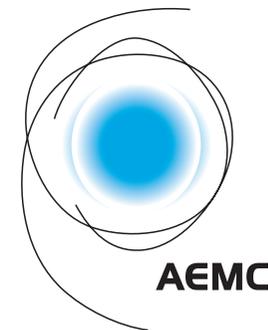


2017 ENERGY SECTOR STRATEGIC PRIORITIES



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1 Strategic priorities advice

1.1 What we need to achieve

The primary purpose of this advice is to assist the energy sector in successfully transitioning from its current state to a new model which provides affordable, reliable and low emissions energy to consumers - whether their needs are residential, commercial or industrial.

Energy is an essential and economically vital service. It supports our lifestyles and the economy. Energy markets need to be well designed and effective in delivering the choice, quality and price outcomes that consumers require. They must provide the information and incentives that let consumers decide if they want to be active managers of their energy generation and consumption or they just want a fair deal for the energy they use. The sector also needs to be underpinned by safety net provisions to look after vulnerable consumers or potentially to provide support for industry.

There are important international dimensions to Australia's energy market. The price and reliability of energy services influences our international competitiveness, and we have made commitments to reduce carbon emissions.

Rapid developments in renewable generation, economic storage options, digitisation and IT management capabilities are materially changing the economics of the sector. Market mechanisms need to change, so they can continue to deliver consumer benefits, and new solutions are required to deliver secure and reliable services.

These are multi-year transitional challenges that will require multi-year and multi-lateral commitments to developing solutions. If managed well, the sector will become more diverse, more responsive and more rewarding for consumers, and contribute to GDP and employment.

This advice provides a strategic plan to manage the sectoral transition.

1.2 Strategic priorities

A strategy is a planned series of actions to achieve desired goals.

A good strategic plan maps a path from a current situation to a desired future state; it takes us from where we are, to where we want to be. Strategic priorities are the most important goals in the strategic plan at a point in time.

This advice provides:

- The **strategic priorities** articulated on a page.
- **Summary views** of the key goals and initiatives in each part of the sector to support the priorities. These views provide the next level of detail on how sectoral outcomes will be achieved.
- A **detailed work-plan** underpins the priorities and summary views.



The ‘tiered’ view is provided so that all stakeholders can be clear about the priorities, goals and initiatives for the energy sector at either a strategic or detailed implementation level as required.

The work-plan highlights that a significant amount of work is already underway, and that by addressing the “gap” issues, a comprehensive plan for the sector can be put in place.

1.3 How the Council should strategically manage the sector

In addition to the tiered view of priorities and initiatives, the advice also proposes a set of “tools” for the Council of Australian Governments Energy Council (the Council) to use in strategically managing the sector. These include:

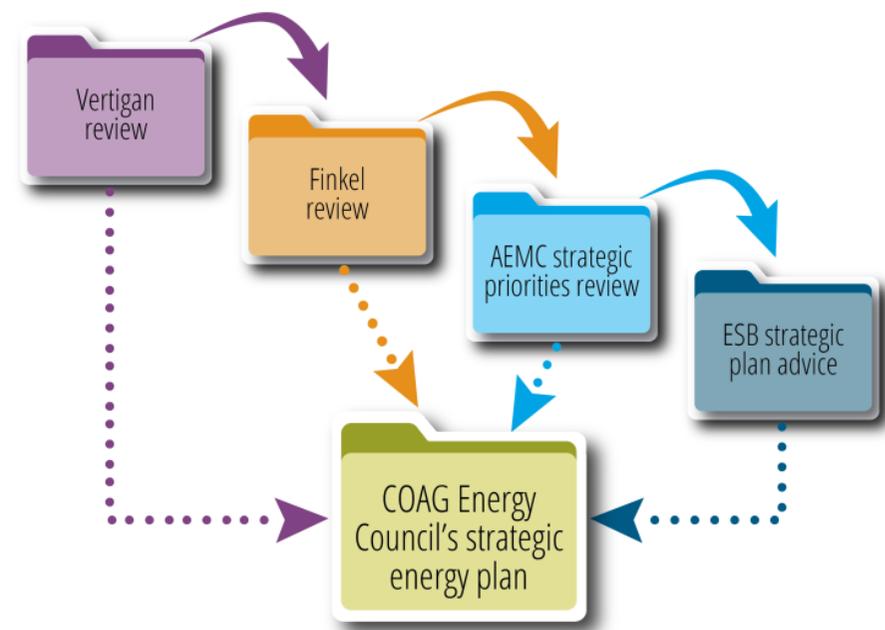
- an analytical framework for mapping all sectoral issues
- a guide to managing inter-relationships between issues
- proposed criteria for making prioritisation decisions
- a proposed operating cycle to manage the sector strategically

Further, as context, a description of key sectoral trends and directions is provided in an appendix to this advice. It provides a foundation set of assumptions on where the industry is heading, and on which the strategic priorities, goals and initiatives are premised.

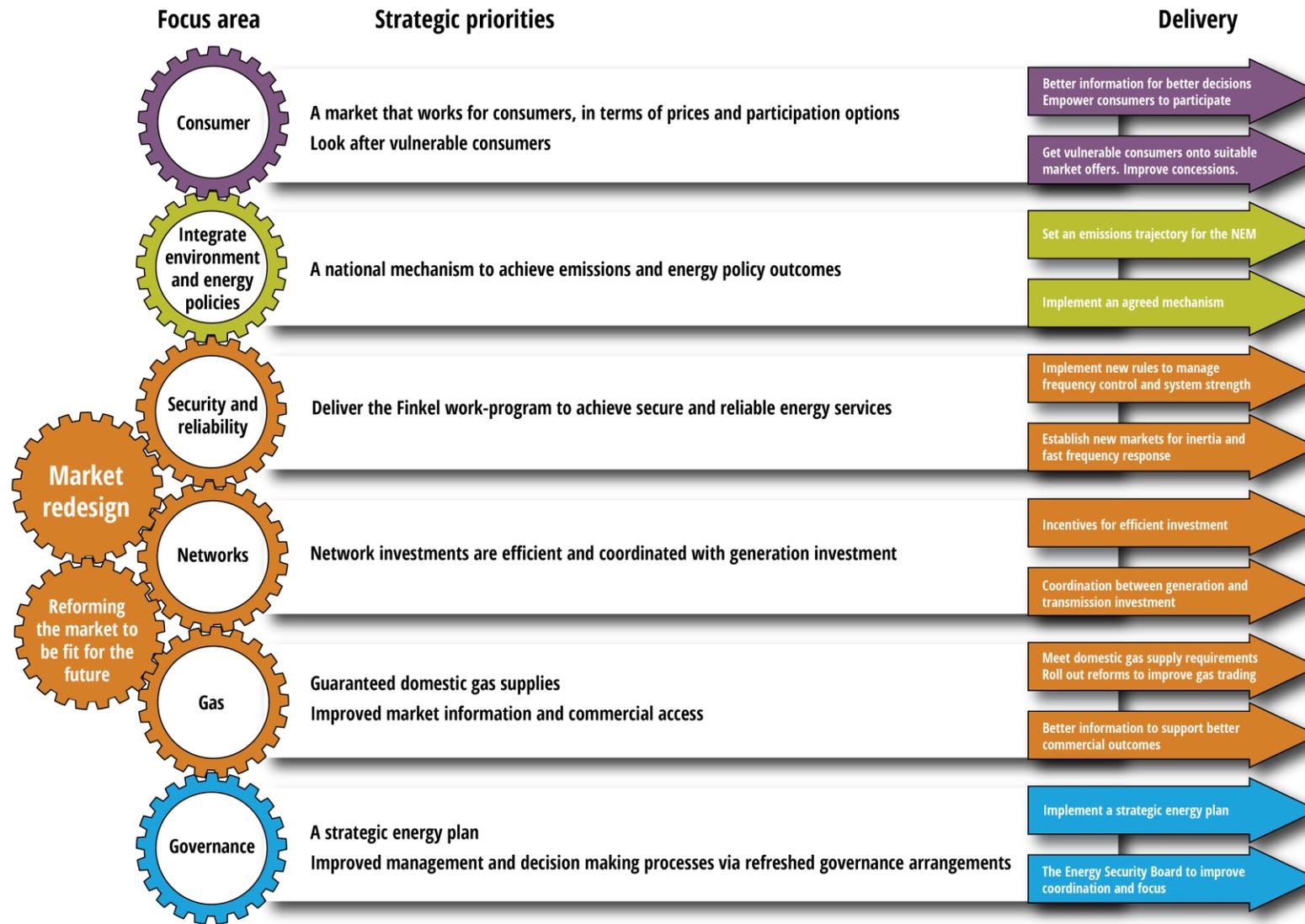
1.4 Where this advice fits in

This advice builds on the Finkel review and is provided as an input into the processes of the Energy Security Board (ESB) and the Council towards finalising and implementing a strategic energy plan.

The AEMC has worked with the Australian Energy Market Operator (AEMO), Australian Energy Regulator (AER) and Energy Consumers Australia (ECA) in developing this advice. It has been informed by extensive consultation and stakeholder engagement including an Approach paper, Discussion paper, public forum, thought-leader lunches with sector participants, stakeholder briefings, public submissions and a workshop with the Senior Committee of Officials (SCO).



Strategic priorities 2018-2019



2 Summary views of goals and initiatives

While the strategic priorities and detailed work-plan are reasonably clear in providing the highest level and most detailed views respectively, some guidance on the summary views section follows.

- **Each summary view focuses on a specific area** of the adopted industry analytical framework (shown in section 3.1 page 17). There are summary views for consumers, integrating environment and energy policies, security, reliability, effective markets, effective network regulation, gas and governance.
- **The goals identified for each sector are shown**, with some key supporting initiatives also articulated.
 - The initiatives description may relate to a single action or a set of related actions.
- **The initiatives are categorised** as:
 - actions from the Finkel review that are agreed or underway
 - other actions agreed or underway by the market bodies
 - additional recommended actions. These items represent “gaps” in the sectoral work-plan. Further clarity on what the Council is being asked to endorse in relation to these items is provided in section 4 of this advice (page 23).

Note that most ongoing operational, enforcement and reporting activities are not shown as initiatives. As such significant portions of the work of AEMO and the AER are not shown in this document.

Summary view - consumer

CONSUMER

KEY:  Recommended actions to be agreed  Finkel actions agreed or underway  Other actions agreed or underway

SUMMARY GOALS AND INITIATIVES	COMPLETION BY				OUTCOMES	LEAD
	Mid 2018	Mid 2019	Mid 2020	Mid 2021		
EFFICIENT, STABLE PRICES AND AFFORDABILITY						
Vulnerable consumers onto suitable market offers		 			Vulnerable customers on suitable pricing plans, receiving concessions when needed, and able to benefit from distributed energy and energy efficiency schemes	Retailer, AER
Improve how concessions work						COAG Energy Council
Energy efficiency for low income households			 			COAG Energy Council, ECA
RELEVANT, TIMELY AND ACTIONABLE INFORMATION						
Better access to consumer usage data, clear pricing offers, and improved ability to compare offers	 				Consumers will have increased: <ul style="list-style-type: none"> ♦ awareness of savings ♦ ability to identify the best deal for their circumstances ♦ ability to manage energy costs 	AER, Retailer, ECA, Network
Help consumers understand savings available	 					ECA, AER, ACCC
Health of the NEM include information on price and availability of long term commercial contracts					Better information for business	ESB, AER
CONSUMERS EMPOWERED TO DRIVE ENERGY MARKET						
Recommendation on demand response opportunities					Consumers benefit from participation and innovation	ARENA, AEMO
AER work with networks on demand response						AER, Networks
TRUST AND CONFIDENCE VIA TARGETED PROTECTIONS						
Extend protections to new energy services and customers and exempt sellers					Appropriate and consistent protections for all consumers	COAG Energy Council, AER
Harmonise consumer protections						

Summary view: integrate energy and environment policies

INTEGRATE ENERGY AND ENVIRONMENT POLICIES

KEY:  Recommended actions to be agreed  Finkel actions agreed or underway  Other actions agreed or underway

SUMMARY GOALS AND INITIATIVES	COMPLETION BY				OUTCOMES	LEAD
	Mid 2018	Mid 2019	Mid 2020	Mid 2021		
IMPLEMENT A LONG-TERM NATIONAL EMISSIONS POLICY						
Department of Environment and Energy review of climate policy	 End 17				Broad industry certainty on emissions reduction path and requirements	DDE
National emissions reduction strategy for 2050						COAG Energy Council
COORDINATION BETWEEN COMMONWEALTH AND JURISDICTIONS						
Commonwealth and jurisdictions agree an emissions reduction trajectory for the NEM		 			Industry plans and investment can be undertaken on national basis	COAG Energy Council
EMISSIONS REDUCTION MECHANISM INTEGRATED WITH ENERGY POLICY						
AEMC advice to Qld, Vic, SA and ACT on design and impacts of a clean energy target	 Oct 17				An established emissions mechanism that is compatible with energy market operation	AEMC
Implement a national emissions reduction mechanism						COAG Energy Council, ESB

Summary view: system security

SYSTEM SECURITY

KEY: ★ Recommended actions to be agreed

F Finkel actions agreed or underway

✓ Other actions agreed or underway

SUMMARY GOALS AND INITIATIVES	COMPLETION BY				OUTCOMES	LEAD
	Mid 2018	Mid 2019	Mid 2020	Mid 2021		
FREQUENCY CONTROL						
A. Requirements set for transmission networks to provide minimum level of inertia. B. Arrangements commence.	F ✓ A	✓ B			Better frequency control, including via the integration of distributed energy resources	AEMC, TNSPs
Review of frequency operating standard complete	✓					Reliability Panel
Determination on generator capability performance standards, including for fast frequency response	F ✓					AEMC
Review of frequency performance, integrate fast frequency response, consider change to generator governor settings and integrating distributed energy resources	F ✓					AEMO, AEMC
Future Power System Security program	✓	✓	✓	✓		AEMO
SYSTEM STRENGTH						
Determination on generator performance standards, including voltage control and related system strength issues	F				Better management of immediate and longer term system strength and threats, including via the integration of distributed energy resources	AEMC
Review and initiatives to integrate and understand distributed energy resources	F	F				AEMC, COAG Energy Council
SYSTEM RESILIENCE AND THREAT MANAGEMENT						
Series of programs to increase system resilience, from forecasting improvements to threat management	F	F	F		A safer and more resilient system	AEMO, ESB, Governments

Summary view: reliability

RELIABILITY

KEY:  Recommended actions to be agreed

 Finkel actions agreed or underway

 Other actions agreed or underway

SUMMARY GOALS AND INITIATIVES	COMPLETION BY				OUTCOMES	LEAD
	Mid 2018	Mid 2019	Mid 2020	Mid 2021		
EFFICIENT MARKET BASED APPROACH						
Review of reliability standard and settings complete					Comprehensive refresh of reliability standard, settings and any required changes to ensure reliable energy supply	Reliability Panel
Reliability frameworks review report on change needed to ensure adequate dispatchable energy in the short and long terms, including assessment of: suitability of day ahead market, need for a strategic reserve, generator reliability obligation, a demand response mechanism.	 					AEMC
APPROPRIATE INTERVENTION MECHANISMS						
Assessment of the adequacy of existing intervention mechanisms	 				The right tools available to deliver reliable energy supply	AEMC, AEMO
CLEAR AND TRANSPARENT INFORMATION						
AEMO publish preparedness for summer and short term demand forecasting methodology					Improved information	AEMO

Summary view: effective markets

EFFECTIVE MARKETS

KEY:  Recommended actions to be agreed  Finkel actions agreed or underway  Other actions agreed or underway

SUMMARY GOALS AND INITIATIVES	COMPLETION BY				OUTCOMES	LEAD
	Mid 2018	Mid 2019	Mid 2020	Mid 2021		
MARKET PARTICIPATION						
Introduction of metering competition (except Victoria)	 Dec 17				Improved market information and participation opportunities	
AEMC to recommend a mechanism to facilitate demand response in the wholesale market						AEMC
Develop a credible source of information on electricity hedging products						Retailers
Source longer term funding for innovation trials by AEMO and ARENA	 					COAG Energy Council
TRANSPARENT AND EFFICIENT PRICES						
ACCC Retail Electricity Pricing inquiry findings available, including on vertical integration and market power					Better information to assess market performance, and make participation and commitment decisions	ACCC
Health of the NEM report provides information on price and availability of long term commercial contracts	 End 17					ESB, AER
Reports on effectiveness of wholesale market competition						AER
Determination on whether to align market settlement time (30 minutes) with dispatch period (5 minutes)						AEMC

Summary view: effective network regulation

EFFECTIVE NETWORK REGULATION

KEY:  Recommended actions to be agreed

 Finkel actions agreed or underway

 Other actions agreed or underway

SUMMARY GOALS AND INITIATIVES	COMPLETION BY				OUTCOMES	LEAD
	Mid 2018	Mid 2019	Mid 2020	Mid 2021		
EFFICIENT REGULATION OF MONOPOLY INFRASTRUCTURE						
Distribution networks implementing AER ring fencing guidelines	 Jan 18				Further progress in defining monopoly areas and facilitating competition beyond those areas	DNSPs
Contestability for connection services commences. Transmission networks responsible for network outcomes						TNSPs
Determination on off-grid electricity supply	 Dec 17					AEMC
A. Test capital bias over opex in network investment B. If so, assess alternative models	 A	 B				AEMC
Review the regulatory tests for investment for transmission and distribution						AER
EVOLUTION OF NETWORKS AS EFFICIENT PLATFORMS FOR ENERGY SERVICES						
Cost reflective network tariffs implemented	 Dec 17				Better foundation for networks to be a suitable and efficient platform for the emerging energy services market	DNSPs
Review on whether generation and transmission investments are efficiently coordinated						AEMC
Create a priority list of transmission projects in each region if investment to enable development of renewable energy zones does not occur						AEMO, TNSPs
Commence review of how AEMO's role in national transmission planning can be enhanced		 Early 19				COAG Energy Council, ESB

Summary view: gas

GAS

KEY:  Recommended actions to be agreed

 Finkel actions agreed or underway

 Other actions agreed or underway

SUMMARY GOALS AND INITIATIVES	COMPLETION BY				OUTCOMES	LEAD
	Mid 2018	Mid 2019	Mid 2020	Mid 2021		
ACCESS TO EFFICIENTLY PRICED GAS						
Gas acceleration program to improve domestic gas supply					Quantity of gas will be sufficient to meet domestic consumer needs	Government
Decision to invoke Australian domestic gas security mechanism	 Oct	 Oct	 Oct			Government
Data on gas made available in informative and accessible way	 End 17					COAG Energy Council
Case by case, evidenced based process for gas assessment		 Early 19				COAG Energy Council
ACCESS TO EFFICIENTLY PRICED PIPELINE INFRASTRUCTURE						
Gas Market Reform Group information requirements for non-regulated pipelines commence	 Feb 18				Pipeline access on reasonable commercial terms and conditions	Pipelines
Review of economic regulation of regulated pipelines complete						AEMC
MARKET INFORMATION						
ACCC inquiry into supply and demand for wholesale gas					Improved information for market participants and on the state of the market	ACCC
Improvements to Gas Bulletin Board						AEMO, AER
Electricity generators report on fuel adequacy						Generators
GAS MARKET REFORMS						
Biennial report on liquidity in the wholesale gas and pipeline capacity markets					Improved market operations to improve commercial outcomes	AEMC, AER
Implementation of Gas Market Reform Group improvements to secondary trading mechanisms		 Late 18				COAG Energy Council, AEMC

Summary view: governance

GOVERNANCE

KEY:  Recommended actions to be agreed  Finkel actions agreed or underway  Other actions agreed or underway

SUMMARY GOALS AND INITIATIVES	COMPLETION BY				OUTCOMES	LEAD
	Mid 2018	Mid 2019	Mid 2020	Mid 2021		
LEADERSHIP AND STRATEGIC DIRECTION						
Re-commit to <i>Australian Energy Market Agreement</i>					Refreshed commitment to national market, and strategic management plan to achieve goals	COAG Energy Council
Advice on <i>strategic energy plan</i>	 Oct	 Oct	 Oct	 Oct		ESB, AEMC
Implementation of <i>strategic energy plan</i>						COAG Energy Council
Advice on priorities for next year, and progress achieved	 Dec	 Dec	 Dec	 Dec		COAG Energy Council
ROLE CLARITY AND COORDINATION						
Statements of expectations to AEMC and AER, and a statement of role to AEMO issued					Clearer and better coordinated regulatory governance	COAG Energy Council, ESB
Statement of Policy Principles issued to guide interpretation of the NEO in rule making						COAG Energy Council
ESB to lead coordination of reviews and reports by market institutions						ESB
RESPONSIVENESS TO MARKET CHANGES						
Initiatives to optimise the rule making process, including the role of SCO and COAG Energy Council	 End 17				Improvements to keep the NEM fit for purpose	COAG EC, SCO, ESB
Data strategy for the NEM complete		 Annual review	 Annual review			AER, ESB
Comprehensive review of national electricity rules				 End 20		AEMC, ESB

3 How the Council should strategically manage the sector

This section of the document proposes a number of tools to assist the Council in managing the sector strategically. The tools include:

- The **analytical framework** this advice uses to map all sectoral issues. The framework is designed to be comprehensive in its coverage and durable as change occurs.
- A **guide to managing sectoral inter-relationships**. Understanding inter-relationships is critical to making decisions which involve trade-offs and to avoid unintended consequences.
- **Criteria for making prioritisation decisions**.
- A proposal to establish a **strategic operating cycle** to enhance efficiency and strategic governance.

3.1 The analytical framework

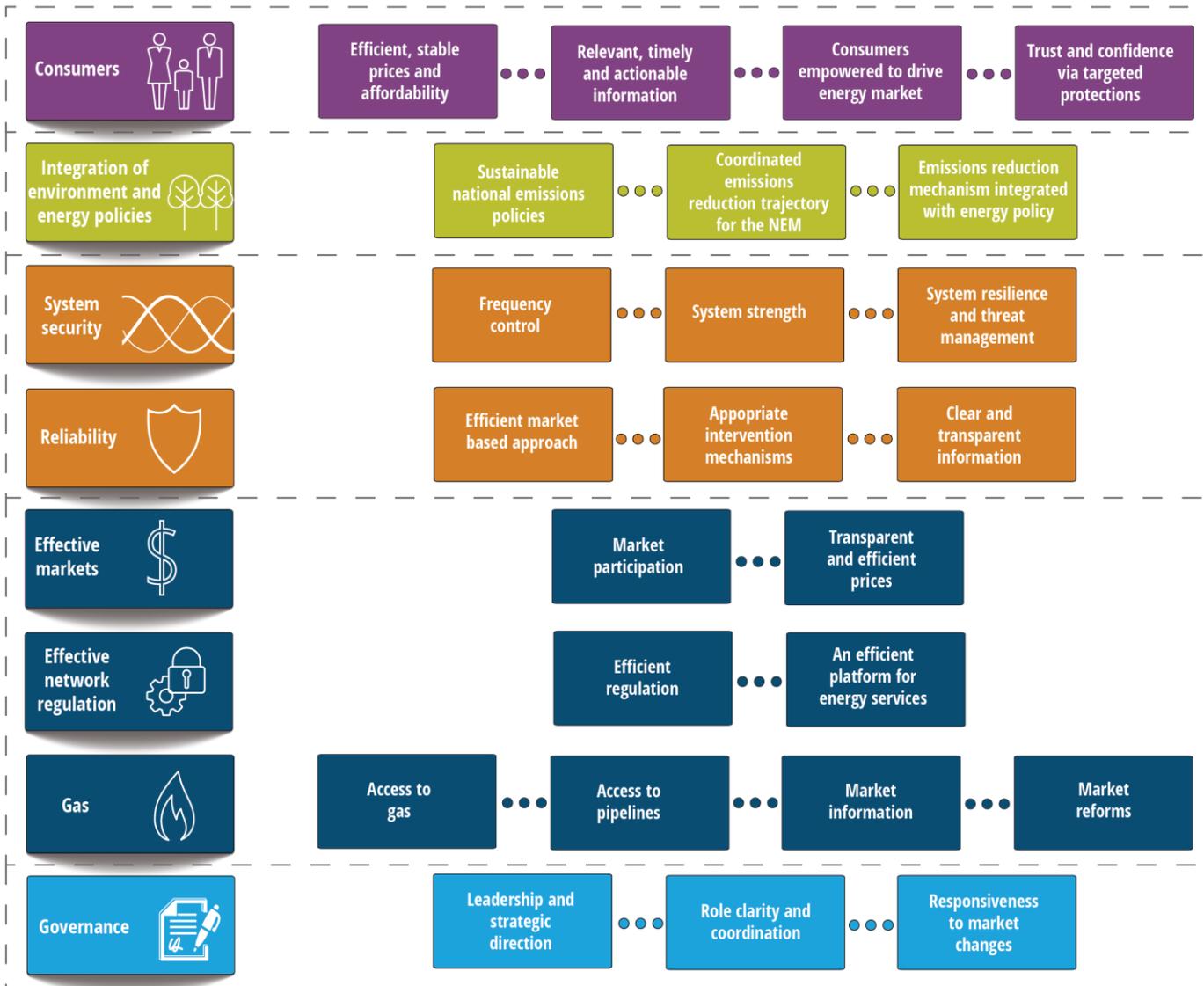
The proposed analytical framework (see Figure 3.1) is considered useful in that it is:

- **broad** – it encompasses all aspects of the energy sector.
- **actionable** – provides a basis for categorising goals and initiatives, identifying the outcomes to be achieved, and evaluating progress.
- **durable** – as there may be a delay between when policy decisions or market reforms are made and when their impacts become apparent, the analytical framework used to manage the sector should be constant to observe and evaluate changes over time.

There is a broad logic to the sequencing of the layers in the framework.

- **Consumers** are the top layer, reflecting the importance of the industry operating to deliver the social and commercial outcomes consumers need.
- **Integration of environment and energy policies** is next, reflecting consistent stakeholder views that this was the most important area of policy to be resolved.
- **Security and reliability** follows, reflecting that getting the physics of the system is key irrespective of the market arrangement that apply.
- **Effective markets and regulation** follows, as the key mechanisms through which optimum outcomes for consumers will be achieved. Gas is identified as a separate focus area in this category given the range of reforms underway.
- **Governance** is the foundation layer, reflecting that good management of the sector and the inter-relationships between issues is critical to achieving the desired sectoral outcomes.

Figure 3.1 Analytical framework



3.2 Managing inter-relationships

In order for the strategic priorities process to be a useful ongoing management tool for the sector, and for the proposed framework and goals to be used effectively, there must be ongoing awareness and management of the inter-relationships between issues. This is a pre-requisite for:

- decisions on goals and initiatives
- prioritisation and sequencing decisions
- risk mitigation (and avoidance of unintended consequences).

The recent sectoral experience in having uncoordinated environmental and energy policies is a clear example of the need to manage inter-relationships. The Renewable Energy Target has been successful in

encouraging an increase in renewable generation in the market. However it has undermined other policy objectives. In particular, it has weakened the market incentives to deliver reliable energy services which can meet dispatchability requirements in all locations. Further, the RET has reduced the availability of financial contracts that retailers use to underwrite their competitive services provision.

The key industry inter-relationships are summarised on the following page (Figure 3.2), and are proposed as a guide for the Energy Council to assist its decision making.

For larger decisions, which necessarily require greater due diligence, it is suggested that specific impact assessment studies should be undertaken to understand and manage sectoral inter-relationships.

Figure 3.2 Managing inter-relationships

POLICY AREAS	INTER-RELATIONSHIPS AND IMPACTS						
	CONSUMER	INTEGRATION OF ENVIRONMENT AND ENERGY POLICIES	SECURITY	RELIABILITY	EFFECTIVE MARKETS	GAS	EFFICIENT ELECTRICITY NETWORK REGULATION
CONSUMER	—	Costs of consumer environmental and energy preferences	Significant costs and inconvenience if security and reliability not met		A balance of opportunities, incentives, protections and cost needed	Consumer energy efficiency initiatives may create preferences for electricity or gas	Network pricing is approximately half a residential consumer bill
INTEGRATION OF ENVIRONMENT AND ENERGY POLICIES	Environmental policy that integrates poorly will increase costs and consumer prices	—	Policy design impacts quantity and type of generation investment, with impacts on dispatchability		Integration policies that do not encourage firm contracts undermine strong retail competition	Emissions policy can impact the role of gas in electricity generation	Integrated environment and energy policies may require network investment to link generation with consumers
SECURITY	Increased security and reliability can increase consumer prices	Security and reliability requirements may have implications for emissions levels from the sector	—		Security and reliability requirements may dictate new markets or market mechanisms needed	Security and reliability services, such as fast frequency response and inertia, can be supplied by gas generators	Increased security & reliability requirements on networks can add to network costs (e.g. related to distributed energy)
RELIABILITY							
EFFECTIVE MARKETS	Market power can reduce consumer outcomes - service, quality, price, innovation	Effective market operations may underpin the success of environmental programs	As the generation mix changes, the market faces new security and reliability challenges		Contracts (on the supply and demand sides) are required to underwrite retail competition	Effective markets and information can deliver access to gas and transport on reasonable terms	Markets ring-fenced from monopoly services promote effective competition
GAS	Gas availability and pricing impacts consumers	Availability and price of gas for domestic consumers may determine its role in contributing to emission reductions	Gas generators can provide security and reliability services		Gas prices impact wholesale electricity prices and it is increasingly the marginal generator	Gas network pricing is determined by effective information requirements and arbitration processes	Incentives to promote efficient investment in gas pipeline capacity
EFFICIENT ELECTRICITY NETWORK REGULATION	Network costs a major part of consumer bills	Network incentives can affect whether investment occurs to support new renewable investments	Network regulation and incentives can impact network contributions to security and reliability		Network tariff structures may shape retail pricing structures	Incentives for efficient investment in network capacity, and user contributions for network augmentation	—
GOVERNANCE	Good governance is a foundation for the effectiveness of all parts of the sector						

3.3 Criteria to determine priorities

A number of criteria have been proposed to assist in determining priorities from among the broad set of industry goals. Notably, all the identified goals are important and need to be progressed, but prioritisation and sequencing is required to account for:

- the relative importance of issues and outcomes
- resource constraints (people, time, budgets).

The proposed criteria for prioritisation decisions are:

- **Near term opportunities**
- **Value (efficiency)**
- **Social impacts (equity)**
- **Aggregate benefit given inter-relationships**

Sequencing is required to ensure a logical order of activities and that the resources are available to undertake the most important work-programs.

3.3.1 Near term opportunities

This category refers to actions that can be undertaken in a relatively short time-frame and at relatively low cost. Progressing these opportunities can provide an immediate benefit to a target area, but

may also help to increase confidence in the sector. Visible evidence of progress may enhance the industry's social licence to operate.

An example of a near term opportunity could be to move vulnerable consumers from standing offers to more suitable market offers (for example, offers with unconditional benefits). Costs to progress this initiative are minimal, and providing customer consent is gained, there would be an immediate benefit to consumers in the greatest need.

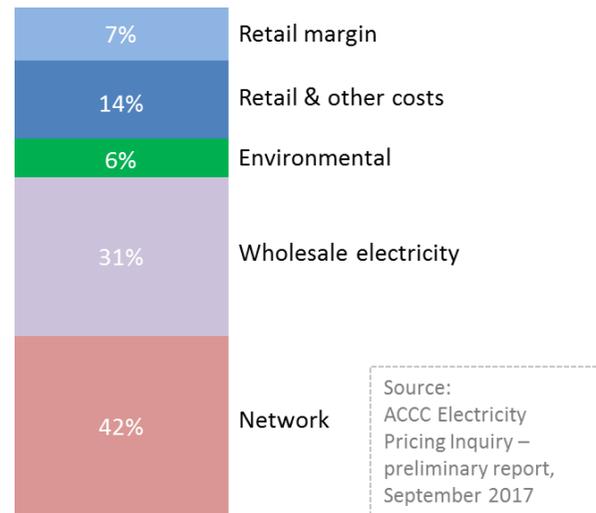
Another example of a near term opportunity is to rationalise and align the analysis and reporting activities undertaken by the market bodies and other institutions. At no incremental cost, achieving improved alignment in these reports would free resources to deal with other industry issues.

3.3.2 Value (efficiency)

Initiatives can be prioritised on the basis of the economic benefit that can be achieved or the risk that can be avoided. A useful way to consider where potential value may be achieved is to reference impacts against the cost stack of residential and business bills. The ACCC has taken this approach in its *Electricity supply and prices inquiry* (see Figure 3.3 below).

Examples of initiatives with significant value benefits are the initiatives aimed at delivering efficient network pricing or gas pipeline access. These initiatives may create significant consumer benefit by lowering the costs of energy.

Figure 3.3 – estimated average residential electricity bill 2016-17



Examples of initiatives that have value because they reduce risk are the set of actions being undertaken to deliver reliable energy services for this summer, and beyond. The costs of unserved energy can be material in aggregate and at an individual consumer level. Reliable energy services mitigate against this economic risk.

3.3.3 Social impacts (equity)

Various initiatives may have a justification that is more strongly based on equity rather than on economic considerations. While there is an economic dimension to these issues, the primary rationale relates to their social impact or equity considerations.

An example of such an initiative is to review the application of energy concession schemes. This would have a social benefit to consumers in ensuring support is provided to those who need it, in addition to an economic benefit from targeting the schemes appropriately. Another example is the Finkel recommendation to enable low income households to access distributed energy resources and energy efficiency options.

3.3.4 Aggregate benefit given inter-relationships

A last category relates to initiatives that may have aggregate benefit across a number of areas. Any one of these benefits may be large or small in economic or equity terms, but in aggregate the benefits are significant and justify prioritisation.

An example of an initiative in this category is the integration of environmental and energy policies. This initiative will generate potential benefits in meeting emissions reduction targets, encourage efficient generator investment, support reliability, stimulate the contracts market and, relatedly, provide a foundation on which healthy retail competition can occur.

3.4 Measuring progress in a strategic operating cycle

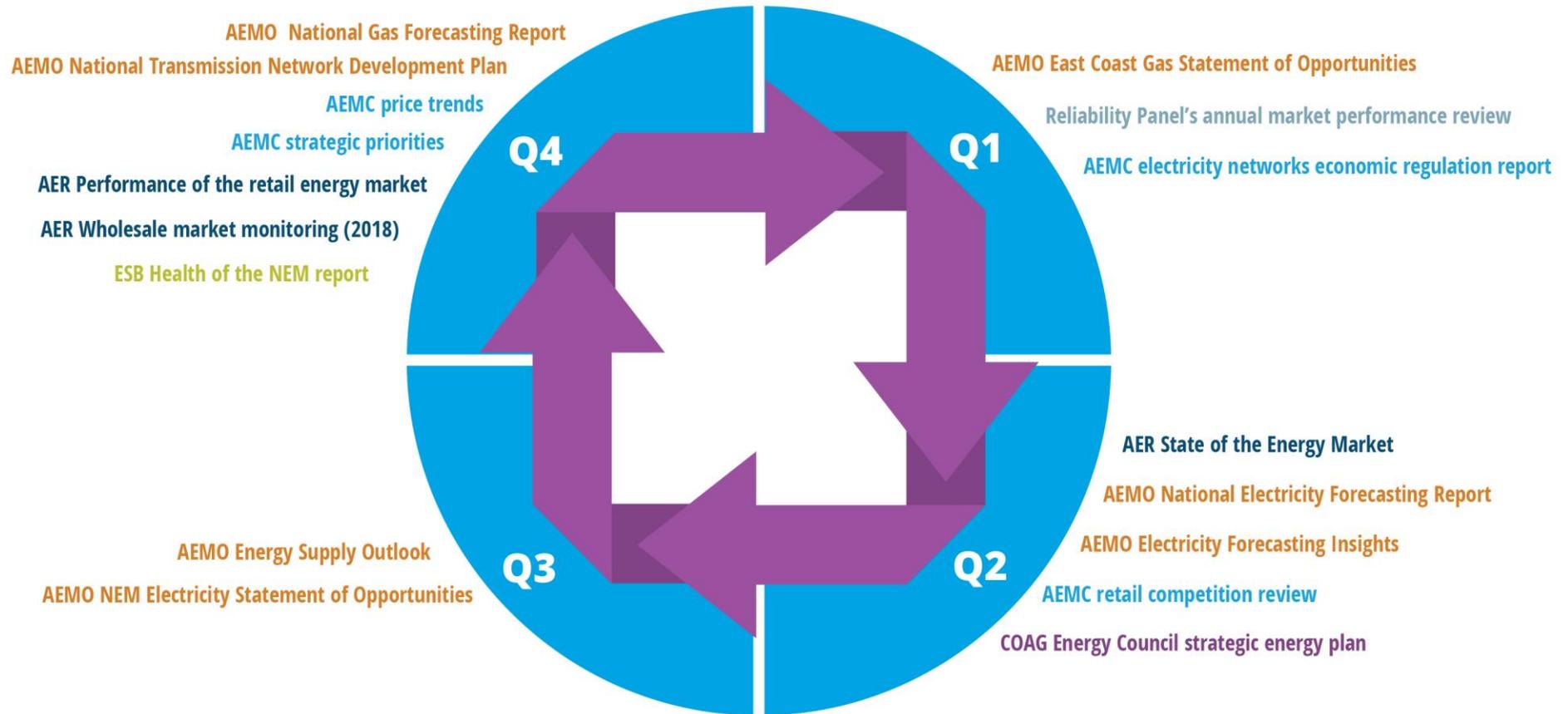
Effective strategic management requires a reinforcing cycle of information provision and analysis. If COAG EC's strategic energy plan is formalised by mid-2018 and the annual refresh process is to occur in the middle of each subsequent year, then industry reports and analysis should be aligned to feed into that refresh process.

At present, the ESB's Health of the NEM report is scheduled for December each year, and other industry reports occur according to their evolved timing (see Figure 3.4). The development of the strategic energy plan and annual refresh process provides an opportunity to reconsider the industry reporting processes, in particular to check whether:

- the reported **issues and metrics inform whether progress is being made towards the achievement of strategic priorities and sectoral goals**
- **the necessary issues are covered without duplication.** The test for the reports should be whether the issues coverage is mutually exclusive and collectively exhaustive
- **the reports occur in a logical and reinforcing sequence.**

It is recommended that the ESB lead the work to review the current reporting processes and timing, with a view to establishing an aligned cycle of analysis and reporting. This is consistent with its objectives of improving the coordination between market institutions and strengthening the strategic management of the sector.

Figure 3.4 Current cycle of industry reporting (calendar year)



4 Recommendations on “gaps” identified

This section describes the issues and actions recommended to address “gaps” identified in this analysis.

4.1 Consumer

Vulnerable consumers onto suitable market offers

- There is work underway to move vulnerable consumers from standing to more suitable market offers. If retailers are required to do this, and are unable to get consumer consent, the explicit informed consent (EIC) provisions may need to be considered. Any change to the EIC would require a change in law.

Improve how concessions work

- The Department of Environment and Energy (DoEE) is reviewing the concession schemes across jurisdictions: who receives them, eligibility criteria, amount of support. Some jurisdictions have recently reviewed their concession schemes (e.g. NSW September 2017). The task is to agree and implement better targeted concessions, consistent across jurisdictions.

Energy efficiency for low income households

- Specific programs for improving low income household access to energy efficiency opportunities and distributed energy resources need to be developed. One option is to examine how deployment of distributed energy resources may address affordability for low income households.

- Significant potential exists for broader energy efficiency measures to contribute to the efficient use of network assets and avoid network investment. This could be undertaken within the National Energy Productivity Plan.

Better access to consumer usage data, clear pricing offers, and improved ability to compare offers

- Improve coordination of the actions underway to ensure consumers get access to their energy data - via a single consent process, with data in a consistent form that is useful for offer comparisons (e.g. *energymadeeasy*). Initiatives underway are:
 - Retailers working with the AER to improve consumer access to metering data and developing a QR code or equivalent for offer comparisons.
 - Meter data portability project consultancy.
 - National Energy Productivity Plan commitment to address challenges with access to consumer data.
 - Productivity Commission data use and availability report recommended that consumer data be available in “machine-readable” form.
- Other initiatives to improve consumer outcomes include:
 - The AER is reviewing the Retail Pricing Information Guidelines, to improve information to consumers (e.g. the bank interest comparison rate).

- AEMC progressing a Commonwealth rule change to require consumer notification at the end of a contract benefit period (November 2017).
- Expected Commonwealth rule change to prevent discounts from plan rates above standing offer rates.

Help consumers understand savings available

- Work to improve *energymadeeasy* is underway.
- Ongoing and broader consumer information is also required. Review any recommendations made in the ACCC inquiry, and seek advice from ECA.

Extend consumer protections to new energy service providers and exempt sellers

- Consider the findings of the AEMC review of embedded networks (28 November 2017).
- Conduct a review of protections and gaps in consumer protections for new energy services, including in relation to distributed energy resources.

Harmonise consumer protections

- Commit to harmonising consumer protections.
- Review any divergences and conduct assessment as to whether the National Energy Customer Framework or alternative arrangement is more effective and efficient.

4.2 Integrate energy and environment policies

- Agree an emissions trajectory for the NEM and a national emissions reduction mechanism integrated with energy policy.

4.3 Effective markets

Develop a credible source of information on hedging

- By 30 June 2018 industry should develop a credible information source or the Treasurer should consider removing the G20 derivative trade reporting exemptions that apply to electricity over-the-counter (OTC) products.

Longer term funding for innovation trials by AEMO and ARENA

- Review trials and use that information to decide on the need and arrangements for funding additional innovation trials.

4.4 Governance

Improved coordination

- ESB to coordinate reviews and reports by market institutions.

Optimise the rule making process

- Actions to improve and expedite AEMC rule making improvements should be accompanied by consideration of ways to shorten related SCO and COAG EC processes.

Appendix - The energy sector outlook

A longer term outlook provides the context within which to view current changes. It provides a perspective on the type of future we are heading towards, and recognises that a longer term view of the industry is required, particularly given the long lifetimes of many industry assets. (e.g. generators with lifecycles of 50 years).

Having an idea about what the future will look like – based on the trends and directions we see today – helps to establish the type and sequence of actions that could and should be taken to create an energy sector that delivers what customers want.

The underpinning trends provide a foundation set of assumptions on which the strategic priorities, goals and initiatives are based.

The extent to which actual developments divert from those anticipated, a reassessment of the goals and initiatives being pursued should be triggered. Even if goals and initiatives remain appropriate, changes to timing and resources may be required.

Importantly, the outlook is contextual rather than predictive. It does not attempt to predict specific outcomes and timing such as the future demand for energy, the cost or mix of technologies, or the value consumers will place on reliability.

What do we know about the future?

The energy industry is in a state of transition. Traditional industry roles and boundaries are being challenged. While changes to the old industry model are observable, the shape of the new is less clear.

Many factors will influence the shape of the future energy market. Changes in technology and economics are key influences, as are the decisions made by consumers, businesses, regulatory agencies and political processes. The many and diverse motivations of sector participants make predicting the future inherently uncertain. This is even harder in periods of technological change.

Despite these caveats, some sectoral directions and characteristics are reasonably clear. These are set out below.

The outlook - where are we heading?

Global context

- Australia has committed to meet international emissions obligations.
- Australia will continue to be exposed to and benefit from international technology developments, including in relation to generation, storage, and IT costs and capabilities.
- Energy will remain a foundation sector for all other sectors. Australia's success or failure in delivering sound energy policy and outcomes will affect the economy and international competitiveness.

Nature of energy as a commodity

- The instantaneous nature of electricity that drives many of operational features of the market will change as electricity becomes more economically storable.
- Electricity storage will be static (hydro, batteries) and mobile (electric vehicles).
- Energy production will have fewer and decreasing emissions compared to today.
- The digital revolution and the internet-of-things will mean more equipment and devices needing electricity (for entertainment, education, employment, or lifestyle-enhancement) but this will be offset by improved energy efficiency.

Producers of energy

- The variety of energy producers will continue to increase; there will be more energy producers, of different sizes, using different technologies and fuel sources, in more locations, than today.
- The transition to renewables will continue, driven by economics. Additional incentives or taxes may alter the speed of the transition but will not change its direction.

Transporters of energy

- Energy will still need to be transported from where it is made to where it is used so the need for poles, wires and pipes will remain.

- The challenge of linking producers and consumers will be more complex than previously, given changes in the scale and locations of generation. Developing these links must be done economically and competitively against the improving economics of stand-alone energy systems.
- Pricing and service models will need to be more flexible and varied, particularly to support two-way transport.
- Electric vehicles will represent an increasing proportion of stored energy and an alternative means of transporting energy.

Organisers of energy

- There will be an increasing role for organisers/aggregators of energy, on both the demand and supply side.
- There will be an increased number of industry participants, including entrants from industries such as telecommunications and global IT companies digital competencies to enter the energy market.
- Technology and data will support more efficient use of disparate and varied energy resources.
- Contract markets to underwrite generation investment and retail competition will need to evolve in line with changes in the characteristics of generators and the availability of demand response.
- As consumers gain greater energy capability and autonomy, the challenge for retailers will increasingly be to become a valued partner in delivering energy services.

Market operation

- The challenges of predicting and organising energy production increase with the diversity of production, and will require new methods.
- As generation and consumption patterns change, new challenges to security and reliability will arise and need to be solved.

Consumers of energy

- Access to energy will remain fundamental to support people's lifestyles.
- The consumer challenges in navigating their market choices may become harder in the near term, as a range of new consumer options become available (for example, new tariff structures, metering providers, solar PV and battery options, energy management software, peer-to-peer trading, demand response or ancillary service options).
- Energy will remain an essential service for the foreseeable future, but as consumers gain greater control over their energy generation and consumption, the need, and expectation, for government involvement may reduce.
- Consumer expectations will drive products, services and pricing structures to become more personalised as better IT and more accurate data supports individually targeted offerings.
- The balance between service-provider-supplied and self-supplied energy services will change as more consumers seek tailored solutions to suit their lifestyles and business. The energy market will be a more diverse market than historically.

The one certainty is that change will occur between now, the 2018 refresh and the 2020 review of this advice. Any changes can be accommodated in the annual refresh processes and the strategic priorities, associated goals and initiatives can be reset as required.

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About the Australian Energy Market Commission (AEMC)

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council (the Council). We have two functions. We make and amend the national electricity, gas and energy retail rules, and conduct independent reviews for the Council.

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