

RECOMMENDATIONS

The blueprint at a glance.

Preparing for next summer

- 1.1 By end-September 2017, the Australian Energy Market Operator should publish an independent third party review of its:
- Short-term demand forecast methodology.
 - FY2018 summer forecast.
 - Preparedness for the FY2018 summer.
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Increased security

- 2.1 A package of **Energy Security Obligations** should be adopted. By mid-2018 the Australian Energy Market Commission should:
- Require transmission network service providers to provide and maintain a sufficient level of inertia for each region or sub-region, including a portion that could be substituted by fast frequency response services.
 - Require new generators to have fast frequency response capability.
 - Review and update the connection standards in their entirety.
 - The updated connection standards should address system strength, reactive power and voltage control capabilities, the performance of generators during and subsequent to contingency events, and active power control capabilities.
 - To be approved for connection, new generators must fully disclose any software or physical parameters that could affect security or reliability.
 - Thereafter, a comprehensive review of the connection standards should be undertaken every three years.
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- 2.2 A future move towards a market-based mechanism for procuring fast frequency response (as proposed as a subsequent measure in the System Security Market Frameworks Review) should only occur if there is a demonstrated benefit.
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- 2.3 By mid-2018, the Australian Energy Market Operator and Australian Energy Market Commission should:
- Investigate and decide on a requirement for all synchronous generators to change their governor settings to provide a more continuous control of frequency with a deadband similar to comparable international jurisdictions.
 - Consider the costs and benefits of tightening the frequency operating standard.
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- 2.4 By mid-2018, the Australian Energy Market Operator should take steps to ensure the black system restart plan for each National Electricity Market region clearly identifies the roles of the parties involved at each stage of the restoration process, and includes regular testing of black start equipment and processes.
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2.5	<p>By mid-2018, the COAG Energy Council should direct the Australian Energy Market Commission to review the regulatory framework for power system security in respect of distributed energy resources participation.</p> <p>By mid-2019, the Australian Energy Market Commission should report to the COAG Energy Council on proposed draft rule changes to better incentivise and orchestrate distributed energy resource participation to provide services such as frequency and voltage control.</p>
2.6	<p>The COAG Energy Council, in addition to its project on energy storage systems, should develop a data collection framework (or other mechanism) to provide static and real-time data for all forms of distributed energy resources at a suitable level of aggregation. The project should be completed by mid-2018.</p>
2.7	<p>The Australian Government should lead a process to regularly assess the National Electricity Market's resilience to human and environmental threats. This should occur by mid-2019 and every three years thereafter.</p>
2.8	<p>By end-2018, the Australian Energy Market Commission should review and update the regulatory framework to facilitate proof-of-concept testing of innovative approaches and technologies.</p>
2.9	<p>Proof-of-concept testing of innovative grid-scale solutions will be required for as long as technology is continuing to rapidly evolve. A funding source for trials by the Australian Energy Market Operator and the Australian Renewable Energy Agency should be assured for the long-term.</p>
2.10	<p>An annual report into the cyber security preparedness of the National Electricity Market should be developed by the Energy Security Board, in consultation with the Australian Cyber Security Centre and the Secretary of the Commonwealth Department of the Environment and Energy.</p> <p>The annual report should include:</p> <ul style="list-style-type: none"> • An assessment of the cyber maturity of all energy market participants to understand where there are vulnerabilities. • A stocktake of current regulatory procedures to ensure they are sufficient to deal with any potential cyber incidents in the National Electricity Market. • An assessment of the Australian Energy Market Operator's cyber security capabilities and third party testing. • An update from all energy market participants on how they undertake routine testing and assessment of cyber security awareness and detection, including requirements for employee training before accessing key systems. <p>The initial report should be completed by end-2018.</p>
2.11	<p>In recognition of the increased severity of extreme weather, by end-2018 the COAG Energy Council should develop a strategy to improve the integrity of energy infrastructure and the accuracy of supply and demand forecasting.</p>
2.12	<p>By mid-2019, the COAG Energy Council should facilitate the development of a national assessment of the future workforce requirements for the electricity sector to ensure a properly skilled workforce is available.</p>

A reliable and low emissions future – the need for an orderly transition

3.1 By 2020, the Australian Government should develop a whole-of-economy emissions reduction strategy for 2050.

3.2 There is an urgent need for a clear and early decision to implement an **Orderly Transition** that includes an agreed emissions reduction trajectory, a credible and enduring emissions reduction mechanism and an obligation for generators to provide adequate notice of closure.

- The Panel **recommends** that the Australian and State and Territory governments agree to an emissions reduction trajectory for the National Electricity Market.
- Both a Clean Energy Target and an Emissions Intensity Scheme are credible emissions reduction mechanisms because they minimise costs for consumers, are flexible and adaptable, and satisfy security and reliability criteria. Both mechanisms are shown to deliver better price outcomes than business as usual.

With the additional context that a Clean Energy Target can be implemented within an already well understood and functioning framework, and has better price outcomes, the Panel **recommends** a Clean Energy Target be adopted.

- To support the orderly transition, the Panel **recommends** a requirement for all large generators to provide at least three years' notice prior to closure. The Australian Energy Market Operator should also maintain and publish a register of long-term expected closure dates for large generators.

These recommendations are made in the context of the need for a Generator Reliability Obligation and the Energy Security Obligations. (Recommendations 3.3 and 2.1).

3.3 To complement the orderly transition policy package, by mid-2018 the Australian Energy Market Commission and the Australian Energy Market Operator should develop and implement a **Generator Reliability Obligation**.

The Generator Reliability Obligation should include undertaking a forward looking regional reliability assessment, taking into account emerging system needs, to inform requirements on new generators to ensure adequate dispatchable capacity is present in each region.

3.4 By mid-2018, the Australian Energy Market Operator and the Australian Energy Market Commission should assess:

- The need for a Strategic Reserve to act as a safety net in exceptional circumstances as an enhancement or replacement to the existing Reliability and Emergency Reserve Trader mechanism.
 - The effectiveness of the new licensing arrangements being developed for generators in South Australia and whether they should be applied in other National Electricity Market regions.
 - The suitability of a 'day-ahead' market to assist in maintaining system reliability.
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More efficient gas markets

- 4.1 By end-2017, the Australian Energy Market Operator should require generators to provide information on their fuel resource adequacy and fuel supply contracts, to enable it to better assess fuel availability.
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- 4.2 By mid-2018, the Australian Energy Market Operator should be given a last resort power to procure or enter into commercial arrangements to have gas-fired generators available to maintain reliability of electricity supply in emergency situations.
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- 4.3 Governments should adopt evidence based regulatory regimes to manage the risk of individual gas projects on a case-by-case basis.
- This should include an outline on how governments will adopt means to ensure that landholders receive fair compensation.
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- 4.4 By mid-2019, the COAG Energy Council should bring together relevant regulatory and scientific data on gas in an informative and easily accessible format.
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Improved system planning

- 5.1 By mid-2018, the Australian Energy Market Operator, supported by transmission network service providers and relevant stakeholders, should develop an integrated grid plan to facilitate the efficient development and connection of renewable energy zones across the National Electricity Market.
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- 5.2 By mid-2019, the Australian Energy Market Operator, in consultation with transmission network service providers and consistent with the integrated grid plan, should develop a list of potential priority projects in each region that governments could support if the market is unable to deliver the investment required to enable the development of renewable energy zones.
- The Australian Energy Market Commission should develop a rigorous framework to evaluate the priority projects, including guidance for governments on the combination of circumstances that would warrant a government intervention to facilitate specific transmission investments.
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- 5.3 The COAG Energy Council, in consultation with the Energy Security Board, should review ways in which the Australian Energy Market Operator's role in national transmission planning can be enhanced.
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- 5.4 By end-2017, the COAG Energy Council should finalise and implement the proposed reforms to the Limited Merits Review regime.
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- 5.5 By mid-2020, the COAG Energy Council should commission a further review of the Regulatory Investment Test for Transmission to ensure the suite of reforms implemented following the 2017 COAG Energy Council review have been effective in addressing stakeholder concerns.
- A review of the Regulatory Investment Test for Distribution should be conducted at the same time.
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Rewarding consumers

- 6.1 As part of its inquiry into the electricity retail market, the Australian Competition and Consumer Commission should make recommendations on improving the transparency and clarity of electricity retail prices to make it easier for customers to:
- Understand and compare prices.
 - Be aware when the terms of their offer change or their discounts expire.
 - Make more informed decisions about investing in rooftop solar photovoltaic, batteries or energy efficiency measures.

The Australian Competition and Consumer Commission should also consider whether the Australian Energy Regulator requires further powers to collect and publish and share retail price data.

- 6.2 The Energy Security Board's annual *Health of the NEM* report to the COAG Energy Council should include the impact of changes in the market on the price and availability of long-term retail contracts for commercial and industrial customers.
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- 6.3 By mid-2020, the COAG Energy Council should facilitate measures to remove complexities and improve consumers' access to, and rights to share, their energy data.
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- 6.4 The Energy Security Board's annual *Health of the NEM* report to the COAG Energy Council should report on affordability issues and proactively identify emerging issues.
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- 6.5 By mid-2018, the COAG Energy Council should accelerate its work on applying consumer protections under the National Energy Retail Law and National Energy Retail Rules to new energy services, and also consider safety issues as part of that work.
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- 6.6 The COAG Energy Council should engage with relevant portfolio areas including housing, and with state, territory and local governments, to identify:
- Opportunities to accelerate the roll out of programs that improve access by low income households to distributed energy resources and improvements in energy efficiency.
 - Options for subsidised funding mechanisms for the supply of energy efficient appliances, rooftop solar photovoltaic and battery storage systems for low income consumers.
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- 6.7 The COAG Energy Council should direct the Australian Energy Market Commission to undertake a review to recommend a mechanism that facilitates demand response in the wholesale energy market. This review should be completed by mid-2018 and include a draft rule change proposal for consideration by the COAG Energy Council.
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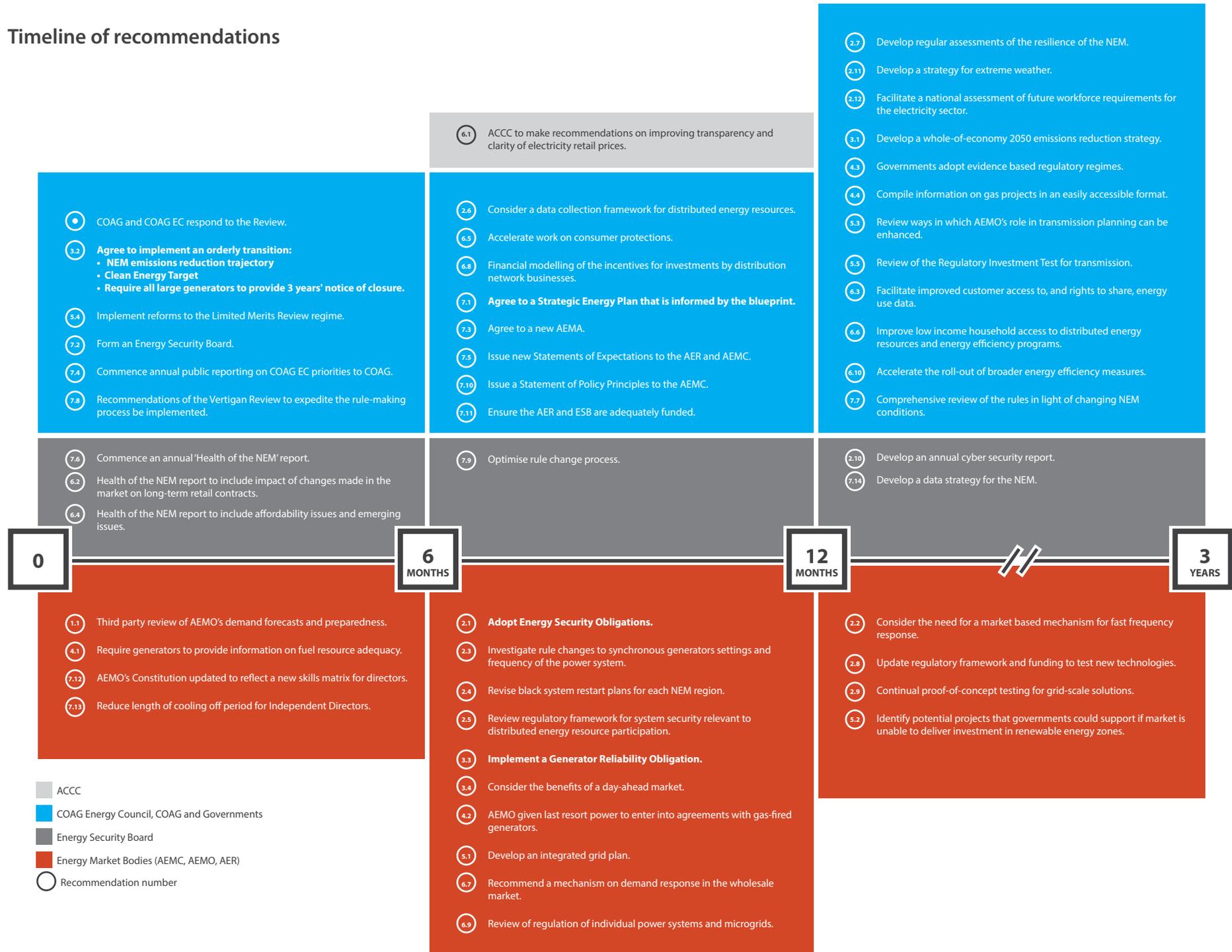
- 6.8 By mid-2018, the COAG Energy Council or the Australian Energy Market Commission should commission financial modelling of the incentives for investments by distribution network businesses, to test if there is a preference for capital investments in network assets over operational expenditure on demand-side measures.

If this work demonstrates that there is a bias towards capital expenditure, the COAG Energy Council should direct the Australian Energy Market Commission to assess alternative models for network incentives and revenue-setting, including a total expenditure approach. This should be completed by end-2019.

6.9	<p>By mid-2018, the COAG Energy Council should direct the Australian Energy Market Commission to undertake a review of the regulation of individual power systems and microgrids so that these systems can be used where it is efficient to do so while retaining appropriate consumer protections.</p> <p>The Australian Energy Market Commission should draft a proposed rule change to support this recommendation.</p>
6.10	<p>Governments should accelerate the roll out of broader energy efficiency measures to complement the reforms recommended in this Review.</p>
<p>Stronger governance</p>	
7.1	<p>By mid-2018, the COAG Energy Council should develop and maintain a strategic energy plan informed by the Panel's blueprint to guide the operation and evolution of the National Electricity Market.</p>
7.2	<p>The COAG Energy Council should immediately agree to establish an Energy Security Board to have responsibility for the implementation of the blueprint and for providing whole-of-system oversight for energy security and reliability.</p> <ul style="list-style-type: none"> • The Energy Security Board should be provided with the necessary funding to operate. • The Energy Security Board should be comprised of an independent Chair, supported by an independent Deputy Chair, with the Chief Executive of the Australian Energy Market Operator and the Chairs of the Australian Energy Regulator and the Australian Energy Market Commission as members. • Administrative support for the Energy Security Board should be provided by the Australian Energy Market Operator.
7.3	<p>By mid-2018, COAG leaders should agree to a new Australian Energy Market Agreement that re-commits all parties to:</p> <ul style="list-style-type: none"> • Taking a nationally consistent approach to energy policy that recognises Australia's commitment in Paris to reduce emissions and governments' commitment to align efforts to meet this target with energy market frameworks. • Notifying the COAG Energy Council if they propose to take a unilateral action that falls within the scope of Australian Energy Market Agreement prior to taking the action. <ul style="list-style-type: none"> • Within 28 days of notification, the Energy Security Board will provide advice to the COAG Energy Council on the impacts of the proposed action taking into account the objectives of Australian Energy Market Agreement.
7.4	<p>By end-2017, the COAG Energy Council should commence annual public reporting to COAG leaders on its priorities for the next 12 months and progress against the strategic energy plan.</p>
7.5	<p>By mid-2018, the COAG Energy Council, in consultation with the Energy Security Board, should issue new Statements of Expectations to the Australian Energy Regulator and the Australian Energy Market Commission, and a Statement of Role to the Australian Energy Market Operator containing a comprehensive set of outcomes-based performance indicators.</p>

7.6	<p>By end-2017, the Energy Security Board should provide an inaugural, annual <i>Health of the NEM</i> Report to the COAG Energy Council describing:</p> <ul style="list-style-type: none"> • The performance of the system. • Performance against whole-of-system key performance indicators. • Opportunities for market development including actual and emerging risks. • Progress against a Statement of Expectations.
7.7	<p>The COAG Energy Council should request that the Australian Energy Market Commission, or alternatively the Energy Security Board or other suitable body, complete by end-2020 a comprehensive review of the National Electricity Rules with a view to streamlining them in light of changing technologies and conditions.</p>
7.8	<p>Recommendations of the Vertigan Review to expedite the rule-making process should be implemented by end-2017.</p>
7.9	<p>The Energy Security Board should prioritise work with energy market bodies, the COAG Energy Council, and other relevant stakeholders to further optimise the end-to-end rule change process.</p>
7.10	<p>By mid-2018, the COAG Energy Council should issue a Statement of Policy Principles to the Australian Energy Market Commission to provide further clarification and policy guidance on applying the National Electricity Objective in the rule-making process.</p>
7.11	<p>The COAG Energy Council should ensure that the Australian Energy Regulator and the Energy Security Board are adequately funded to undertake their responsibilities, including implementing the blueprint.</p>
7.12	<p>By end-2017, the Australian Energy Market Operator should update its Constitution by developing a new skills matrix for directors that will ensure appropriate representation of professional power systems engineering or equivalent expertise.</p>
7.13	<p>The three-year cooling off period for independent directors of the Australian Energy Market Operator should be reduced to six months.</p>
7.14	<p>By end-2018, the Energy Security Board, in collaboration with the Australian Energy Regulator, should develop a data strategy for the National Electricity Market.</p> <ul style="list-style-type: none"> • The initial design of the data strategy must be developed in consultation with industry bodies and consumer bodies, and be consistent with open government data principles. • The Energy Security Board must report to the COAG Energy Council on the completion of the first stage. This should include costs for design and implementation for initial set up, plus indicative costs for ongoing maintenance of the key deliverables under the data strategy. • The first phase of the data strategy must be completed by end-2017, with the functionality of the components of the strategy reviewed annually to ensure that they continue to be fit-for-purpose.

Timeline of recommendations



- ACCC
- COAG Energy Council, COAG and Governments
- Energy Security Board
- Energy Market Bodies (AEMC, AEMO, AER)
- Recommendation number