NSW Department of Planning, Industry and Environment

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10 September 2021

Submission to NSW Department of Planning, Industry and Environment Long Term Energy Service Agreement Design Consultation paper

The Australian Energy Council (AEC) welcomes the opportunity to make a submission to the NSW Department of Planning, Industry and Environment's (DPIE) Long Term Energy Service Agreement (LTESA) Design Consultation paper (Consultation paper).

The AEC is the industry body representing 20 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the majority of the electricity in Australia, sell gas and electricity to over ten million homes and businesses, and are major investors in renewable energy generation.

Introduction

The NSW Electricity Infrastructure Investment Act 2020 (the Act) is prescriptive and requires at a minimum the construction of 12GW of renewable generation and 2GW of long-term storage (LTS) by 31 December 2029.[1] The AEC acknowledges the work of the NSW DPIE to develop a scheme to achieve this within the constraints of the Act and the comprehensive consultation it has undertaken to date.

In essence the scheme proposes to reduce the risk for proponents by transferring risk to NSW electricity consumers. The AEC has concerns with the proposals put forward in the Consultation paper:

- It is complex and likely to distort the functioning of the market.
- The LTESAs provide protection to investors against low prices but will prevent consumers benefiting from low prices.
- It provides an enormous risk transfer to NSW electricity users (and possibly taxpayers) over a very long time period.
- There is likely to be scope for participants to develop complex structures and arrangements in order to maximise value from the scheme in unintended ways.
- The ultimate outcome for NSW electricity consumers is dependent on electricity prices over a 20-year time horizon.

As noted in its April 2021 submission, the AEC believes Long Term Energy Service Agreements (LTESAs) should be introduced in a way that causes minimum distortion on the market. Put-option style arrangements are problematic as they inefficiently distort behaviours.[2] For example:

- discourage mothballing/closure during periods of oversupply;
- incentivise the maximisation of energy output over time over the provision of capacity at the time of most value to the customer (eg, high temperature tolerance of wind farms); and
- change the incentives for the resources to contract with retailers.

Furthermore, in the AEC's 9 June 2021 submission to the Energy Security Board (ESB) addressing the ESB's question: "Which financial principles are most important in establishing means to integrate jurisdictional investment schemes with market arrangements as smoothly as possible?". The AEC noted:

[1] https://legislation.nsw.gov.au/view/whole/html/inforce/current/act-2020-044, Division 2 Clause 44,
[2] https://www.energycouncil.com.au/media/gzfkq5o5/20210521-nsw-roadmap-tranche-2-regulations.pdf

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"There is considerable danger in schemes that remove the risk as, at worst, it can interfere with efficient dispatch and create system security issues."[3]

The AEC maintains its view that a less distortionary form of technology support would be direct financial support unlinked to market conditions (eg, a one-off grant or payment for energy produced over time). This would remove all ongoing risk for the customer and leave the technology otherwise fully exposed to NEM market forces with the behavioural benefits that that provides.

Nevertheless, the AEC recognises that the legislation anticipates a form of option and the discussion below attempts to suggest ways in which this constraint can be met whilst causing the least possible distortion and uncertain customer liability.

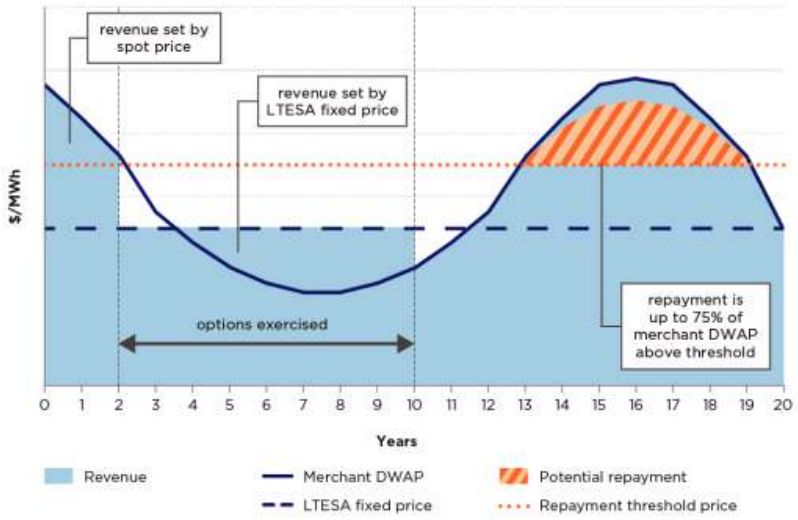
Generation LTESAs

The Consultation paper sets out a proposal for put options on swaps (swaptions) on 'black' energy to be provided to generation proponents under LTESAs.[4] From an option trading perspective NSW electricity consumers will be exposed to a very large short gamma position (ie, short volatility) for 20 years and receive no premium for holding this risk. There are many historical examples of the potential pitfalls of such circumstances, such as Long Term Capital Management (LTCM) which held large short volatility positions.[5]

The oversupply of generation created by the scheme is likely to exert downward pressure on wholesale prices, so the government should contemplate a realistic scenario of the simultaneous exercise of many, and potentially all, of the put options. In addition to this, after exercise, the government will attempt to on-sell the put options into a contract market that is likely to become oversupplied by the putting itself.

While there are partial clawback provisions these only have the potential to apply following the exercise of an option. The Consultation paper sets out an example of a project that exercises its puts in years two through to 10 and then has some revenue clawed back in later years (see Figure 1). If this situation was reversed and the project is profitable in the early years and then exercises its puts in each of the last 10 years of the project's life, the AEC is unsure how any clawback would work.

Figure 1 Generation LTESA illustrative example[6]



[3] https://www.energycouncil.com.au/media/ynoiqhw5/aec-response-to-p2025-market-design-consultation-paper.pdf

[4] Black energy refers to the price of energy that is settled by AEMO. It is referred to as 'black' because it is energy from any source of generation and excludes any environmental certificates/subsidies.

[5] Roger Lowenstein, *When Genius Failed: The Rise and Fall of Long Term Capital Management*, 2002. While LTCM had large bets on the convergence of bond spreads it also had very large short volatility positions as part of this strategy.

[6] Consultation paper, p3.

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The AEC notes that Division 3 clause 48 of the Act specifies that LTESAs must contain options. See excerpt below:

(2) An LTES agreement must—

(a) provide for the construction and operation of the infrastructure to which the agreement relates if the LTES operator wishes to exercise an option under the agreement, and

(b) divide the term of the agreement into periods of no less than 1 financial year, and

(c) give the LTES operator an option to exercise a derivative arrangement, and

(d) require notice to be given to the scheme financial vehicle of a proposal to exercise an option that is not less than the minimum notice period prescribed by the regulations, and

(e) provide for the repayment to the scheme financial vehicle of amounts paid because of the exercise of an option in certain circumstances set out in the agreement,

The legislation does not appear to specify exactly what type of option needs to be issued. There are many other types of options that could be issued to reduce risk for generation proponents. For example, a proponent could be issued with a digital (or binary) option. The option would be exercised when certain criteria have been met. This is a common approach for weather derivatives. For example, inclement weather (eg, precipitation) digital options for large multi-day outdoor events where there is a clear correlation between attendance levels (ie, event revenues) and the weather.

These types of options could have payouts that are not as closely linked to electricity prices and may involve one off grants, equity injections, access to below market rate debt finance, debt support, etc. It may be cheaper for the NSW government to utilise its AAA credit rating and low interest rate environment.

Another alternative that could reduce distortion in the 'black' market could involve options applied to the value obtained from environmental certificates, such as Large Generator Certificates (LGCs), Australian Carbon Credit Units (ACCUs) and any new scheme that may be introduced (eg, a Guarantee of Origin scheme as proposed by DISER). This would effectively quarantine the black energy market from the scheme and retain its beneficial behavioural elements. It would also be much simpler for the government and less prone to complex structuring arrangements.

The AEC considers it would be worthwhile exploring other approaches to providing derivative based risk underwriting for proponents. Particularly, alternatives that are less likely to potentially distort 'black' energy market price outcomes and reduce the uncertainty surrounding financial exposure of NSW electricity consumers under the proposed model.

Other state schemes

The Consultation paper refers to other jurisdictional schemes that rely on DNSP customers to fund them.[7] These schemes have often led to poor outcomes for electricity customers (and sometimes taxpayers). For example, the Queensland Solar Bonus Scheme added significantly to DNSP customer electricity costs. As a result of this the Queensland government decided to take the costs of this scheme back onto the state's balance sheet for three years (2017/18 to 2019/20) at an estimated cost of $770 million.[8]

The NSW government should also acquaint itself with the Australian Capital Territory (ACT) large scale renewable scheme whose liabilities upon customers have rapidly increased this year and are likely to further do so.[9] Figure 2, which is from the previously referenced ENA article illustrates this quite clearly. Within the space of one year, the jurisdictional scheme costs are the largest component of ACT residential network charges and account for the bulk of the 38% increase in residential network bills.

[7] Consultation paper, p13.
[8] Powering Queensland, https://www.epw.qld.gov.au/__data/assets/pdf_file/0014/16016/powering-queensland-plan.pdf
[9] https://www.energynetworks.com.au/news/energy-insider/2021-energy-insider/this-price-is-definitely-not-right/

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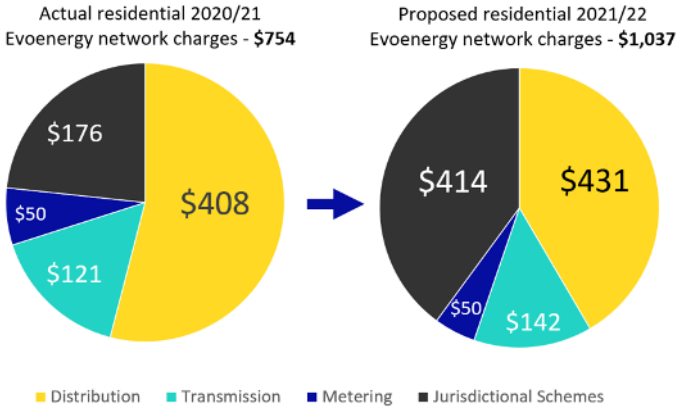
Figure 2: Changes Evoenergy (ACT) residential network charge components



Long Term Storage (LTS)
While *prima facie* the annuity top-up option appears attractive, the AEC is mindful that this approach has the potential to reduce the incentives for an LTS project to maximise profits.[10] The AEC looks forward to further releases from NSW DPIE as to how to mitigate this risk.

The capital costs of 2GW of LTS will be extremely large. The AEC considers large-scale LTS such as pumped-hydro-electric storage (PHES) may be the type of investment that requires the state to be the ultimate financier for the following reasons:

- the level of capex required;
- project cost uncertainty (eg, geotechnical);
- long asset life (50 plus years); and
- project returns are exposed to a volatile and rapidly evolving electricity market.

In contrast, battery LTS projects do not have the same capital requirements, project cost uncertainties and duration risk associated with large PHES projects. Accordingly, the level of state support described above would not be necessary for battery based LTS projects.

Conclusion
The AEC is supportive of NSW DPIE's attempts to reduce customer risk but believes the current proposals:

- expose NSW electricity customers to excessive risk and uncertainty; and
- are likely to distort the market.

The AEC would like NSW DPIE to explore other approaches (within the constraints of the Act) to facilitate the required generation and LTS investment.

Any questions about our submission should be addressed to Peter Brook, by email to peter.brook@energycouncil.com.au by telephone on (03) 9205 3103.

Yours sincerely,

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[10] Consultation paper p34.