



Amendments of the *Electricity (General) Regulations 2012* to establish a new planning and forecasting function

Consultation Paper

December 2023

Department for Energy and Mining

Level 4, 11 Waymouth Street, Adelaide

GPO Box 320, Adelaide SA 5001

Phone +61 8 8463 3000

Email dem.consultation@sa.gov.au

Web www.energymining.sa.gov.au



© Government of South Australia 2023

With the exception of the piping shrike emblem and where otherwise noted, this product is provided under a [Creative Commons Attribution 4.0 International Licence](https://creativecommons.org/licenses/by/4.0/).

Disclaimer

The contents of this report are for general information only and are not intended as professional advice, and the Department for Energy and Mining (and the Government of South Australia) make no representation, express or implied, as to the accuracy, reliability or completeness of the information contained in this report or as to the suitability of the information for any particular purpose. Use of or reliance upon the information contained in this report is at the sole risk of the user in all things and the Department for Energy and Mining (and the Government of South Australia) disclaim any responsibility for that use or reliance and any liability to the user.

Acknowledgement of Country

As guests here on Kaurna land, we acknowledge everything this department does impacts on Aboriginal country, the sea, the sky, its people and their spiritual and cultural connection which have existed since the first sunrise. Our responsibility is to share our collective knowledge, recognise a difficult history, respect the relationships made over time, and create a stronger future. We are ready to walk, learn and work together.



Contents

SUMMARY OF PROPOSAL	4
BACKGROUND	4
THE PROPOSED NEW FUNCTION	5
Alternative options that the state government considered	6
How will the new function operate?.....	6
Benefits of the new function	7
PROPOSED REGULATIONS	8
MAKING A SUBMISSION	9
Questions about the consultation.....	9

Summary of Proposal

The state government is seeking community and stakeholder feedback on its proposed *Electricity (General) (Planning and Forecasting Function) Amendment Regulations 2023*. The regulations amend the *Electricity (General) Regulations 2012*, to establish a state-based electricity planning and forecasting function for the Technical Regulator (the new function).

Under the proposed new function, the Technical Regulator will:

- undertake planning and forecasting activities to assess the least cost pathway for the development of the South Australian power system. The pathway will focus on ensuring electricity supply capacity can meet demand reliably and securely while also meeting South Australia's carbon emissions targets.
- regularly report on this least cost pathway. This reporting will be known as the South Australian Electricity Development Plan (the Plan). The Technical Regulator will provide versions of the Plan for the Minister and develop and publish separate public versions of the Plan. The information contained in the Plan will inform and support power system decision making by regulatory and electricity industry participants.
- provide advice to the Minister on the development of the South Australian power system, at the Minister's request, or on their own initiative. For example, the Technical Regulator may become aware of new information that impacts the development of the South Australian power system, that they think is necessary to advise the Minister on.

Background

For almost two decades, South Australia has been at the forefront of the global energy transition. We have been recognised as an international renewables powerhouse, for shifting our energy source from one per cent to more than 70 per cent renewable energy in little more than 15 years.

Traditional one-way power systems delivering electricity to homes and businesses are transforming to modern, two-way systems. With these two-way systems, people can now consume, generate, export and trade energy.

New technologies such as rooftop solar photovoltaic systems, batteries, electric vehicles, smart meters, and smart appliances continue to be developed and installed on an ever-increasing basis in South Australia. Our electricity grid is thus undergoing significant change.

Now, the state is in the enviable position of sometimes having more energy in the grid than the state can consume. The state government is exploring and initiating various methods and policies so that energy can be harvested and stored, and dispatched at later times when energy demand exceeds generation from renewables.

Work done to date, both in South Australia and beyond, provides a valuable first step for further policy development.

As we continue our journey to achieving 100 per cent net renewables by 2030 and net zero carbon emissions by 2050, significant co-ordination of the state's energy market will be required. This co-ordination has not always been evident at the national level. The state government and other industry participants are facing complex challenges and decisions. The energy market is going through a rapid transition to a carbon-constrained future. There is significant capacity of high emission power plants exiting the market and needing to be replaced. This supply will have to be based on renewables and

storage. It will also have to be based on other dispatchable lower emission generation such as gas-powered, diesel-powered, and hydrogen-powered.

Variable renewable energy power plants will provide most energy in the future. This is changing infrastructure needs in South Australia and across the National Electricity Market (NEM).

Additionally, there is uncertainty around electricity demand and the potential impact, timing and scale of electrification, customer investment in distributed energy resources and load growth (for example, from the development of the hydrogen industry and growth in sales of electric vehicles).

In late 2022, the Premier of South Australia established the National Energy Crisis Committee of Cabinet (NECCC) and the National Energy Crisis Taskforce (NECT). The NECCC and NECT are investigating options to minimise forecast energy price increases in South Australia.

The NECCC has commissioned work that has highlighted that managing the transition of electricity supply towards net zero by 2050, while maintaining the security, reliability, and affordability of electricity, remains a challenge. This work asserted that “*South Australia needs to be certain that the State will have sufficient reliable capacity and energy to meet the demand of consumers under all circumstances*”.

Compounding this challenge, are limitations to South Australia’s electricity forecasting and planning. South Australia’s power system planning expertise transferred to the Australian Energy Market Operator (AEMO) when the Council of Australian Government established it and gave it national planning functions. While AEMO’s expertise has been enough, it does present future risks.

AEMO bases its planning and forecasting on the risks and costs for meeting NEM needs, not South Australia specifically. This can be disadvantageous for South Australia.

It is possible for South Australia to seek specific advice from AEMO regarding forecasting and planning. However, AEMO decides on assumptions and scenarios for their regular publications in accordance with the National Electricity Rules and associated guidelines. They are also informed by broad national stakeholder consultation. AEMO’s advice is not specific to South Australia.

The proposed new function

The state government is proposing to introduce a state-based electricity planning and forecasting function (the new function) for the Technical Regulator, Department for Energy and Mining. This function will enable the development and ongoing maintenance of a South Australian Electricity Development Plan (the Plan). The Plan will facilitate the least cost pathway for electricity supply capacity to meet demand reliably and securely while also meeting South Australia’s carbon emissions targets.

The new function will also involve the Technical Regulator advising the Minister on the development of the South Australian power system, at the Minister’s request, or on their own initiative.

Due to the complexity of information now required to support government risk analysis and decision making, local expertise is needed. Other NEM jurisdictions have recognised the need for state-based forecasting and planning. They are re-establishing their expertise to support risk analysis and decision making. Queensland, Western Australia, New South Wales, and Victoria either have or are establishing in-house capability.

Establishing an in-house agency capability provides effective focus and a flexibility to changing circumstances during the transition to net zero emissions. It provides a local view on the least cost development of the power system to achieve a reliable electricity supply.

Agency delivery supports a responsive capability in addressing government strategic concerns. It provides accessibility to agency energy policy, regulation, and industry technical knowledge.

The state government can also use specialised external technical advice, to address specific, complex issues on a case-by-case basis and whilst internal capability is being established.

Alternative options that the state government considered

The state government also considered the following options for state electricity planning and forecasting before recommending the new function:

- **AEMO Services:** An independent subsidiary of AEMO has been established to carry out function as appointed and financed by NEM jurisdictions. Whilst it can provide more tailored forecasting and planning services, the state government understands that this is a higher cost option.
- **Expanding AEMO's current capability and services:** NEM jurisdictions can expand AEMO's capability and services. However, this generally involves amendments to law, regulations, or rules. It requires a collective view that changes must occur and involves lead times of at least twelve months.
- **External consultants:** The state government could procure planning and forecasting advice on an ongoing basis from consultants. However, there are several disadvantages which this approach including:
 - timing risk
 - reliance on contractor analysis of modelled outcomes
 - financial cost for consultant advice including sensitivity analysis and iterations
 - risk of consultant availability unless long term contract with a single supplier
 - risk of consultant bias
 - less control over the inputs and assumptions.

How will the new function operate?

Under the new function, the Technical Regulator will undertake planning and forecasting activities to assess the least cost pathway for the development of the South Australian power system. This will include the Technical Regulator making an ongoing quantitative and technical assessment to establish and actively monitor South Australia's power system requirements.

The Technical Regulator's assessment will be based on established mathematical optimisation modelling tools and power systems software. It will involve demand forecasting, power system design, costing and modelling, and market and reliability modelling and analysis to support power system decision making (regulatory and electricity industry participants).

The new function will also involve the Technical Regulator providing a formal report, the South Australian Electricity Development Plan (the Plan). Based on the Technical Regulator's planning and forecasting activities, the Plan will provide a local view on the least cost development of the state's power system to maintain a reliable electricity supply.

The Technical Regulator will provide a confidential version of the Plan to the Minister for Energy and Mining and Cabinet at least twice in each year unless the Minister directs a different frequency. The frequency of reporting is due to the significant activity in the energy sector at our current stage of transition to a low carbon future. An approximate six-monthly cycle for the Plan has flexibility for timely ad hoc updates based on new information, market events or policies to be considered. The frequency for reporting may, however, change in the future.

The Technical Regulator will also develop a separate public version of the Plan. This version would protect sensitive and confidential information and be released annually.

Additionally, the new function will involve the Technical Regulator providing advice on development of the South Australian power system to the Minister in certain circumstances - in response to the Minister's ad hoc requests or on its own initiative.

The state government will recover costs of the new function through electricity industry participant administration and licence fees.

Benefits of the new function

The new function will inform and support power system decision making (regulatory and electricity industry participants) in South Australia, by doing the following:

- Providing the ability for South Australia to monitor and respond quickly to rapid changes in its electricity supply, and the transition of electricity supply to net zero emissions. It also provides an alternate source of advice and information, with a focus on South Australia. This is instead of a focus on joint regions (from a transmission perspective), or the whole NEM.
- Informing the optimisation, of the location and scale of the necessary generation, storage, and other supporting infrastructure. This includes optimisation from a costs and emissions perspective.
- Enabling assessment and testing of the risks associated with the transition. These risks include:
 - the timing of the exit of generators.
 - the entry of new supply technologies and changes in demand that may emerge from electrification and the development of a hydrogen industry.
 - tail risk, which is an event that has a small probability of happening.
- Enabling a local assessment of reliability based on the South Australian consumer expectations.
- Maximising the opportunities for consumers to benefit from participating in the two-way electricity market.
- Providing greater transparency and discussion on electricity demand, supply and supporting infrastructure. This supports business decision making and underpins genuine engagement with the community on matters such as their expectation of electricity reliability and land access.
- Ensuring efficient planning and development of supporting infrastructure for new demand, such as for the hydrogen industry. It includes considering release areas under the *Hydrogen and Renewable Energy Act*. This will avoid duplicate infrastructure increasing the cost of doing business and sterilising more land than necessary.

- Allowing timely consideration of the significant uncertainties and changes in policies and regulations across the NEM. Additionally, it allows timely consideration of changes in the relative costs and function of different technologies, and changes in demand and supply elsewhere in the system.
- Informing capacity needs of the State in terms of quantum and technology mix.
- Enable planning for potential significant new demand that may emerge through opportunities associated with decarbonisation, for example hydrogen, green steel, and critical minerals.

Proposed Regulations

The state government has drafted amendments to the *Electricity (General) Regulations 2012* (the Regulations), the *Electricity (General) (Planning and Forecasting Function) Amendment Regulations 2023* (the draft regulations). These amendments establish the new function under the *Electricity Act 1996* (the Act).

Some of the objects of the Act are to promote efficiency and competition in the electricity supply industry and to promote the establishment and maintenance of a safe and efficient system of electricity generation, transmission, distribution, and supply. The Technical Regulator, in using its new function to analyse and share information and data with stakeholders, aims to promote efficiency and competition in the electricity supply industry.

Section 8(d) of the Act provides for the Technical Regulator to have “any other function prescribed by regulation or assigned to the Technical Regulator by or under this or any other Act”.

The state government is proposing to amend the Regulations to insert Regulation 13B – Function of Technical Regulator – planning and forecasting, under Part 2 – Administration.

The draft regulations outline that the Technical Regulator’s new function comprises the following:

- *undertaking planning and forecasting activities to assess a least cost pathway for the development of the South Australian power system.*
- *providing a report to the Minister on the least cost pathway for the development of the South Australian power system*

The Ministerial report is the confidential version of the Plan. The Minister will have the power to direct the Technical Regulator in writing about the frequency of the reporting required. If the Minister does not provide this direction, the Technical Regulator must provide the report at least twice a year.

The Minister may also direct the Technical Regulator in writing, to consider the following when preparing a report: any objectives, principles, standards, or targets; any constraints. Additionally, the Minister may direct the Technical Regulator in writing about the period into the future that the Technical Regulator must consider in a report.

- *on an annual basis, preparing and publishing on a website that they maintain, a report on the least cost pathway for the development of the South Australian power system.*

This report is a separate public version of the Plan. This version would protect sensitive and confidential information and it would be released annually on a website that the Technical Regulator maintains.

The Minister may, by written notice to the Technical Regulator, specify the manner and form in which a report is to be prepared, and the information that must be included in a report. Additionally, the Minister may, by written notice to the Technical Regulator, specify the period within which a report is to be prepared and published.

- *advising the Minister on the development of the South Australian power system, at the Minister's request, or on their own initiative.*

For example, the Technical Regulator may become aware of new information that impacts the development of the South Australian power system, that they think is necessary to advise the Minister on.

Making a submission

Please provide your submission in relation to the draft regulation changes by **5 pm ACDT on 5 January 2024** via one of the following.

1. **Submit via YourSAy website:** Upload your submission on the consultation page on the South Australian government YourSAy website at yoursay.sa.gov.au/regulations-for-planning-and-forecast-functions.
2. **Submit via email:** Send your submission to dem.consultation@sa.gov.au with the subject line "Electricity (General) Regulations 2012 Amendments".

All submissions will be published on the state government website including your name and organisation (if applicable). Your contact details will not be published.

Please indicate clearly on the front of your submission if you would like it to be treated as confidential, in full or part, and the reason why it should not be made publicly available.

Under the *Freedom of Information Act 1991*, the state government may also be required by law to release your submission to a third party. If a request is made under the Act, you will be contacted prior to the release of any material.

Questions about the consultation

To discuss the draft Regulations further, please contact Justin Ward, Senior Policy Officer, Strategic Policy, and Delivery, on **08 8429 0707**.

Further information

Department for Energy and Mining

Level 4, 11 Waymouth Street, Adelaide
GPO Box 320, Adelaide SA 5001

T +61 8 8 463 3000

E dem.consultation@sa.gov.au

www.energymining.sa.gov.au

