *Australia's Climate Policy Options.* http://climatechangeauthority.gov.au/sites/prod.climatechangeauthority.gov.au/files/SpecialReport2/Options%20paper%20Final.pdf

MODELLING ASSUMPTIONS

Modelling Scope

The scope of this research is the analysis of the impact of:

- A range of proposed emissions reduction targets under the proposed National Energy Guarantee on residential retail price and greenhouse gas emissions reductions.
  - 26% reduction on 2005 levels by 2030 as consistent with the Commonwealth Governments position.
  - 45% reduction on 2005 levels by 2030 as consistent with Federal Labor's proposed economy-wide target.
  - 65% reduction on 2005 levels by 2030 the upper end of the Climate Change Authority's recommendation for economy-wide target.[12]
- Excluding Energy Intensive Trade Exposed Industry (EITEs) from the emissions guarantee, on residential retail price.

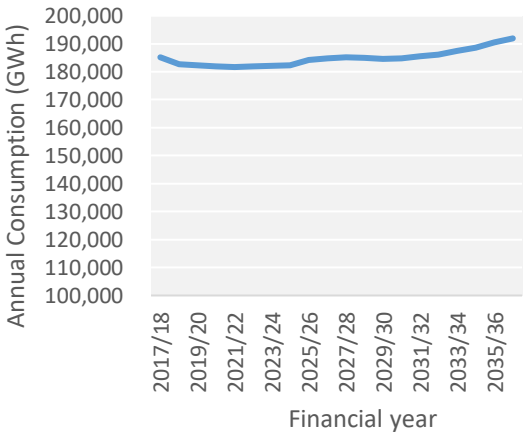
In looking at residential retail price, the research was only able to look at outcomes for Queensland, Victoria, New South Wales and South Australia.

Key Assumptions

Key assumptions for the modelling include:

- Neutral demand (relatively flat demand for energy) calculated from AEMO 2018 EFI Forecast for the NEM, published in March 2018 (see figure 1).[13]
- The model uses publicly announced retirement dates for coal-fired power stations (e.g. Liddell 2022/3, Bayswater 2034/5, Vales Pt 2028/9, and Yallourn 2032/3) and also explicitly models retirement of coal generators if they are not announced, based on a 50 year life cycle for generators.
- Retail prices are supplied by Frontier Economics and do not reflect implementation of recommendations from the ACCC report.
- Reliability is assumed to be maintained under the 'reliability guarantee'.

Figure 1 Energy Demand forecast for NEM



- Technology and technology costs include:
  - Utility solar PV: ~$75/MWh initially, ~$57/MWh 2030, ~$46/MWh 2040
  - Solar thermal, 12 hours storage: ~$120-125/MWh (2020), ~$90/MWh 2030, ~$63/MWh 2040
  - Wind ~$73/MWh initially, ~$64/MWh 2030, $57/MWh 2040
  - On firmness: Intermittent Wind and Solar PV are "derated" for reliable contribution to peak demand (ability to provide firmness). Solar PV derated by 75% (initial) to 100% from 2025 (during evening peak); Wind is derated by 92-97%, depending on region. This requires sufficient "firm" capacity (peakers, batteries, and dispatchable renewables) to meet peak demand; this reflects the increase in price volatility with higher penetration of intermittent renewables.

[12] http://www.climatechangeauthority.gov.au/sites/prod.climatechangeauthority.gov.au/files/files/CFI/Final-report-Australia-future-emissions-reduction-targets.pdf adjusted for change in emission reduction baseline from 2000 to 2005.

[13] http://forecasting.aemo.com.au/Electricity/AnnualConsumption/Operational

- The BAU scenario assumes:
  - The conclusion of the Large scale Renewable Energy Target mechanism (RET) (33TWh in 2030)
  - The VRET proceeds in full - 40% by 2025 (approximately 3600MW additional wind/solar PV from 2020-25) and the QRET fully proceeds - 50% by 2030 (approximately 5500MW additional renewables to 2030). Assume that and contract for difference costs associated with VRET and QRET is not added to retail price (and subsidy where required is funded from government balance sheet). The assumption of VRET/QRET is consistent across cases and does not cause any difference between scenarios.
  - 3% Weighted Average Cost of Capital risk premium added for new generation capital from 2029 onwards.
- The 26%, 45% and 65% emissions reduction scenarios also include the RET, VRET and QRET.
- EITE exclusion assumes 40TWh excluded per annum, and further assumes that the cross subsidy burden of EITE is spread evenly across the NEM, as broadly described in the Energy Security Board (ESB) design paper. Impact applies only to retail price and not wholesale price.
- All costs and prices are in $ for FYE 2017.

NEG Assumptions

The **emissions constraint** is modelled as per an Emissions Intensity Scheme (EIS) or a "High Baseline" Clean Energy Target (CET) with an emissions intensity target – these are equivalent for plant dispatch and generator impacts and retail pricing. The modelling assumes a competitive market for emissions and does not account for potential "strategic" pricing of any emissions premium.

The **reliability constraint** is assumed to affect investment in peak capacity only given the latest design proposal applies to peak demand only; it is assumed that this does drive not more competitive bidding behaviour throughout the year.

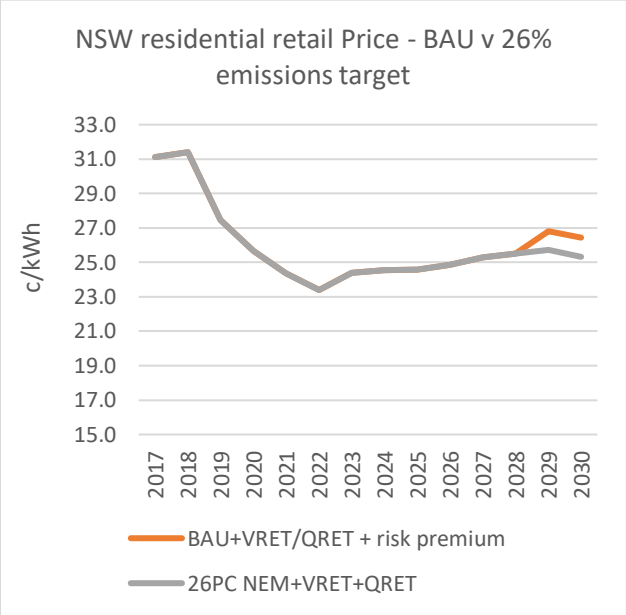
OUTCOMES

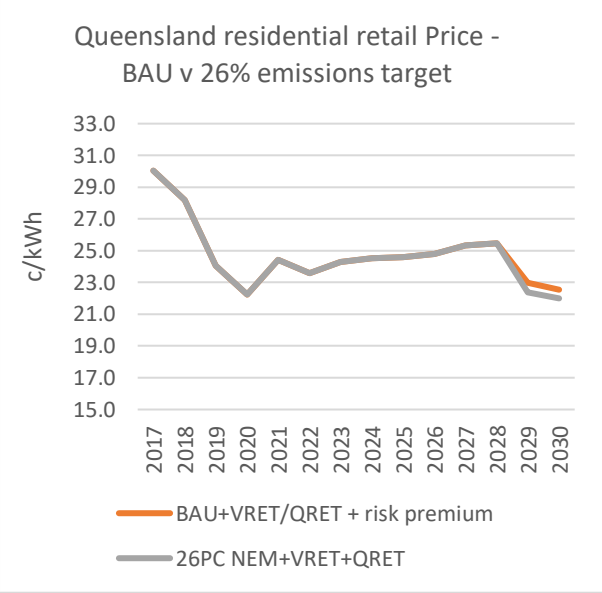
No discernible difference between business as usual and 26% emissions reductions

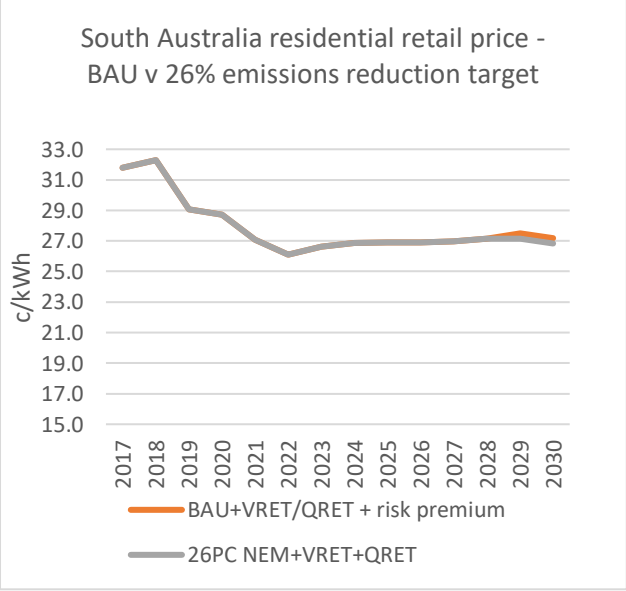
The modelling finds there is no difference between BAU and the 26% scenario on residential retail price or emissions reductions until 2029. The modelling assumes, based on the most likely scenario, that the RET, the VRET and the QRET will deliver the generation and emissions reductions until 2028 and then the National Energy Guarantee will drive investment in cleaner energy in 2029 and 2030. This is because the model assumes perfect foresight, and the expectation of an emissions premium post-2030 affects the investment decision when Vales Point is replaced from 2029.

The modelling finds that under the 26% scenario, small additional price savings will be made (see figure 2 below), but only 1 Mt of emissions will be reduced (see figure 3), beyond BAU. A reduction in policy uncertainty is a contributor to the retail price savings made in 2029 and 2030. The cost of policy uncertainty does not affect results before then as we assume that entrants under VRET/QRET face no policy uncertainty given long term contracts for difference made by the state governments.

Figure 2 Comparison of residential retail price (cents per kWh) under BAU v 26% emissions reduction scenario by State







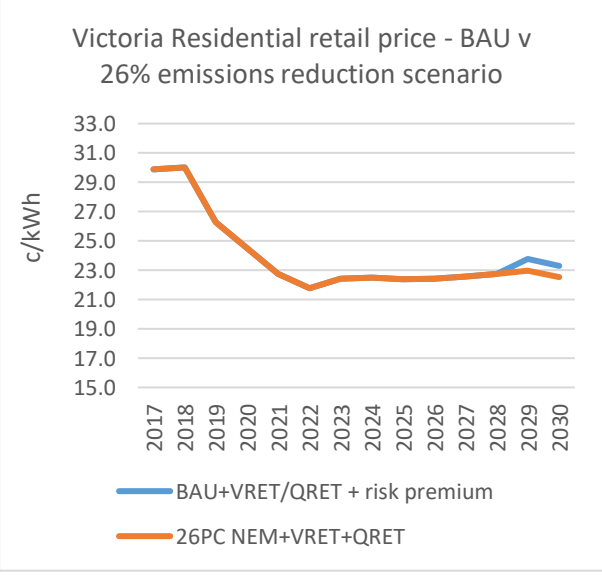
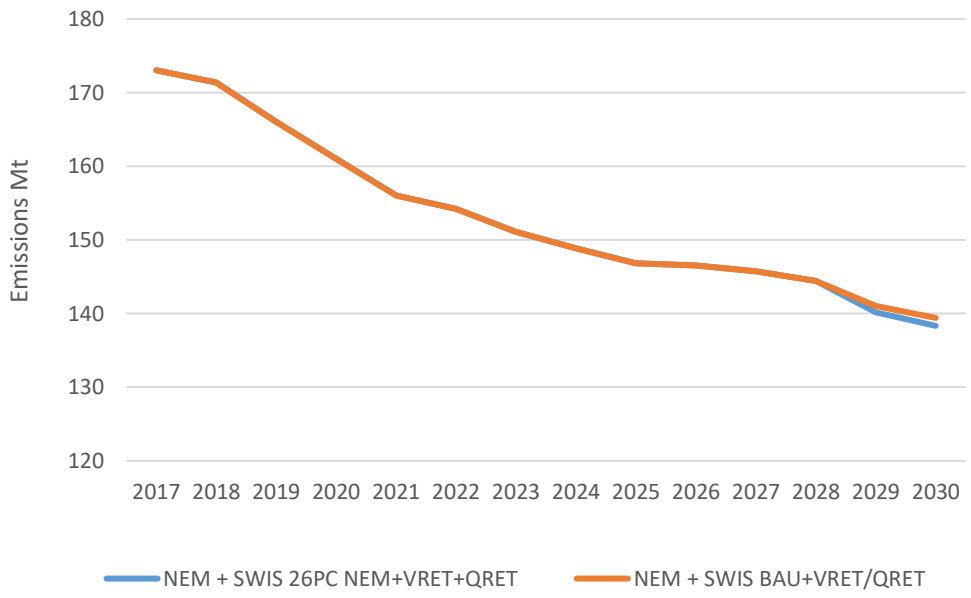


Figure 3. National Emissions reductions (Mt) - BAU v 26% emissions reduction



Energy prices will fall with new investment in clean energy

The modelling finds that, under all four emissions scenarios (BAU, 26%, 45% and 65%), wholesale and residential retail prices decrease from current levels. This is because wholesale prices rose sharply over the last few years due to a combination of a relative freeze on new investment due to scaling back of the RET and uncertainty about emissions reduction policy, combined with the sudden closures of Northern and Hazelwood coal-fired power stations and high gas prices. The RET, the VRET and the QRET are driving a large pipeline of new investment and bringing down wholesale prices.

As shown in figure 4, the level of reductions in wholesale price in 2030 from today's prices varies depending on the state (see also appendices for data between 2017 and 2034), however if we average out across the four states[14] the modelling finds (EITEs included):

- under the BAU scenario an average savings of 36.1%
- under the 26% scenario an average savings of 42.3%
- under the 45% scenario an average savings of 35.6%
- under the 65% scenario an average savings of 26.5%

As shown in Figure 5, the Level of savings in residential retail price in 2030 from today's prices also varies depending on the state (see also appendices for data between 2017 and 2034), however if we average out across the four states[15] the modelling finds (EITEs included):

- under the BAU scenario, an average savings of 18.5%
- under the 26% scenario, an average savings of 20.8%
- under the 45% scenario, an average savings of 18.3%
- under the 65% scenario, an average savings of 15.0%

[14] A simple average, unweighted by state demand
[15] A simple average, unweighted by state demand

Figure 4. Percentage savings in wholesale price by 2030 under range of emisisons reductions targets

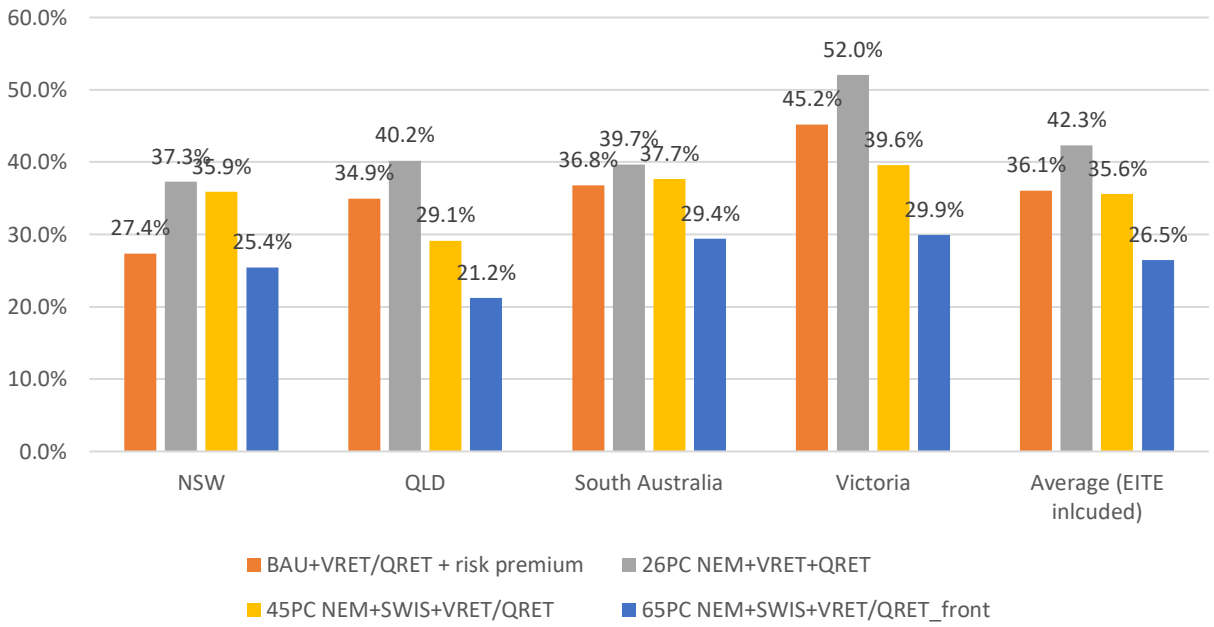
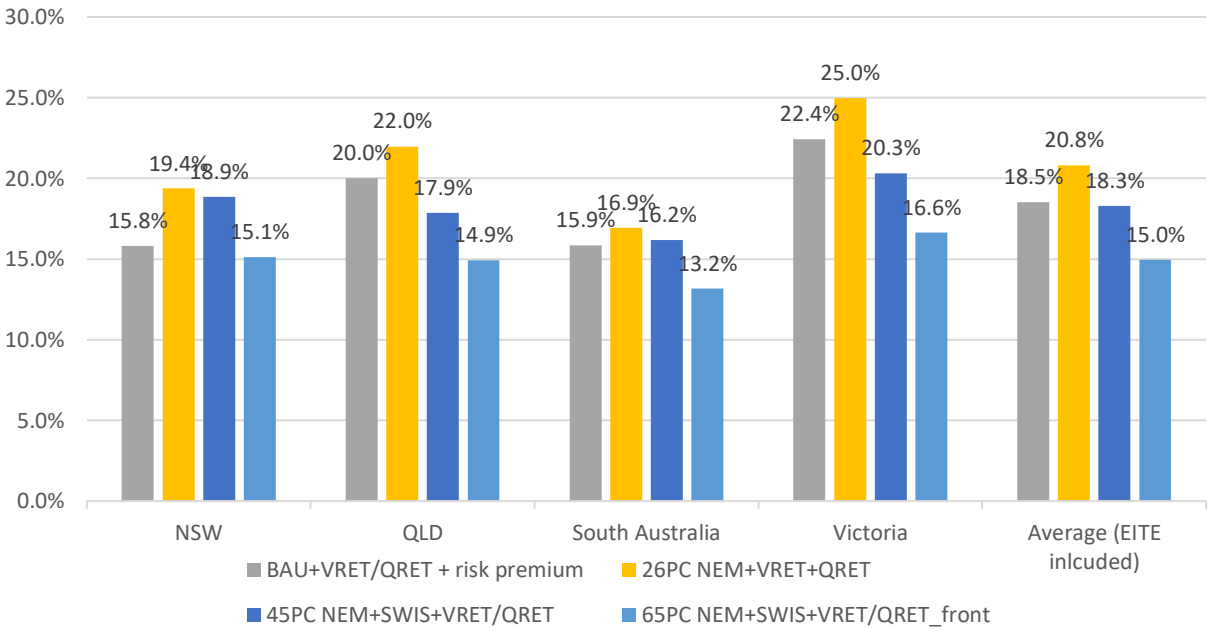


Figure 5. Percentage savings in residential retail electricity price in 2030 across a range of emissions reduction scenarios



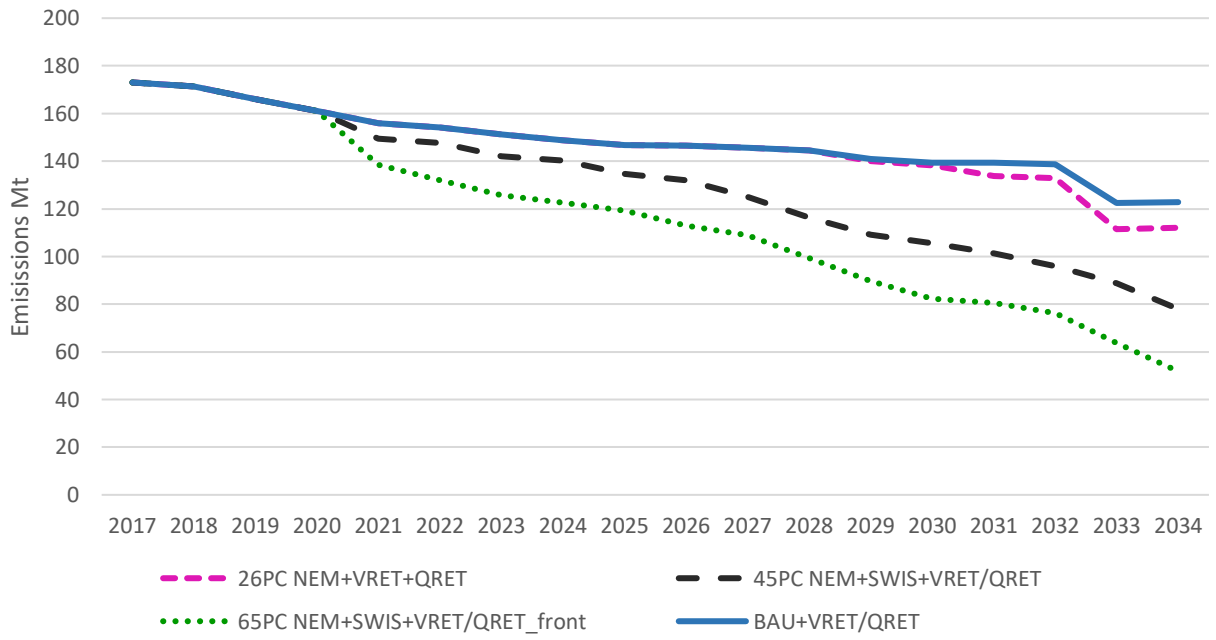
The relative difference in retail prices between regions is largely influencing by the relative role of VRET and QRET in meeting each emissions reduction target. For example, these policies play a major role in meeting the 26% emissions reduction target and drive most new investment in Victoria and Queensland, which drives greater relative price savings in these regions for the lower target. For the deeper emissions cuts (45% and 65%) the abatement effort, new investment and relative price saving are more evenly spread across the regions.

More bang for your buck with higher emissions reductions

The modelling finds a substantial difference in amount of NEM + WEM (Western Australian Wholesale Electricity Market) electricity sector emissions reduced between 2018 and 2030 (annual amount), under each scenario (see figure 6), with higher emission reduction targets producing significantly greater levels of emissions reductions:

- under the BAU scenario, emissions are reduced by 32 Mt
- under the 26% scenario, emissions are reduced by 33 Mt (or 2 MT cumulative from 2021-2030 relative to BAU)
- under the 45% scenario, emissions are reduced by 66 Mt (or 172 MT cumulative from 2021-2030 relative to BAU)
- under the 65% scenario, emissions are reduced by 89 Mt (or 343 MT cumulative from 2021-2030 relative to BAU)

Figure 6. Emissions Reductions under different emissions reduction targets in NEM + WEM



The modelling indicates that if all sectors are included in the National Energy Guarantee you get more 'bang for your buck' with greater emissions reduction.

For example, if you compare the BAU scenario with the 45% scenario the average savings across the four states in 2030 is roughly the same (18.5% savings v 18.3% savings) but the emissions reductions is doubled (32MT to 66Mt).

Under a 65% scenario, the emissions reduction is almost tripled (32 to 89 MT) and there are still significant savings on electricity retail price of 15%.

A strong emissions reduction target coupled with additional energy affordability reforms, as suggested by the ACCC for example, would make more ambitious emissions reduction targets even more affordable.

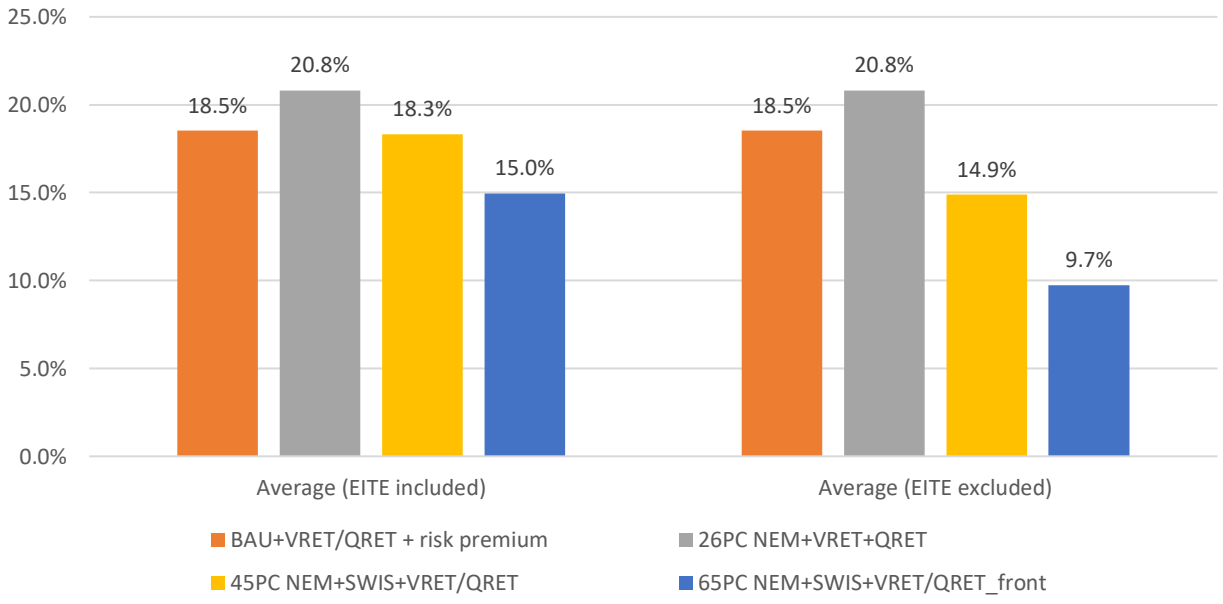
Excluding EITEs hurts households

The modelling also looked at the impact of excluding Energy Intensive Trade Exposed Industry (EITEs) from the 'emissions guarantee'. The modelling found that excluding EITEs from the 'emissions guarantee' results in an increase in residential retail price, which worsens each year as higher emissions reductions are achieved. Residential retail prices will still be lower than today's prices, but the savings will not be as great. Households will not get the full benefit of the savings.

In this modelling, under the 26% emissions reduction scenario, the exclusion of the EITEs from the 'emissions guarantee' does not impact on the retail electricity price until after 2030. This is because the RET, VRET and QRET are doing all the work on emissions reduction. Under the ESB's modelling,[16] which assumes the VRET and QRET are not fully met and the National Energy Guarantee under the 26% scenario drives investment, the exclusion of EITEs would impact on the retail electricity price before 2030.

Under the 45% target, excluding EITEs from the 'emissions guarantee' results in residential retail prices by 2030 not being reduced as much as they otherwise would be (by 3.4%) (averaged across NSW, Vic, Qld and SA). Under the 65% target scenario, exclusion of EITEs would mean that residential retail prices are not reduced by as much as they otherwise could be, by a factor of 5.3% (See figure 7).

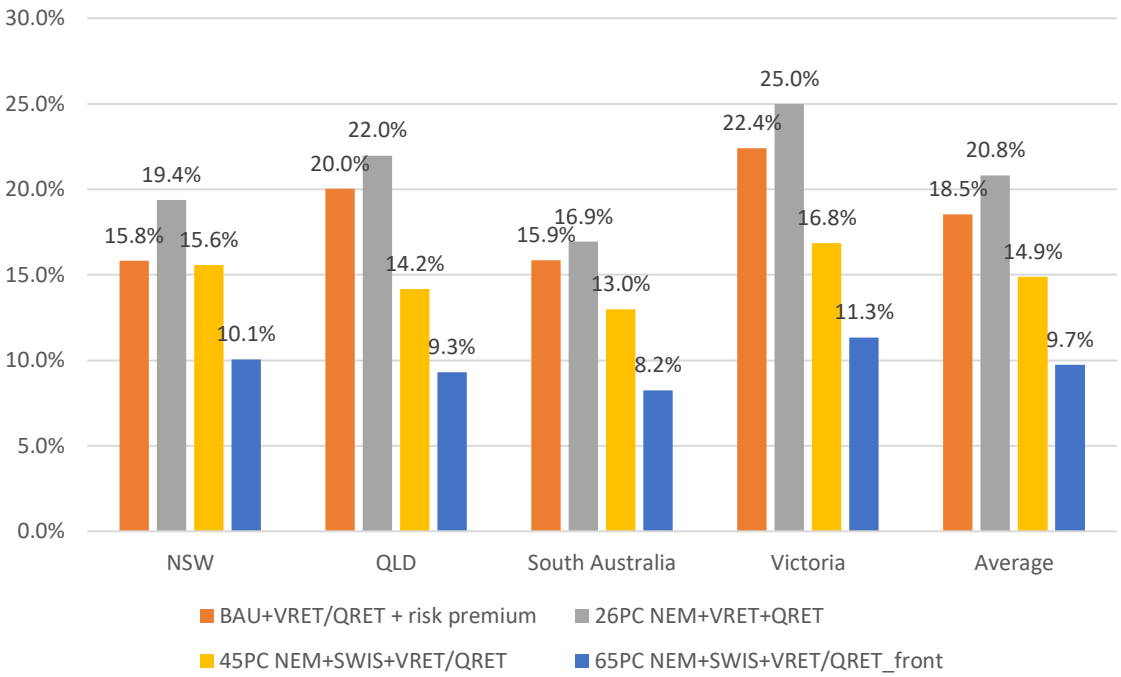
Figure 7. Impact on average savings to residential retail price under EITE inclusion and exclusion from 'emissions guarantee'



Comparing figures 5 above and 8 below shows the difference in savings for four states with EITEs included (figure 5) and excluded (figure 8).

[16] Energy Security Board (2018): *National Energy Guarantee. Final detailed design.* http://www.coagenergycouncil.gov.au/sites/prod.energycouncil/files/publications/documents/Final%20Detailed%20Design%20-%20National%20Energy%20Guarantee_1.pdf

Figure 8. Percentage savings in electricity price in 2030 with EITE excluded



The results clearly demonstrate there will be a cross subsidy from households to big, mostly multinational, businesses. This will impact on low-income houses in particular as they pay disproportionately more of their income on electricity. The cross subsidy goes against the ACCC's advice to cease applying subsidies though electricity bills and find more progressive ways to fund industry support if it's necessary.

Under all scenarios, wholesale and retail prices fall from today's levels, it is therefore unclear why EITEs need to be excluded.

Additional state focused figures are provided in the appendix:

- Appendix 1 – Queensland
- Appendix 2 – South Australia
- Appendix 3 – Victoria
- Appendix 4 – New South Wales.

ANALYSIS AND RECOMMENDATIONS

Credible, low-cost, equitable policies to reduce emissions are urgently needed

The modelling shows that if the settings are right, the National Energy Guarantee could drive more rapid emissions reductions in the electricity sector and put downward pressure on energy prices.

ACOSS and BSL believe the idea that we need to choose between cheaper energy prices and limiting global warming is misleading and short-sighted, and does a huge disservice to the community, especially to people on low incomes.

The majority of price increases over the past decade are a result of overinvestment in poles and wires, retailer costs, high gas prices and investment uncertainty in energy generation.

Repealing the carbon price and reducing the RET scheme resulted in a shortage of power-plants and uncertainty about what to invest in, which according to the Finkel Review[17], the ACCC review of retail prices[18] and the Australian Energy Council[19], has contributed to reliability issues and recent price rises in the wholesale energy market (generation).

We cannot rein in electricity prices unless we are addressing the issues across the whole energy supply chain including investment in electricity generation.

We cannot protect the most vulnerable in our society from climate change impacts if Australia is not doing its fair share to reduce greenhouse gas emissions. At the time of publication, other than the voluntary Emissions reduction Fund, the Australian Government has no plans to reduce emissions in the electricity sector nor any other sector.

ACOSS and BSL recommend:

> **Recommendation 1.** The Australian Government urgently implement policies to reduce emissions across our economy, in particular the emissions-intensive electricity sector. Whether the policies are economy wide or sector-specific is less important, so long as the policies are credible, stable, low cost, and equitable with protections for vulnerable groups.

Higher emissions reduction targets are necessary and achievable

The speed at which we transition our economy and energy sector to net zero emissions has been contentious, as there will inevitably be costs the faster we transition. The costs of the transition has been rapidly reducing – for example, new wind and solar plants with firming technology are now cheaper to build than new coal and gas power-plants.[20]

The costs of delay, in terms of greater climate change impacts and steeper emissions reductions required later, are far greater. Delay pushes greater costs on to the next generation and becomes an

[17] Finkel (2018*): Independent Review into the Future Security of the National Electricity Market – Blueprint for the Future* https://www.energy.gov.au/publications/independent-review-future-security-national-electricity-market-blueprint-future

[18] ACCC (2018): *Restoring electricity affordability & Australia's competitive advantage* https://www.accc.gov.au/publications/restoring-electricity-affordability-australias-competitive-advantage

[19] https://www.energycouncil.com.au/news/energy-industry-concerned-by-policy-shift/

[20] Recent analysis from Bloomberg (http://bit.ly/2FXIPK6) Reputex (http://bit.ly/2mCNitT) the Centre for International Economics (CIE) (http://bit.ly/2oQu3fY) and the gentailer AGL (http://bit.ly/2oQu3fY) found that for a new energy generation build, renewable energy (wind and large scale solar pv) is now cheaper than gas and coal. Reputex and AGL found this is still the case with storage and/or firming capacity added.

intergenerational equity issue. For people living on low incomes or experiencing disadvantage, climate change impacts will increase poverty and inequality.

International analyst, Climate Action Tracker, finds Australia's current economy-wide target of 26-28% is among the weakest of any advanced economy.[21] Their analysis suggests that Australia's targets were replicated by all other countries, it would lead to global warming of over 2°C and up to 3°C. In addition, if all other countries were to follow Australia's current policy settings, warming could reach over 3°C and up to 4°C.[22]

The modelling for this paper demonstrates that residential retail prices will be lower than today's prices under low and high emissions reduction scenarios. While the level of savings varied a little between states, a more ambitious emissions reduction target provides greater bang for buck. We note that the modelling assumptions were reasonably conservative, and we have seen technology costs fall at a faster pace than predicted.[23] It is not a stretch to suggest technology costs will continue to fall and make the transition even more affordable.

ACOSS and the BSL recommend:

> **Recommendation 2**. Increase the 2030 emissions reduction target to at least 45% on 2005 levels, noting higher targets coupled with energy affordability reforms (see recommendation 4) are desirable.
>
> **Recommendation 3.** Ensure the emissions reduction target-setting process is at least consistent with the Paris Agreement:
>
> - Include a no-backsliding provision;
> - an ability to modify the emissions reduction target outside set review periods, to take into account changes to international commitments, climate change science, technology changes and community expectations; and
> - give the relevant federal minister discretion to change the target in consultation with the public.

Supporting an affordable, faster transition to clean economy and energy

While the modelling shows that residential retail prices will decrease from current levels under all emissions reduction scenarios, we need to do more to make electricity more affordable to relieve energy stress and support more ambitious emissions reductions. This is particular important for people on low incomes who pay disproportionately more of their income on essential services including energy.

ACOSS and BSL recommend:

> **Recommendation 4.** Take up further opportunities to make energy bills more affordable and reduce the disproportionate burden on people with low incomes.
>
> ACOSS and the BSL support the principles of many of the reforms recommended by the ACCC and we urge progress to be made on the recommendations in consultation with the community sector, in particular on:
>
> - a fairer regulated retail price (recommendation 30);

[21] Climate Action Tracker: https://climateactiontracker.org/countries/australia/
[22] *Ibid*
[23] IRENA (2018): *Renewable Power Generation Costs in 2017* https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Jan/IRENA_2017_Power_Costs_2018.pdf

- a shift to percentage-based concessions (recommendation 37);
- restricting conditional discounts, such as pay-on-time discounts which do not reflect true costs (recommendation 33);
- introduce a grant scheme for consumer and community organisations to provide targeted support to vulnerable consumers (recommendation 38);
- provide a mechanism to offer demand response to the market (recommendation 21);
- remedy past overinvestment in networks, through write-down of regulated asset base in Queensland and Tasmanian; and rebates on network charges in New South Wales (recommendation 11);
- shifting solar schemes away from electricity bills to government Budget (recommendation 25); and
- give greater powers for the Australian Energy Regulator (recommendation 3)

ACOSS and BSL research finds additional reforms are needed specifically to assist people on low incomes or experiencing disadvantage to reduce the size of their bills and improve their capacity to pay, including:

- increase Newstart and related allowances is also an urgent, essential step to help those struggling on less than $40 a day to put a roof over their head and food on the table and heat their home in winter and cool it in summer.
- energy efficiency measures are critical to reduce the size of energy bills and improve health and wellbeing. Measures may include mandatory energy efficiency standards for rental properties, supported by tax incentives for landlords.
- retaining the Energy Supplement for new recipients of income support, which equates to between $4.40 and $7 per week.

Transition to a clean economy must be equitable

What was clear from the modelling was we need to better deal with the issue of equity. Three groups face the potential for detrimental impacts as we transition to a cleaner economy and energy system: low-income households; displaced workers and their communities; and emissions-intensive trade-exposed industry (EITE).

The previous mechanism to reduce economy-wide emissions, the Clean Energy Act (repealed in 2014), raised revenue and provided various levels of support to households and industry. The National Energy Guarantee only dealt with one potentially vulnerable group – EITEs, and to the detriment of other consumers, particularly low-income households.

There was no analysis undertaken by the ESB or COAG on the impact that the National Energy Guarantee would have on vulnerable groups, why only EITEs would need special treatment, and the flow-on effects of this special treatment would have on others.

ACOSS and BSL recommend that going forward:

> **Recommendation 5.** In developing an economy-wide or sector-specific emissions reduction mechanism(s), a review of the impact of low and high emissions reductions on vulnerable groups such as low-income households, workers, affected communities and EITE industries, should be undertaken and appropriate equity measures to address those impacts should be implemented.

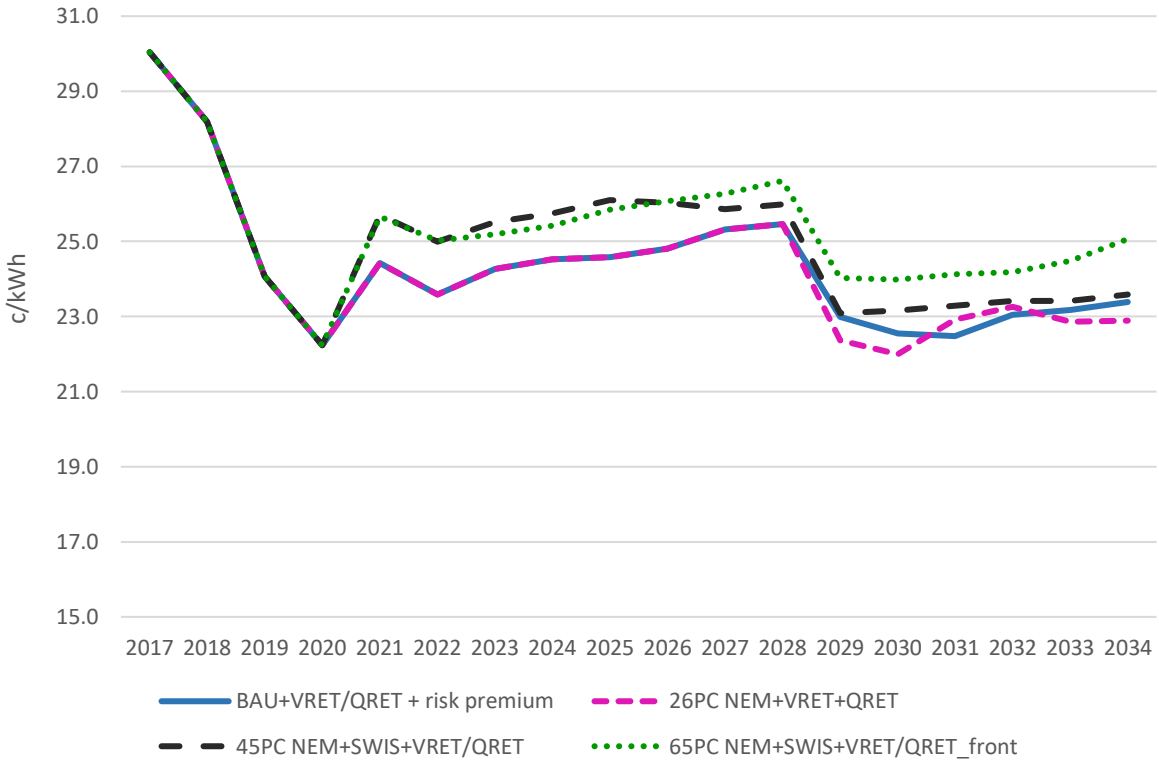
Recommendation 6. Further, include in target-setting legislation a requirement that before new targets are issued or amended, the Minister must issue a report that:

- estimates the expected impacts of the new or amended targets on low-income households, workers in vulnerable industries and trade-exposed industries; and
- considers the adequacy, equity and effectiveness of assistance measures to address those impacts.

In preparing the report the Minister must undertake wide consultation with the community and industry, and consideration of independent expert advice.

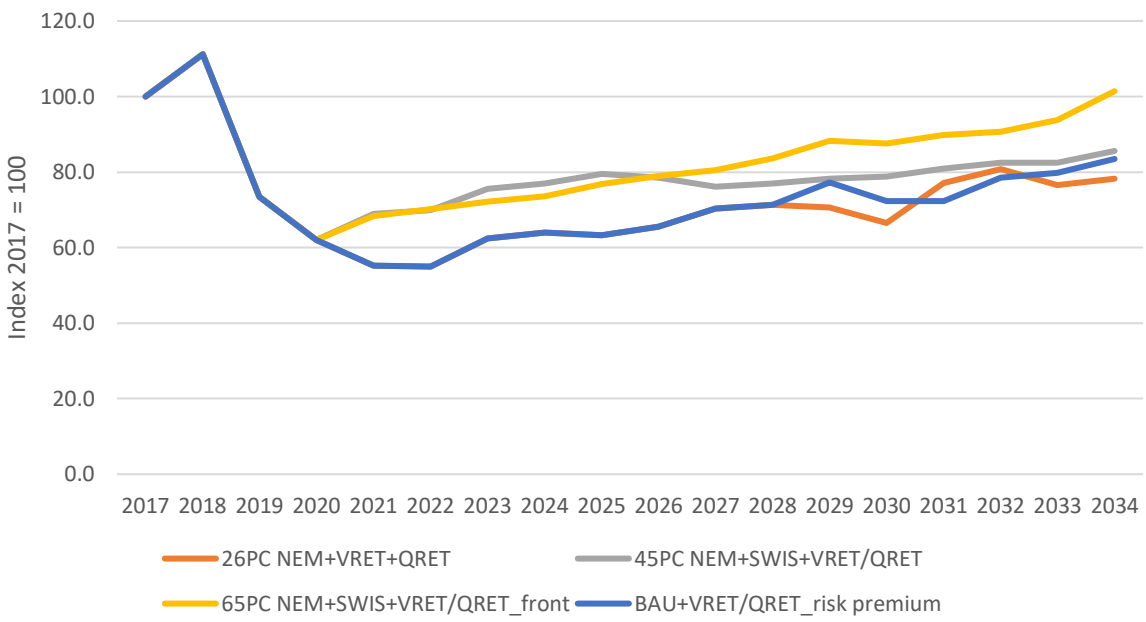
APPENDIX 1 – QUEENSLAND

Figure 9. Residential Retail Price (cents per kWh) for Queensland under emissions reduction scenarios



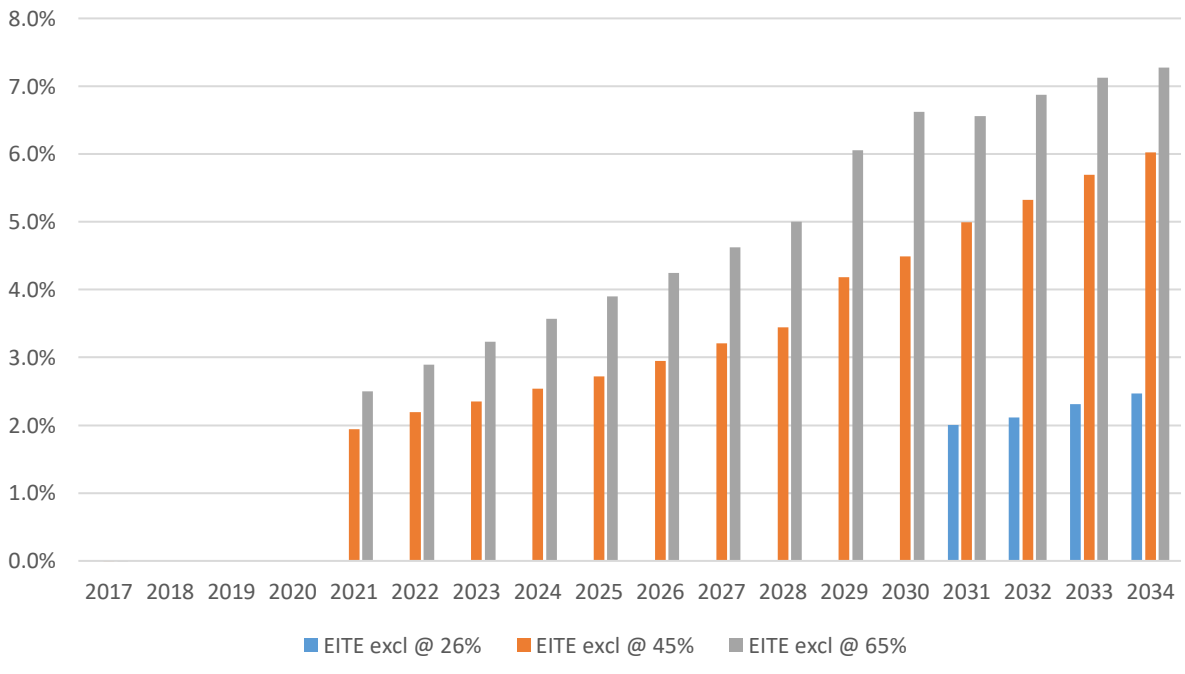
Note: The modelling for Queensland has taken into account the potential changes to the Queensland solar bonus scheme (44c feed-in-tariff) which is now closed to new entrants but continues to run until 2028. In 2017 the Queensland government directed Energy Queensland to remove this cost from bills to the Queensland government budget for 3 years to provide bill relief. The modelling assumes that the solar bonus feed-in-tariff policy it reverts back to putting the cost on the Bill after the 3 years, and then ends 2028, which is why retail price are modelled to go up again post 2020 and come back down again post 2028. It is possible the Government will decide not to return the solar bonus feed-in-tariff to bills, but that is uncertain, and government policy was modelled.

Figure 10 - Wholesale data indexed to 2017 for Queensland under a range of emisisons reductions scenarios



Disclaimer: these figures do not represent what could be earned by all types of generator and should not be used for any investment purposes.

Figure 11. Percentage increase to residential retail price of EITE exclusion for Queensland



APPENDIX 2 – SOUTH AUSTRALIA

Figure 12. Residential Retail Price (cents per kWh) for South Australia under emissions reduction scenarios

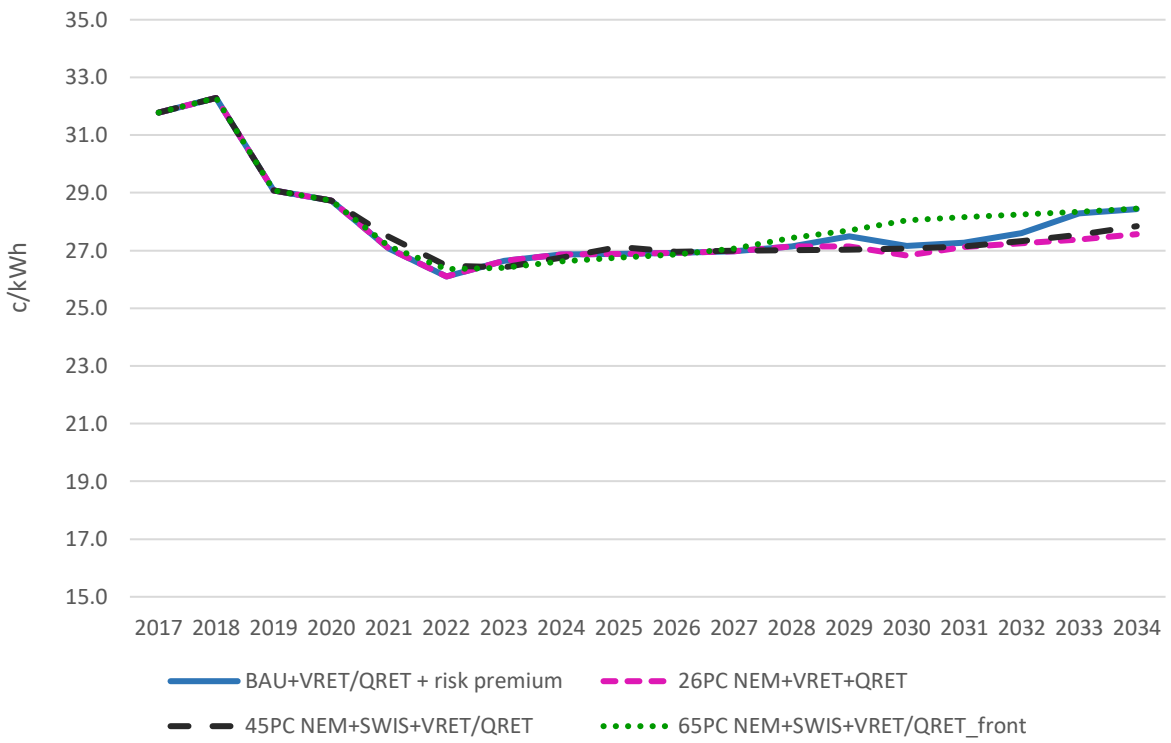
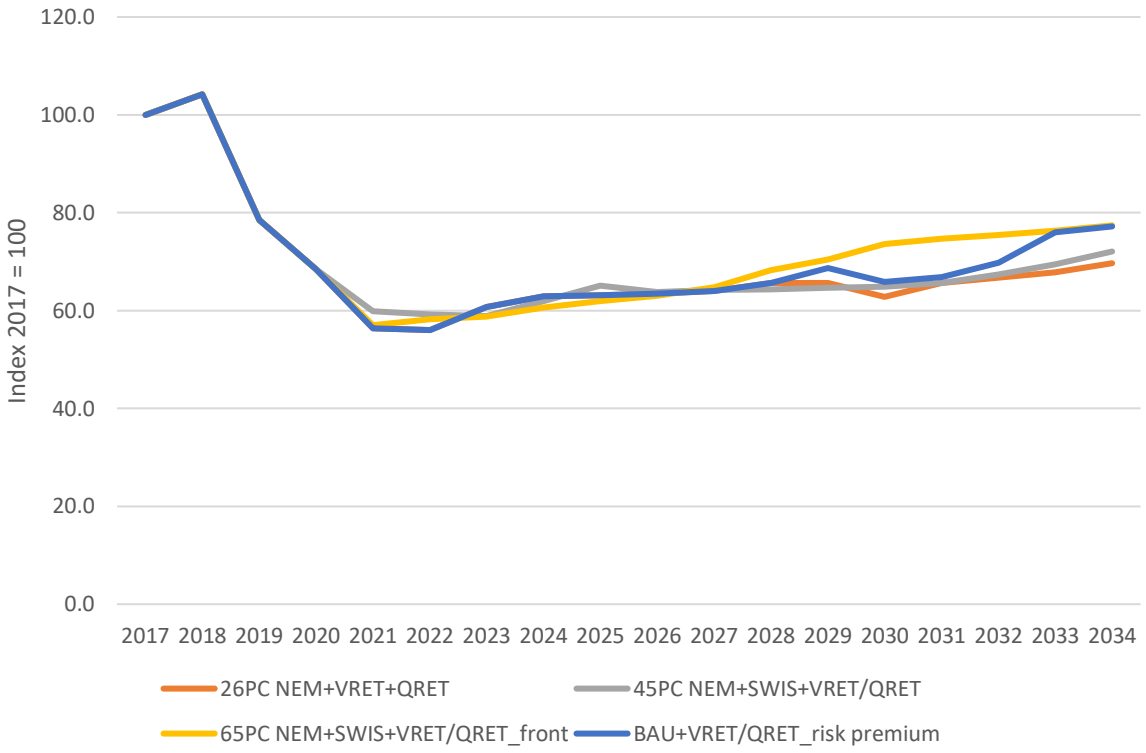
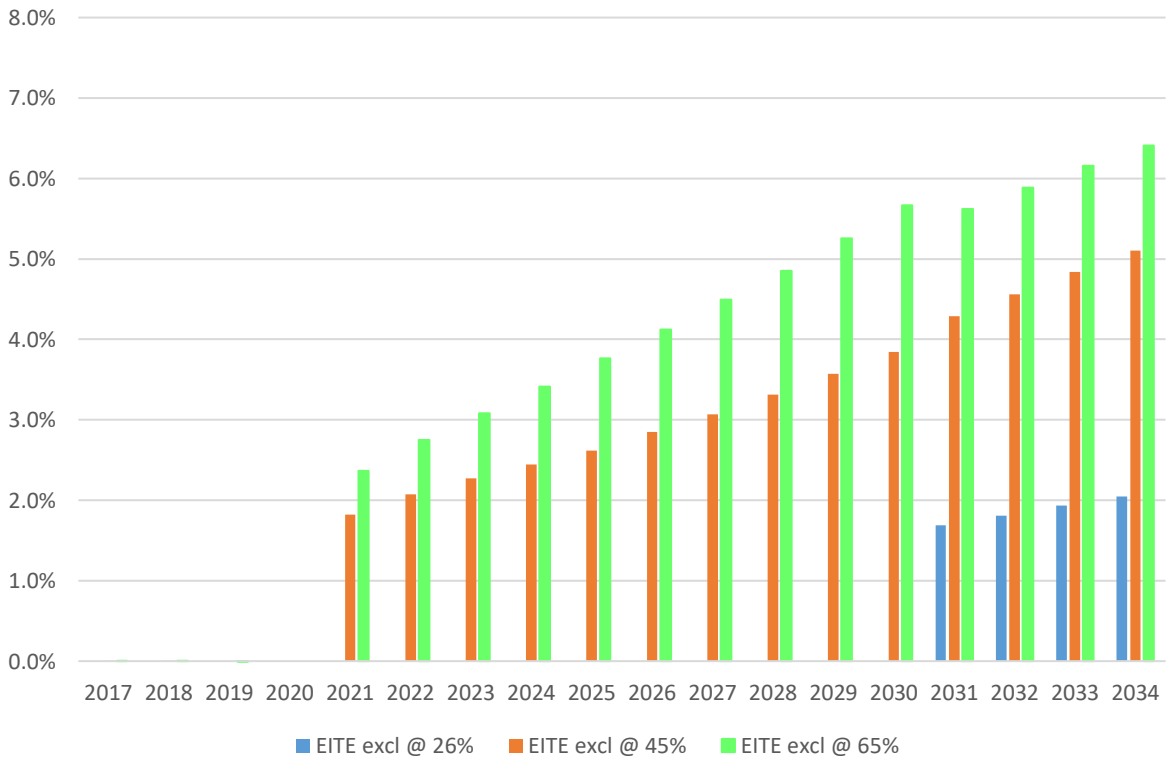


Figure 13 - Wholesale data indexed to 2017 for South Australia under a range of emisisons reductions scenarios



Disclaimer: these figures do not represent what could be earned by all types of generator and should not be used for any investment purposes.

Figure 14. Percentage increase in cost of retail price of EITE exclusion for South Australia



APPENDIX 3 – VICTORIA

Figure 15. Residential Retail Price (cents per kWh) for Victoria under emissions reduction scenarios

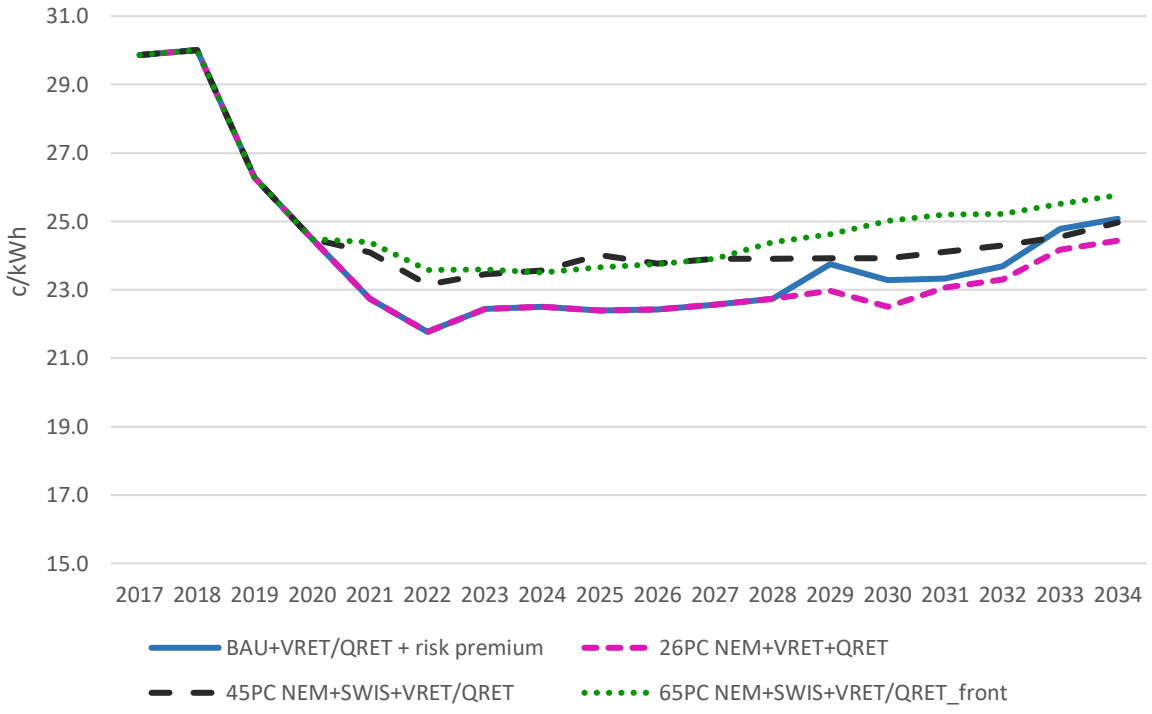
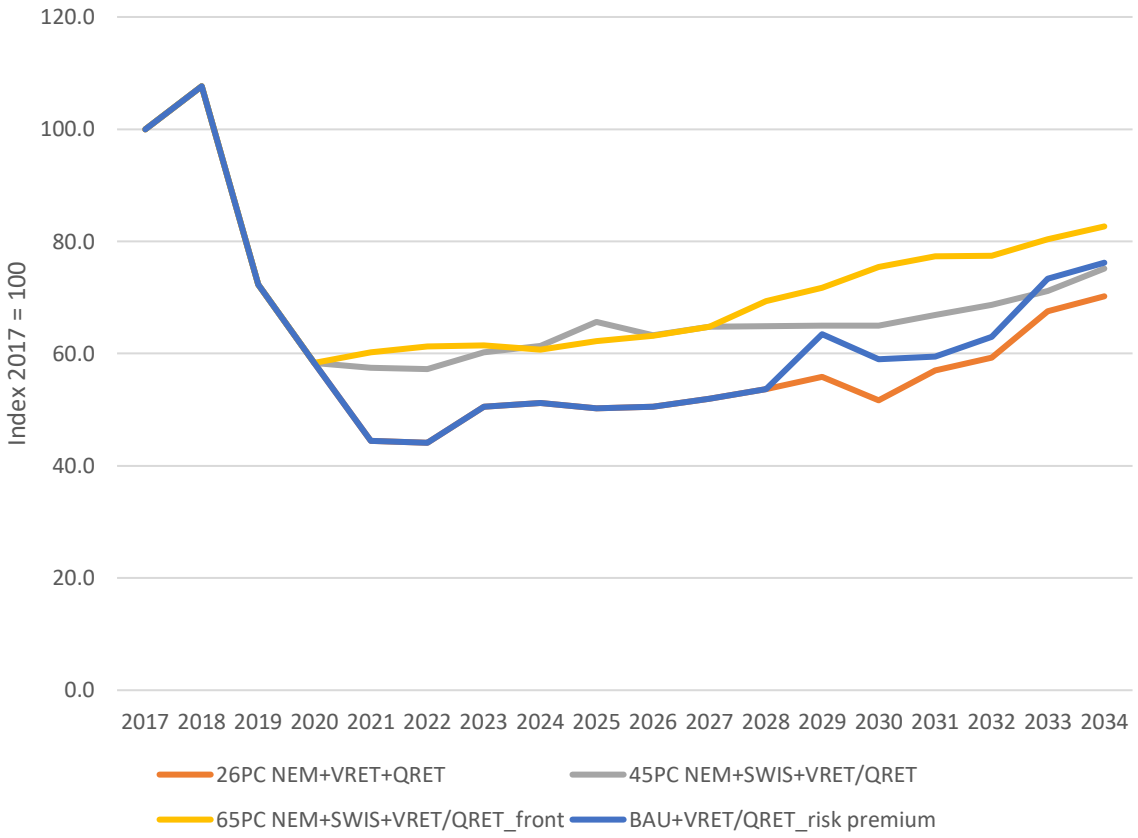
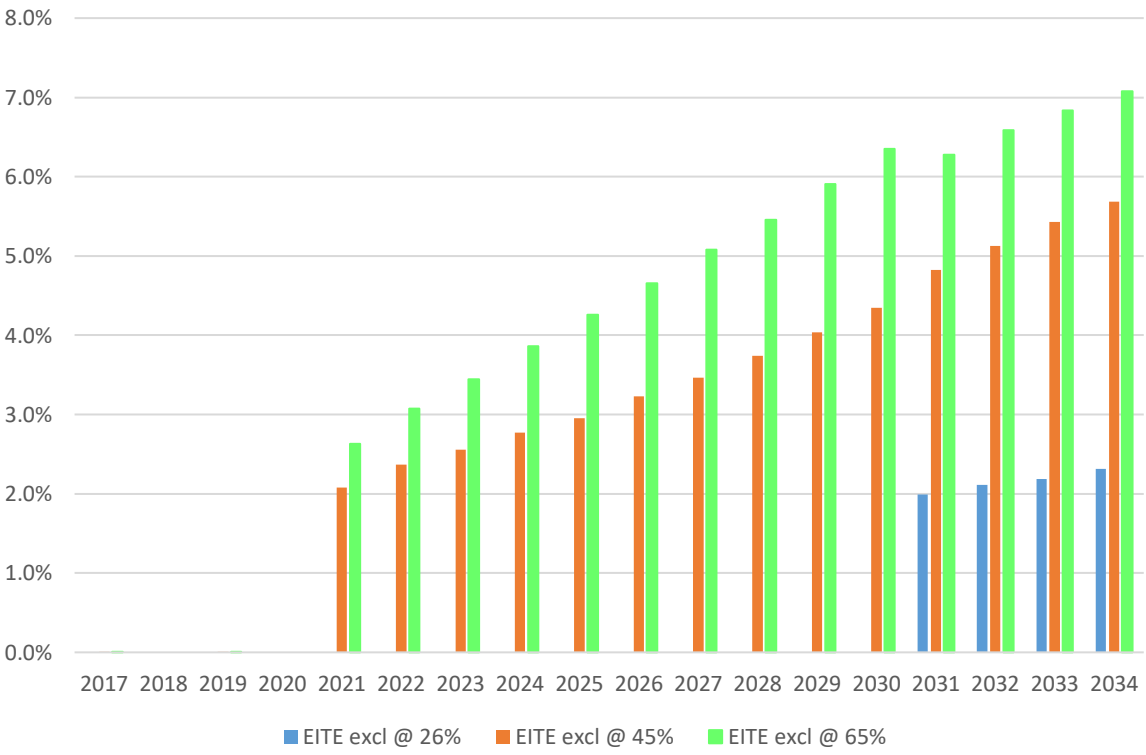


Figure 16 - Wholesale data indexed to 2017 for Victoria under a range of emisisons reductions scenarios



Disclaimer: these figures do not represent what could be earned by all types of generator and should not be used for any investment purposes.

Figure 17. Percentage increase in cost of retail price of EITE exclusion for Victoria



APPENDIX 4 – NEW SOUTH WALES

Figure 18. Residential Retail Price (cents per kWh) for New South Wales under emissions reduction scenarios

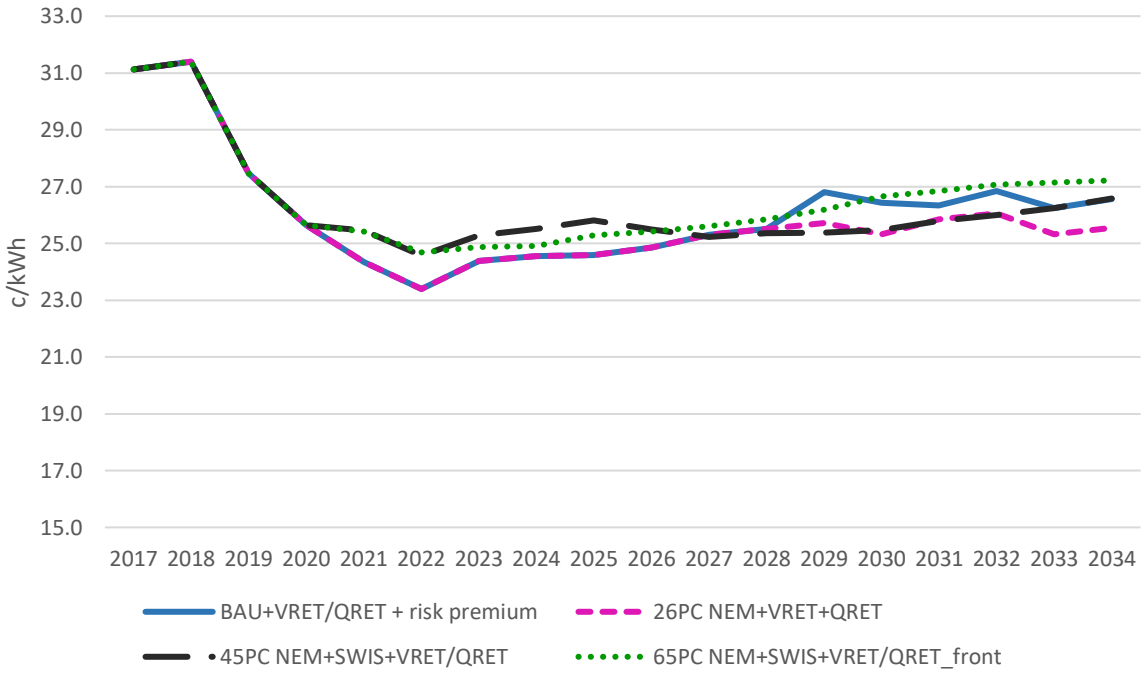
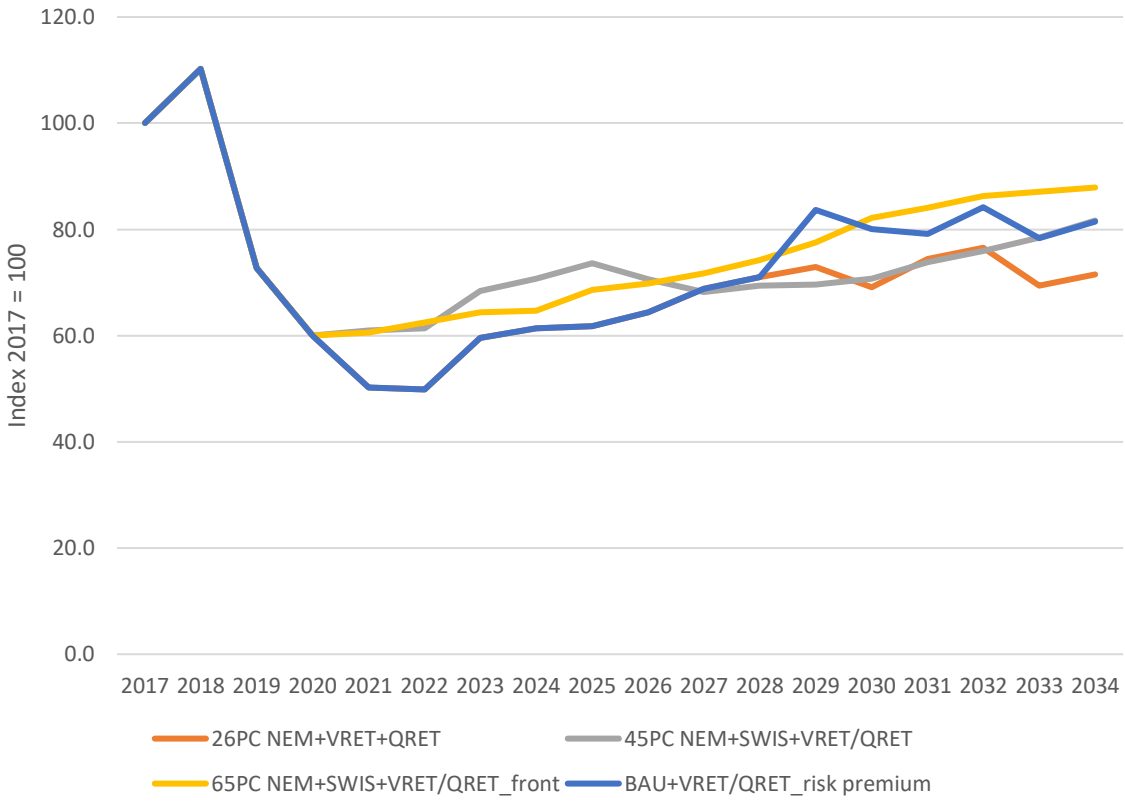


Figure 19 - Wholesale data indexed to 2017 for New South Wales under a range of emisisons reductions scenarios



Disclaimer: these figures do not represent what could be earned by all types of generator and should not be used for any investment purposes

Figure 20. Percentage increase in cost of retail price of EITE exclusion for New South Wales