



Contact officer: Kathryn Wood / Louisa Kefford
Contact phone: 02 9230 3846 / 03 9290 1965
Our ref: MA1000024

Level 17, 2 Lonsdale Street
Melbourne Vic 3000
GPO Box 3131
Canberra ACT 2601
tel: (03) 9290 1800
www.accc.gov.au

16 August 2023

Fiona Crosbie
Chair
Allens

By email

Dear Ms Crosbie

Re: Brookfield and MidOcean application for merger authorisation for proposed acquisition of Origin Energy Limited

The Australian Competition and Consumer Commission (**ACCC**) received an application for authorisation under section 88(1) of the *Competition and Consumer Act 2010 (Act)* (**Application**) from Eos Aggregator (Bermuda) LP (**Brookfield**) and MidOcean Reef Bidco Pty Ltd (**MidOcean**) (**Applicants**) for the proposed acquisition by MidOcean of 100% of the ordinary shares in Origin Energy Limited (**Origin**) and the proposed subsequent on-sale of the Origin Energy Markets Business to Brookfield (**Proposed Acquisition**).

Pursuant to section 90(6)(b) of the Act, the ACCC requests that the Applicants give the ACCC additional information in response to the questions set out in **Attachment A**, being information that is relevant to the ACCC's determination in respect of the Application.

The following documents are also attached to this letter:

- **Attachment B** is a copy of a report prepared by Matt Harris of Frontier Economics dated 9 August 2023, in response to an ACCC request issued to Matt Harris under section 90(6)(d) of the Act (**Harris Report**).
- **Attachment C** is a copy of a report prepared by Paul Hyslop of ACIL Allen dated 10 August 2023, in response an ACCC request issued to Paul Hyslop under section 90(6)(d) of the CCA (**Hyslop Report**).

Given the short timeframe within which the ACCC is required to conduct its assessment of the Application, the ACCC requests that the Applicants' response be provided no later than 5pm on 23 August 2023, to enable the ACCC to consider the information provided. Section 90(6A) of the Act provides that the ACCC may, but need not, take into account any information received after this time.

We request that the Applicants confine their response to this request to no more than 25 pages in total.

The public register and requesting confidentiality

Pursuant to section 89(5) of the Act, the Applicants may request that their response to this request, in whole or in part, be excluded from the ACCC's public register for confidentiality reasons. If the Applicants wish to do so, they must do so at the time of providing the response. To enable the ACCC to decide whether or not to accept the request to exclude the information, all claims of confidentiality should be supported by reasons.

Subject to any request for exclusion of a document or part of a document from the public register, the Applicants' response will be placed on the ACCC's public register as required by section 89(4) of the Act.

The ACCC notes that, even if information is excluded from the public register, it may disclose that information to such persons and on such terms as it considers reasonable and appropriate for the purposes of making its determination on the application as per section 89(7) of the Act.

This letter will also be published on the public register.

If you wish to discuss any aspect of this letter, please contact Kathryn Wood on 02 9230 3846.

Yours sincerely

A handwritten signature in black ink, appearing to read 'DMcCracken-Hewson', with a long horizontal flourish extending to the right.

Daniel McCracken-Hewson
General Manager
Merger Investigations Branch

Attachment A

Competition and Consumer Act 2010, section 90(6)(b)

The ACCC requests that the Applicants provide, by no later than 5pm on 23 August 2023, additional information relevant to the ACCC's determination in respect of the Application as follows:

1. The Applicants' views on the opinions expressed in the Harris Report, in particular that:
 - a. Australia is likely to meet its 2030 emissions target of 43% reduction on 2005 emissions, and its target of net zero emissions by 2050. Harris also expresses the view that Australia is likely to be able to meet a goal of 82% renewable generation for the NEM by 2030. How do the Applicants reconcile this view with the Applicants' claim that the Proposed Acquisition will make a significant contribution to achieving Australia's net zero targets?
 - b. The biggest barriers to new renewables investment are grid connection bottlenecks and network capacity. Do the Applicants agree with this position and why would the Applicants be better placed to overcome these barriers than Origin or other investors? Further, comment on Harris' view that while network and grid bottlenecks continue, any increase in renewable investment by one private developer is likely to delay or crowd out projects by other developers as opposed to delivering a faster overall rollout.
 - c. An increase in private investment in renewable generation is likely to crowd out other private or public investment in generation.
 - d. Government renewable policies and interventions targeting decarbonisation are the key driver of new renewable investment.
 - e. Australia will require an acceleration of the recent trend in renewable energy growth to meet a goal of 82% renewable share of generation by 2030 but that required increase in renewable investment is likely.
 - f. The nature and ownership of an individual renewable investor is unlikely to have a bearing on the speed that investment in renewables and storage occurs in Australia. How do the Applicants reconcile this view with the Applicants' claim that Brookfield is uniquely placed to deliver on its 'green build out' plans and bring forward Origin and/or Australia's energy transition?
 - g. The benefit of a retail customer base appears to be minimal given current policy settings and development of the PPA market.
2. If the ACCC were minded to accept the conclusions of the Harris Report, including the propositions outlined in 1(a) to (g) above, to what extent would this affect the likelihood and extent of public benefits accruing from the Proposed Acquisition? Which conclusions and propositions in the Harris Report are most crucial to the likelihood and extent of public benefits accruing from the Proposed Acquisition, and why?

3. Any other comments that the Applicants wish to make in relation to the Harris Report.
4. The Applicants' views on the opinions expressed in part 2.1 of the Hyslop Report regarding the feasibility of the "misuse" of confidential information in respect of:
 - a. A gentailer integrated into electricity transmission;
 - b. A gentailer integrated into electricity distribution;
 - c. A gas distributor integrated into retail.
5. The Applicants' views on the opinions expressed in part 2.3 of the Hyslop Report regarding the incentives for an integrated firm to engage in discrimination.
6. Whether the Applicants accept that not all generators seeking access to the transmission network would be considered large and sophisticated.
7. Any other comments that the Applicants wish to make in relation to the Hyslop Report.



Expert report – Matt Harris



9 August 2023



Frontier Economics Pty Ltd is a member of the Frontier Economics network, and is headquartered in Australia with a subsidiary company, Frontier Economics Pte Ltd in Singapore. Our fellow network member, Frontier Economics Ltd, is headquartered in the United Kingdom. The companies are independently owned, and legal commitments entered into by any one company do not impose any obligations on other companies in the network. All views expressed in this document are the views of Frontier Economics Pty Ltd.

Disclaimer

None of Frontier Economics Pty Ltd (including the directors and employees) make any representation or warranty as to the accuracy or completeness of this report. Nor shall they have any liability (whether arising from negligence or otherwise) for any representations (express or implied) or information contained in, or for any omissions from, the report or any written or oral communications transmitted in the course of the project.



Contents

1	Introduction	5
	Personal	5
	This report	6
2	Question 1: Australia’s emissions and renewables targets	7
2.1	Australia’s emissions and renewable targets	7
2.2	My opinion on whether Australia is “on track” to meet emissions and renewable targets?	10
3	Question 2: Key Commonwealth and State & Territory policy mechanisms and incentives for private investment in renewable generation	20
4	Question 3: The impact of government policies attracting private investment in renewables	24
5	Question 4: Individual investor influence on investment in renewables	28
6	Question 5: Biggest impediments to private investment in Australian renewable generation	33
7	Question 6: Advantages (if any) to a renewable generator investor having a retail customer base	35
	Statement	36
	Tables	
	Table 1: 2030 Emissions targets	8
	Table 2: Renewable targets (including rooftop PV)	9
	Table 3: Renewable capacity additions: projection versus recent historical trend	15
	Table 4: Renewable capacity additions: required versus recent trend	16
	Table 5: New renewable capacity: Committed, Anticipated, Publicly Announced, In commissioning	31

Figures



Figure 1: 2002 Australian emissions projections	10
Figure 2: Australian emissions projections	11
Figure 3: Cumulative abatement required, 2021-30	12
Figure 4: ISP scenario	13
Figure 5: Renewable investment trend, CER	14
Figure 6: Renewable share in Australia's 2022 emissions projections, Baseline	17
Figure 7: Impact on emissions from electricity sector measures	18
Figure 8: Electricity emissions by grid in the Baseline scenario	18
Figure 9: Cumulative emissions against budget	19
Figure 10: AEMO Services WACC assumptions with and without the NSW Roadmap (LTESAs)	26
Figure 11: Renewable investor survey	26
Figure 12: Corporate PPAs in Australia by offtaker	29
Figure 13: PPAs market segments in Australia	30



1 Introduction

Personal

1. I have a B.Com (Hons) and a L.L.B. (Hons) from the University of Melbourne.
2. I joined Frontier Economics Pty Ltd as an economic consultant in 2004 and became a Director in 2022. I lead the firm's climate change and renewables work in Australia.
3. I have provided electricity price forecasts, policy and market advice for around 7GW or \$24B worth of renewable and storage projects in Australia, including for RES, Origin, Infigen (now Iberdrola), Trustpower (now Tilt Renewables), APA, QIC, AMP Capital, Macquarie Infrastructure and Real Assets (MIRA), REST, Squadron Energy and Queensland Hydro (Borumba pump hydro).
4. I have advised on renewable energy procurement and net zero/carbon offset strategies for SA Government, GFG Alliance, Tomago smelter, Amazon, Melbourne Water, SEQWater, South East Water and Frasers Property.
5. I have advised on State renewable scheme impacts (Victoria, Queensland and NSW), the Commonwealth Liddell Taskforce (2019) and Commonwealth "Contract for Closure" program to retire brown coal generators (2012).
6. I assisted the South Australian Government with their energy plan from 2016-18 in response to a blackout in 2016. This included the 100MW Tesla battery and a 250MW Virtual Power Plant on government-owned public housing.
7. I have advised the Queensland Government on restructuring government owned generation assets to create a "CleanCo" generation portfolio and, separately, the 50% Renewable Energy Target and how this aligns with the Queensland Hydrogen Industry Strategy (2017, 2019, 2020).
8. In 2009 I designed an [Emissions Intensity Scheme \(EIS\)](#) for Malcolm Turnbull (then Federal Opposition leader) and Nick Xenophon. I presented the policy and emissions modelling to the Federal Coalition (Australia), media and stakeholders.
9. I have advised the AEMC and COAG on various emissions reduction policy options for electricity, including an [EIS](#) (2016) a Clean Energy Target (CET) (2017) and the National Energy Guarantee (NEG) for the Energy Security Board.
10. Other emissions work I have led includes:
 - transport: electric vehicle forecasts and policy recommendations for Austroads, including projected road emissions and abatement costs. Developed a Net Zero 2050 roadmap for the Australian aviation sector.
 - industry: built a model for the Singapore government to project industry sector emissions; advised on potential for "green steel" production at Whyalla steelworks.



This report

11. I have been retained by Baker McKenzie, lawyers for the ACCC, to provide an opinion.
12. In a letter of instruction dated 25 July 2023 I was asked to address the following questions under s.90(6)(d) of the Competition and Consumer Act 2010 (Cth):
 1. *Is Australia on track to meet the emissions and renewables targets it has committed to at both Commonwealth and State & Territory Level? Why/why not?*
 2. *By reference to the period 2017 – 2033, please describe the nature of the key Commonwealth and State & Territory policy mechanisms and incentives for private investment in renewable generation and complementary technologies (eg network and storage) in Australia? What are the key government investments (both direct as well as government-sponsored or underwritten) in renewable generation and complementary technologies?*
 3. *What is the impact of government policies and interventions when it comes to attracting private investment in renewables generation and storage in Australia? Do existing policies and interventions, as currently operating, provide sufficient incentives to attract investment with a view to meeting: (a) the objectives of the relevant policy measure and (b) Commonwealth and State & Territory emissions and renewables targets.*
 4. *In what respects are the nature or characteristics (including ownership) of an individual investor likely to influence the likelihood and speed that investment in renewables and storage occurs?*
 5. *In your view, what are the biggest impediments to Australia securing private investment in renewable generation? Please include your views on supply chain dynamics, costs, securing financial close on projects, network constraints or build out and anything else you consider relevant.*
 6. *In your view, what are the advantages (if any) to a potential investor in renewable generation from having a retail customer base relative to other offtake arrangements the investor might seek to enter?*
13. This report is my response to those questions.
14. I have read and had regard to the Federal Court of Australia Practice Note GPN-EXPT Expert Witnesses in Proceedings in the Federal Court of Australia, including the Harmonised Code of Conduct.
15. All the opinions expressed in this Report are my own.



2 Question 1: Australia's emissions and renewables targets

Is Australia on track to meet the emissions and renewables targets it has committed to at both Commonwealth and State & Territory Level? Why/why not?

16. In this section I provide my opinion on whether Australia is on track to meet emissions and renewables targets, and why. First, I describe the different targets in Section 2.1. Second, I provide my opinion on whether Australia is “on track” in Section 2.2. In summary:
- a Australia's latest official emissions projections are very close to, but do not currently meet, the 2030 emissions target of 43% reduction on 2005 emissions.
 - b Historically, the national emissions projections fall significantly in every annual update compared with the previous projection. There are consistent improvements in technology and new policies introduced (at national and state level) aimed at further emissions reductions, which causes each new projection to be lower than the previous.
 - c There are seven years still to achieve the 2030 target, which allows sufficient time for further technology and policy improvements to achieve the relatively small gap to the target. On this basis, I expect the emissions target to be met.
 - d Australia will require an acceleration of the recent trend in renewable energy growth to meet a goal of 82% renewable share of generation by 2030. The required increase in renewable investment is likely given:
 - i An acceleration in investment is reflected in the AEMO ISP Step Change forecasts; this is the most likely scenario according to industry stakeholders.
 - ii The pipeline of new proposed projects is well in excess of capacity needed.
 - iii Most new renewable investment will be supported by government contracting and direct public investment, which should ramp up once network and connection bottlenecks are addressed. New investment should accelerate as a result of significant (but recent) new investment in network and renewable zones and as a result of other new policies to support accelerated growth.
 - iv AEMO reports an increase in connection applications and projects in construction relative to 12 months ago, which should lead to faster growth in operating projects.

2.1 Australia's emissions and renewable targets

17. In June 2022, Australia committed to reducing its greenhouse gas emissions by 43% below 2005 levels by 2030 and achieving net zero emissions by 2050.¹ This was an increase from the previous target of 26-28% below 2005 levels by 2030. This increased national target is largely consistent

¹ DCCEEW 2022, *Australia's emissions projections 2022*, Department of Climate Change, Energy, the Environment and Water, Canberra, December. <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf> accessed 31 July 2023



with emissions targets that most States and Territories had already adopted. A summary of the targets by region is shown in Table 1.

Table 1: 2030 Emissions targets

Region	% reduction on 2005 emissions by 2030	Notes
Australia	43%	Submitted to United Nations Framework Convention on Climate Change (UNFCCC) June 2022. ² This is a cumulative target from 2021-2030 and a target for the year 2030.
QLD	30%	Net zero 2050. ³
NSW	50%	Net zero 2050. Target increased from 35% Sept 2021 ⁴
VIC	45-50%	Net zero 2050; 45-50% reduction by 2030 ⁵
WA	n/a	Net zero 2050. No Statewide 2030 target but adopted a target 80% reduction on 2020 Government entity emissions by 2030
SA	50%	Aspirational goal of 50% below 2005 emissions by 2030, net zero 2050 ⁶
TAS	100%	Net zero or lower by 2030. Net zero was achieved in 2015, with negative net emissions in 2020. ⁷
NT	n/a	No target.
ACT	54%	65-75% reduction on 1990 emissions (equivalent to 54% reduction on 2005 emissions); net zero by 2045 ⁸

18. A summary of National, State and Territory renewable targets is shown in Table 2.

² <https://www.dcceew.gov.au/about/news/australia-submits-new-emissions-target-to-unfccc> accessed 1 August 2023. DCCEEW 2022, *Australia's emissions projections 2022*, Department of Climate Change, Energy, the Environment and Water, Canberra, December. <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf> accessed 31 July 2023.

³ <https://www.des.qld.gov.au/climateaction> accessed 1 August 2023.

⁴ <https://www.energy.nsw.gov.au/sites/default/files/2022-12/NSW-Net-Zero-Plan-Implementation-Update-2022.pdf> accessed 1 August 2023; <https://www.soe.epa.nsw.gov.au/all-themes/climate-and-air/net-zero-plan-stage-1-2020-2030> accessed 31 July 2023.

⁵ <https://www.climatechange.vic.gov.au/victorian-government-action-on-climate-change> accessed 31 July 2023.

⁶ <https://www.environment.sa.gov.au/topics/climate-change/net-zero-pathway> accessed 1 August 2023.

⁷ https://recfit.tas.gov.au/climate/climate_change_action_plan accessed 1 August 2023. https://www.premier.tas.gov.au/site_resources/2015/additional_releases/tasmanian-greenhouse-gas-emissions-report-2022-released accessed 1 August 2023.

⁸ <https://www.climatechoices.act.gov.au/policy-programs/act-climate-change-strategy> accessed 1 August 2023.



Table 2: Renewable targets (including rooftop PV)

Region	2030	Notes
Australia	82%	Large Renewable Energy Target (LRET) of 33TWh annually from 2020-30, which is already met. This is equivalent to approximately 20%. 82% renewable share was the projected level of renewables resulting from that <i>Powering Australia</i> policy, which includes \$20B in low cost finance for electricity network projects ⁹
QLD	50%	70% 2032, 80% 2035 ¹⁰ . Queensland expects to be at 60% by 2030 ¹¹ .
NSW	12GW	We estimate this to be equivalent to around 80% of NSW generation, depending on the mix of wind or solar capacity.
VIC	65%	95% 2035 ¹²
WA	n/a	State owned coal to be retired by 2030 ¹³ .
SA	100% ¹⁴	
TAS	150%	200% 2040 ¹⁵
NT	50% ¹⁶	
ACT	100% ¹⁷	Net target based on contracted projects in other regions

19. Australia's Large Renewable Energy Target (LRET) is 33TWh annually from 2020-2030. This is equivalent to approximately 20% of electricity generation, which was met in January 2021¹⁸.

⁹ <https://www.energy.gov.au/government-priorities/australias-energy-strategies-and-frameworks/powering-australia> accessed 1 August 2023.

¹⁰ <https://www.des.qld.gov.au/climateaction/sector-action/energy> accessed 1 August 2023.

¹¹ https://www.epw.qld.gov.au/_data/assets/pdf_file/0031/32989/queensland-energy-and-jobs-plan-overview.pdf accessed 1 August 2023.

¹² <https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets> accessed 1 August 2023.

¹³ <https://www.wa.gov.au/government/announcements/state-owned-coal-power-stations-be-retired-2030-move-towards-renewable-energy> accessed 1 August 2023.

¹⁴ <https://www.energymining.sa.gov.au/industry/modern-energy/leading-the-green-economy> accessed 1 August 2023.

¹⁵ https://www.premier.tas.gov.au/site_resources_2015/additional_releases/state-on-track-to-reach-tasmanian-renewable-energy-target accessed 1 August 2023.

¹⁶ <https://territoryrenewableenergy.nt.gov.au/about/our-renewable-energy-target> accessed 1 August 2023.

¹⁷ <https://www.climatechoices.act.gov.au/energy/what-the-act-government-is-doing> accessed 1 August 2023.

¹⁸ <https://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target/Achieving-the-target> accessed 1 August 2023.



Australia does not have a legislated 82% renewables target by 2030, or a specific mechanism to achieve it: an 82% renewable share was the projected share of renewables under a proposed *Powering Australia* policy that included \$20B in low cost finance for network projects, which would enable more renewable investment. The 82% renewable share is described as a target in the 2022 Australian Emissions Projections.¹⁹

2.2 My opinion on whether Australia is “on track” to meet emissions and renewable targets?

Emissions

20. Under the latest Commonwealth emissions projections, the 43% emissions target is not currently expected to be met.²⁰ The projections include a “With additional measures” scenario that reflects (a) reform to the Safeguard Mechanism²¹ and (b) a national 82% renewable electricity target by 2030.
21. Under this “with additional measures” scenario, the projections are 17MtcO₂-e above the point estimate for 2030, which equals a 40% reduction on 2005 levels. The cumulative emissions budget from 2021-30 is 48MtCO₂-e above the target. This equates to a 42% reduction on the 2005 levels, though it is expressed as 1% above budget.

Figure 1: 2002 Australian emissions projections

Table 1 Tracking towards Australia’s 2030 point target

	Emissions in 2030 (Mt CO ₂ -e)	% below 2005 levels
2030 point target	354	43%
Baseline scenario	425	32%
With additional measures scenario	371	40%

Table 2 Tracking towards Australia’s 2030 emissions budget target

	Cumulative emissions 2021-2030 (Mt CO ₂ -e)	% above emissions budget
2021-2030 emissions budget	4,381	-
Baseline scenario	4,620	5%
With additional measures scenario	4,429	1%

Source: DCCEEW 2022, Australia’s emissions projections 2022

22. The fact that the latest projections do not currently meet the target does not mean that Australia is not on track to meet that target. The basis for this is as follows:
 - a The national emissions projections have fallen materially in every annual update. There are consistently improvements in technology and new policies introduced (at national and

¹⁹ DCCEEW 2022, *Australia’s emissions projections 2022*, Department of Climate Change, Energy, the Environment and Water, Canberra, December. <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf> accessed 31 July 2023.

²⁰ DCCEEW 2022, *Australia’s emissions projections 2022*, Department of Climate Change, Energy, the Environment and Water, Canberra, December. <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf> accessed 31 July 2023.

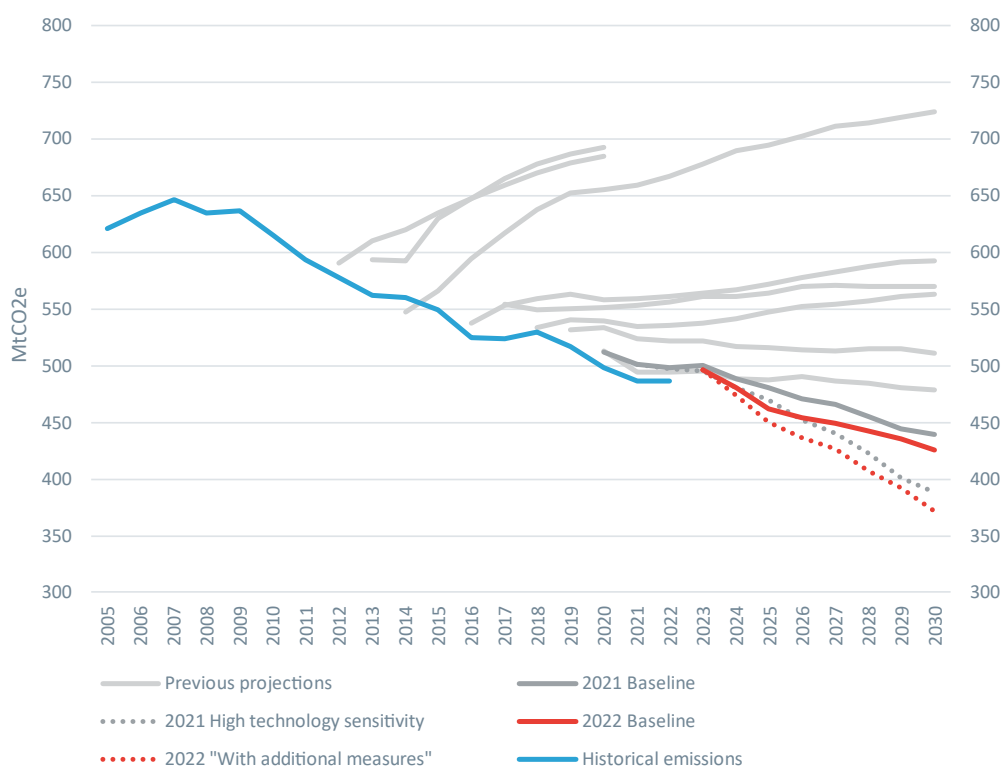
²¹ A policy that covers large emitting facilities.



state level) aimed at further reductions, which has caused each new projection to be lower than the previous. This is shown in Figure 2 and Figure 3.

- b There are seven years still to achieve the 2030 target, which allows sufficient time for further technology and policy improvements to achieve the relatively small gap to the target.
23. This opinion on the emissions projections is often published in public Frontier Economics Bulletins. For example, in 2019²² we concluded that Australia would comfortably beat the previous 2030 emissions target (26-28% reduction on 2005 emissions) even though the official 2018 projections at the time were 695MtCO₂-e above the target. This position has been confirmed by continued improvement in the emissions projections.
24. Figure 2 shows a summary of the national emissions projections. Each series reflects an annual update since 2012. For clarity, projections before 2021 are all shown in grey but each of these is lower than the previous.

Figure 2: Australian emissions projections



Source: <https://www.dcceew.gov.au/climate-change/publications/australias-emissions-projections-2022> (and previous annual projections)

25. Figure 3 shows the cumulative emissions reduction task from 2021-2030 to meet a 26% emissions target. Each bar reflects the cumulative difference between each annual projection and the target (where zero on the y-axis reflects the 26% emissions target). The projection in

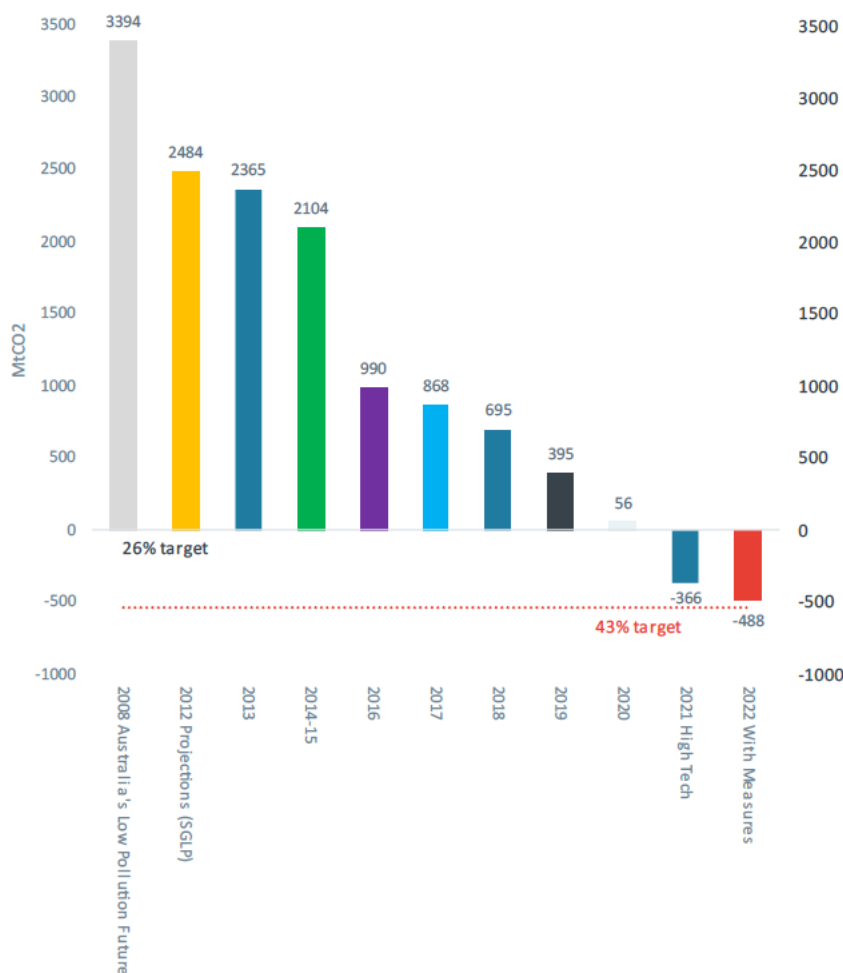
²² <https://www.frontier-economics.com.au/documents/2019/05/briefing-lacking-vision-australian-emissions.pdf/> accessed 1 August 2023.



2008 had Australia 3394Mt above a 26% emissions target. This fell to 2484Mt in 2012, 695Mt in 2018 and 56Mt in 2020.

26. It was only in 2021 and 2022 that projections fell below the 26% target, and the projections continue to fall. The emissions target has since been increased to a 43% reduction, as shown by the red dashed line. The latest official projections are already close to this target, with seven years remaining.
27. Given the historical trend of falling emissions projections due to technology improvement and new policies, I expect that the projections will officially meet the target before 2030.
28. I have not reviewed each State and Territory against their individual emissions targets.

Figure 3: Cumulative abatement required, 2021-30



Excludes surplus carryover from 2008-2020. Source: <https://www.industry.gov.au/publications/australias-emissions-projections-2020>, adapted for 2021, 2022.



Renewables

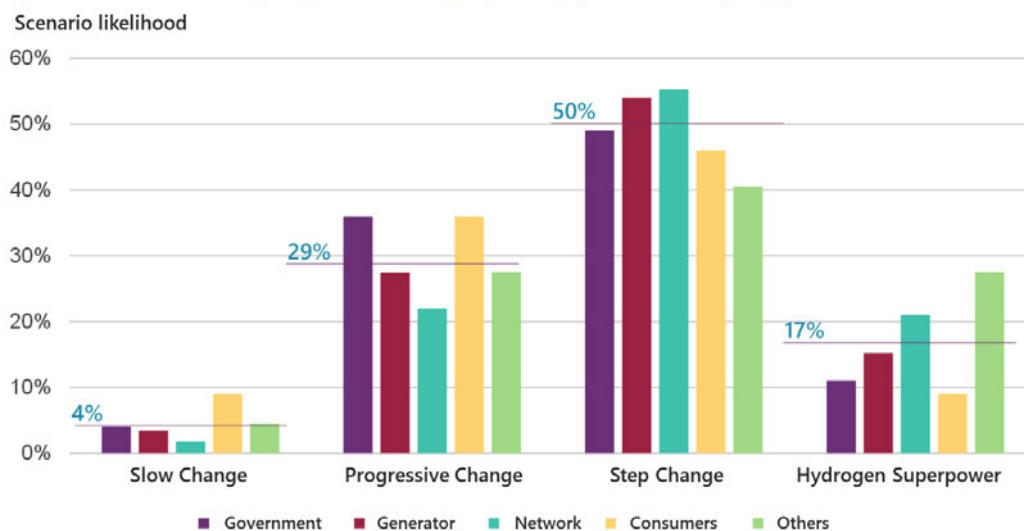
29. I have reviewed the electricity market operator’s electricity projections to 2030 that produce estimates of the required investment to meet an 82% renewable target for Australia (AEMO’s Integrated System Plan (ISP) 2022 Step Change scenario (generation outlook²³)
30. The ISP Step Change scenario projects the National Electricity Market (NEM) renewable share of 79% for financial year ending (FYE) 2030 and 83% for FYe 2031²⁴. This simple calculation reflects a share of generation including storage load and losses. AEMO described this scenario as the most likely according to stakeholders:

Stakeholders identified the most likely to be the relatively fast Step Change scenario, with renewables generating 83% of NEM energy by 2030-31²⁵

Figure 4 shows the scenario likelihood weighting by stakeholder group in the AEMO ISP 2022.

Figure 4: ISP scenario

Figure 9 Scenario weightings, second Delphi panel (by stakeholder group)



Source: AEMO ISP 2022, <https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/2022-integrated-system-plan-isp.pdf>

²³ <https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp/2022-integrated-system-plan-isp> accessed 1 August 2023. Specifically the generation outlook file (<https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/generation-outlook.zip?la=en>), and the worksheet: [2022 Final ISP results workbook - Step Change - Updated Inputs.xls]Capacity!], using “Candidate Development Path (CDP) 2.

²⁴ ISP generation outlook file (<https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/generation-outlook.zip?la=en>), and the worksheet: [2022 Final ISP results workbook - Step Change - Updated Inputs.xls] Generation!], using “Candidate Development Path (CDP) 2, accessed 1 August 2023.

²⁵ AEMO ISP 2022 <https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/2022-integrated-system-plan-isp.pdf> p7.



31. The **cumulative** new renewable capacity in the NEM for the Step Change scenario is 44GW between 2023 and 2030²⁶. This is split by:
- a 21.4GW wind and 3.8GW utility solar (combined utility scale wind and solar 25.2GW)
 - b 18.8GW distributed rooftop solar
32. The **average annual** new renewable capacity in the NEM for the Step Change scenario from 2024-2030 is 6.3GW²⁷. This is split by:
- a 3.1GW wind and 0.5GW utility solar (combined utility scale wind and solar is 3.6GW)
 - b 2.7GW distributed (“rooftop”) solar
33. I have reviewed recent trends in new renewable projects reaching financial close based on Clear Energy Regulator (CER) (Figure 5). This shows rooftop PV (which is the small renewable energy scheme (SRES) capacity) has averaged 3GW new investment annually over the past 3 years, with utility scale renewables (wind and solar) reaching financial close averaging 3.5GW new capacity per year.

Figure 5: Renewable investment trend, CER

Total investment in wind and solar generation capacity 2016-2023 (H1)

Year	Utility scale wind and solar FID (MW)	SRES capacity (MW)*	Total (MW)
2016	1,326	748	2,073
2017	4,019	1,119	5,138
2018	4,874	1,617	6,492
2019	2,334	2,165	4,499
2020	3,231	2,965	6,196
2021	2,962	3,192	6,154
2022	4,333	2,793 [#]	7,126
2023 (H1)	520	1,426 [#]	1,945

* Installation data has been used as a proxy for investment under the SRES

[#] 2022 and 2023 installation capacity has been lag-adjusted to account for 12-month creation rule

Note: A 12 month creation period for registered persons to create small-scale technology certificates applies under the *Renewable Energy (Electricity) Act 2000*. The 2022 and 2023 SRES capacity may change. Data is correct as at 17 July 2023.

Source: CER, <https://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target/Large-scale-Renewable-Energy-Target-market-data/large-scale-renewable-energy-target-supply-data#Total-investment-in-wind-and-solar-generation-capacity-20162022> accessed 1 August 2023. FID refers to final investment decision or financial close.

²⁶ Generation outlook file (<https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/generation-outlook.zip?la=en>), and the worksheet: [2022 Final ISP results workbook - Step Change - Updated Inputs.xls]Capacity!], using “Candidate Development Path (CDP) 2. Accessed 1 August 2023

²⁷ Generation outlook file (<https://aemo.com.au/-/media/files/major-publications/isp/2022/2022-documents/generation-outlook.zip?la=en>), and the worksheet: [2022 Final ISP results workbook - Step Change - Updated Inputs.xls]Capacity!], using “Candidate Development Path (CDP) 2. Accessed 1 August 2023



34. The CER reported FID (final investment decision) data does not split wind or solar capacity.
35. The capacity reaching financial close is a leading indicator of new capacity, as financial close typically precedes construction and operation (energy output).
36. Although the CER historical data reflects all Australian data (including WA), the recent historical investment (2020-2022) is similar to AEMO's projected new capacity projected for the NEM (Table 3).

Table 3: Renewable capacity additions: projection versus recent historical trend

	ISP Step Change Cumulative growth projected 2023-30 (GW, NEM)	ISP Step Change Annual average projected 2023-30 (GW, NEM)	CER Historical trend, renewables reaching financial close (FID) , 2020-2022, (GW, Australia)
1. Wind	21.4	3.1	Not reported
2. Utility Solar	3.8	0.5	Not reported
3. Rooftop solar	18.8	2.7	3.0
Total large scale (1+2)	25.2	3.6	3.5
Total (1+2+3)	44	6.3	6.5

37. I have also reviewed the recent trend for growth in renewable energy produced in the NEM. Based on OpenNem²⁸ data, between financial year ending (FYE) 2018 and FYe 2023:
 - a Utility wind increased from 13TWh to 27TWh, averaging 2.8TWh growth per year
 - b Utility solar increased from 0.8TWh to 12.8TWh, averaging 2.4TWh growth per year
 - c Rooftop solar increased from 6.7TWh to 20.9TWh, averaging 2.8TWh growth per year
 - d Total large scale renewables (wind and solar) averaged 5.2TWh growth per year
 - e Total renewables (wind, solar and rooftop solar) averaged 8TWh growth per year
 - f The total renewable share grew from 18% (FYE2018) to 37% (FYE2023), averaging 3.9 percentage points growth per year.
38. Simple extrapolation of the 5 year trend growth in energy would result in a renewable share of 64% FYe2030 to 68% FYe2031.
39. The AEMO ISP Step Change scenario has average annual growth in the total renewable share of 5.8 percentage points per year from FYe2024 to FYe2031 to reach an 83% share. This forecast growth begins at 4.2 percentage points in FYe2024 (which is similar to the current trend) but it projects a ramping up of growth.

²⁸ <https://opennem.org.au> accessed 2 August 2023



40. The AEMO ISP Step Change forecasts average annual energy growth from FYe2024 to FYe2031 of:
- 10TWh in wind;
 - 2TWh in utility solar
 - 3.3TWh in distributed rooftop solar PV
 - 12TWh in total large scale renewables (wind and solar)
 - 15TWh in total renewables (wind, solar and distributed rooftop solar PV)
41. This comparison is shown in Table 4.

Table 4: Renewable capacity additions: required versus recent trend

	ISP Step Change projected annual growth(FYE24-31)	Recent trend, NEM annual average (OpenNem, FYe2018-23)
1. Wind (TWh/year)	10.0	2.8
2. Utility Solar (TWh/year)	2.0	2.4
3. Rooftop solar (TWh/year)	3.3	2.8
Total large scale (1+2) (TWh/year)	12.0	5.2
Total (1+2+3) (TWh/year)	15.3	8
Renewable share of energy generation by FYe2031	83%	68% (assuming simple extrapolation of historical trend)
Annual growth in renewable share of energy generation: (average percentage point growth per year)	5.8% (projected)	3.9% (recent trend)

42. Although the recent current trend in capacity growth is similar to the required trend from 2024-2030, it does require an increase in the recent trend in energy growth to meet a goal of 82% renewables. The reasons for this difference are:
- AEMO ISP Step Change projects that 85% of new utility scale renewable capacity will be wind, which produces more energy per MW of capacity than solar, but the recent trend for new utility scale capacity in the NEM has been 43% wind and 56% solar (based on LGC accreditation of wind versus solar capacity)
 - AEMO assumed capacity factors for future projects are higher than recent historicals, which likely reflects larger wind turbine capacities.
43. On the basis of energy, an acceleration of the recent growth trend will be required to meet a goal of 82% for the NEM by 2030. This is likely to occur given:
- An acceleration in investment is reflected in the AEMO ISP Step Change forecasts, which is the most likely scenario according to industry stakeholders;



- b There is a sufficient pipeline of new proposed projects: AEMO Generator Information (July 2023)²⁹ lists 43.8GW of proposed utility solar projects, 77.4GW of proposed onshore wind projects and 52.5GW of proposed offshore wind projects;
 - c AEMO reports a recent increase in connection applications:
 - i 30GW progressing through the connection process at end of Q2 2023 compared with 25GW at end of Q2 2022
 - ii 10.3GW at various stages of construction at end of Q2 2023 compared with 6.5GW at end of Q2 2022.
 - d New investment should accelerate as a result of new investment in network and renewable zones and as a result of other new policies to support accelerated growth. These are discussed in the following questions but include EnergyConnect, North Queensland Supergrid and the national Rewiring the Nation (RTN) policy more broadly.
44. In terms of the emissions implications if an 82% renewable target is not met by 2030, Australia's 2022 Emissions Projections³⁰ includes a "Baseline" scenario that does not include an assumed 82% national target. In these projections, the NEM still reaches a renewable share of 76% by 2030 and 82% by 2035 (Figure 6), largely driven by State renewable targets.

Figure 6: Renewable share in Australia's 2022 emissions projections, Baseline

Table 11 Renewable share of generation²⁴ in the baseline scenario, %

Grid	2020	2025	2030	2035
National Electricity Market		52	76	82
<i>Queensland</i>		45	58	75 ²⁵
<i>New South Wales/ACT</i>		47	87	97
<i>Victoria</i>		47	70	72
<i>South Australia</i>		76	98	86 ²⁶
<i>Tasmania</i>		100	100	100 ²⁷
Western Australia Wholesale Electricity Market		44	60	64
On-grid (NEM, WEM, NWIS, DKIS)		50	73	80
Off-grid²⁸		7	11	16
Whole sector	23²⁹	47	68	75

Note: totals may not sum due to rounding.

Source: <https://www.dceew.gov.au/climate-change/publications/australias-emissions-projections-2022>

²⁹ <https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-data/generation-information> accessed 2 August 2023.

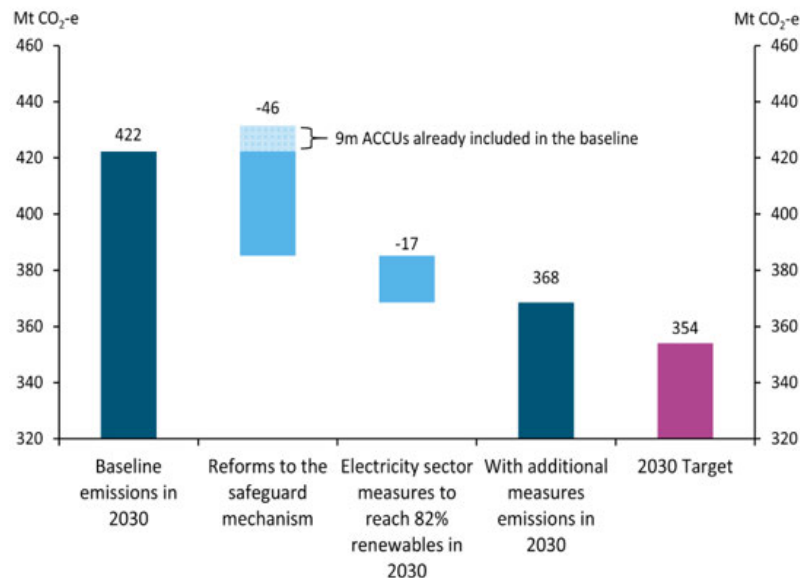
³⁰ <https://www.dceew.gov.au/about/news/australia-submits-new-emissions-target-to-unfccc> accessed 1 August 2023. DCEEW 2022, *Australia's emissions projections 2022*, Department of Climate Change, Energy, the Environment and Water, Canberra, December. <https://www.dceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf> accessed 31 July 2023.



45. The estimated emissions difference between the 82% 2030 renewable target and the “baseline scenario” is 17Mt in 2030 (Figure 7), which I estimate to reflect approximately 14Mt in the NEM and 3Mt in the WEM.

Figure 7: Impact on emissions from electricity sector measures

Figure 8 Change in Australia’s emissions from the baseline to the ‘with additional measures’ scenario in 2030, Mt CO₂-e



Source: <https://www.dceew.gov.au/climate-change/publications/australias-emissions-projections-2022>

46. The 2022 Australian emission projections also assume no improvement in off-grid emissions, which remains at only 11% renewable share with 19Mt (Figure 8) even in the “With measures” scenario. This is one area with significant scope for further improvement not already reflected in the projections, which could complement emissions gains in the NEM to further assist in meeting 2030 emissions targets.

Figure 8: Electricity emissions by grid in the Baseline scenario

Table 10 Electricity emissions in the baseline scenario, Mt CO₂-e

Grid	2005	2020	2025	2030	2035	Total generation by grid in 2030 (%)
National Electricity Market	176	141	97	54	43	82%
<i>Queensland</i>	46	47	32	25	16	
<i>New South Wales/ACT</i>	58	49	30	8	2	
<i>Victoria</i>	63	41	33	20	24	
<i>South Australia</i>	8	3	2	<1	1	
<i>Tasmania</i>	<1	<1	<1	<1	<1	
Western Australia Wholesale Electricity Market	11	12	9	5	5	8%
Other grids, including off-grid	10	19	19	19	18	10%
Total electricity sector	197	172	124	79	66	100%

Note: totals may not sum due to rounding.

Source: <https://www.dceew.gov.au/climate-change/publications/australias-emissions-projections-2022>



47. With respect to the cumulative emissions impact, the 2022 emissions projections report an estimated shortfall to the cumulative target of 239Mt in the Baseline Scenario and 48Mt in the “With Measures” scenario (Figure 9). This means that the full impact of “With Measures” is 191Mt cumulative from 2021-30. The two additional policies included in the “With Measures” scenario are:
- The 82% renewable target and
 - Reforms to the Safeguard Mechanism, which is an emissions intensity (credit) scheme that will cover large industrial facilities other than electricity generation. These reflect combustion, industrial and fugitive emissions (largely coal mines and LNG facilities).
48. The projections do not separately report the cumulative contributions of the Safeguard Mechanism reform relative to the 82% renewable target. Based on the impact in year 2030 (Figure 7), the Safeguard Mechanism reform is estimated to contribute around 70% of the difference between the Baseline and “With Measures” scenarios.

Figure 9: Cumulative emissions against budget

Table 4 Tracking towards Australia’s 2030 emissions budget target

	Cumulative emissions 2021-2030 (Mt CO ₂ -e)
2021-2030 emissions budget	4,381
Baseline	4,597
Voluntary cancellation of ACCUs ⁴	23
Emissions reduction task	239
With additional measures	4,406
Voluntary cancellation of ACCUs ⁴	23
Emissions reduction task	48

Source: <https://www.dcceew.gov.au/climate-change/publications/australias-emissions-projections-2022>

49. More recent analysis of the impact of the Safeguard Mechanism reforms³¹ estimated a cumulative impact of at least 205Mt from 2024 to 2030 for the Safeguard alone, which is a material contribution to closing the emissions gap even if the 82% renewables target is not met. The Regulatory Impact Analysis of the Safeguard Mechanism Reform also states (page 13):

The Safeguard reforms, in combination with the Government’s target of 82 per cent renewable electricity generation by 2030 and the Rewiring the Nation program, are projected to put Australia on track to 40 per cent below 2005 levels by 2030. It is expected the remaining gap will close as more policies are developed and implemented.

³¹ DCCEEW, *Regulatory Impact Analysis of the Safeguard Mechanism Reform* (2023) <https://oia.pmc.gov.au/sites/default/files/posts/2023/05/Publish%20Version%20-%20Impact%20Analysis.pdf> accessed 4 August 2023.



3 Question 2: Key Commonwealth and State & Territory policy mechanisms and incentives for private investment in renewable generation

By reference to the period 2017 – 2033, please describe the nature of the key Commonwealth and State & Territory policy mechanisms and incentives for private investment in renewable generation and complementary technologies (eg network and storage) in Australia?

What are the key government investments (both direct as well as government-sponsored or underwritten) in renewable generation and complementary technologies?

50. In this section I summarise key Commonwealth, State and Territory policy mechanisms for private investment in renewable generation and complementary technologies. Given the wide range of policies and changes, I focus on key policies: this is not an exhaustive list.

Commonwealth Policies

51. There are references to a Commonwealth target of 82% renewables by 2030, for example in the 2022 Emissions Projections modelling³². This appears to be a projected outcome from policies such as RTN but it is not an announced or legislated target and there is no single mechanism to deliver it. This will largely reflect the aggregation of State targets, given the AEMO ISP Step Change scenario (which projects 83% renewables by FYe2031) did not explicitly model an 82% national target.
52. Commonwealth renewable and complementary policies include the:
53. **Large-scale Renewable Energy Target (LRET):**³³ this is a tradeable certificate scheme that effectively provides a subsidy for renewable generation. Eligible (large scale) generators earn credits for output that they can sell to liable parties (typically electricity retailers). The target is set at 33TWh annually for 2020-2030;
54. **Small-scale Renewable Energy Scheme (SRES):**³⁴ this is a certificate credit scheme that provides an effective subsidy for small scale renewable generation. Credits are sold to liable entities (typically electricity retailers).

³² DCCEEW 2022, *Australia's emissions projections 2022*, Department of Climate Change, Energy, the Environment and Water, Canberra, December. <https://www.dcceew.gov.au/sites/default/files/documents/australias-emissions-projections-2022.pdf> page 6. Accessed 31 July 2023.

³³ <https://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target/How-the-scheme-works/Large-scale-Renewable-Energy-Target> accessed 2 August 2023.

³⁴ <https://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target/How-the-scheme-works/Small-scale-Renewable-Energy-Scheme> accessed 2 August 2023.



55. **Australian Renewable Energy Agency (ARENA):**³⁵ this government body often provides grant funding to support renewables and complementary technologies. This included \$90m of grant funding for 12 large solar projects (490MW) during one funding round.
56. **Clean Energy Finance Corporation (CEFC):** this government body provides concessional finance for renewable and complementary projects. This has reported investments of \$3B to support 5GW of solar and wind capacity³⁶. The CEFC has been allocated a further \$19B to deliver a policy called Rewiring the Nation (RTN)³⁷, with a focus on network investment and long duration storage to support new renewables.
57. **Direct investment:** in 2018 the Commonwealth committed to direct investment in Snowy 2.0, a 2GW pump hydro project in NSW developed by the Commonwealth owned Snowy Hydro.³⁸

Queensland

58. Queensland has a renewable target of 50% by 2030 but expect to reach 60% by 2030 and announced renewable targets of 70% by 2032 and 80% 2035 in September 2022³⁹. Policies include:
59. **Direct investment and contracting:** CleanCo was established as a government owned portfolio in 2018. This initially included ownership of around 1GW of “firming” generation and a mandate to contract for 1GW of new renewables by 2025⁴⁰. This is via power purchase agreements (PPA) with projects developed and owned independently. These long term PPAs provide improved price certainty (and reduced risk), which is important for securing project finance at lower cost. This target was subsequently increased to 1.4GW by 2025.⁴¹
 - a CleanCo typically contracts around 70% of capacity for projects to secure finance, allowing remaining capacity to be contracted or sold to the market. For Macintyre Wind Farm, CleanCo signed a PPA for 400MW on a project of 923MW. In total, CleanCo has signed around 1GW of PPAs on projects with total capacity of 1.8GW.
60. **Direct investment and public ownership:** The Queensland Energy and Jobs Plan (announced September 2022)⁴² included several direct investment projects, which were increased in the most recent budget, including:
 - a Total investment of \$19B over 4 years for new wind, solar, storage and network⁴³
 - b A commitment to network investment (Supergrid) to allow more renewable and storage connection

³⁵ <https://arena.gov.au/news/arenas-perfect-score-large-scale-solar-12-12/> accessed 2 August 2023.

³⁶ <https://www.cefc.com.au/media/media-release/cefc-reaches-5-gw-and-3-billion-clean-energy-milestone-with-walla-walla-solar-farm-commitment/> accessed 2 August 2023.

³⁷ <https://www.cefc.com.au/where-we-invest/renewable-energy/energy-grid/> accessed 2 August 2023.

³⁸ <https://www.premier.vic.gov.au/victoria-finalises-snowy-hydro-sale-commonwealth> accessed 2 August 2023.

³⁹ https://www.epw.qld.gov.au/_data/assets/pdf_file/0031/32989/queensland-energy-and-jobs-plan-overview.pdf accessed 2 August 2023.

⁴⁰ <https://s3.treasury.qld.gov.au/files/CleanCo-fact-sheet.pdf> accessed 2 August 2023.

⁴¹ <https://cleancoqueensland.com.au/our-portfolio/#contracted> accessed 2 August 2023.

⁴² https://www.epw.qld.gov.au/_data/assets/pdf_file/0031/32989/queensland-energy-and-jobs-plan-overview.pdf accessed 2 August 2023.

⁴³ <https://statements.qld.gov.au/statements/97925> accessed 2 August 2023.



- c A commitment to progress two large pump hydro projects (PHES) of 2GW and 5GW. This commitment was recently increased to \$14B for Borumba PHES⁴⁴.
- d \$4.5B to a Queensland Renewable Energy and Hydrogen Jobs Fund which will invest directly in renewables, hydrogen and batteries⁴⁵.
- e Commitment to convert all of Queensland’s publicly-owned coal-fired power stations into clean energy hubs by 2035, backed by a Job Security Guarantee for workers
- f The draft laws for the renewable targets includes “**Public Ownership Targets**” of 100% for network and deep storage and more than 50% for generation, which would include utility wind and solar⁴⁶

NSW

- 61. **Contracting:** The NSW Electricity Infrastructure Roadmap will target 12GW new renewable generation and 2GW new long-duration storage by 2030⁴⁷. A “consumer trustee” (AEMO Services) signs long-term contracts Long Term Energy Service Agreements (LTESAs) with projects setting an effective floor price to reduce price risk and attract private investors and developers.
- 62. The first round of LTESAs for generation were announced in May 2023 for 1.4GW of capacity (1.1GW utility solar and 275MW wind)⁴⁸.
- 63. NSW Labor has a policy for a \$1B Energy Security Corporate to provide concessional finance similar to the CEFC.

Victoria

- 64. **Victorian Renewable Energy Target (VRET), contracting:** VRET operates as government backed contracts for difference (CFDs), signed with new entrant renewables to fix a long term supply price per MWh. This largely removes price risk for projects to attract private investment. Two rounds of tenders have been conducted.
 - a VRET1 delivered 800MW over 5 projects (mostly wind)⁴⁹
 - b VRET2 has committed to 623MW renewable capacity over 6 projects (mostly solar)⁵⁰

⁴⁴ <https://www.afr.com/companies/energy/qld-to-commit-14b-for-mega-pumped-hydro-project-20230609-p5dfba> accessed 2 August 2023.

⁴⁵ <https://www.treasury.qld.gov.au/programs-and-policies/queensland-renewable-energy-and-hydrogen-jobs-fund/> accessed 2 August 2023.

⁴⁶ <https://www.allens.com.au/insights-news/insights/2023/06/next-step-in-delivering-the-queensland-energy-and-jobs-plan/> accessed 2 August 2023.

⁴⁷ <https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/electricity-infrastructure-roadmap> accessed 2 August 2023.

⁴⁸ <https://www.nsw.gov.au/media-releases/first-round-of-renewable-energy-projects-puts-nsw-one-third-of-way-to-12-gigawatt-renewable-energy-goal> accessed 2 August 2023.

⁴⁹ <https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets/victorian-renewable-energy-target-auction-vret1> accessed 2 August 2023.

⁵⁰ <https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets/victorian-renewable-energy-target-auction-vret2> accessed 2 August 2023.



65. **Ownership:** Victoria has announced a publicly owned State Electricity Commission (SEC) with initial investment of \$1B for delivering 4.5GW of renewable generation capacity.⁵¹
66. **Offshore wind:** Victoria has announced offshore wind targets of 2GW by 2032, 4GW 2035 and 9GW by 2040. At this stage there is no price mechanism or subsidy to support this. Actions to date focus on transmission planning and development and preparing ports and the supply chain for future construction. Due to development times, offshore wind is unlikely to enter at scale before 2030.

Tasmania

67. Tasmania has legislated a 150% renewable target by 2030 (200% by 2040). There is no direct mechanism to achieve this in the form of subsidies or credits.⁵²

ACT

68. **Contracts:** The ACT has a 100% renewable target achieved by signing contracts for difference (CFDs) with large renewable projects. Most of these are in other states but the volume contracted is equivalent to consumption from ACT electricity customers⁵³. These contracts remove price risk for projects.

South Australia

69. South Australia (SA) is projected to reach 85% renewables by 2025 and 100% by 2030.⁵⁴
70. SA is already at 70% renewables. Further growth will come from continued growth in rooftop PV and from a new interconnect between SA-NSW (EnergyConnect) due to open in 2025, which will allow new sites to connect to the grid in SA and NSW.

⁵¹ <https://www.vic.gov.au/state-electricity-commission-victoria> accessed 2 August 2023.

⁵² https://recfit.tas.gov.au/_data/assets/pdf_file/0012/313041/Tasmanian_Renewable_Energy_Action_Plan_December_2020.pdf accessed 2 August 2023.

⁵³ https://www.environment.act.gov.au/_data/assets/pdf_file/0007/987991/100-Renewal-Energy-Tri-fold-ACCESS.pdf accessed 2 August 2023.

⁵⁴ <https://www.energymining.sa.gov.au/industry/modern-energy/leading-the-green-economy> accessed 2 August 2023.



4 Question 3: The impact of government policies attracting private investment in renewables

What is the impact of government policies and interventions when it comes to attracting private investment in renewables generation and storage in Australia?

Do existing policies and interventions, as currently operating, provide sufficient incentives to attract investment with a view to meeting: (a) the objectives of the relevant policy measure and (b) Commonwealth and State & Territory emissions and renewables targets.

71. Government renewable policies and interventions targeting decarbonisation are the key driver of new renewable investment.
72. Most policies encourage further private investment in renewables by reducing price or volume risk or providing grants or concessional finance. These include grants (ARENA), certificate based subsidies (LRET), concessional finance (CEFC), long-term contracts (guaranteeing prices (CFDs or PPAs with government owned entities), or providing a price floor (LTSEA) and direct investment in network capacity.
73. Many of the policies aim to reduce the policy risk that projects face from government interventions in the market, which can include changes to existing scheme rules and targets (for example, removing the carbon price).
74. Increasingly, there is significant direct government investment or commitments in transmission network and renewable generation. Investment in transmission will encourage private investment in renewable generation by removing network bottlenecks.
75. Renewable investors without long contracts can face risk of oversupply *caused by* government interventions to increase renewable supply and to lower prices for consumers. The rate of new renewable supply required to meet 2030 targets is faster than what is required to meet demand growth and coal retirements. This is arguably contributing to earlier coal retirements. Following the announcement of the NSW Electricity Infrastructure Roadmap (Nov 2020) the owners of Yallourn⁵⁵ and Eraring⁵⁶ announced earlier retirement dates, though this may also be driven by owner decarbonisation commitments.
 - a Yallourn is a 1450MW Victorian brown coal generator. Retirement was brought forward from 2032 to 2028 in March 2021.
 - b Eraring is a 2880MW NSW black coal generator. Retirement was brought forward from 2032 to 2025 in Feb 2022.

⁵⁵ <https://aemo.com.au/en/newsroom/media-release/energy-australia-announces-the-early-retirement-of-yallourn>, accessed 2 August 2023.

⁵⁶ <https://www.originenergy.com.au/about/investors-media/origin-proposes-to-accelerate-exit-from-coal-fired-generation/>, accessed 2 August 2023.



76. Many renewable policies now provide greater investor certainty on prices and financial returns. Early renewable investors often faced price risk due to changes in renewable policies and targets after investing. For example, the removal of the national carbon price (introduced for FYe 2013 and FYe2014 but removed from July 2014⁵⁷).
77. There has been a broader shift away from legislated schemes (carbon pricing and tradeable certificates) towards contracting (CFDs, LTESA), direct investment and ownership. The latter provide more price certainty relative to legislated targets that can change with a change of government. Reduced price risk often results in lower financing costs.
78. There is a wide range of National, State and Territory policies, including direct investment in projects, indirect support via transmission investment, indirect support via contracts (either directly via VRET and LTESA, or indirectly via publicly owned entities such as CleanCo and Snowy Hydro). As such, it is difficult to estimate the proportion of projects that receive some form of government support.
79. There are 6.3GW of large wind and solar projects listed as “committed” by the Clean Energy Relator (CER).⁵⁸ All of these would receive credits under the LRET as one form of support, which may be sold to liable parties or to meet voluntary corporate demand. I estimate that around 66% of that committed capacity receives another form of support such as LTSEA, VRET, CEFC finance, other direct government finance or indirect support via PPAs with government owned entities.
80. An increase in the rate of renewable investment is likely due to recent increases in government support, particularly the large investment for new network capacity. There has only been one round of LTESA and two rounds of VRET held to date, but more rounds will occur.
81. Other mechanisms involving direct investment have only recently been established: the Victorian SEC was announced October 2022 and the Queensland Energy and Jobs Plan announced September 2022. These will increase overall renewable investment but depending on implementation, they may also crowd out some private investment. If these invest as partners to private developments than this is likely to encourage additional private investment.
82. The existing policies address any investor issues related to obtaining finance by providing price certainty to reduce risk. The cost of capital faced by projects with government contracts or direct investment is generally lower than private capital costs (see AEMO Services estimate of weighted average cost of capital (WACC) for NSW Roadmap projects versus Non-roadmap projects⁵⁹ (Figure 10). This largely reduces advantages for larger developers of vertically integrated retailers.

⁵⁷

https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1314/QG/CarbonPriceRepealBills accessed 2 August 2023.

⁵⁸

<https://www.cleanenergyregulator.gov.au/DocumentAssets/Pages/Power-stations-and-projects---committed.aspx> accessed 2 August 2023.

⁵⁹

AEMO Services, *NSW Electricity Infrastructure Roadmap benefits modelling report* (June 2023) https://www.energy.nsw.gov.au/sites/default/files/2023-06/202306_NSW_Electricity_Infrastructure_Roadmap_benefits_modelling_report_v2.PDF_p25 accessed 3 August 2023. These estimates are based on an earlier NAB cost of capital report.



Figure 10: AEMO Services WACC assumptions with and without the NSW Roadmap (LTESAs)

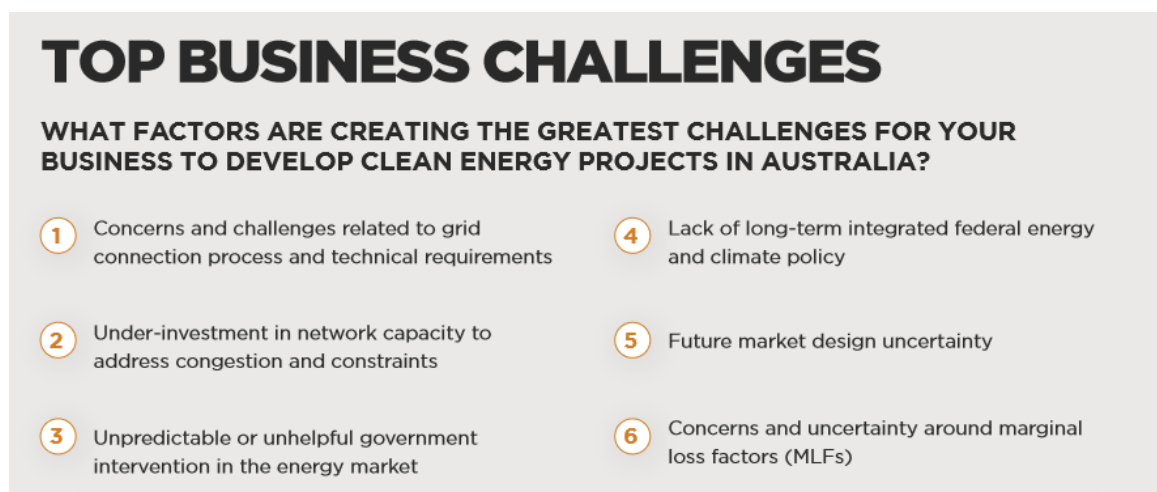
Table 6: Technology-specific WACC assumptions in the Roadmap model and the no-Roadmap model

Technology	Roadmap model assumption	No-Roadmap model assumption
Wind	1.8%	5.0%
Solar PV	1.5%	5.2%
LDS	5.5%	7.9%
Firming	2.4%	4.8%

Source: AEMO Services, NSW Electricity Infrastructure Roadmap benefits modelling report (June 2023)

83. The biggest barriers to new renewable investment, as identified by renewable investors, are grid connection bottlenecks and network capacity (Figure 11), which is also being addressed by direct government funding to support transmission build and grid connection. This includes the Commonwealth Rewiring the Nation (RTN) and Queensland Supergrid (and Queensland government network investment). Victoria also passed laws to exempt new transmission from standard planning processes to allow faster network investment⁶⁰.

Figure 11: Renewable investor survey



Source: Clean Energy Council, Clean Energy Outlook Confidence Index, Dec 2021⁶¹.

84. Overall, the policies and interventions involving government contracts and direct investment should provide sufficient incentives to address barriers related to financing projects.

⁶⁰ <https://www.energymagazine.com.au/victoria-side-steps-nem-with-new-amendment-act/> accessed 3 August 2023.

⁶¹ <https://assets.cleanenergycouncil.org.au/documents/resources/reports/clean-energy-outlook/Clean-Energy-Outlook-Confidence-Index-%E2%80%93-December-2021-report.pdf> accessed 3 August 2023.



85. There are many new policies and interventions introduced in the past 12 months aimed at addressing barriers related to grid connection and network capacity. These will significantly improve the likelihood of meeting the 2030 renewable targets but it is too early to assess whether this will fully overcome all network and grid connection barriers in time given the complexity of some project delays. But these delays caused by delays in network capacity will affect private developments with or without other policy support.
86. Direct government investment in renewable generation may risk crowding out some new private investment, but direct public investment should increase overall renewable investment to meet 2030 targets.
87. On the other hand, given that most additional growth in renewable investment will be driven by government targets, any increase in private renewable investment is likely to reduce the need for further government support for other projects. An increase in private investment in renewable generation is as likely to crowd out other private or public investment in generation.



5 Question 4: Individual investor influence on investment in renewables

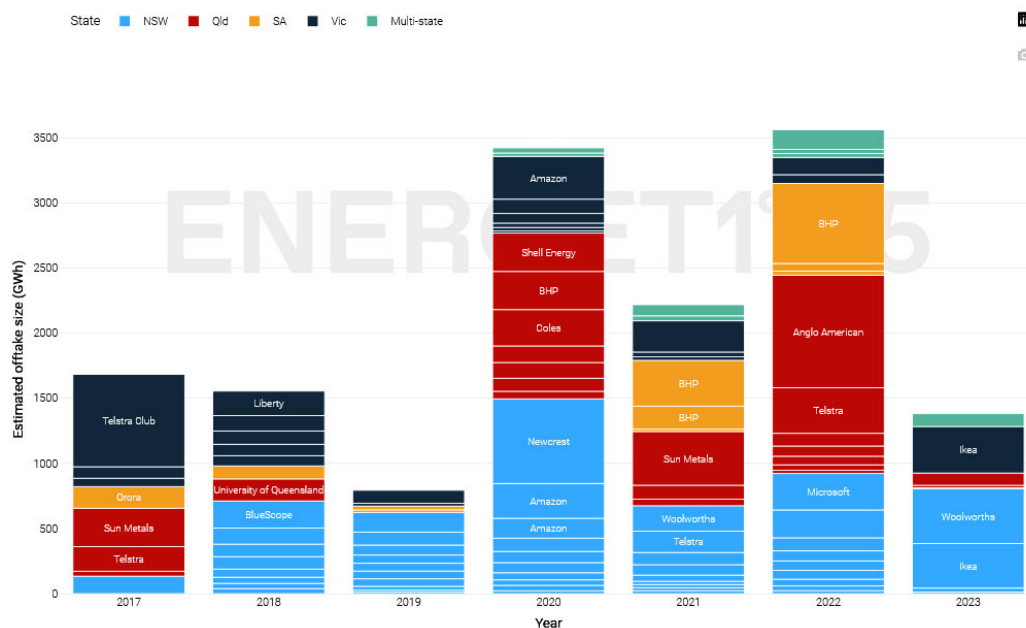
In what respects are the nature or characteristics (including ownership) of an individual investor likely to influence the likelihood and speed that investment in renewables and storage occurs?

88. The nature and ownership of an individual renewable investor should have minimal bearing on the speed of renewable and storage investment due to the type of renewable investment barriers and the policies and interventions introduced to reduce those barriers.
89. Most issues related to finance and access to capital should be addressed by long term government contracts that reduce price risk, or direct government investment and ownership that reduces the need for private investment. Victoria, NSW and Queensland have adopted these policies (explained above) and these will support most of the investments required to meet their state targets. This reduces the relative advantages of vertically integrated generator-retailers because it reduces the cost of finance for any project that has a government counterparty.
90. In addition to government interventions, there is also a growing market for corporate power purchase agreements (PPAs) to fulfil voluntary corporate renewable targets. Many of these involve the largest global companies such as Apple, Amazon, Microsoft, BHP, and Telstra (Figure 12). By December 2022, corporations have contracted with around 5.8GW of renewable capacity supporting projects of 14GW.⁶² Direct PPAs with large global companies would provide a similar reduction in price and counterparty risk to contracting with a large private electricity retailer. Many of these projects also likely receive some government support, as government contracts such as ACT-FIT, VRET or LTESA underwrite the price but allow the energy to be onsold to consumers.

⁶² Business Renewables Centre Australia, *Corporate Renewable Power Purchase Agreements in Australia: State of the Market 2022*, <https://climate-kic.org.au/wp-content/uploads/2023/03/SOM22.pdf> accessed 3 August 2023.



Figure 12: Corporate PPAs in Australia by offtaker



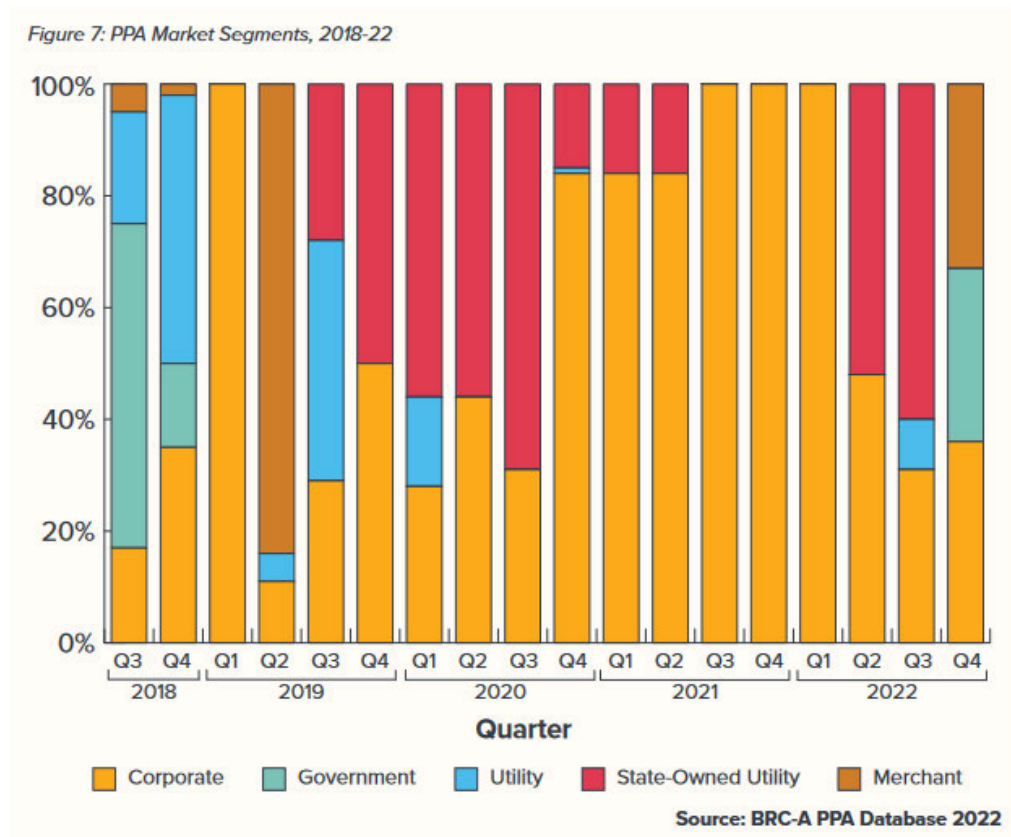
Source: Energetics Corporate Renewable PPA Deal Tracker⁶³.

- Many early renewable developments (before 2016) involved long-term PPAs with large electricity retailers. Increasingly, projects are contracting directly with either large corporate users, governments or publicly-owned utilities in Queensland or Snowy Hydro. In recent years only a relatively small share of PPAs were signed with larger private retailers (Figure 13). This suggest that the there is minimal advantage signing PPAs with large private electricity retailers compared with contracting directly with large corporate consumers.

⁶³ <https://www.energetics.com.au/corporate-renewable-ppa-deal-tracker> accessed 3 August 2023.



Figure 13: PPAs market segments in Australia



Source: Business Renewables Centre Australia, Corporate Renewable Power Purchase Agreements in Australia: State of the Market 2022.

92. Recently announced direct interventions such as the Victorian publicly owned SEC and the Queensland Energy and Jobs Plan (with 50% ownership mandate) should increase the rate of renewable investment and reduces the private capital requirements.
93. Large contributions to new network capacity (under Rewiring the Nation) will also reduce risk associated with new renewable projects and address any barriers related to accessing private finance.
94. The new renewable project pipeline also suggests that there is minimal advantage for large private electricity retailers. AEMO's Generator Information for July 2023 reports new projects by status. This list includes 45.3GW of utility solar and 53.5GW onshore wind that are either Committed, Anticipated, "in commissioning" or Publicly Announced.
95. AEMO lists many projects and subsidiaries separately: the list includes aggregation of major major projects and subsidiaries (showing only the top 30 owner/developers: Table 5). This is not an exhaustive list of all projects and subsidiaries. These are generally specialist renewable developers rather than large electricity retailers.
96. This table excludes a pipeline of 77.4GW of offshore wind which is unlikely to be operating before 2030 (and mostly involving specialist developers without a pipeline of onshore developments).



Table 5: New renewable capacity: Committed, Anticipated, Publicly Announced, In commissioning

Owner	Solar PV MW	Wind Onshore MW	Total MW	Cumulative MW
ARK Energy	412	7,149	7,561	7,561
Squadron Energy (Windlab, CWP)	800	4,945	5,745	13,306
Spark Renewables	1,227	2,912	4,139	17,445
ACEN	1,420	2,529	3,949	21,394
Acciona	403	3,387	3,791	25,184
RES Australia	266	2,755	3,021	28,206
Lightsource BP	2,506	-	2,506	30,712
Renewable Energy Partners	2,480	-	2,480	33,192
Tilt	144	2,228	2,372	35,564
Genex Power Limited	1,970	258	2,228	37,792
Neoen	349	1,643	1,991	39,783
Sunshine Energy	1,500	-	1,500	41,283
WestWind Energy Pty Ltd	-	1,500	1,500	42,783
Canadian Solar	1,404	-	1,404	44,187
CleanSight P/L	-	1,200	1,200	45,387
Mainstream	-	1,165	1,165	46,552
Edify Energy Pty Ltd	980	58	1,038	47,590
Kariboe Wind Farm Pty Ltd	-	1,020	1,020	48,610
Walcha Energy Pty Ltd	450	405	855	49,465
Wind Prospect	-	763	763	50,228
Total Eren	758	-	758	50,986
TagEnergy Golden Plains Investments Pty Ltd	-	756	756	51,742
ESCO Pacific	729	-	729	52,471
brightnightpower_NR	426	300	726	53,197
Crossroads Energy Pty Ltd	650	-	650	53,847
Piambong Wind Farm Pty Ltd	-	632	632	54,479
Fera Australia Pty Ltd	-	630	630	55,109
unitedgreen_NR	608	-	608	55,717
Vena Energy	605	-	605	56,322
Alinta Energy Retail Sales Pty Ltd	-	600	600	56,922

Source: AEMO Generator Information Jul 2023.



97. Renewable investors have identified network capacity and grid connection as larger barriers to investment than obtaining finance. These barriers, along with social licence, declaring renewable zones (for offshore wind) and potential supply chain constraints are likely to be no worse for large specialised renewable developers than for large vertically integrated generator-retailers.
98. While network and grid bottlenecks do continue, any increase in renewable investment by one private developer is as likely to delay or crowd out projects by other developers as opposed to delivering a faster overall rollout.
99. The lower risk associated with renewable projects with long term government-backed contracts are also appealing to investors seeking lower risk and lower returns. This often appeals to large superannuation funds as investors.



6 Question 5: Biggest impediments to private investment in Australian renewable generation

In your view, what are the biggest impediments to Australia securing private investment in renewable generation? Please include your views on supply chain dynamics, costs, securing financial close on projects, network constraints or build out and anything else you consider relevant.

100. The biggest barriers to new renewable investment, as identified by renewable investors, are grid connection bottlenecks and network capacity (Figure 11). This is because new renewable capacity is located where solar and wind resources are high. The existing electricity network is built for existing large coal fired generation, which is located at coal mines (Latrobe Valley, Hunter Valley).
101. Additional network capacity is being addressed by direct government funding to support transmission build and grid connection. This includes the Commonwealth RTN and Queensland Supergrid (Queensland government network investment). Victoria also passed laws to exempt new transmission from standard planning processes to allow faster network investment⁶⁴.
102. Other material risks identified by renewable investors are “unpredictable or unhelpful government intervention in the energy market”, “lack of long-term integrated federal energy and climate policy” and future market design uncertainty”. I interpret these to largely relate to:
 - a risk of direct government investments in generation crowding out private sector investment. Examples include the Victorian publicly owned SEC and the Queensland Energy and Jobs Plan (with 50% ownership mandate); and
 - b other proposed government interventions to extend or retain coal capacity in the market, such as:
 - i the Energy Security Board (ESB) proposed a change in electricity market design to a capacity market that would include payments to coal and gas capacity. This was labelled a “coal keeper” policy by green groups that opposed it⁶⁵.
 - ii Victorian signed a contract with Yallourn brown coal power station to continue operating until 2028⁶⁶;

⁶⁴ <https://www.energymagazine.com.au/victoria-side-steps-nem-with-new-amendment-act/> accessed 3 August 2023.

⁶⁵ <https://www.afr.com/companies/energy/tension-over-energy-crisis-plan-as-esb-backs-coal-and-gas-20220619-p5ausx> accessed 3 August 2023.

⁶⁶ <https://www.energyaustralia.com.au/about-us/energy-generation/yallourn-power-station/energy-transition> accessed 3 August 2023.



- iii the Commonwealth Liddell Taskforce investigated potential market interventions to delay the closure of Liddell black coal power station⁶⁷.
 - iv NSW government is considering options to delay the early retirement of Eraring⁶⁸;
103. Government contracts (price guarantees) are a significant enabler of private investment as it largely removes price risk. Direct government investment and ownership of generation is a barrier that crowds out private investment. However, this would still drive renewable growth through public investment.
104. Delays in connection approval and lack of network capacity are a significant barrier to private investment as it delays or prevents operation (volume risk). It follows that direct government investment in network (Rewiring the Nation) will allow more renewable capacity. For example, the new EnergyConnect (between SA-NSW) is forecast to “unlock” 1800MW of renewable capacity.⁶⁹ Delays in large network projects will mean that barriers remain.
105. Securing financial close on projects depends on both price and volume risk; projects typically obtain a connection approval and some price guarantee (either via government contracts or corporate PPA) before reaching financial close. Some will proceed on a “merchant” basis without a PPA.
106. Recently, technology costs are estimated to have increased by 9% for solar and 35% for onshore wind due to higher material costs.⁷⁰ This will increase the cost of new projects, and given most new investment will be driven by government renewable targets, this may increase the cost of government support but should not delay investment.
107. Attracting finance does not appear to be a barrier once a connection approval and a PPA is secured (including government contracts).

⁶⁷ <https://www.energy.gov.au/publications/liddell-taskforce-terms-reference-report-statement-and-response> accessed 3 August 2023.

⁶⁸ <https://www.afr.com/companies/energy/crunch-time-looms-for-origin-on-eraring-closure-20230217-p5clb4> accessed 3 August 2023.

⁶⁹ <https://www.cefc.com.au/where-we-invest/case-studies/energyconnect-to-unlock-cheaper-greener-power/> accessed 3 August 2023.

⁷⁰ CSIRO, *Gencost 2022-23 Consultation Draft* (Dec 2022) <https://publications.csiro.au/rpr/download?pid=csiro:EP2022-5511&dsid=DS1> accessed 3 August 2023, p ix.



7 Question 6: Advantages (if any) to a renewable generator investor having a retail customer base

In your view, what are the advantages (if any) to a potential investor in renewable generation from having a retail customer base relative to other offtake arrangements the investor might seek to enter?

108. The benefit of a retail customer base appears to be minimal given current policy settings and development of the PPA market.
109. Many earlier renewable projects (before 2016) were developed by large electricity retailers. At the time, projects faced price and policy risk, including risk of policy and target changes, changes to energy and renewable certificate prices under the LRET tradeable certificate scheme. A retail customer base provided a hedge against renewable generation projects, as retailers need to acquire both energy and renewable credits for customer load. Some projects were developed by large retailers and the projects sold with a long term PPA in place. The credit rating of the large retailers (as a PPA counterparty) is an advantage relative to smaller electricity retailers. This reduces risk for generation projects.
110. Many policies introduced since then have reduced the advantage of large retailer PPAs over other PPAs. Government contracts (ACT FIT, VRET, LTESA) and PPAs with Government-owned entities (Snowy Hydro, CleanCo) reduce counterparty risk.
111. There has also been strong growth in corporate PPAs with highly creditworthy global counterparties, including Amazon, Apple, Microsoft, BHP, Anglo American, Telstra, Woolworths, Coles and Ikea (Figure 12). These are effectively bypassing the retailers to contract directly for the largest loads.
112. This appears to be confirmed by the profile of the largest developers in the project pipeline (Table 5), where most of the development pipeline is specialist renewable developers with minimal developments owned by the large electricity retailers. Similarly, private utilities reflect only a small share of PPA counterparties in recent years (Figure 13).



Statement

- I have had regard to the Federal Court of Australia Practice Note including the Harmonised Code of Conduct.
- I confirm that:
 - a. the factual matters stated in this report are, so far as I know, true;
 - b. I have made all the enquiries I considered appropriate in addressing the questions I was instructed to consider;
 - c. the opinions stated in this report are genuinely held by me;
 - d. this report contains reference to all matters that I consider are significant in addressing the questions I was instructed to consider; and
 - e. I understand my duty to the Court, and I have complied with that duty.

Signature

Handwritten signature of Matt Harris.

Name: Matt Harris

Position: Director, Frontier Economics

Frontier Economics

Brisbane | Melbourne | Singapore | Sydney

Frontier Economics Pty Ltd
395 Collins Street Melbourne Victoria 3000

Tel: +61 3 9620 4488

<https://www.frontier-economics.com.au>

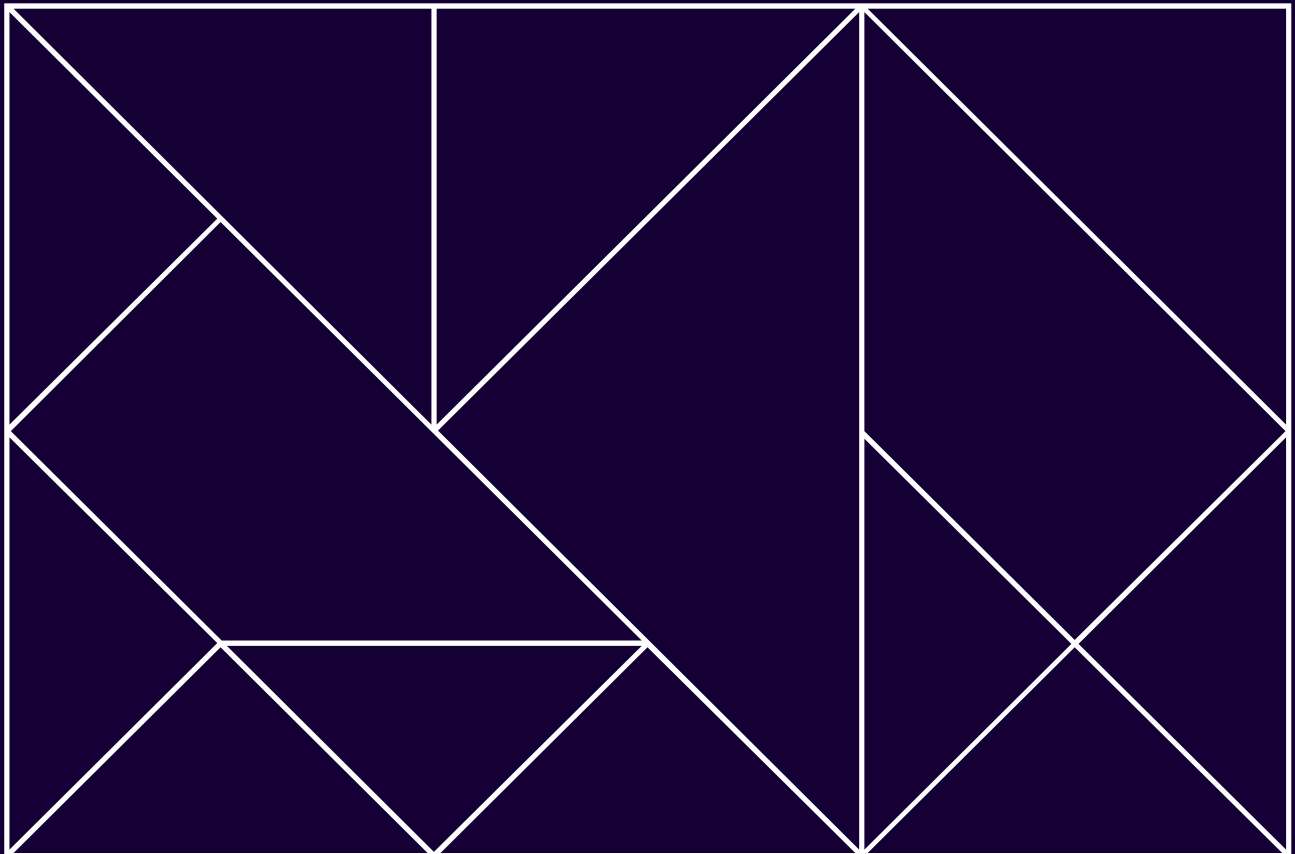
ACN: 087 553 124 ABN: 13 087 553 124

10 August 2023

Report to Australian Competition and Consumer Commission

Brookfield – Origin Energy acquisition:

Response to questions



About ACIL Allen

ACIL Allen is a leading independent economics, policy and strategy advisory firm, dedicated to helping clients solve complex issues.

Our purpose is to help clients make informed decisions about complex economic and public policy issues.

Our vision is to be Australia's most trusted economics, policy and strategy advisory firm. We are committed and passionate about providing rigorous independent advice that contributes to a better world.

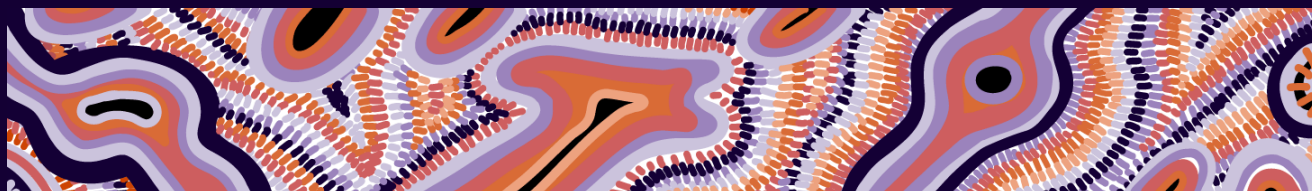
Reliance and disclaimer The professional analysis and advice in this report has been prepared by ACIL Allen for the exclusive use of the party or parties to whom it is addressed (the addressee) and for the purposes specified in it. This report is supplied in good faith and reflects the knowledge, expertise and experience of the consultants involved. The report must not be published, quoted or disseminated to any other party without ACIL Allen's prior written consent. ACIL Allen accepts no responsibility whatsoever for any loss occasioned by any person acting or refraining from action as a result of reliance on the report, other than the addressee.

In conducting the analysis in this report ACIL Allen has endeavoured to use what it considers is the best information available at the date of publication, including information supplied by the addressee. ACIL Allen has relied upon the information provided by the addressee and has not sought to verify the accuracy of the information supplied. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report. Unless stated otherwise, ACIL Allen does not warrant the accuracy of any forecast or projection in the report. Although ACIL Allen exercises reasonable care when making forecasts or projections, factors in the process, such as future market behaviour, are inherently uncertain and cannot be forecast or projected reliably.

This report does not constitute a personal recommendation of ACIL Allen or take into account the particular investment objectives, financial situations, or needs of the addressee in relation to any transaction that the addressee is contemplating. Investors should consider whether the content of this report is suitable for their particular circumstances and, if appropriate, seek their own professional advice and carry out any further necessary investigations before deciding whether or not to proceed with a transaction. ACIL Allen shall not be liable in respect of any claim arising out of the failure of a client investment to perform to the advantage of the client or to the advantage of the client to the degree suggested or assumed in any advice or forecast given by ACIL Allen.

© ACIL Allen 2023

ACIL Allen acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the land and its waters. We pay our respects to Elders, past and present, and to the youth, for the future. We extend this to all Aboriginal and Torres Strait Islander peoples reading this report.



Goomup, by Jarni McGuire

Contents

1	Introduction	4
1.1	Qualifications and Experience	4
1.2	Instructions	5
2	Responses to questions	6
2.1	Question 1 and response	6
2.1.1	Question 1	6
2.1.2	Electricity market competition	6
2.1.3	Gentailer integrated into electricity transmission	9
2.1.4	Gentailer integrated into electricity distribution	12
2.1.5	Gentailer integrated into electricity smart meter supply and installation services	16
2.1.6	Gas distributor integrated into retail	16
2.2	Question 2 and response	17
2.2.1	Question 2	17
2.2.2	Response	17
2.3	Question 3 and response	17
2.3.1	Question 3	17
2.3.2	Response	18
2.4	Question 4 and response	19
2.4.1	Question 4	19
2.4.2	Response	19
2.5	Question 5 and response	21
2.5.1	Question 5	21
2.5.2	Response	21
2.6	Question 6 and response	22
2.6.1	Question 6	22
2.6.2	Response	22
2.7	Question 7 and response	22
2.7.1	Question 7	22
2.7.2	Response	22
2.8	Question 8 and response	23
2.8.1	Question 8	23
2.8.2	Response	23
A	Questions	A-1
	References	2
	Figures	
Figure 2.1	Contracts for a project that doesn't require augmentation	20
Figure 2.2	Contracts structure for a contestable project requiring augmentation	20



1.1 Qualifications and Experience

1. I am Paul Hyslop, the Chief Executive Officer of ACIL Allen Pty Ltd. I have been in my current role since July 2009. My business address is L15/127 Creek Street, Brisbane, Queensland 4000.
2. I am a qualified economist and electrical engineer with 33 years of experience in operational, marketing, business development and consulting roles. I have worked at senior levels in various businesses and areas, including general management, business development, mergers and acquisitions and business regulation. I advise clients strategically across energy, water, and infrastructure markets. My advice typically involves optimising decision-making concerning investment and utilisation of infrastructure and assets. I regularly advise governments and policymakers concerning how policies and government decisions are likely to impact markets, including the price and reliability of supply of goods and services delivered by those markets. I also often act as an expert witness on the energy market and related matters.
3. I hold the following qualifications:
 - a) Master of Economics – (University of New England – 2011)
 - b) Graduate Diploma of Economics – (University of New England – 2008)
 - c) Graduate Diploma of Applied Finance and Investment (Financial Services Institute of Australasia – 2004)
 - d) Master of Business Administration (Deakin University – 1999).
 - e) Bachelor of Arts (political science) (University of Queensland 1992)
 - f) Bachelor of Engineering (Electrical, Honours) (University of New South Wales – 1985).
4. I have been cited as an Energy Expert in Australia and New Zealand Who's Who Legal in 2020, 2021 and 2022. My 2022 entry notes:

- a) *The “highly regarded” Paul Hyslop at ACIL Allen Consulting is a leading name in the energy market thanks to his decades of experience advising large corporations on energy infrastructure.*¹

1.2 Instructions

5. The Australian Competition and Consumer Commission (**ACCC**) has received an application for authorisation under section 88 (1) of the Competition and Consumer Act 2010 (**ACT**) from Eos Aggregator (Bermuda) LP (**Brookfield**) and Midocean Reef Bidco Pty Ltd (**MidOcean**) for the proposed acquisition of Origin Energy Limited (**Origin**) (the **Proposed Acquisition**).
6. Should the Proposed Acquisition proceed, Brookfield will retain the Origin electricity and downstream gas assets, and MidOcean will keep the upstream gas and LNG assets.
7. I have been provided with an expert report prepared by Greg Houston dated 8 June 2023 (**Houston Kemp Report**), which has been lodged with the ACCC by Brookfield in support of the Proposed Acquisition.
8. I have been asked to respond to a set of questions provided to me by the ACCC under section 90 (6) (d) of the ACT. The questions are directed at testing a number of statements in the Houston Kemp Report. The full set of questions are set out in Appendix A.
9. My responses to each question are set out in Chapter 2 below. My answers follow the order of the questions provided by the ACCC.
10. In responding to the questions, I have provided my opinion impartially based on my knowledge of the industry and, where relevant, research by me. My opinions in the report are based solely or substantially on specialised knowledge from my training, study, or experience.

¹ Refer to <https://whoswholegal.com/analysis/australia--new-zealand-2022---energy-experts>

Responses to questions

2

11. This chapter responds to the eight questions that were provided to me by the ACCC under section 90 (6) (d) of the ACT.

2.1 Question 1 and response

2.1.1 Question 1

12. In what ways do you consider that entities that are vertically integrated in each of the following ways could engage in discrimination or other conduct that is adverse to competitors?
- a) An electricity 'gentailer' (including embedded generation) integrated into each of:
 - i) transmission, distribution, and/or
 - ii) smart meter supply and installation services.
 - iii) A gas distributor integrated into retail.

2.1.2 Electricity market competition

13. This section considers how generators, gas and electricity retailers and meter service providers practically compete in the east coast gas and electricity markets.

Generator competition

14. Generators compete in several dimensions, depending on the technology to be deployed:
- a) **Dispatch** – generators compete to be dispatched to provide energy and (where capable) ancillary services
 - b) **Access to fuel** – thermal generators compete for access to coal or gas
 - i) Coal can be exclusive mine mouth, shared mine mouth or remotely mined and delivered. Constraints in the supply chain can limit access
 - ii) Gas access is often determined by pipeline capacity.
 - c) **Location** – generators compete to position assets at favourable locations. Location supporting access to network capacity, especially where capacity already exists, and the risk of being constrained off is low, is relevant to all generator projects. Location is more important for wind and pumped hydro as wind resources or the suitability of pumped hydro sites are limited and location-specific. Location may also be important for thermal generators as it may affect access to fuel.

- d) **Network connection and access** – generators compete for access to connect to transmission and distribution systems. Generally, larger generators (say >30 MW) seek access to transmission because of the network capacity required to transmit large volumes of electricity. Smaller generators may connect to either transmission or distribution, but connecting to the distribution system usually involves less cost. As noted in c) above, location can be important in gaining network access.

Electricity retail competition

15. Electricity is a low-involvement ubiquitous product for most mass-market consumers. Use within the mass market segment, where most of the retail value lies², is relatively homogenous (powering homes and small businesses). Therefore, electricity retailers sell a homogenous commodity and compete using classical marketing approaches:
- a) **Price** – compete on price by offering lower prices, discounts, smoothed bills, and more favourable payment terms
 - b) **Product** – differentiate products through:
 - i) value adds (e.g., include 12 months of free pay-television or streaming channels or membership of a football club)
 - ii) adding related products (gas, broadband, insurance etc.)
 - iii) co-investing in rooftop solar and behind-the-meter batteries (may be included in a virtual power plant)
 - c) **Brand** – brand recognition and, to a lesser extent, brand values, is a key device used by retailers in attracting new and retaining existing customers. Electricity retailers typically focus on attributes such as Australian-owned, environmental sustainability, competitive pricing, ease of access and management of account in promoting their brands.
 - d) **Sector** – differentiation based on geography and market segment. Some retailers focus on specific segments, and some on specific regions or both. Other retailers offer services nationally and across all segments.
16. While retailers compete geographically, the specific customer location is usually unimportant. In particular, mass market customers are given access to networks by distribution network owners and can then choose their retailer, based on competitive offers available. Meters are provided by meter providers organised by the retailer, as the metering coordinator, but are transferable when a customer chooses to switch retailers.

Gas retail competition

17. Gas is similar to electricity in that it is a low-involvement product. However, it is only available (reticulated) in some parts of the NEM. Most potential customers in Victoria have access to reticulated natural gas. Use within the mass market segment is also largely homogenous (one or more of the cooking, space and hot water heating uses). Therefore, gas retailers also sell a homogenous commodity and compete using classical marketing approaches using price, product differentiation, branding and sector. However, some methods that work for electricity are not feasible for gas (e.g., smart meter-based services, behind-the-meter generation and VPP, etc.).

² Retail margins in the large commercial and industrial segments are small. The incentives for behaviour that discriminates against, or seeks to foreclose competitors, are weak in these segments.

Dual fuel competition

18. While not entirely distinct from gas and retail competition, gas and electricity retailers also compete in the dual fuel segment of the market – customers who consume both gas and electricity. Retailers with dual-fuel capability usually place a higher value on the segment compared with single-fuel customers because
- a) customers tend to be more sticky, and they can extract higher margins
 - b) there are operating synergies around the back office (billing and payments) and customer interaction functions (call centre).

Meter service provider competition

19. Meter service provision encompasses the role of metering coordinator, metering provider and metering data provider. For small (mass market) customers, the retailer has the role of metering coordinator. The other services are contestable. For large customers, all three roles are contestable.
20. Providers of metering services primarily compete to roll out smart meters and replace existing meters. Supplying meters underpins selling additional services, including metering data provider services.
21. As meters have a relatively long life – typically 15 to 25 years – the bulk of competition currently is in the roll out of smart meters to replace legacy meters. Smart meters are programmable interval meters with additional capabilities that support other services to be provided to the customer. The capabilities vary but may include switching of demand and rooftop PV generation, smart charging of batteries and electric vehicles and security monitoring.
22. Meter providers purchase smart meter hardware, including software, from global smart meter manufacturers such as Honeywell and Landis & Gyr. They may add local capability to the meters and then on-sell them to electricity retailers in the mass market. For the large customer market, meters may be provided directly or through retailers (where they retain the role of metering coordinator).

Gentailer

23. Gentailer refers to companies vertically integrating electricity generation with a retail electricity customer base. Incentives to structure in this manner include the following:
- a) Each part provides a ‘natural hedge’ for the other and reduces each part’s exposure to volatile electricity markets. The natural hedge reduces a firm’s exposure to hedging in wholesale forward and futures markets, which are volatile and, at times, may not have sufficient capacity to meet the demand for hedging.
 - b) Financing capacity and costs for a vertically integrated firm are much lower than for stand-alone generators and retailers because of the lower volatility of revenues and profits.
 - c) The vertically integrated firm can take profits from both parts over the business cycle. Therefore profits tend to be more stable.
 - d) Access to generation allows retailers to influence wholesale prices to the portfolio’s advantage by increasing or withholding generation output (under the rules).

24. Notwithstanding vertical integration, in responding to the questions asked, I have considered the generation and retail components of the business separately. I think the issues concerning integration with networks are different for the generation and retail components of a vertically integrated business as I set out in the sections below.

2.1.3 Genter integrated into electricity transmission

Generation

25. The NEM operates as a constrained dispatch arrangement with generators subject to average marginal losses (calculated and applied annually) and facing the risk of output being constrained by network congestion. Generators may connect to the transmission network if they meet the required standards. This open access arrangement is intended to support competitive entry, especially where older, less efficient generators might otherwise block the entry of lower-cost and more efficient new generators.
26. The National Electricity Rules (NER) are evident in prohibiting a TNSP or equivalent from engaging in conduct to prevent or hinder access to prescribed or negotiated transmission services.

A Transmission Network Service Provider or a person who is provided prescribed transmission services or negotiated transmission services must not engage in conduct for the purpose of preventing or hindering access to those services.³

27. Therefore, a genter integrated with transmission that acts to discriminate or engage in other conduct that is adverse to generation competitors would breach its obligations under the NER. To succeed, such conduct would need to be opaque to, or at least have a strong chance of not being discovered by regulators or generator competitors.
28. I don't consider it feasible for a genter integrated with transmission to use prices to discriminate against generator competitors for the reasons set out below.
29. A generator connecting to transmission must enter into a connection agreement with the relevant TNSP before being connected to the network.⁴ The NER⁵ sets out a detailed list of requirements that the TNSP must include in its offer to connect to a generator. An offer to connect by a TNSP to a generator must include, among other things, connection service charges and payment conditions. These prices are either regulated or contestable for new generators as follows:⁶
- a) Negotiated services are subject to negotiating principles set out in the NER and are limited to the stand-alone cost of providing the services.
 - b) Shared connection assets above \$10 million are contestable.
 - c) Dedicated connection assets are contestable.
 - d) Designated network assets are contestable beyond functional specification are contestable

³ NER, rule 5.2A.3 (e)

⁴ NER, rule 5.2.5 (b) (1)

⁵ NER Schedule 5.6, Part A

⁶ Prescribed entry services apply only to certain existing or committed assets, or replacement of those assets as at 9 February 2006; NER rule 11.6.11. I have not considered them as they do not apply to entry in 2023 and beyond.

30. A generator is provided the cost and charging arrangements before connecting and in most cases providing the connection is contestable. Therefore, a generator seeking connection can seek alternative competing offers to provide the connections services.
31. I consider that it may be feasible for a gentailer integrated with transmission, to misuse information in a way that is adverse to generator competitors, because, in my experience, the use of information by a TNSP is not fully transparent to generator and other market participants.
32. Network development, planning and operation is complex, and there are usually significant information asymmetries in favour of a TNSP compared with generators seeking to connect or already connected. The misuse of information could potentially include:
 - a) The use of confidential information about a competitors development plan by the affiliated TNSP, derived through early notification required under the connection application process,⁷ to frustrate or block the development. For example, the affiliated TNSP may use provisions of the NER⁸ (requests for additional information, delays through requiring extra studies, etc.) to delay or stymie network development that would favour generator competitors. This may benefit existing affiliate generators or provide a first-mover advantage for affiliate generation that is also being developed.⁹
 - b) Influencing the development of the transmission network such that generator competitors received unfavourable loss factors and greater risk of congestion. Network development objectives can be achieved via several different physical configurations, and there are often choices about the location of new network assets and replacement of existing aging assets that affect losses and congestion at different locations in the network. Also current choices about network development affect future choices which may disadvantage generator competitors even more in the future
 - c) Influencing the timing of network outages that are unfavourable to generator competitors. While AEMO is the responsible TNSP, AusNet owns and maintains the transmission system. Therefore AusNet would be expected to develop maintenance schedules including taking equipment out of service to facilitate maintenance. AEMO is the authority to approve outages as the TNSP but would be expected to approve AusNet requests unless an outage would put power system security or reliability of supply at risk.
33. The Houston Kemp Report¹⁰ argues that the misuse of information is not a matter of concern for the issues he considered because of the requirements for ring-fencing and prohibitions on TNSPs using confidential information under the NER. However, I have considered them in the context of behaviour that is opaque or at least has a strong

⁷ For example, NER rule 5.2.5 (b) requires a generator applying to connect to comply with design requirements imposed by the TNSP and provide forecast generation to the TNSP. The provision of the information could be many months prior to the generator making its final investment decision (FID) and longer where a TNSP uses the provisions of the NER to extend the period prior to making an offer to connect (noting that the establishment of a connection agreement is typically a precondition to FID).

⁸ For example, Response to Connection enquiry, NER rule 5.3.3 (c).

⁹ Where an affiliate TNSP provides an affiliate generator with confidential information about a planned competitor development, the affiliate generator could speed up the development of its own competing project(s) to reach FID ahead of the competing development. Should this occur, the competitor development may be delayed or even shelved (economic outcomes may no longer support the competitor development).

¹⁰ Houston, clause 268

chance of not being discovered by regulators or generator competitors because of the complexity of planning, development and operations and the asymmetry of information inherent in a TNSP's relationship with generators connected or seeking to connect.

34. The Houston Kemp Report¹¹ argues that the Origin Energy gentailer integrated with the Victorian transmission system owner will not discriminate against generator competitors because AEMO is the TNSP responsible for planning and operating the shared transmission network. I accept this is a significant factor in protecting generator competitors. However, AusNet, as the owner of the assets, may be able to influence AEMO's decision-making, especially concerning maintenance advice that may affect the timing and nature of transmission network outages as I described in clause 32 c) above.
35. The Houston Kemp Report¹² argues that generator competitors are large and sophisticated participants and "were a connecting party to consider that the price for a negotiated transmission service would undermine its ability to compete in the wholesale market", the party would use the relevant NER dispute resolution procedures. Assets that might expect to connect to the Ausnet transmission system in the future may not be large and sophisticated participants.¹³
36. Brookfield has proposed significant restrictions on the relationship between AusNet and Origin Energy Markets in a draft undertaking to the ACCC. The undertaking may satisfy the ACCC concerning the matters raised in paragraph 32 above.
37. The proposed arrangements rely on the legal and regulatory ring-fencing arrangements and separation of management and board control, rather than the absence of incentives. Some additional requirements could be included to further limit either the incentive or the ability to misuse confidential information to discriminate against generator competitors. I have suggested some additional requirements that may be considered in my response in section 2.8 below.

Retail

38. Very few customers consume electricity directly from the transmission system. Where they do, they are typically large consumers and place the most value on price and the quality and reliability of service. For these customers, transmission prices generally are negotiated directly between the customer and the TNSP.
39. In theory, a gentailer integrated with transmission could raise transmission prices to itself and its competitors and squeeze retail margins. At the extreme, the monopoly transmission service provider could take all or at least enough of the retail profit margin and drive competitor retail businesses out of the market. The transmission service provider would be willing to operate the gentailer retail business at a very small or no profit margin because it enables the transmission price squeeze strategy. Houston describes this as vertical foreclosure.
40. However, transmission businesses are regulated by the AER in line with the NER. Regulation includes scrutiny of capital and operating input costs and returns calculated prescriptively by processes predetermined by the AER. This

¹¹ Houston, clause 213

¹² Houston clause 197 and 211

¹³ Solar PV and Battery Energy Storage Systems do not exhibit significant scale economies and are not necessarily large and sophisticated.

process assigns a revenue cap to a transmission business. The transmission business must then publish prices for various customer classes¹⁴ following AER-approved pricing principles. These prices are then charged consistently to all parties accessing the transmission network.

41. It appears infeasible for a transmission service provider to raise transmission prices above the levels approved by the AER. And where it could do so, there would be incentives to do so anyway, without being integrated with a gentailer. Electricity is a relatively inelastic product. If transmission prices could be raised above the approved level, a gentailer integrated with transmission would have incentives to raise prices to capture additional profits rather than “leave money on the table”.
42. Assuming that a transmission service provider will charge the maximum amount possible, there would appear to be little incentive to subsidise the gentailer retail business in the short term. Otherwise, the integrated business would forgo substantial profits over this time frame. A retailer could use subsidies provided by an affiliate to undercut competitors in the medium- to long-term as a means of capturing market share and potentially moving to a position of market dominance (noting that such a strategy would need to be cognisant of the Misuse of Market Power provisions within the Competition and Consumer Act) . However, any retailer can enact this strategy with the support of an affiliate with sufficient resources, not just one affiliated with a transmission service provider.
43. It is theoretically possible for a transmission service provider to offer lower prices to its affiliate gentailer servicing retail customers. However, transmission costs are charged to DNSPs and then charged to retailers. This makes discrimination infeasible except where the transmission is also integrated with distribution.
44. Brookfield owns slightly less than half of AusNet. The interests of the shareholders in AusNet will not be fully aligned with the Brookfield interest in the Origin gentailer. Therefore, there is a substantial disincentive for the majority shareholders in AusNet Brookfield to subsidise the Origin gentailer through direct subsidies or lower tariffs. Notwithstanding the question over feasibility discussed above, should Brookfield seek to move to a 100 per cent (or close to it) interest in AusNet, or the current AusNet shareholders seek to acquire stakes in the Origin gentailer in rough proportion to their interests in AusNet, the incentive to engage in this form of discrimination would be increased.
45. Based on the above discussion, I consider that a gentailer integrated with transmission would have little capacity or incentive to engage in discrimination or other conduct that is adverse to competitors in retail markets.

2.1.4 Gentailer integrated into electricity distribution

Generation

46. The distribution entity of a gentailer integrated with distribution has an incentive to block or stymie development of competitor generators seeking connection to the distribution system or act to negatively impact the operation of existing competitor generators connected to the distribution system. The incentives exist because the actions would reduce competition for the gentailers existing generation assets and for development of new generation assets.

¹⁴ These classes are typically based on voltage at which the customer is connected and the customer size in terms of maximum demand and/or annual consumption. These three factors are typically highly correlated.

47. Generators (including energy storage) seeking access to the distribution system are considered embedded and are usually small relative to generators connected to the transmission system. The constraint on size is primarily created by two factors:
- a) The capacity of the distribution system to transfer power from a single location is limited because of the sizing of the rating of equipment and the voltage at which it operates.
 - b) Distribution systems are predominantly located in and around urban or built-up areas, limiting the physical footprint available to locate a generator and creating social and environmental opposition to large developments. Rural distribution elements do not face the same issues, but the ability to transfer electricity is usually lower, and the losses associated with transfers are generally much higher, making connecting to rural distribution an inferior proposition in most locations.
48. A gentailer integrated into distribution, through its affiliated DNSP, would have incentives to delay or block entry of generator competitors, as this delay or blocking of generator competitor generators would benefit the affiliate gentailers as outlined in 46 above.
49. The types of embedded generators vary and can be broadly classified as follows:
- a) Small, embedded generators which are likely to be solar PV or solar PV with batteries. These generators are likely large in number but small in capacity (100 kW to say 2 MW) constructed on the top of buildings or on adjacent land and connected at low voltages. The process of connecting is relatively straightforward, and location and size are diverse and are not easily frustrated by the DNSP affiliated with the gentailer. There is also a higher transaction cost per project to frustrate or delay such projects.
 - b) Mid-sized embedded generators (typically up to 10 MW) would be smaller in number and are often affiliated with a consumer of a substantial portion of the generator's generated electricity (e.g., cogeneration or trigeneration in a hospital or small industrial site). There is potential for the affiliated DNSP to frustrate or delay these types of projects as they tend to have bespoke connection arrangements, which give the DNSP more grounds on which to delay access. Also, the transaction cost per project in acting to frustrate or delay is lower.
 - c) Large, embedded generators would be few and are more like large-scale grid-connected generators but smaller in size because of the transfer limits on the distribution system. They may connect at up to 66kV.
50. In my opinion a gentailer integrated with distribution has limited scope to use prices to discriminate against competing generators because of the combined effect of the following:
- a) The NER¹⁵ authorises the AER to develop ring-fencing guidelines which prohibit discrimination by a DNSP between an affiliate of the DNSP and competitors of the affiliate.¹⁶
 - b) For negotiated connection arrangements, section 5.3AA of the NER is prescriptive as to the costs that may be included by a DNSP and the negotiating framework that the DNSP must follow.
 - c) In the case of Victoria, the ESC requires distribution connection services to be contestable.¹⁷

¹⁵ NER, rule 6.17

¹⁶ AER Ring-fencing Guideline Electricity Distribution Version 3, clause 4.1

¹⁷ ESC (2023), Electricity Distribution Code of Practice, p 28

51. Similar to transmission, I consider that it may be feasible for a gentailer integrated with distribution, to misuse information in a way that is adverse to generator competitors, because, in my experience, the use of information by a DNSP is not fully transparent to generator and other market participants. The lack of transparency occurs because distribution network development, planning and operation has some complexity, and there are reasonable levels of management discretion concerning development, operations and maintenance. There are usually significant information asymmetries in favour of a DNSP compared with generators that seek to connect or are connected. A DNSP is not required to disclose information to the level of detail that would be required to remove the information asymmetries.
52. I acknowledge that the NER¹⁸ and the AER Ring-fencing guidelines¹⁹ prohibit disclosure of information that could be misused. However, the prohibitions do not remove the incentive, and the lack of transparency potentially creates an environment where disclosure and misuse of information may not be perceptible to either affected participants or the AER (in its role as enforcer of the NER).
53. The misuse of information could potentially include:
- a) The use of confidential information about a competitor's development plan, derived through early notification required under the connection application process,²⁰ to frustrate or block the development. For example, the affiliated DNSP may use its discretion for various steps in the connection process to delay or stymie network access, especially where augmentations or extensions on transmission or distribution networks are required to support the necessary power transfer from the embedded generator. This may benefit existing affiliate generators or provide a first-mover advantage to affiliate generation also being developed.
 - b) Use of its discretion in relation to network operations and maintenance to disadvantage competitor generators through network outages and poorer quality.
54. Similar to the arguments concerning generation and transmission, the Houston Kemp Report²¹ argues that Ausnet does not have the ability to misuse information because:
- a) Ring-fencing requirements prevent this misuse of confidential information by prohibiting the disclosure of confidential information to affiliates that might be competitors.
 - b) The AER or its customers would discover any breach of its ring-fencing obligations, and the consequences for a DNSP would be severe, including significant financial penalties and loss of reputation.
55. For the reasons set out I don't agree with the Houston Kemp Report on the misuse of information in the context of a gentailer integrated with distribution.

¹⁸ NER, rule 5.3.8 and rule 8.6.

¹⁹ AER Ring-fencing guidelines, 4.3.2.

²⁰ For example, NER, rule 5.2.5 (b) requires a generator applying to connect to comply with design requirements imposed by the DNSP and provide forecast generation to the TNSP. The provision of the information could be many months prior to the generator making its final investment decision (FID) and longer where a DNSP uses the provisions of the NER to extend the period prior to making an offer to connect (noting that the establishment of a connection agreement is typically a precondition to FID).

²¹ Houston, clause 352

Retail

56. The Houston Kemp Report²² raised three potential ways in which a gentailer integrated with distribution could engage in discrimination or other conduct adverse to competitors:
- a) Lowering network quality to retail customers serviced by competitors
 - b) Raising network prices for connection and use of system for retail customers to squeeze competing retail margins.
 - c) Misuse of information to the detriment of competitors.
57. I consider lowering quality for specific customers would, in practice, be infeasible. Retail customers connected to the distribution system rely on shared distribution network assets, including substations, high-voltage feeders, low-voltage transformers and low-voltage distribution lines, to deliver electricity. In my view, discriminating quality by customers is not feasible because the assets that supply electricity, including quality, are not separable. In addition, customers are contestable. Therefore, even if discrimination based on quality was feasible, customers could switch with the benefits shifting to a competing retailer.
58. I consider raising prices to squeeze competitor retail margins is also not feasible. As I argued for transmission, the DNSP would be expected to charge the maximum amount possible already (if it could raise prices, it would have done so already). As revenues and pricing methodologies are regulated, the scope to raise prices beyond approved levels is not feasible.
59. The DNSP could lower prices only for the affiliated retailer. However, the DNSP is required to submit an annual pricing proposal to the AER each year for approval. The approved pricing proposal is published on the AER website and sets specific tariffs for customer classes based on voltage and usage patterns.²³ If the DNSP provided preferential pricing to an affiliate retailer, competitor retailers would quickly discover it. Also, the other owners of AusNet have no interest in subsidising the affiliated retail business as it is not affiliated with them, and they gain no benefit from the distribution network offering discounts for the Gentailer to increase its market share.
60. In my opinion, misuse of information is feasible in certain circumstances for a gentailer integrated with distribution to engage in discrimination adverse to retail competitors. A specific example is where an affiliated retailer receives early notice of lowering distribution tariffs from the affiliated DNSP, which allows it to undercut its competitor offerings, which are set based on published higher tariffs.
61. While potentially detrimental to competitors, the benefits would subside once the updated tariff information was provided. Networks receive draft and final decisions. The draft is typically a good indicator of the final decision and final decisions come into effect some time after being handed down by the regulator. These factors would limit affiliated retailers' ability to use such information.

²² Houston, clause 354

²³ For example, AusNet Services, Schedule of Network Use of System Tariffs (1 July 2022), retrieved from <https://www.aer.gov.au/system/files/Attachment%204%20-%20AusNet%20Services%20-%20Schedule%20of%20Tariffs%202022-23-%20%206%20April%202022.pdf>

2.1.5 Gentailer integrated into electricity smart meter supply and installation services

62. Smart meter suppliers and installers purchase smart meters, mostly from global manufacturers and contract with retailers (as Metering Coordinators) to provide metering provider and metering data provider services.
63. Meter supply and installation services are contestable. Houston states retailers have tended to enter relatively long contracts which may offer exclusivity or minimum volume incentives.
64. A gentailer integrated with a smart metering service supplier would be incentivised to engage in discrimination or other adverse conduct to competitors. Potential forms of discrimination could include raising prices or refusing to provide meters to competing retailers. The affiliate retailer could also seek to damage competing smart meter service providers by refusing to purchase their services (purchase only from the affiliated smart meter service provider).
65. However, in my view, the above incentives and potential forms of discrimination are adequately mitigated by a combination of:
 - a) metering services being contestable
 - b) metering services being a relatively small component of the costs of retailing
 - c) Origin not holding a dominant position in any retail market segment
 - d) possibilities for other large retailers to sponsor the entry of metering provider services where it is considered there is insufficient competition

2.1.6 Gas distributor integrated into retail

66. A gas distributor integrated into retail could engage in discrimination in similar ways to the gentailer integrated into distribution:
 - a) Lowering network quality to retail customers serviced by competitors
 - b) Raising network prices for connection and use of system for retail customers to squeeze competing retail margins.
 - c) Misuse of information to the detriment of competitors.
67. While there are differences in how electricity and gas are supplied and consumed, my conclusions regarding the feasibility of engaging in the identified forms of discrimination are similar.
68. I consider lowering quality for specific customers would, in practice, be infeasible. Retail customers connected to the distribution system rely on shared distribution network assets to receive gas. Key quality parameters are pressure, availability and gas content. Gas is delivered on common pipelines running by each customer location. Discriminating quality by customers is, in my view, not feasible. In addition, customers are contestable. Therefore, even if discrimination based on quality was feasible, customers could switch with the benefits shifting to a competing retailer.
69. I consider raising prices to squeeze competitor retail margins is also not feasible. Almost all revenue AusNet earns is for reference services that the AER regulates. As I argued for electricity transmission and distribution, the gas distributor would be expected to charge the maximum amount possible to maximise its profitability (if it could raise prices, it would have already done so). As revenue and pricing methodologies are regulated, the scope to raise prices beyond approved levels is not feasible.

70. The gas distributor could lower prices only for the affiliated retailer. This would breach the requirements of the National Gas Law (NGL). Also, the other owners of AusNet have no interest in subsidising the affiliated retail business as it is not affiliated with them and they gain no benefit from it squeezing its competitors and increasing its market share.
71. As for electricity retail, misuse of information is feasible in certain circumstances for a gentailer integrated with distribution to engage in discrimination adverse to retail competitors. A similar example to electricity is when an affiliated retailer receives early notice of lowering distribution tariffs, which allows it to undercut its competitor offerings based on the higher published tariffs. I note it would have the same transitory benefits and subside once the updated tariff information was provided. Gas distribution networks receive draft and final decisions. The draft is usually a good indicator of the final decision and final decisions come into effect, some time after being handed down by the regulator. These factors would limit affiliated retailers' ability to use such information.

2.2 Question 2 and response

2.2.1 Question 2

72. In what ways does the ability of an upstream entity to control or influence a downstream entity (or vice versa), or the flow of information between them affect your views on potential discrimination expressed in question 1?

2.2.2 Response

73. In my view, the question of how much an upstream (or downstream) entity may control or influence a downstream (upstream) entity or the flow of information is highly relevant to whether a vertically integrated entity could successfully discriminate against competitors. In the absence of influence or control and of flow of information, any incentives to discriminate would be unlikely to be feasible.
74. My views in section 2.1 above rely heavily on the legal and regulatory prohibitions on discrimination and limitations on the misuse of information that apply to TNSP and DNSP in both the NER and the AER Ring-fencing guidelines. In particular:
- A TNSP or DNSP must follow the requirements and timetable to connect a competitor seeking to access a network and, therefore, the market.²⁴
 - The AER Ring-fencing guidelines prohibit the sharing of confidential and other information gained through its obligations as a network service provider that may be used to achieve a first mover advantage against competitors or take action to delay or prevent a competitor from proceeding with a competitive investment (e.g., acquire rights to easements or lands that could prevent an investment).

2.3 Question 3 and response

2.3.1 Question 3

75. In respect of each potential form of vertical integration and type of discrimination outlined in response to question 1, what do you consider are the incentives for an integrated firm to engage in such discrimination and why do they arise?

²⁴ NER, rule 5.3

2.3.2 Response

76. I have described the various forms of discrimination and the incentives for an integrated firm to engage in such discrimination in section 2.1 above. I have summarised them below:

a) Gentailer integrated with transmission

- i) The transmission entity acting to delay or prevent competing generators accessing the network to reduce competition with the integrated firm's existing generation assets and the development of future assets (delay/prevent physical access and misuse of information).
- ii) Development and operation of a network to favour the integrated firm's generation assets to enhance or maintain the firm's revenues and restrict competing firms' revenues (the nature, location and timing of network development and the timing of outages affecting competitor plant revenues).
- iii) Raising network prices for connection to generators above the stand-alone cost (noting generators currently do not pay use of system charges) to squeeze competing generator profit margins and deter competing generators from investing.

b) Gentailer integrated with distribution

- i) The distribution entity acting to delay or prevent competing generators from accessing the network to reduce competition with the integrated firm's existing generation assets and development of future assets (delay/prevent physical access and misuse of information).
- i) Development and operation of a network to favour the integrated firm's generation assets to enhance or maintain the firm's revenues and restrict competing firms' revenues (the nature, location and timing of network development and the timing of outages affecting competitor plant revenues).
- ii) Raising network prices for connection in excess of the stand alone cost and use of network by generators (noting generators currently do not pay use of system charges) to squeeze competing generator profit margins and deter competing generators from investing.
- iii) Raising network prices for connection and use of system to retail customers to squeeze competing retail margins to reduce competition by forcing existing retailers to exit the market and deter entry.
- iv) Misuse of information; for example gaining early insights into likely falls in network tariffs which are then used as a first mover advantage by the retail business to capture customers.

c) Gentailer integrated with smart meter supply and installation services

- i) Raising prices to competing retailers for smart meter services to squeeze retail margins of competing retailers to reduce competition by forcing existing retailers to exit the market and deter entry.
- ii) Refusing to provide smart meter services to competing retailers.
- iii) Not purchasing or purchasing fewer metering services from competing smart meter service providers to reduce competition by forcing existing smart meter service providers to exit the market and deter entry.

d) Gas distributor integrated into retail

- i) Raising network prices for connection and system use for retail customers to squeeze competing retail margins to reduce competition by forcing existing retailers to exit the market and deter entry.

- ii) Misuse of information; for example, gaining early insights into likely falls in network tariffs, which the retail business uses as a first mover advantage to capture customers.

2.4 Question 4 and response

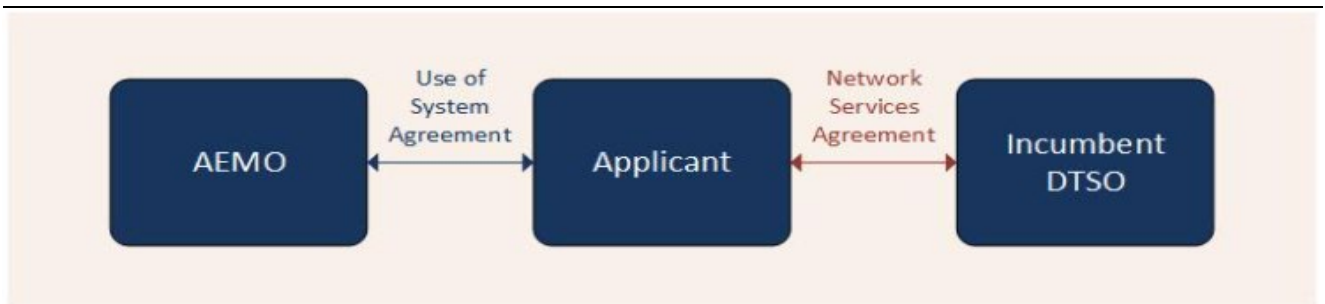
2.4.1 Question 4

77. What are some of the factors relating to the process for connecting to the Victorian transmission network that currently delay or deter new generation connections? Do you consider that the proposed transaction is likely to exacerbate any of these factors?

2.4.2 Response

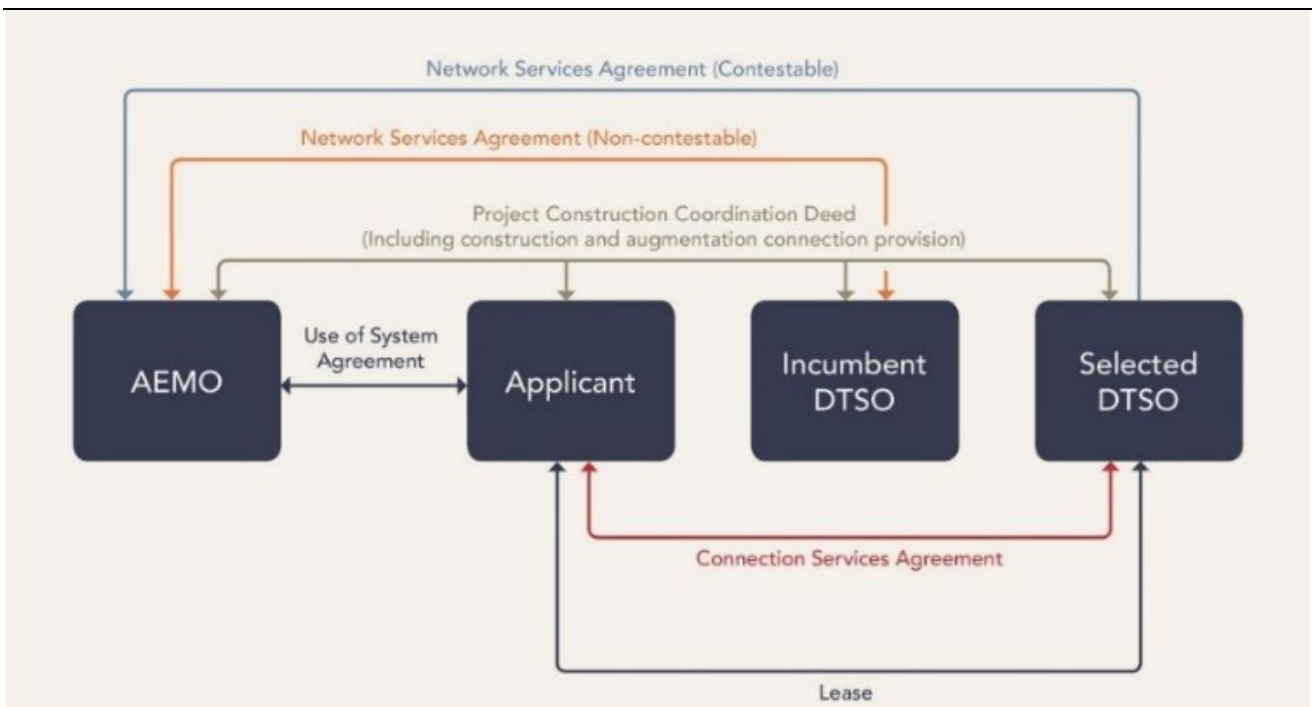
78. The Victorian transmission system is unique in the NEM in that the responsibilities for planning, coordination and grid development are split between several parties as follows:
- a) AEMO has the role of TNSP, is responsible for planning and operating the transmission system, and determines which development projects proceed.
 - b) AEMO runs contestable procurement processes for developing projects' design, construction, ownership and operation.
 - c) AusNet owns the existing transmission system and is responsible for these assets' maintenance and physical operation. AusNet may also be the successful tenderer for AEMO-sponsored development projects.
 - d) The Victorian Government, through VicGrid, coordinates the planning and development of renewable energy zones and is also involved with AEMO in identifying network investments. The Victorian Government will establish a new transmission planning and development framework in 2024. This framework will incorporate environmental objectives, consider rural and regional community views before determining final transmission routes and design and involve benefit sharing, including payments to affected parties.
79. Victoria is small and densely populated compared with the other mainland NEM states. Rural land use tends to be more intensive. Social and environmental objections to development tend to be more pronounced in Victoria.
80. Connections may or may not require augmentations to the shared network. Where the connection does not require shared network augmentation, the connecting generator is responsible for designing and constructing the connection assets. The connecting generator would normally contract this requirement to a suitably skilled entity. Where the shared network requires augmentation, AEMO tenders to complete the augmentation. The successful tenderer may be AusNet or another party tendering to provide the facilities.
81. Figure 2.1 and Figure 2.2 show the contracting arrangements for where a shared network augmentation is not or is required. The incumbent Declared Transmission System Operator (**DTSO**) is AusNet.

Figure 2.1 Contracts for a project that doesn't require augmentation



Source: AEMO Website, Stage 4 - Contracts

Figure 2.2 Contracts structure for a contestable project requiring augmentation



Source: AEMO Website, Stage 4 - Contracts

82. Therefore, the process of connecting generation to the transmission system in Victoria is more complex than in other NEM regions. It is also more likely to face local community concern and opposition because of the dense population and more intensive land use. The Victorian transmission system cannot currently connect sufficient renewable generation capacity to meet the Commonwealth and Victorian government decarbonisation targets. The ability to connect in the future for most generation developments will depend on the effective development of the renewable energy zones to provide adequate transmission capacity to connect and transmit the renewable energy to consumers.
83. While the connection process is complex, the proposed transaction is unlikely to exacerbate these factors. AusNet remains as the incumbent DTSO, and the connecting generator has the right to contract AusNet or another party to provide the connection assets. AEMO continues to manage the process for augmenting shared transmission assets based on tendering for the most cost-effective solution.

2.5 Question 5 and response

2.5.1 Question 5

84. Do you agree with the opinions expressed in the Houston Kemp Report in relation to the effectiveness of the legislation and regulations (including ring-fencing) that apply to electricity or gas markets in Australia, and the operation of those markets? Specifically:
- a) Are there forms of conduct available to a transmission or distribution network that would not be captured, or effectively controlled by, the existing regulations and that would allow the network operator to confer an advantage to a related generation or retail entity?
 - b) Generators might be able to rely on 'dispute resolution procedures', but will the possibility/likelihood that they will need to be relied on act as a deterrent to new generators?

2.5.2 Response

85. The NER provisions and AER Ring-fencing guidelines outlined by Houston are effective if the transmission and distribution networks fully comply.
86. The Houston Kemp Report²⁵ argues that networks will comply because the risk of being caught is high, and the consequential financial and reputational penalties are a deterrent. However, if incentives to not comply exist, and the benefits of not complying outweigh the risk of being caught, the legislation and regulations may not be sufficient.
87. If the proposed transaction occurs, it is reasonable to assume incentives to favour affiliate generators and retail entities will exist because of the financial benefits that would flow to the integrated entities shareholders where favouritism is possible.
88. I also believe that the complexity of the processes and information asymmetry in favour of the networks result in some means of favouring affiliates not being easily discoverable.²⁶ Concerning connecting to transmission and distribution networks, networks regularly participate in connection processes, while generators and retailers, as individual entities, participate occasionally. The knowledge and experience advantage of networks about a process that has great complexity adds to the information asymmetry problems.
89. For example, an electricity or gas distribution network might inform a retail affiliate ahead of market, that network tariffs would fall in the next regulatory cycle. The retail affiliate could use this information to undercut competitors, continuing to price retail offerings on higher network tariffs. While the retail affiliates' actions would be transparent, they could be explained away as a marketing push to capture market share.

²⁵ For example, Houston, clauses 279 and 404

²⁶ For example, use of information about competitor plans to plan and develop networks such that they provide less favourable outcomes to the competitors and discrimination against competitor plant in relation to the timing and nature of planned network outages.

2.6 Question 6 and response

2.6.1 Question 6

90. Do you consider that the generators that will be seeking to access the transmission network in the foreseeable future are likely to be 'large and sophisticated'?

2.6.2 Response

91. The Houston Kemp Report²⁷ relies in part that generators seeking to access the transmission network in the foreseeable future are likely to be 'large and sophisticated'.
92. Many generators seeking access to the transmission network would be considered large and sophisticated²⁸. However, most future investments will likely be in renewable energy or energy storage. Some forms of renewable energy and storage have very limited (if any) economies of scale, and the knowledge barriers in acquiring and deploying the technologies are not high.
93. In my experience, some potential developers have modest financial resources and limited knowledge of the NEM arrangements when they commence work on developing a NEM project. Therefore, not all generators seeking access to the transmission network would be considered large and sophisticated.

2.7 Question 7 and response

2.7.1 Question 7

94. What, if any, practical steps do you consider could be taken to mitigate the risks of any of the conduct you have identified in question 1 from arising?

2.7.2 Response

95. Two additional steps could be taken to mitigate risk:
- a) While the combination of the NER, ring-fencing guidelines and Brookfield's undertaking, provide full separation of management and operations, there remains the possibility that employees of both AusNet and Origin could participate in short and long-term incentive schemes based on the performance of the upstream entity, which would depend in part on the performance of both AusNet and Origin.²⁹ The Undertaking could include a provision that precluded any employee, manager or Director of either AusNet or Origin from benefiting from any upstream performance scheme.

²⁷ For example, Houston, clauses 172, 197, 211, 218 and 241

²⁸ I have considered three factors when classifying a generator as large and sophisticated:

1. Large – sufficient financial resources to participate on equal terms with the integrated entity where disagreements or disputes arise.
2. Financially sophisticated
3. Knowledgeable about the NEM connection and operation, or have the resources to engage third parties that can provide the required knowledge.

²⁹ This could include a bonus scheme based on groupwide performance or employee share schemes or option grants in a listed parent entity. Brookfield Asset Management is listed on both the Toronto and New York Stock Exchanges.

- b) The second is to impose additional transparency obligations on Origin in any dealings with affiliated networks in relation to connection of generators. This provision aims to mitigate against Origin using confidential competitor information to engage in discrimination against them. This obligation would require Origin to publish information each time it applied to connect generation to affiliated electricity networks or updated a connection application. The requirements to publish would include:
- i) Location on the network
 - ii) Type (technology) and the size of facility to be connected
 - iii) Date of planned connection
 - iv) Where relevant, the pricing terms offered.

2.8 Question 8 and response

2.8.1 Question 8

96. Please provide any other information in relation to the Houston Report that you consider is important for the ACCC to consider in its assessment of the Proposed Acquisition, including identifying any particular opinions or conclusions expressed in the Houston Kemp Report with which you disagree.

2.8.2 Response

97. In clause 357 of his report, Houston gives the opinion in relation to the market definition for retail:

that the relevant retail electricity market for assessing the risk of foreclosure in this case is:

- a. the retail of electricity to small customers (comprising residential and small business customers in the NEM); and*
- b. the retail of electricity to large customers in the NEM.*

98. In clause 369, Houston states:

I take a conservative approach and define the geographic dimension of the electricity retail markets to be each of the regions of the NEM. This is a conservative approach because it considers separately the states in which Origin has its highest market share, rather than taking the average across states.

99. While most retailers operate in more than one NEM region, variations in spot prices and the need for hedging contracts referenced to each region in which a retailer operates, in my opinion limits the market definition to:

- a) the retail of electricity to small customers (comprising residential and small business customers in a NEM region)
- b) the retail of electricity to large customers in a NEM region.

100. As AusNet only has transmission and distribution assets in Victoria, the relevant market definition for retail of electricity would be limited to the two market segments in the Victorian region, not other NEM regions.



This appendix sets out the questions I was asked to respond to by the ACCC under section 90 (6) (d) of the ACT.

1. In what ways do you consider that entities that are vertically integrated in each of the following ways could engage in discrimination or other conduct that is adverse to competitors?
 - a) An electricity 'gentailer' (including embedded generation) integrated into each of:
 - i) transmission, distribution, and/or
 - ii) smart meter supply and installation services.
 - iii) A gas distributor integrated into retail.
2. In what ways does the ability of an upstream entity to control or influence a downstream entity (or vice versa), or the flow of information between them affect your views on potential discrimination expressed in question 1?
3. In respect of each potential form of vertical integration and type of discrimination outlined in response to question 1, what do you consider are the incentives for an integrated firm to engage in such discrimination and why do they arise?
4. What are some of the factors relating to the process for connecting to the Victorian transmission network that currently delay or deter new generation connections? Do you consider that the proposed transaction is likely to exacerbate any of these factors?
5. Do you agree with the opinions expressed in the Houston Kemp Report in relation to the effectiveness of the legislation and regulations (including ringfencing) that apply to electricity or gas markets in Australia, and the operation of those markets? Specifically:
 - b) Are there forms of conduct available to a transmission or distribution network that would not be captured, or effectively controlled by, the existing regulations and that would allow the network operator to confer an advantage to a related generation or retail entity?
 - c) Generators might be able to rely on 'dispute resolution procedures', but will the possibility/likelihood that they will need to be relied on act as a deterrent to new generators?
6. Do you consider that the generators that will be seeking to access the transmission network in the foreseeable future are likely to be 'large and sophisticated'?
7. What, if any, practical steps do you consider could be taken to mitigate the risks of any of the conduct you have identified in question 1 from arising?
8. Please provide any other information in relation to the Houston Report that you consider is important for the ACCC to consider in its assessment of the Proposed Acquisition, including identifying any particular opinions or conclusions expressed in the Houston Kemp Report with which you disagree.

References

ACCC. (November 2008). *Merger Guidelines*. ACCC.

AEMC. (30 May 2023). *National Electricity Rules Version 200*. AEMC.

AEMO. (2022). *Stage 4 - Contracts*. Retrieved from AEMO: <https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/participate-in-the-market/network-connections/victorian-transmission-connections/stage-4-contracts>

AER. (March 2023). *Ring-fencing Guideline Electricity Transmission Version 4*. AER.

AER. (November 2021). *Ring-fencing Guideline Electricity Distribution Version 3*. AER.

Essential Services Commission. (2023). *Electricity Distribution Code of Practice*.

Houston, G. (8 June 2023). *Expert report of Greg Houston*. Houston Kemp.

Melbourne

Suite 4, Level 19; North Tower
80 Collins Street
Melbourne VIC 3000 Australia
+61 3 8650 6000

Canberra

Level 6, 54 Marcus Clarke Street
Canberra ACT 2601 Australia
+61 2 6103 8200

ACIL Allen Pty Ltd
ABN 68 102 652 148

acilallen.com.au

Sydney

Suite 603, Level 6
309 Kent Street
Sydney NSW 2000 Australia
+61 2 8272 5100

Perth

Level 12, 28 The Esplanade
Perth WA 6000 Australia
+61 8 9449 9600

Brisbane

Level 15, 127 Creek Street
Brisbane QLD 4000 Australia
+61 7 3009 8700

Adelaide

167 Flinders Street
Adelaide SA 5000 Australia
+61 8 8122 4965