

26 May 2017

Government of South Australia
Lodged Electronically

RE: Clean Energy Council response to the draft regulation to introduce an Energy Security Target in South Australia

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia. We represent and work with hundreds of leading businesses operating in solar, wind, energy efficiency, hydro, bioenergy, energy storage, geothermal and marine along with more than 4,000 solar installers. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The CEC understands that the South Australian government has committed to implementing an Energy Security Target (EST) with the intent to retain the existing gas generation fleet in the short term and bring new gas generation online in the medium term. It intends for gas generation to continue to supply between 40 and 50 per cent of the state's electricity demand needs for the foreseeable future.

CEC members have raised concerns about the proposed EST framework which are discussed in more detail below. At a high level, the scheme as designed will likely fail to meet its objectives because:

- It will create an effective cap on the volume of renewable energy that can be generated within the state, thus ensuring that higher marginal cost gas generation cannot be displaced by lower marginal cost renewable generation. Thus, it effectively restricts fuel source diversity in the state and inhibits the resulting downward pressure on wholesale electricity prices.
- While not explicitly preventing renewable energy generators from participating, the narrow scope of eligibility implicitly excludes them. It will reduce the appetite of South Australian retailers to invest in renewable energy generation within the state, and create sovereign risk for those projects that are designing and deploying innovative solutions to meet the particular needs of the South Australian electricity market.
- It is ostensibly targeted at 'energy security', while defining no measureable outcomes with regards to the security of the South Australian power system. Instead, it presupposes that this engineering outcome will be provided by an economic incentive that is aimed at increasing the energy generated by conventional generation technologies. The scheme is not clearly connected to the material energy security needs of the South Australian electricity system.

- The engineering outcome of power system security posited by the scheme is expected to be achieved through the wholesale electricity market, which is an approach identified as unworkable and inefficient by the Australian Energy Market Commission.
- Rather than promoting innovation from new technologies that can deliver the energy security needs of the state's electricity system, the EST takes a backwards view that security can only be provided by conventional synchronous generation technologies. Opportunities for innovation in other supportive technologies will be restricted as a result.
- It is likely to increase costs for consumers because it implicitly focusses on gas generation. The EST aims to manipulate electricity market outcomes by dispatching higher marginal cost generation ahead of lower marginal cost imports. Any resulting generator revenue shortfalls would be borne by consumers through the certificate scheme, with prices set in a market that has a demonstrated competition deficit.
- Competition amongst the existing gas generators has been shown to be restricted. Increasing the volume of energy generated by these market participants would continue to restrict competition, rather than increase it.
- Competition for scarce gas supply will increase, which may impact large gas customers that depend on reasonably priced gas supply for their operations, and continued contribution to the South Australian economy.

Given the above, the CEC's view is that the EST regulation as drafted would restrict competition and deter renewable energy deployment in South Australia. The flow on effect of this, along with the potential impacts on the gas market is likely to have broader ramifications for the South Australian economy, including a reduction in economic development and a decline of jobs in regional areas.

The CEC notes that the South Australian government has not demonstrated that these serious factors would be addressed by the EST. As described later in this submission, it is incumbent on the government to demonstrate to consumers that the EST would deliver its stated objectives to *'increase competition, put downward pressure on prices and provide more energy system stability'* on a cost-neutral basis as claimed.

Despite these concerns, the CEC recognises the government's dedication to a scheme such as this. The following recommendations are aimed at increasing the scheme's chances of delivering its stated objectives. They are supported by the following submission which also includes proposed changes to the draft regulation that implement the recommendations.

Recommendation 1: The South Australian government releases detailed modelling of the target to demonstrate how it delivers an efficient level of energy security, while addressing the issues raised by the AEMC in relation to relying on generator dispatch to deliver security services.

Recommendation 2: Amend the scope of eligibility for the EST to permit generation technologies that may incorporate mechanical inertia from ancillary equipment such as synchronous condensers or synthetic inertia such as Fast Frequency Response (FFR) from sources such as energy storage, wind turbines or demand response to be eligible, irrespective of generator registration category.

Recommendation 3: The South Australian government should release detailed economic modelling of the EST to demonstrate how it increases competition in South Australia and addresses existing market power concerns at a net zero cost to consumers. This study should also consider and identify the impact the EST will have on gas customers across the state.

Recommendation 4: The EST should promote competitive market outcomes by extending the scope of eligibility to other forms of generation or energy storage that can address price volatility concerns, irrespective of generator registration category.

Recommendation 5: The South Australian government should reinforce its policy objectives of supporting renewable energy development in the state, made in recognition of the broader economic benefits of these investments, by making the necessary changes to the draft regulation.

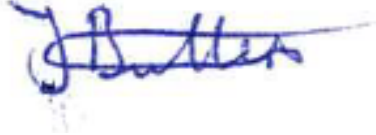
Recommendation 6: The South Australian government should provide the industry with the appropriate level of analysis to consider the implications of this major intervention in the state's electricity market. Due process expects that at least 2-3 months would be required for an intervention of this scale. The scheme's implementation should be delayed in the absence of this information and timeframe.

Recommendation 7: The Essential Services Commission of South Australia should report on the success of the scheme in delivering its stated objectives and undertake a review on an annual basis. This review should compare the schemes objectives against those enshrined in other legislative instruments, such as the National Electricity Rules, along with the scheme's outcomes as compared to those achieved in the absence of the scheme. This review should include a process to recommend the abolition of the scheme.

The EST is a major intervention planned to lock in gas arrangements for the long-term. Presupposing that energy security will be achieved concurrently through this narrow view is likely to focus on the wrong energy mix and restrict innovation in the diverse solutions to energy security that will be needed in the future. It overlooks the broader needs of a secure future power system which include ongoing and continual innovation to deliver the right outcomes. The opportunity costs for South Australia will be significant.

The remainder of this submission provides a more detailed account of our concerns and recommendations. Please do not hesitate to contact the undersigned or Emma White (03 9929 4107) for any queries or comments.

Sincerely,



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Assessment of the scheme's potential to 'provide more energy system stability'

As already identified by AEMO and the AEMC, the engineering outcome for energy security purposes is the provision of minimum baselines of fault level or mechanical inertia at all times, while allowing scope for the introduction of new technologies like energy storage or wind turbines to provide fast frequency response (FFR). The EST fails to provide any comparable outcome for South Australian consumers.

Instead, the EST proposes to link the provision of these essential grid services to AEMO's dispatch system. However, there is no guarantee that the security of the power system in South Australia would be delivered through this approach.

The AEMC are currently undertaking a review of the System Security Market Frameworks in the NEM and has considered the delivery of fault level or inertial services through market dispatch arrangements (as posited by the EST). The AEMC concluded that providing these services through the wholesale market would present potentially insurmountable challenges including:

- Failing to provide investment certainty for new plant to deliver the required level of inertia;
- Major complexities with dispatch arrangements due to the need for advance notice of the need for a generation to run, and;
- The requirement for additional market arrangements to dispatch high price generators ahead of low price generators, basically overriding the productive efficiency constraints built into the NEM's economic dispatch system because constraining on high SRMC generation would have the effect of allocating market power to them otherwise¹.

The AEMC have concluded that separating the functions of power system security services (such as inertia, FFR and fault current) from energy dispatch is the preferred solution. The model proposed is to place an obligation on transmission businesses to deliver these services², which would be designed with an 'outcomes-focussed' approach. The EST is instead 'input-focussed'.

Given that the EST presupposes an engineering outcome and is inconsistent with the AEMC's direction for delivering the engineering outcomes necessary for power system security, the level of engineering analysis and consideration of these issues in the design of the EST is questionable.

¹ AEMC, System Security Market Frameworks Review, Directions Paper, p. 34.

² AEMC, System Security Market Frameworks Review, Directions Paper, p. ii.

Recommendation 1: *The South Australian government releases detailed modelling of the target to demonstrate how it delivers the appropriate level of energy security while addressing the issues raised by the AEMC.*

Australia's electricity generation mix is ageing. Electricity network planning has historically relied on conventional synchronous generation technologies to provide power system security services. This is the paradigm on which the EST appears to be founded. However, as renewables reach a larger market share this paradigm must change to recognise that those legacy generating units are already old and may not be providing the same services in the medium to long term. The mix of technologies that provide inertia, FFR and fault current must grow into a more diverse portfolio of solutions.

The EST presupposes the outcome of energy security by locking in the existing gas generation fleet. It therefore fails to look forward or plan for the long-term where more diverse solutions will be needed to operate a low emissions power system. It is this diversity that will be essential for energy security in the coming decades. However, the EST's restrictive scope intends to limit this diversity and will ultimately reduce South Australia's energy security in the long term.

There are alternative technologies available today that can provide equivalent system security services. A scheme designed to deliver a secure future energy system in South Australia would look beyond conventional generation technologies and focus on the necessary power system security outcomes. The narrow definition of eligible technologies under the scheme will lead to a continued reliance on conventional technologies and a reduction in innovation.

Recommendation 2: *Amend the scope of eligibility for the EST to permit generation technologies that may incorporate mechanical inertia from ancillary equipment such as synchronous condensers or synthetic inertia such as Fast Frequency Response (FFR) from sources such as energy storage, wind turbines or demand response to be eligible, irrespective of generator registration category.*

Given that the EST takes a backward view of energy security and provides no measurable parameters with regard to this outcome, its scope appear to be limited to economic objectives. These are explored below.

Assessment of the scheme's potential to 'increase competition, put downward pressure on electricity prices'

The consultation paper suggests that the EST would increase competition while it also promotes participation by the state's existing gas generation fleet from the outset. The stated benefit of encouraging local eligible generation to generate more of the state's energy is increased competition.

The wholesale market in South Australia is dominated by three factors: wind generation, gas generation and imports from Victoria. Wind generation is highly competitive with a very low energy cost. Therefore, it should be expected that gas will play more of a role during periods of low wind generation, in competition with lower cost imported energy. The effect would be for higher marginal cost gas to displace lower marginal cost imports, while the 'energy security certificate' price is expected to subsidise the wholesale market revenue shortfall for those gas generators that choose to operate in low wind generation conditions. The price paid by retailers for these certificates would be passed on to electricity customers, placing upward pressure on electricity bills.

The level of bill increase will depend on the level of competition across South Australia's gas generators. The Frequency Control Ancillary Services (FCAS) market in South Australia is dominated by these same generators and experience has shown that competition is ineffective in delivering frequency control to South Australian customers at a reasonable price. These arrangements have cost South Australian consumers tens of millions over the last 18 months. The fact that the Australian Energy Regulatory has undertaken no less than 12 inquiries into FCAS prices exceeding \$5000/MW in the same period³ should serve as a grave warning on market power issues with the existing gas generation fleet.

The EST's objective to increase competition is likely to be challenged and could potentially increase market power for some participants who may have incentives to withhold supply of certificates to influence the certificate price. Overall, on a productive efficiency basis, electricity prices should be expected to increase rather than decrease as proposed.

Given the major risks associated with market power in South Australia, it is appropriate that retailers are accountable for the costs of the energy security contracts that they commit to. Alternative proposals, such as recovering costs from renewable generators would further increase market power concerns. Consumer pressure is the only available measure that can hold retailers to account for the cost of the energy security certificates they are procuring (potentially from their own generating plant).

Competition concerns should also be considered in the gas market, where large gas consumers are likely to face increasing pressure as capacity is contracted to generators ahead of customers. These broader economic issues have not been clearly investigated.

The existential aim of the EST is to provide long-term certainty to allow gas generators to sign long-term contracts for fuel, and retailers to sign long-term contracts for electricity. While this may have some longer-term suppressive effect on wholesale prices it would also have

³ <https://www.aer.gov.au/site-search/FCAS%20prices%20above%20%245000%5CMW>

the effect of locking in the existing gas generation fleet for a longer period, thus undermining the ability of South Australia to achieve its 'Target Zero' goals⁴.

Recommendation 3: *The South Australian government should release detailed economic modelling of the EST to demonstrate how it increases competition in South Australia and addresses existing market power concerns at a net zero cost to consumers. This study should also consider and identify the impact the EST will have on gas customers across the state.*

A further objective of the scheme is to reduce volatility in the wholesale market by incentivising gas generation to generate for short times of high prices, but where it is currently uneconomic for them to do so. As the South Australian government would be aware from history, smaller non-scheduled generators can play a role on provide peaking capacity when needed during high price events thus assisting in securing the state's energy supply and providing competition that reduces volatility.

Battery storage can also achieve the outcome of reducing volatility and increasing contract liquidity. However, the scope of the EST eligibility is restricted to scheduled generation, presupposing that only gas generation would reduce volatility. This definition differs from the consultation paper that suggests that generation which can be 'dispatched on command' would be eligible.

The draft regulation therefore runs contrary to its objectives of increasing competition by promoting one form of solution to a volatile market over another. The result will be reduced entry from prospective new competitors (reduced productive efficiency) and a reduction in innovation (reduced dynamic efficiency) in the South Australian electricity market.

Recommendation 4: *The EST should promote competitive market outcomes by extending the scope of eligibility to other forms of generation or energy storage that can address price volatility concerns, irrespective of generator registration category.*

The EST would also impede the development of competitive renewable energy projects in South Australia. Firstly, because South Australian retailers would have an incentive to protect gas assets they own or have contracted with, reducing their interest in investing in renewable energy assets in South Australia. Secondly, because those renewable generators currently investing in developing innovative solutions to deal with characteristics in the South Australian market (such as volatility) will face sovereign risk to their investments and will become less likely to invest in innovation, or the state if they are looking at multiple opportunities. Again, the EST would have a negative effect on dynamic efficiency.

⁴ <http://www.climatechange.sa.gov.au/target-zero>

Impacting on renewable energy investment in this way will have effects beyond the electricity market. Construction and operation jobs would be impacted in regional areas. In addition, CEC members are currently building the business case for equipment supply chains from local manufacturers to major renewable energy infrastructure projects in the state. These opportunities will be put at risk by narrow scope of the EST.

Recommendation 5: *The South Australian government reinforce its policy objectives of supporting renewable energy development in the state made in recognition of the broader economic benefits of these investments, by making the necessary changes to the draft regulation.*

Beyond considering the scheme's objectives, this process highlights a number of other issues.

Inadequate due process

The EST consultation process has not provided sufficient time or due process for the market to consider the scheme's impacts, properly interrogate the assumptions that underpin it or to adjust investment strategies around the changed market conditions. The South Australian government has not released any modelling to demonstrate that the EST will achieve its stated objectives. As highlighted above, success appears unlikely with the current draft.

Concurrently, the South Australian government has suggested that the scheme will not affect renewable energy investments in South Australia, would have a net zero impact on power prices in the state and therefore assumedly have no impact on jobs and investment in the state. It is incumbent on the government to demonstrate that these outcomes should indeed be expected from the EST.

Recommendation 6: *The South Australian government should provide the industry with the appropriate level of analysis to consider the implications of this major intervention in the state's electricity market. Due process expects that at least 2-3 months would be required. The scheme's implementation should be delayed in the absence of this information and timeframe.*

Regular reporting and review of the scheme

Given the dynamic nature of the changing energy market and policy landscape the appropriate approach to implementing a scheme such as the EST would include annual reviews of the need for this scheme on an ongoing basis. These reviews would include considering the influence of national policy mechanisms or those implemented in the National Electricity Rules that deliver the intended outcomes of the EST.

Recommendation 7: *The Essential Services Commission of South Australia should report on the success of the scheme in delivering its stated objectives, and undertake an annual review of the scheme. This review should compare the schemes objectives against those*

enshrined in other legislative instruments, such as the National Electricity Rules, along with the scheme's outcomes as compared to those achieved in the absence of the scheme. The review should include a process to recommend the abolition of the scheme.

Responses to consultation questions

The following responses are provided to the Consultation Paper's specific questions:

1 – Transparency

The proposed scheme would not provide sufficient information for customers since the draft regulation provides South Australian consumers with no insights into whether the scheme is achieving its objectives at all. In order to provide sufficient transparency ESCOSA should report quarterly on the impact of the scheme with regards to

- 1) Its influence on South Australian wholesale electricity prices and consumer electricity bills; and
- 2) The increased demand from gas due to the scheme and subsequent impact on other gas customers; and
- 3) The scheme's benefit with regards to the security of the South Australian power system; and
- 4) The volume of certificates purchased by eligible retailers from ESCOSA at the cap price.

In addition to the quarterly report, ESCOSA should undertake an annual review of the scheme in the first quarter of the financial year with an aim to consider

- 1) Whether other legislative instruments such as the National Electricity Rules include the scheme's stated power system security objectives; and
- 2) Whether the scheme is delivering equivalent objectives and the resulting cost to consumers of doing so; and
- 3) Whether the scheme should be continued beyond the current financial year.

2 – ESCOSA Powers

It is not clear that ESCOSA has a shortcoming in this regard.

3 – Evidence for verification of a certificate

Certificates should include the strike price, as this would provide ESCOSA with sufficient data to demonstrate that the scheme is cost-neutral, as suggested by the South Australian government.

4 – Specific changes suggested for the draft regulation

The following changes to the draft regulation will have to be made in order to address the issues raised above and deliver the stated objectives of the scheme.

	Suggested change	Reasoning
1	44EB(1) <i>Fast Frequency Response</i> means <u>a controlled response from an asynchronous generator or device triggered in response to a rapidly changing frequency where AEMO has deemed that such a response can support real inertia.</u>	Creating an opportunity for innovative measures to support the security of the power system, to the degree that AEMO has agreed that such solutions substitute conventional solutions.
2	44EC(1)(a) is <u>can demonstrate controllable output from a scheduled generator (within the meaning of the National Electricity Rules) or from an energy storage system deployed in conjunction with any other generator licenced by the Commission; and</u>	The clause needs to be updated to allow participation by competitive renewable energy generators and energy storage sources that can deliver on the objectives of reducing volatility in order to support the objectives of the scheme.
3	44EC(1)(b) provides the following energy security services to the State's power system: (i) fault current; <u>and</u> (ii) real inertia; or <u>(iii) fast frequency response</u>	The clause is unnecessarily restrictive for the achievement of power system security services. Allowing alternative solutions which provide innovative system security services to enter the market in time, with AEMO's support, will increase competition as proposed by the scheme.
4	44ED(4) A certificate must contain— (a) the date on which the eligible electricity to which the certificate relates was generated; and (b) the eligible energy source from which the eligible electricity was generated; and (c) the date on which the certificate was created; and (d) <u>the price at which the certificate was traded; and</u> <u>(e) any other information specified by the Commission.</u>	ESCOSA requires information on the strike price for certificates such that it can demonstrate that the EST is achieving its objective of placing downward pressure on power prices.

5	<p><u>44EK</u></p> <p><u>(4) The Commission must, within 3 months from commencement, and then at 3 month intervals thereafter publish a report assessing the previous three month period (reporting period) on—</u></p> <p><u>(a) the average price for traded electricity security certificates during the reporting period; and</u></p> <p><u>(b) the volume of electricity security certificates procured from the Commission during the reporting period; and</u></p> <p><u>(b) the impact of this regulation on wholesale electricity prices during the reporting period; and</u></p> <p><u>(c) the impact of this regulation on consumer bills for during the reporting period, and over the life of the scheme to date; and</u></p> <p><u>(d) the increase in gas demand, and resulting impact on gas availability as a result of the regulation, during the reporting period; and</u></p> <p><u>(e) the power system security benefit that the scheme has delivered during the reporting period.</u></p>	<p>The draft regulation has no formal reporting on the scheme’s objectives of increasing competition, reducing prices and increasing energy security in the state. Consumers should be provided with evidence that the scheme is delivering these objectives at regular intervals on an ongoing basis.</p>
5	<p><u>44EK</u></p> <p><u>(5) The Commission must, within 3 months from commencement, and then annually thereafter undertake a review in consideration of the Commission’s objectives, and publish a report on—</u></p> <p><u>(a) the efficacy of this regulation in comparison to other legislative instruments that deliver equivalent power system security outcomes and;</u></p> <p><u>(b) the total cost to consumers of this regulation in comparison to to other legislative instruments that deliver equivalent power system security outcomes and;</u></p> <p><u>(c) whether this regulation is delivering the stated outcomes of increasing competition, reducing consumer costs and providing more energy system stability and;</u></p> <p><u>(d) whether this regulation should be terminated at the end of the current financial year.</u></p>	<p>ESCOSA should be provided an obligation to review the regulation annually with an aim to consider the ongoing need for the regulation and potentially recommend its termination if other legislative instruments deliver the stated objectives of the regulation.</p>

