

AEMO Annual Report 2018

Leading the transformation



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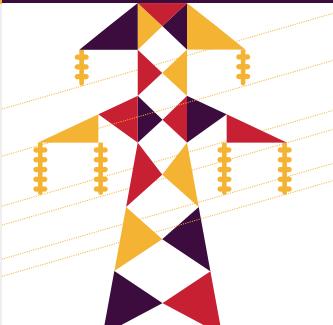
The changing energy landscape

The energy sector in Australia is undergoing unprecedented transformation in rate, scale and scope. The core disruptors changing the way we manage Australia's gas and electricity systems are highlighted below.

What remain unchanged are the physics and our focus on our fundamental obligations:

- Energy is an essential service and access must be available universally at an affordable price.
- AEMO must identify and pursue solutions that allow the changing energy industries to provide value to Australian consumers now and into the future.
- As the independent system operator and market administrator, AEMO is technology and ownership neutral. Our obligation is to facilitate the industry transition to support innovative and competitive alternatives that supply greatest value and improved outcomes for Australian consumers.

AEMO has identified eight key disruptors that are changing the way we manage Australia's gas and electricity systems, and we are addressing these disruptors through many projects described in this report.



Demand growth

Economic growth and population growth no longer result in changes in the overall need for power from the grid, due to counterbalancing impacts of distributed energy at consumers' locations. For the power system to provide consumer value, a transition plan that supports delivery of reliable power at the lowest cost is essential.

Supply sources

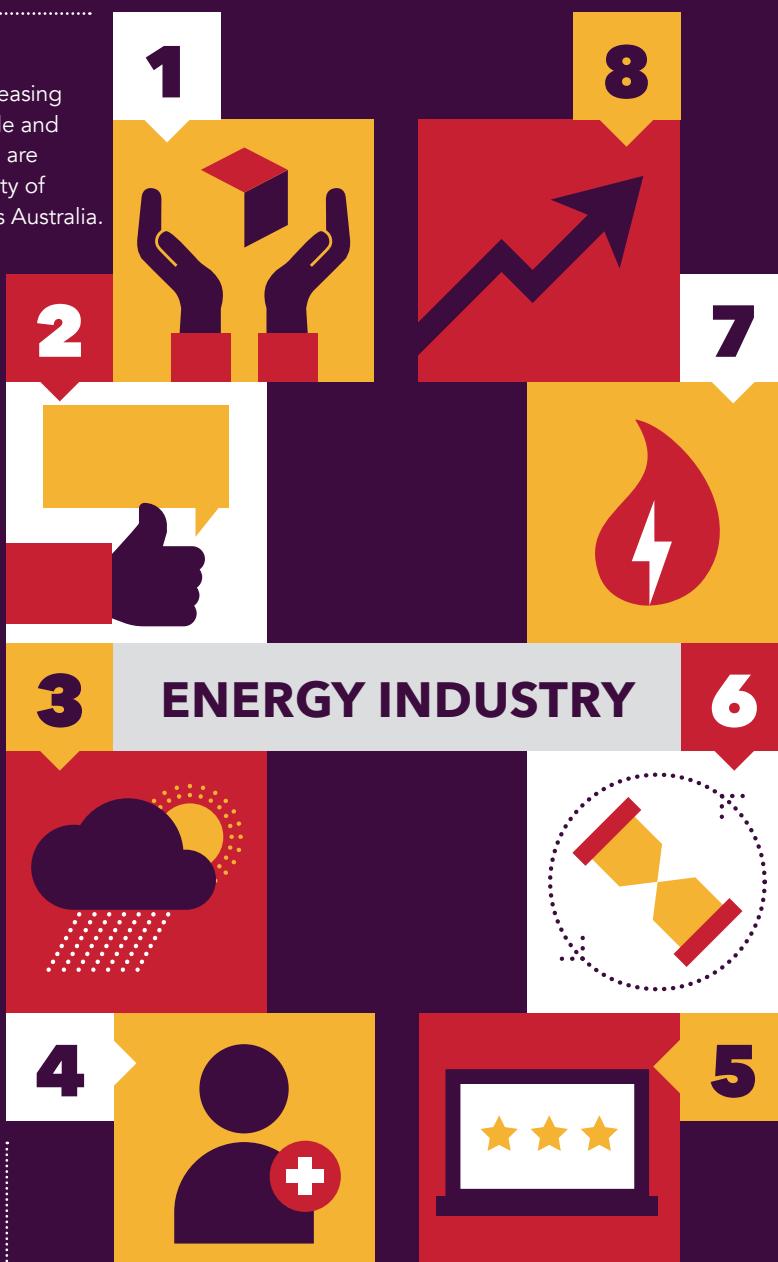
The advent and decreasing cost of new renewable and storage technologies are increasing the diversity of supply sources across Australia.

Consumer preferences

The growth of rooftop PV and home storage technologies have changed the way consumers are interacting and using our energy systems.

Weather and climate change

The effects of climate change are increasing the volatility and intensity of extreme weather events. This is also increasing the need for precise supply and demand forecasts as more weather-related generation resources penetrate the system.



New service models

The increasing number of market technologies and amount of consumer data have created new ways for energy to be distributed and settled in the market.

The convergence of gas and electricity

The increasing interconnectedness of Australia's gas and electricity systems requires planning and operation of both systems in a manner that optimises outcomes for consumers of both products.

Ageing infrastructure

Large coal-fired generation plants are reaching the end of their operational life-cycle.

Cyber security

Cyberthreats are changing the way we need to protect our operating systems and information systems.

Performance overview - 2017/18

AEMO is the independent system and market operator, with the primary responsibility of managing and maintaining energy system security for all Australians.

AEMO is responsible for managing a combined 48,000 kilometres of electricity transmission infrastructure in both the National Electricity Market (NEM) and the South West Interconnected System (SWIS) in Western Australia. We also operate 2,000 kilometres of high pressure gas transmission infrastructure as part of the Victorian Declared Transmission System, as well as the Victorian Declared Wholesale Gas Market, the Wallumbilla gas supply hub, Short Term Trading Market hubs in Adelaide, Sydney and Brisbane, and Retail Gas Markets in all states.

In Financial Year 2017/18, AEMO met all of our performance goals and delivered on our commitment to deliver safe, reliable and efficient energy to all Australians:



Managing a secure and reliable network

AEMO's 2017/18 Operational Plan met the reliability standard (less than 0.002% unserved energy) for electricity. As a result of focused planning and coordination with industry and governments, AEMO's summer readiness plan allowed us to secure reliable operations of the system during the second hottest summer on record.

Similarly, the gas systems were operated reliably and safely, even whilst we recorded the second highest ever demand in Victoria of 1,277 terajoules on 3 August 2017.



Managing an efficient market

It is AEMO's role to operate markets and systems effectively and efficiently to deliver value and improved outcomes to consumers. AEMO's settlements statements were issued and settled 99.98% of the time. All prudential requirements were managed with \$500,000 materiality and all rule changes to date have been implemented within regulatory timeframes.



Investing in our people

AEMO has heavily invested in our most important asset – our people – in the last financial year. In 2017/18, employee satisfaction tracked at 70% and our Work, Health, Safety and Environment scorecard met all obligations.



Technology and cyber security

The reliable and consistent operation of our IT systems is critical to the energy industry. AEMO's electricity, gas, and Western Australia systems exceeded their targets and delivered system availability at 99.994%, 99.986%, and 99.975% respectively.

AEMO is leading the development of an industry wide cyber-security framework, which will deploy international benchmarks to ensure a cyber secure sector. We launched this effort during the fiscal year with a focused effort on industry wide assessments and programs for continuous improvement.



Governance

Governance is a priority for AEMO and we have robust processes in place for declarations of interest and management of any perceived, potential and/or actual conflicts of interest. There were no major breaches of any of AEMO's statutory obligations in 2017/18.



A message from AEMO's Chairman



I was both honoured and excited to accept the position of Chairman at AEMO in November 2017, as I believe the independent market and power system operator must play a critical role in navigating Australia's energy future.

I have been working in energy policy since 2003, and was keen to continue in the sector at the cutting edge of power system engineering, technology, and markets, and I thank all AEMO members for their support.

I would like also to thank my predecessor, Dr Tony Marxsen, for his outstanding contribution to Australia's energy sector. I can see from the legacy he has left behind, and from the colleagues who had the pleasure to work beside him, that he will be sorely missed at AEMO. I look forward to upholding the exceptional standards he has set for the Board, a group of experienced independent

and non-independent Directors who bring multiple perspectives and current industry understanding and experience to AEMO.

Coming from a public policy background, I was well aware that the years ahead would be demanding. However, while the disruption currently occurring in the energy sector is profound, the fundamentals remain constant. AEMO has a central role in meeting the National Electricity and Gas Objectives – based on the long-term interests of consumers with respect to energy price, safety, reliability, and security. These objectives must continue to be met while the sector transforms to a low emissions future, in the context of energy as an essential service. This dynamic is often described as the energy trilemma – simultaneously addressing price, reliability/security, and environmental policy objectives.

And AEMO is not alone in its quest to meet these objectives. In my first year as AEMO's Chairman, I have met with all jurisdictional energy ministers and the Chairs of the other market bodies, leaders from AEMO's industry membership, and many energy consumers, and it is clear that their concerns are no different to ours. Priorities differ, but the fundamentals are consistent.

It has become a truism in the energy sector to say that the last year has been 'challenging' – and I don't expect that will quickly change. But the last year has also seen a greater focus on corporate governance in Australia, and the AEMO Board is cognisant of its obligations in that regard. Of the many issues that we address, risk and strategy are two of the most critical. The AEMO Board



and Executive team have invested much time and effort over the last year in addressing risk, in timeframes from seconds to decades, and in developing our corporate strategy and plans. We will be publishing more information on this during 2018/19.

One of the joys of this role is engaging with AEMO staff – seeing the levels of passion and expertise that they bring to their jobs, and their determination to deliver great outcomes for Australian energy consumers. No-one exemplifies this more than our Managing Director and CEO, Audrey Zibelman, and I thank her for her leadership and support.

One of the few things we can be certain about is that the transformation of energy systems and markets is not finished. Technology, policy, markets, and consumer preferences will continue to disrupt, creating both challenges and opportunities. But I have always been optimistic about Australia's energy future, and I am delighted to see how well-placed AEMO is to play its critical part.

A handwritten signature in black ink, appearing to read "Drew Clarke".

Drew Clarke

A message from AEMO's CEO



Universally, our industry is experiencing the simultaneous effects and opportunities of digitalisation, ageing infrastructure, a markedly and rapidly changing cost structure in both supply and storage, flattened and even negative demand growth, the impacts of climate change, cyber security concerns, and a profound change in consumer preferences and expectations for the industry. These changes collectively are impacting the production, transmission, and consumption of power at an unprecedented rate.

The continued diversification of Australia's generation mix continues to change the dynamics of the power system. In 2017/18 alone, 1,900 MW of renewable resources and battery storage was connected to the grid, and AEMO anticipates this growth to continue.

AEMO has implemented all 19 recommendations from the South Australian Black System report, and together with those allocated within the Finkel Review report, we have strengthened our engagement with industry and governments to collectively work towards operating and evolving a power system in disruption.

Our mandate under the National Electricity and Gas objectives is unchanged, and the essential need for cost-effective and reliable power for the overall economic welfare of society remains our imperative. What also remains unchanged is the fact we operate a complex power system in a capital-intensive industry, and we must abide by the physical requirements governing the highly technical and integrated characteristics of the energy system.

With our feet firmly grounded in economic and technology reality, AEMO's focus throughout 2017/18 has been on operational excellence and enabling initiatives that facilitate an efficient, more productive, integrated system. We have continued to put in place system security improvements and progressed work on market reforms to enable us to deliver affordable, secure, and reliable energy to Australian consumers.

Achievements of note include the successful implementation of our 2017/18 summer readiness plan. Despite Australia experiencing its second-warmest summer on record, the system performed well and no NEM consumers experienced interruptions to their electricity supply due to insufficient generation being available. Our joint frequency control ancillary service (FCAS) trial with ARENA, NEOEN and Siemens-Gamesa Australia demonstrated that wind farms combined with storage could deliver essential power system stability services to the market. The Hornsdale Wind Farm and Battery delivered \$35 million in savings to consumers in its first four months of operation alone. We consolidated our operations in Western Australia and greatly improved our forecasting, most

notably real-time weather forecasting capabilities across the country. We launched our inaugural Integrated System Plan, a core recommendation made by the Finkel Review, and witnessed a pleasing industry and government response following the release of our 2018 Gas Statement of Opportunities. Through our participation on the Energy Security Board, AEMO took an active role in all aspects of the development of the National Energy Guarantee, by seconding various AEMO employees to the Energy Security Board. We also focused on developing a number of strategic partnerships, with ARENA, the Bureau of Meteorology, Energy Networks Australia, and CSIRO. These are just some of the initiatives we are most proud of delivering for members and consumers during the last financial year.

Looking ahead, we as an industry must look to capitalise on the opportunities presented in front of us. The pace of change is accelerating. Where the industry could once think about things in decades, we have to think about things in months. Adopting this mindset, AEMO is focused on continuing to provide real value to our members and Australian energy consumers.

AEMO's executive leadership team and Board have been working diligently on a corporate strategy to drive the organisation forward, designed to best meet the needs of today and into the future. Drew and I look forward to sharing our strategies with our members and participants over the coming months.

Our existing expertise in delivering power system security and reliability without disruption, and efficiently managing our markets, remains a



priority for continuous improvement. AEMO will continue to focus on the requirements of the systems and will use our engineering and technical acumen to embrace new technologies and approaches to delivering increased value to consumers. Our future strategy will also concentrate on three new capability focus areas: digitalisation (both within and across the sector), coordination of Distributed Energy Resources (DER), and a new adaptive operating model for our organisation, designed to better position us to service the needs of our members and the Australian community.

The increase in the volume of data and accessibility of digital services, and the exponential rate of change, will have a marked impact on AEMO and the energy industry. Our vision is to deliver a digital platform that ensures operational excellence for AEMO's core functions (such as real-time operations, market monitoring, and planning and forecasting analysis), drives innovation in existing and emerging energy markets, and provides easy access to the grid for market participants.

There is also an immediate need to lead the integration and optimisation of DER. Effective integration of DER, through the right market designs and pricing, can provide economic and system benefits through load shaping, ramp control, and system security and reliability – driving efficient investment in, and operation of, the system, together with greater consumer choice.

To deliver our strategy in the best interests of our stakeholders, we must also look at our current capabilities. A move to a more adaptive organisation will enable us to operate with a high degree of agility, design for the

future while building and delivering for today, embrace change, and importantly, seek to create true value in everything we do.

And that leads me to the heart of AEMO's successful and productive year – our people. I am fortunate to work with some of the smartest colleagues I've ever had the pleasure of working with. But beyond engineering intelligence and technical capability, I have been humbled by the genuine pride and passion I see every day, displayed by people who truly believe in our clear objective of delivering affordable, reliable, and secure energy for all Australians.

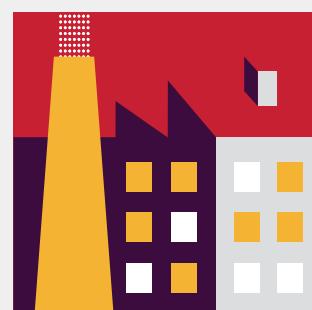
My excitement and optimism for what can be achieved over the coming 12 months and beyond has only increased. I was delighted with the opportunity to work with Dr. Tony Marxsen and appreciated his great leadership and support, and under Drew's Chairmanship, our Board continues to drive organisational excellence and focus to enable AEMO to be the best it can be. This is an exciting time to be part of the AEMO team, and the wider Australian energy landscape. I thank all those who continue to support our endeavours, and again congratulate our people on a successful 2017/18.



Audrey Zibelman

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Our Executive Leadership Team



Audrey Zibelman

Chief Executive Officer and Managing Director

Audrey joined AEMO in March 2017, and oversees all AEMO's electricity and gas functions and responsibilities.

She also currently serves on the CSIRO Energy Advisory Committee, the Energy Security Board, the Hawthorn Club's Asia Pacific Advisory Board and the Melbourne Energy Institute's Advisory Board.

Audrey had extensive previous international experience in the public, private, and not-for profit energy sectors. Her recent roles before joining AEMO included Chair of the New York State Public Service Commission and Executive Vice President and Chief Operating Officer of system operator PJM, as well as Board-related roles with the US Department of Energy and Advisory Council, New York State Energy Research and Development Authority, the New York State Planning Board, and the New York State Emergency Planning Council.



David Swift

Executive General Manager, Forecasting and Planning

David took up his current position in April 2018, and is responsible for AEMO's range of electricity and gas forecasting activities.

He previously spent nine years in AEMO in a range of executive roles across regulatory policy, retail market strategy, and market policy development.

David's previous experience in the energy industry spanned over two decades. His most recent role before joining AEMO was Chief Executive of the Electricity Supply Industry Planning Council of South Australia.





Damien Sanford

Executive General Manager, Operations

Damien moved to his current role in May 2017, with responsibilities for AEMO's electricity and gas system operations and engineering teams.

His previous roles in over eight years in AEMO included a range of operational functions, most recently in senior management for real-time electricity and gas operations.

Damien brought AEMO wide experience in energy operations and markets, emergency and risk management, and the armed forces.



Peter Geers

Executive General Manager, Markets

Peter has held this role in AEMO since 2014, looking at the financial operation of, and transactions across, Australia's gas and electricity markets.

He joined AEMO in 2008 and has held other roles including, most recently before his current role, Group Manager of AEMO's Markets and Business Strategy divisions.

Peter also worked extensively in the energy industry for a decade before joining AEMO, with energy trading experience in several major Australian energy companies.



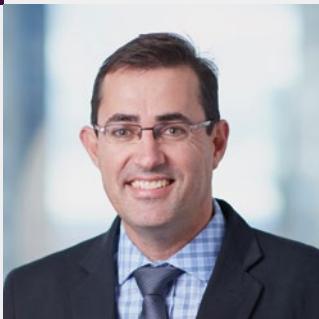
Jo Witters

Executive General Manager, Strategy and Innovation

Jo began this role in June 2017, working with industry stakeholders to develop solutions to emerging complex system challenges, and trial proof of concepts and new technologies that can improve outcomes for customers and market and system operation.

She has held roles with AEMO since 2009, across functions including business strategy, regulatory policy, and people and culture.

Jo's previous experience in 10 years in the energy sector, in Australia and internationally, included roles with UK energy regulator the Office of Gas and Electricity Markets (Ofgem), and at system operator Transpower and in consultancy in her native New Zealand.



Cameron Parrotte

Executive General Manager, Western Australian Functions

Cameron is responsible for the management and operations of Western Australia's gas and electricity markets, and has led this function since January 2016, when AEMO began the transition to becoming responsible for wholesale and retail markets in Western Australia.

During the 2017/18 reporting period, he was also responsible for AEMO's new Strategy and Innovation department from June 2017 to April 2018.

Cameron joined AEMO in 2016 from Western Power, where he had extensive experience in power system operations, management, and planning over more than 20 years in a range of roles.

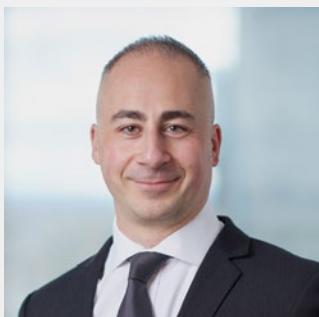


Brett Hausler

Executive General Manager, Regulation and Governance and Company Secretary and General Counsel

Brett leads the team managing corporate governance, legal, risk, audit, compliance, and procurement across AEMO. He has held his current EGM position since June 2017 and has been AEMO's Company Secretary and General Counsel since July 2012.

He joined AEMO's predecessor, the National Electricity Market Management Company (NEMMCO), in 1999, as General Manager Corporate Services, after several years in the energy sector. Brett's previous career was in corporate roles and private legal practice.



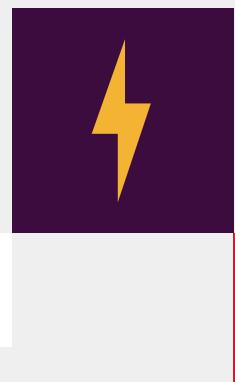
Joe Adamo

Executive General Manager, Public Affairs

Joe has held this role since June 2017 and is responsible for developing best practice approaches for AEMO's engagement with stakeholders, governments, media, and the community.

He joined AEMO in 2011 and has led the media and public affairs function in various roles since that time.

In Joe's previous career, he had 10 years of experience in a range of consulting and in-house corporate and public affairs roles.



Joe Locandro

Chief Digital and Technology Officer

Joe joined AEMO in March 2018, and leads teams delivering operating solutions and technologies to support efficient, secure, and reliable energy systems.

He had over 20 years of previous experience in executive IT management, and has held CIO and executive roles at Emirates Airlines, Cathay Pacific Airlines, China Light & Power, AusPower, Yallourn Energy, and Village Roadshow.



Katherine Henry

Executive General Manager, People and Transformation

Katherine joined AEMO in this role in December 2017, and is responsible for people and transformation strategies and the delivery of corporate services, people and culture services, and a transformation program across AEMO. She is also a non-executive Board member with the Australian Power Institute.

Katherine has over 20 years of international experience leading transformational change in sectors including technology, financial services, and fast-moving consumer goods in places including Australia, New Zealand, Asia, North America and the UK. She also has organisational psychology and HR executive experience, and has worked for organisations including PwC, IBM, ANZ Bank, and UXC Limited.



Jack Fitcher

(left AEMO in June 2018 to pursue other opportunities)

Jack was the Chief Financial Officer of AEMO and led the Corporate Services department which incorporated commercial services and the program management office. Jack was appointed to this role in 2012, having started at AEMO's predecessor, Vencorp in 2001 as its Finance and Risk Manager.

Jack has also held finance roles in the tourism and retail industries.

He has been replaced by Sandra Chui who has been with AEMO for 7½ years and has progressed from being a Financial Accountant to Group Manager, Commercial Services and now Chief Financial Officer.

Security and reliability

AEMO operates the electricity grid that connects five physically connected regions across Australia's east coast, and the South West Interconnected System (SWIS) in Western Australia. AEMO is also responsible for the physical operation of the high-pressure gas network in Victoria, and administration and operation of Victoria's declared wholesale gas market (DWGM).

Operating the power system in the dynamic and transforming energy industry requires hyper-vigilance on everything that can impact the security of the system from a fraction of a millisecond to 20 years in the future. AEMO accomplishes this through continuous analysis of the system by our own employees and continuous dialogue with industry partners. We regularly undertake operational improvements in the here and now, and provide forecasting and planning information that guides the efficient development of energy supply and transmission to meet Australia's future energy needs over the next five, 10 and 20 year time periods.

Planning and forecasting transparency and excellence

As Australia's energy supply mix continues to experience rapid change, alongside changing energy demand conditions, the accuracy of our forecasts has never been more vital. AEMO continues to invest in our valued partnerships with the Bureau of Meteorology and CSIRO as well as through the development of sophisticated forecasting systems methodologies to enable us to ascertain and then manage our changing system. Through these processes, AEMO is able to identify actions required to optimise the system in real time and investments for the future. This allows us to provide information that supports better policy, investment and operating decisions by governments and market participants. Advanced forecasting also allows us to improve system efficiency through taking advantage of the lowest cost resources for supplying reliable, secure and affordable energy to consumers.

Development of the inaugural Integrated System Plan

In July 2018 AEMO published our inaugural Integrated System Plan (ISP) after engaging and consulting widely during its development. The ISP fulfilled a recommendation from the Finkel Review and is a comprehensive evaluation of the likely changes that will be occurring across the power system in the NEM over the next 20 years. The ISP is a critical step towards adapting the national transmission system to meet current and future needs of our changing energy mix.

The ISP's analysis was predicated on sound engineering and sequenced approaches to investments in the transmission system, providing an identified least-cost pathway to managing the energy transition. The ISP applied probabilistic scenario-based analysis and system optimisation to project the reliability and security needs of the power system, while simultaneously identifying the lowest cost combination of resources to meet system and consumer needs in the context of government policies.

Over the next year, AEMO will work with industry and government to implement the investments that the ISP identifies as necessary and of no regret as well as work with the ESB to identify and implement changes to the ISP processes to further ensure its value to the industry and policy makers.

Improved forecasts

AEMO further improved our forecasting methodologies during 2017/18 to ensure we are delivering enhanced, more accurate long-medium- and short-term forecasts to our members. This included modelling

an increased number of scenarios in our 2017 (NEM) Electricity Statement of Opportunities (ESOO), and closer engagement with stakeholders and data-gathering for our 2018 Gas Statement of Opportunities (GSOO).

The improved methodologies and learnings from each report were used in the forecasts for our Integrated System Plan, which was predominantly modelled during the 2017/18 financial year. These improvements resulted in a stronger focus on demand-side participation, along with forecast growth of battery storage, rooftop photovoltaic (PV), and embedded generators responding to prices.

Looking ahead, we are progressing an initiative to implement AEMO's first cloud-technology analytic system to enable an uplift in forecasting and planning data management and modelling capability.

Forecast Uncertainty Measure

A significant enhancement to the existing reserve management procedures was introduced in early 2018 with the implementation of the Forecast Uncertainty Measure (FUM). The continuing investment in wind and solar farms in the NEM, in conjunction with the ever-increasing penetration of roof-top PV generation, has increased the levels of variability and thus uncertainty on both the supply and demand side. The FUM quantifies this uncertainty and provides AEMO real-time operations with a forecast of uncertainty, allowing the control room to better understand and manage the risk associated with the new generation fleet in the NEM. It also augments the existing Projected Assessment of System Adequacy (PASA) mechanisms, allowing market participants a more comprehensive view of the forward

trading conditions. This initiative is part of AEMO's strategy to extract value from large-scale data using novel data science techniques. AEMO is also working with international counterparts who have expressed interest in the FUM to further develop our capabilities through shared learnings.

As the proportion of variable generation in the NEM continues to rise, the FUM will result in more accurate collation of the reserves needed to manage uncertainty, maintain reliability and security, and improve operational decision-making.

Medium-Term Projected Assessment System Adequacy upgrade

AEMO successfully delivered the Medium-Term Projected Assessment System Adequacy (MT PASA) Redevelopment project in May 2018. The system's two-year redevelopment was initiated to provide a richer picture of power system reliability by implementing a probabilistic modelling approach, and included considerable stakeholder engagement and input. The probabilistic approach replaces the previous deterministic approach towards assessing reliability and removes the need to calculate minimum reserve levels.

This approach better captures the uncertainties inherent in the power system and is currently used by industry as a mid-term planning tool to help with outage scheduling.

Operational improvements

As energy systems transform, we continue to lead and undertake initiatives to protect the security and reliability of the power system, and improve our capability to manage the energy disruption in consumers' long-term interests, minute by minute and day to day, now and into the future.

Black System recommendations

Since the South Australian Black System on 28 September 2016, AEMO has not only taken a number of actions to reduce the impact and likelihood of a reoccurrence, we have implemented operational improvements based on learnings from the event.

Black System recommendations

Recommendation	Completion date
AEMO to work with ElectraNet to determine the feasibility of developing a special protection scheme to operate in response to sudden excessive flows on the Heywood Interconnector, and to initiate load shedding with a response time fast enough to prevent separation.	The first design was implemented in December 2017 with an additional component using the Hornsdale Power Reserve's fast response to be further tested in November 2018.
AEMO to support ElectraNet to identify and address any specific risks to the operation of protection systems due to the low levels of system strength that may be experienced if South Australia is islanded.	A third-party report was approved and provided to ElectraNet in November 2017.
AEMO to support ElectraNet in reassessing control strategies to achieve very rapid switching of reactive plant to manage the risk of severe over voltages in South Australia that might occur due to large levels of under frequency load shedding following separation.	AEMO has worked closely with ElectraNet to specify and procure the right solution for ongoing system strength and voltage management in South Australia. While ElectraNet is progressing with filling the Network Support and Control Ancillary Services (NSCAS) gap by end 2020, through the installation of synchronous condensers that will support voltage control, in July 2017 AEMO implemented system strength requirements that specify a minimum amount of synchronous generation to be online. This generation requirement will also support the fast and rapid control of transmission network voltages in South Australia.
AEMO to develop a more structured process in consultation with participants to source and capture data after a major event in a timely manner and to co-ordinate data requests.	AEMO identified an alternative mechanism to obtain the necessary data following major events, which was implemented in October 2017.
AEMO to investigate with participants the possibility of introducing a process to synchronise all high-speed recorders to a common time standard.	Following the Black System, older-style meters in the state were replaced or supplemented with modern hardware by May 2018.
AEMO to consider development of a new generator reclassification process to manage generator 'type' risks, including how information about potential risks will be sought, and the most appropriate methods to manage power system security during such a generator reclassification.	AEMO undertook an assessment of the classification process in December 2017. Further collaboration with manufacturers and operators is required to establish how the reclassification process will be implemented and prioritised based on a risk assessment.

In our last Annual Report, we reported that 13 of the 19 recommendations from our Black System Final Report had been completed. We are pleased to report that the remaining six recommendations have now been implemented.

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As Australia’s energy supply mix continues to experience rapid change, alongside changing energy demand conditions, the accuracy of our forecasts have never been more vital.

Tools and Capabilities

Voltage control for an evolving power system

Voltage management is a critical element of managing the power system. As the levels of rooftop PV and energy efficiency continue to rise, AEMO is seeing rapid changes in voltage conditions, creating challenges for the power system.

In Victoria, where AEMO is the planner of the Declared Shared Network, AEMO has instituted holistic and coordinated voltage control strategies to keep the power system secure and to manage the cost to consumers. This includes coordinating the voltage control sources available across Victoria’s generation, distribution, and transmission, sources of reactive support, and operational measures.

AEMO will share the learnings with stakeholders over the coming 12 months and work towards putting similar practices in place throughout the NEM.

Improved power system frequency control

Power system frequency is a critical aspect of stable power system operation. Australia’s power systems, including the interconnected NEM power system, operate at a frequency range as close to 50 Hertz (Hz) as possible. If the frequency varies outside of this range, there is an increased risk of harm to equipment and system failure.

AEMO led several initiatives over the last two years to manage challenges of controlling frequency on the changing system. Most recently, this includes conducting a Market Ancillary Service Specification (MASS) review, optimising the purchase of regulation Frequency Control Ancillary Services (FCAS), and bringing together an industry forum – through the NEM Operational Committee – to develop an effective strategy to improve system frequency. As part of the implementation of the strategy, AEMO has been working closely with the local network service provider to conduct trials on primary frequency control in Tasmania. The learnings from these trials will feed into further trials that will be conducted in other jurisdictions of Australia.

Lightning reclassification project

AEMO’s lightning reclassification tool was delivered to our electricity control rooms on 7 December 2017 to help mitigate power system risks associated with extreme weather events. The tool uses data from weather, energy and market applications to automate the process of reclassifying lines that are vulnerable to lightning strikes during lightning storms.

Reclassification is an important risk management tool for our operators, as it identifies instances when abnormal conditions increase the risk of events that can affect power system operations. This project also created a platform where additional automation and process improvements can be made in future.

Increasing efficiency, reducing risk

- Since the launch of AEMO’s lightning reclassification tool, over 400 lightning reclassifications have been performed, ensuring AEMO is able to continue to operate the power system in a secure state, even under abnormal conditions like lightning storms.
- Over summer, approximately 300 reclassifications were performed by the tool.
- The amount of time spent by controllers identifying, issuing, extending and cancelling reclassifications has been cut by 50%.

A focus on summer preparedness

Summer is the season when the Australian energy system is most under strain due to high consumer demand and the increased likelihood of extreme weather events. AEMO collaborates closely with the wider industry and government jurisdictions throughout the year to prepare the power system for the summer ahead, including planning the system for extreme hot weather, and other events that can stress the system's resilience and impair reliable power delivery.

Summer readiness 2017/18

Following supply interruptions in South Australia and New South Wales in February 2017, AEMO brought forward our summer readiness plans to manage risks to consumer supply of electricity during periods of weather-related high demand over the summer of 2017/18.

The program saw heightened engagement with industry members and state and federal governments to ensure a shared understanding of the power system's requirements, and the implementation of a range of actions.

AEMO worked to secure almost 2,000 MW of additional resources, including the return of 833 MW of existing market generation capacity from gas-powered generators and over 1,141 MW of generation and demand response resource reserves procured via the Reliability and Emergency Reserve Trader (RERT) mechanism. The demand response reserves included 143 MW from a joint demand response initiative in collaboration with the Australian Renewable Energy Agency (ARENA).

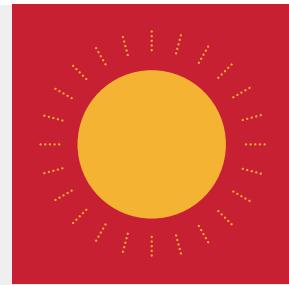
AEMO's comprehensive summer readiness plan also included the implementation of a range of operational improvements, contingency planning, close collaboration and communication with industry and governments, and ensuring the availability of fuel for generators (coal, gas, water and diesel) and the availability and capacity of the transmission network.

AEMO shared our summer readiness plans with the wider industry by holding a major briefing in Melbourne for over 200 stakeholders.

The power system was particularly challenged on two occasions. AEMO had to activate the RERT mechanism on 30 November 2017 in Victoria, and 19 January 2018 in Victoria and South Australia when a strong heatwave event impacted both states concurrently.

AEMO's 2017/18 summer readiness report summary was published in May 2018. It outlined all actions taken to best prepare the NEM to meet energy consumer requirements. The report confirmed no NEM consumers experienced interruptions to their electricity supply due to insufficient generation, despite Australia experiencing its second-warmest summer on record. Summer 2017/18 illustrated that close collaboration with the broader industry ensured that AEMO was able to effectively mitigate the previously projected risks of load shedding.

AEMO will build on its learnings and findings from these experiences in its preparation for summer 2018/19.



NEM industry trends

Radical changes are occurring in both the demand requirements and supply mix in the NEM. The consumption of NEM grid-supplied energy over the next 10 years is forecast to remain flat, due to the growth of rooftop PV and increasing use of local storage, as well as overall increases in energy efficiency. In the past year, rooftop PV installations have grown by 20% in the residential sector and almost 60% in the business sector. High growth is forecast to continue for the next three years, before plateauing through the next decade.

This uptake of rooftop PV continues to shift maximum operational demand to later in the day, at times when the contribution of rooftop PV is declining. Within the next decade, maximum operational demand in most regions is expected to reach a point at which it is no longer materially reduced by additional PV installations. From this point on, some growth in maximum operational demand is forecast, due to other drivers such as population increases. Maximum operational demand in South Australia already occurs late in the day when solar irradiance is low.

At the same time as demand from the power system is flattening, existing supply sources, particularly thermal resources, are ageing and approaching the end of their technical lives. These resources must be replaced at a time and at the locations required to continue to support a reliable and secure power system and to meet consumer demand for affordable power that also meets public policy requirements.

Amid this backdrop, AEMO is observing record levels of newly committed renewable generation development in the NEM, with just under 6,000 MW of new solar and wind generation projects in an advanced or committed stage to be operational in the next two years, displacing the energy contribution provided by both gas- and coal-fired generation.



Western Australian (WA) electricity operations and trends

AEMO has held responsibility for power system operations in the South West Interconnected System (SWIS) since 2016, and now operates as both grid and market operator on the west coast. Our WA functions enable the effective operations of WA's gas and electricity markets to benefit businesses and households in the state.

WA industry trends

It was a year of records for the SWIS – a system where one in four households have installed rooftop PV, totalling 900 MW – with the system recording an all-time winter peak of 3,419 MW on 31 July 2017. The system also recorded its lowest daytime demand since 2011, and AEMO is observing increasing occurrences of daytime demand being less than the previous night's minimum demand.

Looking ahead, AEMO's analysis suggests peak demand and operational consumption in the SWIS is forecast to grow slowly over the 10-year outlook period from 2018/19 to 2027/28. This trend is underpinned by lower economic and population growth outlook, and the continuing rapid uptake of rooftop PV. Existing and committed generation resources, alongside demand-side management capacity, is projected to be sufficient to meet forecast peak demand in the SWIS over the outlook period.

WA operational enhancements

AEMO successfully consolidated our WA market operations and system management into AEMO's new WA Control Centre, bringing the two west coast teams together into the one office. AEMO has also progressed work on updating the systems within the control centre. AEMO's eTerra Energy Management System project – a control room system implementation that will be compatible with the NEM's control systems – is nearing completion. The upgrade of this system allows AEMO to run more accurate network models, and more detailed fault level analysis and voltage stability analysis.

AEMO has also worked closely with Western Power on the technical requirements of a Generator Interim Access initiative. The access tool is now ready to facilitate the commissioning of new generation into the SWIS, on a partially constrained basis.

A secure gas future for Australia

AEMO operates gas retail markets in New South Wales and the Australian Capital Territory, Queensland, South Australia, Victoria, and WA. AEMO also operates wholesale gas markets in south-eastern Australia – the Declared Wholesale Gas Market in Victoria (DWGM), the Short Term Trading Market in Adelaide, Brisbane, and Sydney (STTM), and the Gas Supply Hub (GSH), whose trading locations are based at Wallumbilla in Queensland and Moomba in South Australia. AEMO also operates the Natural Gas Services Bulletin Board (GBB), and is system operator of the Victorian Gas Declared Transmission System (DTS). AEMO is responsible for Gas Services Information functions in WA.

Victorian gas operations

In Victoria, AEMO operates the Victorian Gas DTS pipelines and maintains and schedules the Victorian DWGM, a system and market that collectively manages over 200 petajoules (PJ) of gas flows and settles over two billion dollars in transactions annually. The functions prescribed to AEMO in Victoria include management of gas quality and reviewing the adequacy of gas supply and pipeline capacity for the DTS. We also play a pivotal role in the management of, response to, and recovery from gas emergencies in the state.

Annual Victorian gas consumption has been relatively consistent at approximately 200 PJ per year since 2003, a result of declining industrial gas use being offset by increasing winter residential consumption.

In 2017 we witnessed a slight increase in gas consumption for electricity generation due to the withdrawal of 1,600 megawatts (MW) of coal-fired generation capacity when Hazelwood Power Station closed in March 2017. Accordingly, winter 2017 saw the highest annual consumption of gas in the last six years. The coldest day in Victoria, 3 August 2017, also resulted in the second highest gas demand day in history. Total gas use in Victoria for the financial year was 215.8 PJ.

Platform and process improvements lead to considerable efficiencies

AEMO successfully modernised the DWGM application platform in March 2018, reducing settlements and prudentials processing from 90 and 73 minutes to seven and four minutes respectively. The new platform has also enabled regular gas market scheduling tasks to be completed at least 50% faster than previously, allowing for greater flexibility in processes if required. The introduction of this new platform also facilitates AEMO's ability to more readily meet future regulatory demands and improve our recovery capability should any issues arise.



The software vendor and integration partner for this project is now using this project as a best practice case study for future project implementations globally.

In a larger piece of work, AEMO's Gas Markets Future Platform is a multi-year program to modernise the IT platform that supports AEMO's Gas Retail and Wholesale Market systems. It will also modernise the existing IT Infrastructure platform, which is at end of life and support. In the 2017/18 financial year, AEMO completed phase two of the project, which focused on platform planning, testing, and the go-live stage for the DWGM systems. Phases three and four of the project will commence in late 2018. This upgrade ensures AEMO continues to support the industry's strategic objectives and responds to the change agenda proposed in the current Victorian DWGM Review. The project is expected to close in 2019.

Gas metering system replacement prepares for the future

Under the National Gas Rules (NGR), AEMO is required to calculate the gas energy flows in the DTS, and we conduct the settlements process to collate meter and allocation data received from the market.

In early 2018, AEMO implemented a new Heating Value Allocation Model system for determining gas heating value in real time in the DTS, which dramatically improved the consistency of energy measurement for gas supplies into the distribution network.

This system enhancement has delivered further improvements and efficiencies to the Victorian retail gas market, and paves the way for future fuel developments to be easily integrated into the market.

Western Australian gas operations and trends

Analysis released by AEMO in 2018 stated WA's domestic gas market is forecast to be well-supplied until 2020, however development of new reserves is needed to prevent a tightening of supply thereafter. Unlike Australia's east coast, the state has a Domestic Gas Policy that requires WA liquefied natural gas (LNG) export projects to make gas available to the WA domestic gas market on a long-term basis, by setting aside reserves equivalent to 15% of their LNG production.

Throughout the reporting period, AEMO observed increasing competition in WA's gas markets, following an increase in the number of wholesale and retail sellers.

Changes in Western Australia's gas markets over the last five years (increase from 2013 to 2017)



Delivering independent analysis and industry insights

As the national energy market operator and planner, AEMO plays an important role in working with the industry to deliver a more integrated, secure and cost-effective national energy supply. We do this by supporting Australia's energy transformation through the delivery of regular insights and advice to our stakeholders.

Our annual, statutory reports released in the 2017/18 financial year included:

The infographic features three main report cards arranged in a grid-like structure. The first report, '2017 Electricity Statement of Opportunities', is dated 5 September 2017 and includes a description of its purpose. The second report, '2017 Western Australian Gas Statement of Opportunities', is dated 14 December 2017 and includes a description of its purpose. The third report, '2018 Electricity Forecasting Insights', is dated 29 March 2018 and includes a description of its purpose. The background of the infographic consists of stylized energy-related icons: a power line tower, a flame, a valve, a battery, and a graph with connected dots.

5 September 2017

2017 Electricity Statement of Opportunities

The Electricity Statement of Opportunities (ESOO) provides technical and market data that informs the decision-making processes of market participants, new investors, and jurisdictional bodies as they assess opportunities in the NEM over a 10-year outlook period.

14 December 2017

2017 Western Australian Gas Statement of Opportunities

AEMO's assessment of the Western Australian domestic gas market for the 10-year outlook period to 2027.

29 March 2018

2018 Electricity Forecasting Insights

The Electricity Forecasting Insights Update provides independent electricity consumption, maximum and minimum demand forecasts for each NEM region over a 20-year forecast period (2017/18 to 2036/37).

Delivery of power system and market analysis and insights

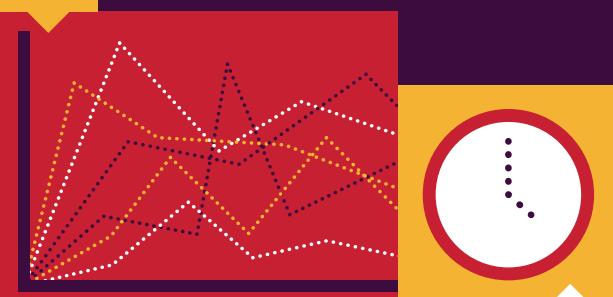
AEMO also delivered advice and recommendations as requested by government jurisdictions or as deemed necessary throughout the period.

29 March 2018

2018 Victorian Gas Planning Report Update

The VGPR Update provides information about changes in the supply demand balance over the next five years (2018 to 2022, called the outlook period) for the Victorian DTS, since AEMO published the 2017 VGPR in March 2017.

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22 June 2018
2018 Gas Statement of Opportunities

AEMO's 2018 Gas Statement of Opportunities assesses the adequacy of gas infrastructure, reserves and resources to meet demand in eastern and south-eastern Australia to 2038.

15 June 2018

2018 Wholesale Electricity Market Electricity Statement of Opportunities

AEMO's WEM ESOO provides forecasts and analysis of peak demand and energy use in the SWIS for the next 10 years.

As outlined previously in this annual report, AEMO developed the first Integrated System Plan following considerable stakeholder consultation and detailed analysis, and based on a Finkel Review recommendation. We published the document in July 2018.

In an important piece of analysis, in March 2018 AEMO published our observations on operational and market challenges to reliability and security in the NEM. The analysis outlines the reliability and security challenges confronting the NEM and its finding that the NEM no longer achieves optimal outcomes for customers and investors. The document flags the urgent need for the design and adoption of new market and regulatory changes to support energy security and reliability and better customer outcomes, and outlines potential avenues that could address the challenges.

In response to Federal Government requests, AEMO provided information and advice on the risks to reliability and affordability posed by the recent exit of thermal generation and anticipated exit events over the next 10 years. In early 2018, AEMO responded to the Commonwealth's request and analysed AGL's proposal to replace the energy and capacity currently delivered by the Liddell Power Station following its retirement in 2022.

AEMO published a Power System Requirements paper in March 2018 to help stakeholders understand the technical and operational needs of the power system – needs that remain constant even as energy systems like the NEM and the WEM transform.

Since December 2017, AEMO has regularly published a Quarterly Energy Dynamics report that provides energy market participants, businesses, consumers, governments and other interested parties with information on the market dynamics, trends, and outcomes during each quarter.

Information transparency and shared knowledge are hallmarks of a well functioning market. Over the next year, AEMO will add to our publication of critical market and system operation statistics, and will consult with our members and market participants to ensure their information needs are met.

Markets

AEMO has responsibility for the management, enhancement, and analysis of Australia's gas and electricity wholesale and retail markets on both the east and west coast.

Our work includes settlements and prudentials, market implementations, wholesale market management, retail markets and metering, and investigating how Australia's energy markets can be evolved to best support consumer and system needs.

The energy disruption is concurrently altering the physical power system and changing the dynamics of our energy markets. As the energy market operator, we are obligated to support and promote existing market frameworks which meet our legislative objective to deliver long-term value to consumers. We are also responsible for supporting the energy transition by driving the development of opportunities and reforms that facilitate a more efficient and productive energy market, for the ultimate benefit of all Australians.

Prudential and settlement figures

Summary of annual trades and volumes 2017/18

NEM

Energy purchased (GWh)	185,161 GWh
Purchase value (\$B)	\$16.1 B

WEM

Total energy consumed (GWh)	17,899 GWh
Total value (\$B)	1.734 B

DWGM

Wholesale gas withdrawal (PJ)	213.5 PJ
Wholesale gas purchased (\$M)	\$2125 M

STTM

Wholesale gas withdrawal (PJ)	150.9 PJ
Wholesale gas purchased (\$M)	\$1229 M

GSH

Wholesale gas withdrawal (PJ)	14.2 PJ
Wholesale gas purchased (\$M)	\$107.1 M

Wholesale Gas Market reform

As a result of reforms progressed by the Gas Market Reform Group, AEMO is continuing our implementation of a gas capacity auction and capacity trading platform. This platform will provide participants the opportunity to buy and sell unused capacity on pipelines connecting gas markets across the east coast. This reform complements the Gas Supply Hub, allowing participants to buy both commodity gas and transportation services.

AEMO has also implemented new arrangements for the Gas Bulletin Board, to allow easier access and use of the data so participants can readily analyse information on gas markets and gas flows in the system.

Gas Bulletin Board Redevelopment project

The Natural Gas Services Bulletin Board is a gas market and system information website covering all major gas production fields, major demand centres, and natural gas transmission pipeline systems in South Australia, Victoria, Tasmania, New South Wales, the Australian Capital Territory and Queensland.

In September 2017, the Australian Energy Market Commission (AEMC) published its determination and final rule in relation to the Improvements to Natural Gas Bulletin Board rule change request. The rule change request received from the COAG Energy Council proposed changes to enhance the breadth and accuracy of information provided to the market through the Natural Gas Services Bulletin Board.

The rule change involved:

- Changes to the cost recovery provisions – AEMO is now required to determine the cost recovery process itself rather than the process being set out in the NGR. Further, the existing process described in the NGR was no longer feasible due to other rule changes so AEMO was required to fundamentally rework Gas Bulletin Board cost recovery.



AEMO has also implemented new arrangements for the Gas Bulletin Board to allow easier access and use of the data so participants can readily analyse information on gas markets and gas flows in the system.

- Alignment of reporting requirements for the operator of the Declared Transmission System (AEMO) with other pipeline operators to the extent practicable.
- A major expansion of data made available for users as well as an expanded scope for the GBB participation requirements. GBB now covers almost all substantial east coast gas infrastructure (including Northern Territory once the Northern gas pipeline is commissioned), from production facilities until the entry point to distribution systems and large end users. Furthermore, pipeline operators are required to give much more granular connection point level information (previously provided much higher level aggregated data).
- Tougher compliance framework; however this aspect of the rule change didn't directly impact this project.

The new procedures were published on 30 April 2018 and the change in fee structure became effective from 1 July 2018. The go-live date for the new Rules was 30 September 2018.

The increased transparency and access to more information from this project will further improve market outcomes for the benefit of consumers.

Power of Choice

AEMO successfully launched the Power of Choice (PoC) program on schedule on 1 December 2017, bringing into effect reforms to deliver new and improved initiatives in electricity metering, retail market arrangements, and associated infrastructure.

This package of reforms was designed to enhance competition for consumers and enable them to better manage their electricity services and usage. The reforms were initiated after the 2012 PoC review by the AEMC. PoC provides households, businesses and industry with more opportunities to make informed choices about the way they use electricity and manage expenditure.

These reforms will also allow the introduction of further new and innovative services to the NEM, ultimately enabling customers to manage their electricity services and usage in a manner that suits them best.

Enhancements to the Reliability and Emergency Reserve Trader

In March 2018, AEMO submitted a rule changes to the AEMC to strengthen the Reserve Trader arrangement in the NEM.

As system operator, AEMO operates the NEM in the context of greater uncertainty, variability and a tighter supply-demand balance driven by a growing proportion of variable renewable generation (on-grid and behind the meter), an ageing fleet of thermal generation, and unexpected retirement of capacity, increasing risk of forced outages.

Recent reviews and advice have recognised the benefits of an enhanced reserve mechanism, aimed at providing AEMO with the necessary tools to manage the system through shortfalls. These include the Finkel Review and AEMO's advice to the Commonwealth Government on dispatchable capacity.

Procurement of RERT for summer 2017/18 together with the ARENA/AEMO demand response trial have highlighted some opportunities to enhance the existing RERT framework to mitigate against the risks associated with unanticipated shortfalls. To better understand the issues and potential changes, AEMO established a process to develop a High Level Design for a reserve framework, which was completed at the end of 2017. In developing the High Level Design, AEMO consulted with a range of stakeholders through our Expert Panel and Working Group, government and held sessions with the AEMC and Reliability Panel. This engagement included holding workshops, meetings, and one-one briefings/discussions.

Taking account of stakeholder feedback, AEMO produced a High Level Design together with an accompanying rule change request. AEMO is currently working with the AEMC and industry on the rule change proposal.



Wholesale Electricity Market reforms

In August 2017, the Western Australia Minister for Energy announced plans to introduce constrained network access arrangements in Western Australia's SWIS, with complementary and consequential amendments to the WEM. Following this announcement, AEMO worked with the Public Utilities Office (PUO) to plan and scope a reform work program.

On 30 June 2018, the WEM Rules were revised, obliging AEMO to prepare for and facilitate the implementation of WEM and Constrained Network Access Reform. Through the Rule Change Panel, a suite of rule changes to be implemented by AEMO are also being examined that improve the operation of the existing market.

Western Power, the PUO, and AEMO have also progressed the Generator Interim Access solution which has enabled ongoing development of large-scale renewable projects.

Five-Minute Settlements

AEMO and industry participants have begun work on the Five-Minute Settlement (5MS) Program. The 5MS program will alter the settlement period for the wholesale electricity spot market from 30 minutes to five minutes.

The revised rules, which come into effect on 1 July 2021, will align operational dispatch and financial settlement periods. The alignment is expected to lead to more efficient bidding, operational decisions, and investment. The five-minute settlement arrangements are also expected to provide a better price signal for investment in fast response technologies, such as batteries, new gas peaking generation, and demand response. The arrangements will be mandatory for all wholesale facilities (typically generators larger than 5 MW and several major loads), but will also be progressively adopted for retail customers as smart meters are installed under the enhanced metering competition reforms implemented as part of the AEMC's Power of Choice program. The NEM will be one of, if not, the first electricity market to introduce five-minute metering and settlement to residential customers and small businesses, and will see a dramatic growth in meter data in coming years.



Technology, data, and cyber security

Data and technology will play a key role in the way we manage our increasingly complex energy systems and markets. The rapid digitalisation of energy technologies will require the use and development of communication technologies and information technology infrastructure.

As Australia's energy sector continues to evolve, it's important that our technology and IT systems can support and enhance the capabilities of our grid and energy markets.

AEMO is working to implement the next stage of our digital strategy to enable the provision of access to data and sophisticated analytics that will further facilitate the efficient operation of the power system and energy markets. To support this objective, AEMO progressed work on a range of technology projects in 2017/18.

Growth in data

The Australian electricity industry is at the start of its digitalisation journey, with our sector ranked thirteenth out of sixteen sectors in Australia^{*1}.

Opportunities associated with digitalising the electricity sector have been valued at AU\$1.3bn per annum^{*1}. With the increasing adoption of smart meters, sensors, and other Internet of Things devices it is predicted the data

handled by the average grid company will grow tenfold over the next five to ten years^{*2}. AEMO is introducing a digital platform to improve access to information and insights, create a frictionless experience for all who interact with us, and improve efficiencies so we can support the industry in realising these potential benefits.

^{*1} Digital Australia: Seizing the opportunity from the Fourth Industrial Revolution, Digital McKinsey.

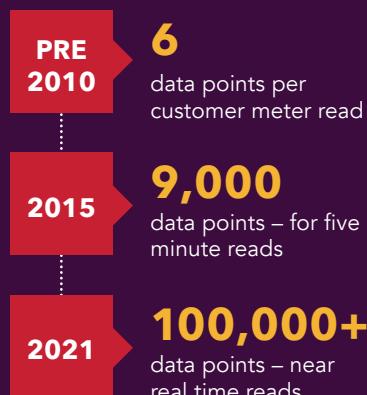
^{*2} The Power Grid of the Future, The Boston Consulting Group.

Test automation

To improve the efficiency and reliability of our systems and critical infrastructure, AEMO systems development teams began introducing test automation to existing and future applications.

Test automation helps teams deliver high-quality software products faster and more cost-effectively. This minimises the risk of a production environment defect impacting our energy systems, and has the potential to save millions of dollars' worth of damage to AEMO and the broader energy industry.

The test automation implemented during the Power of Choice program played an instrumental role in AEMO delivering system changes to the market on time and on budget in December 2017.

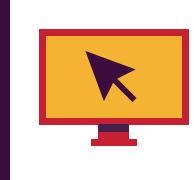


Cyber security program

Continued investment in technology and practices to protect against cyber threats is a harsh reality of our current environment. As critical infrastructure to our personal lives and economy, the energy industry must adopt best practices that will help secure the systems against cyber threats.

AEMO is currently developing an industry uplift program and defining standards for Cyber Security posture within the energy sector. AEMO is engaged on this program in coordination and with oversight from the Australian Cyber Security Centre and Critical Infrastructure Centre.

The Industry Cyber Uplift Program will ensure that AEMO and our critical energy industries are engaging in best practices to protect against cyber threats.



The growth of Distributed Energy Resources

Consumers with Distributed Energy Resources that allow them to actively and passively manage their energy consumption from the grid are playing a significant and growing role on the energy grid.

This is most evident in the rapid growth in photo-voltaic and storage technologies, particularly as these technologies get cheaper through scale, further technology innovation, deeper delivery capability, and competitive pressures.

More than 1.1 GW of rooftop PV was installed in 2017 and figures from the Clean Energy Regulator show that well over 3 GW of rooftop PV will be installed in 2018. This corresponds with Energy Networks Australia's (ENA) estimates that by 2050 consumers will generate up to 45% of Australia's electricity needs.

Unless appropriate markets and rules are put into place that support the systematic and orderly integration of DER into our systems and markets, these consumer investments will not achieve their full value. Under the appropriate regulatory and market framework and with the necessary data and system management tools, DER can help individual consumers and the system as a whole manage the price of power and can provide essential services to support the security and reliability of the power system.

AEMO has commenced a broad program of work aimed at integrating DER into the system and market. To deliver this, AEMO is working closely with ENA, the AEMC, the AER, ARENA and industry participants, on the focus areas summarised below.

DER visibility

In 2017/18, AEMO worked with federal and state governments and industry members to communicate the need for visibility around DER. The development of a DER register is part of AEMO's DER program, and aligns closely with our strategy of managing a transition towards a two way energy system.

The visibility of these resources is a critical gateway to the effective integration of DER into the Australian power system, and to allowing AEMO and network service providers (NSPs) to better manage grid security and operational supply and demand levels.

These collaborative efforts successfully secured funding and support from the Council of Australian Governments (COAG) to set up a DER register, and the COAG Energy Council also requested a rule change for this register to be established, with consultation expected to be completed in late 2018.

AEMO is also exploring more granular visibility of distributed resources, including electric vehicles, particularly as these resources are integrated into the grid and market dispatch processes.



Connection framework and technical standards

AEMO is working with ENA to inform the development of a national framework for the connection of distributed resources, aimed at the timely and effective connection of these resources onto the grid and ensuring they met appropriate network and power system needs. AEMO is also working with Standards Australia on the development of standards for distributed resources, and reviewing the need for additional DER technical standards.

Market access

AEMO is working with the AEMC on changes to the regulatory regime to facilitate DER access to energy, ancillary, and reserve markets. These regulatory framework reviews will be informed by a range of AEMO pilot programs.

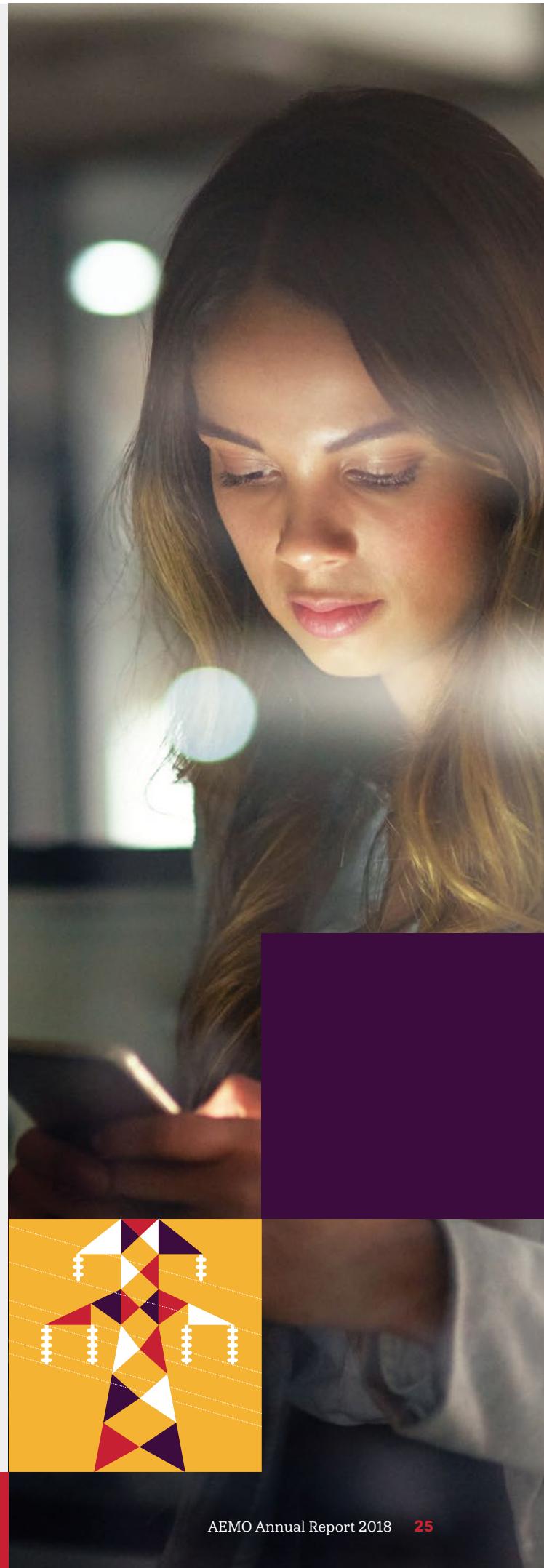
Open Energy Networks

AEMO and ENA began a body of work, in consultation with industry, to look at models that enable DER integration and optimisation, taking into account both transmission and network constraints, with the aim of informing regulatory framework changes.

Following the release of the consultation paper in June 2018, AEMO and ENA held a series of workshops across Australia. The industry feedback was comprehensive, with over 60 submissions received. AEMO and ENA will continue to work with industry to work through the details of the various models.

Pilot programs

AEMO is establishing a three-phased trial program in relation to DER. The first two phases are focused on enabling virtual power plants and aggregated distributed resources more generally to offer energy and frequency services into the market, with these resources being dispatched alongside other resources. The third phase aims to progress the trialling of a distributed market model. AEMO will work with distribution businesses, consumer groups and other market participants to progress this.



Strategic Partnerships

The radically changing dynamics of the power system are forcefully reshaping, and delivering tangible impacts to, all aspects of the energy industry. In this changing context, AEMO recognises the importance of shared knowledge and strategic partnerships that can significantly expand our internal capabilities to solve technical challenges. Because we are so committed to ensuring that the energy transition is successful for Australian consumers, it is more important than ever to take every opportunity to collaborate with others who can extend our knowledge and help us make the power system more innovative, competitive, and efficient for consumers.

Energy Security Board

In August 2017 a new Energy Security Board (ESB), chaired by Dr Kerry Schott AO, was established by the COAG Energy Council. Comprising an independent chair and deputy chair together with the heads of the AEMC, AER and AEMO, the Board's role is to coordinate the implementation of the reform blueprint produced by Australia's Chief Scientist, Dr Alan Finkel AO.

Following approval from the COAG Energy Council to develop a detailed framework to support the provision of reliable, secure and affordable electricity with a focus on reliability and emissions reduction, AEMO seconded several employees to the ESB to provide specialist advice and analysis for the development of the National Energy Guarantee.

Australian Renewable Energy Agency (ARENA)

AEMO continues to work closely with ARENA since the inking of our Memorandum of Understanding (MOU) in May 2017.

Joint initiatives delivered in the 2017/18 financial year include the Australian-first demand response trial and the Hornsdale Wind Farm FCAS trial.

There are several other projects in development that will commence in the next financial year.

Bureau of Meteorology

The growing nexus between weather, climate, and energy means weather and climate-related information is now a central input to both our real-time operations decision-making process and our longer-term supply and demand forecasts. Since March 2017, BOM has deployed an embedded senior meteorologist in the AEMO's control rooms to help prepare for weather events, such as extreme heat, that can have an impact on electricity supply. The Bureau has also provided direct data feeds to AEMO 24/7 to help support operational decision making.

Energy Networks Australia Open Networks Australia

The effective management or 'optimisation' of a decentralised energy system would not only support its safe and reliable integration into the grid, but also unlock the true value of customer investment in these resources. However, it is important that all customers could benefit from this release of value, and that it is equitable for all.

As noted in the previous section of this annual report, AEMO is working with ENA to seek stakeholder input on how to best integrate solar and energy storage into electricity networks to help ensure quality and reliability of supply and lower household power bills.

Demonstrations

ARENA Demand Response trial

In October 2017, AEMO and the Australian Renewable Energy Industry (ARENA) jointly announced a three-year demand response trial to manage electricity supply during extreme peaks. The \$35.7 million initiative will deliver 200 MW of capacity by 2020.

Over three years, the pilot projects will be trialled in Victoria, South Australia, and New South Wales to free up temporary supply during extreme weather – such as prolonged summer heatwaves – and unplanned outages. Funding was awarded to 10 pilot projects to deliver 143 MW for the 2017/18 summer.

This is the flagship initiative of ARENA and AEMO's collaboration to test proof of concept projects to support grid security and stability.

Hornsdale Wind Farm Frequency Control Ancillary Services trial

From August 2017 to February 2018, AEMO conducted an Australian-first trial with ARENA, NEOEN, and Siemens-Gamesa Australia, to see if a specific type of wind farm could provide essential power system stability services to our market.

The project's objectives were to model, implement, and test the capability of Hornsdale Wind Farm 2 to be remotely controlled by AEMO for Frequency Control Ancillary Services (FCAS), and to determine the types of FCAS the wind farm can provide.

Following the successful trial, the Hornsdale Wind Farm 2 is now registered and offering FCAS in the NEM, and has already saved approximately \$3.5 million during a five-hour period in South Australia's FCAS market. This is the first time a wind farm has been registered to offer and deliver FCAS services in Australia.

Market Participant Five Minute forecast

The Market Participant Five Minute self-forecasting trial is a collaboration between AEMO and ARENA, in conjunction with forecasting service providers and existing wind and solar projects, to demonstrate the potential benefits that wind and solar generator self-forecasting can deliver towards the operation of the power system. It is anticipated that the use of self-forecasting will deliver system-wide benefits by reducing generation forecast errors and providing greater autonomy to existing intermittent generators.

In early 2018, AEMO and ARENA held a workshop with industry on self-forecasting technologies for utility-scale wind and solar, as part of close engagement with industry in Stage 1 of this trial. This workshop covered the technical requirements for allowing a market participant's five minutes ahead forecast to be integrated into AEMO systems, and an A-lab to explore a potential proof of concept. Stages 2 and 3 of the trial will continue through 2018 and 2019.



Virtual Power Plant trial

AEMO, the AEMC, and the AER are working together to establish a virtual power plant (VPP) trial program. The trials will be used to support an understanding of the technical and regulatory challenges associated with VPPs providing energy, FCAS, and network support services. The intention is that the trials will inform any future amendments to the regulatory framework to enable benefits to the power system and consumers.

AEMO plans to consult with industry on the proposed VPP Demonstrations framework before launching the demonstrations in 2019 for an initial duration of 12 months.



Member and stakeholder relations

As Australia's energy landscape continues to change, providing insights and information that enables our stakeholders to make informed decisions is a priority for AEMO.

AEMO is committed to engaging openly and transparently to understand stakeholder priorities, develop a shared view of maximising benefits for consumers, manage risk through rigorous contingency planning, and pursue opportunities to collaborate and innovate.

As an early example of our goal to provide simple and easy-to-access information, AEMO took a more proactive and wider approach to communicating with the public both directly and through the media in 2017/18. Our objective is to demystify the complexities of the energy industry and to deliver energy literacy to consumers.

Managing new network connections and market registrations

In 2017/18, AEMO worked with industry to successfully commission approximately 1,900 MW of new grid-scale generation across the NEM.

With a large number of new entrants unfamiliar with uniquely Australian conditions, we are seeing some proponents make commercial commitments ahead of confirming grid connection requirements, with the potential to lead to sub-optimal investment and power system performance outcomes.

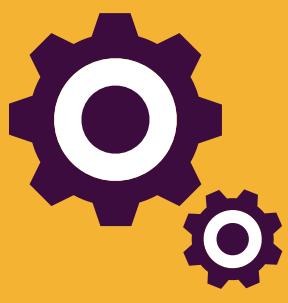
There is high interest in renewable connections across the NEM, generally in regions remote from existing generation sources, load centres, and power transmission infrastructure. These are increasingly requiring

detailed technical assessments to confirm the ability to operate safely without adversely impacting power system stability.

AEMO continues to work with stakeholders to develop solutions to address often urgent and complicated enquiries with varying levels of familiarity and understanding of the market participation registration and network connections processes. This further highlights the importance of AEMO's ISP and ensuring our members are engaged and aware of the work AEMO is delivering in relation to the Renewable Energy Zones highlighted in the ISP.

The influx of enquiries is further exacerbated by the complexity involved in registering and connecting emerging generation and energy storage to the grid, existing system strength and transmission capacity in high interest areas of the electricity network, and potential policy and NER changes underway to facilitate efficient operation of new generator models in the NEM.

To better support our registration and connection teams, AEMO's stakeholder relations team continues to work to better engage our stakeholders to proactively manage their expectations while not compromising on the technical requirements for a safe and secure power system.



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AEMO launched its energy literacy platform EnergyLive on 1 December 2017 as a communications resource and channel for the Australian energy industry and beyond.

Managing emergencies effectively

As the nation's system operator, the effective management and resolution of energy-related emergencies is a critical part of our core functions. Over the past financial year, our emergency preparedness team supported the business through a number of incidents, and liaised closely with industry members, stakeholders, and state and federal governments to ensure alignment and collaboration remained a key component to our success.

Other projects included internal and external emergency training sessions and exercises, updating and enhancing emergency management plans, protocols, and frameworks, and establishing and maintaining close working relationships with Emergency Management Victoria and other industry bodies.

The largest and most successful body of work in our 2017/18 financial year included AEMO's summer readiness 2017/18 project. This incorporated jurisdiction and industry summer readiness meetings, development and running of the weekly summer readiness briefings from November 2017 to April 2018, and the facilitation of the inaugural joint national gas and electricity industry (NEMEMF-NGERAC) emergency preparedness exercise.

Working closely with market participants

Alongside our other communications platforms, AEMO has held a wide range of consultative forums across Australia's states to give our stakeholders the opportunity to meet AEMO employees and voice any challenges, ideas, and questions they have about Australia's changing energy sector.

AEMO will continue to engage closely with stakeholders through these forums, to ensure a diverse range of perspectives are incorporated into our strategic planning for Australia's energy sector. Topics covered at these forums are focused on supporting the delivery of an efficient energy system and energy market for the benefit of Australian energy consumers.

Number of forums	36
Total number of invitees	724

Working with participants and industry to deliver energy literacy to the community

AEMO launched our energy literacy platform EnergyLive on 1 December 2017 as a communications resource and channel for the Australian energy industry and beyond. Our position as an independent advisor, and as the market operator, provides us with a unique opportunity to provide a platform for industry to engage with a broad audience.

There is a clear distinction between our corporate site and EnergyLive. While they are always aligned, they are very much parallel platforms with different objectives.

The corporate website continues to be the primary source of information for the energy industry and government, delivering market-specific information that facilitates the delivery of a productive and efficient energy market. Our corporate website had just under 500,000 visitors and over 3.3 million page views in 2017/18.

AEMO's Energy Live addresses topical industry issues as well promoting objective in-house expertise to dissect and predict energy trends that impact Australian businesses and consumers. We use a variety of ways to foster audience engagement, including long and short form articles, infographics, animations, podcasts, and videos.

The AEMO Energy Live website has been well received by industry members, stakeholders, and the public through the dissecting and prediction of energy trends, with the site averaging 5,000 visitors each month in 2017/18, and over 100,000 page views in the six months following its launch.

Over 2017/18, AEMO again worked to steadily grow and engage with our social media following. This included more frequent posts across our Facebook, Twitter, and LinkedIn pages, and promoting published articles on Energy Live, AEMO's presentations at national and international conferences, and updates on industry events or emergencies. As a result of this work, AEMO's social platforms have amassed a large following of industry members, government employees, and interested members of the public, increasing our reach for a broader base to grow community energy literacy.

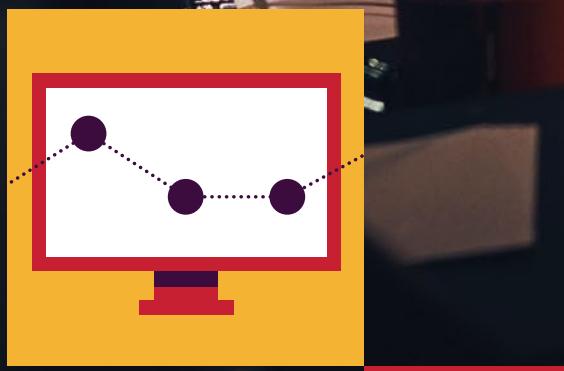
Educating the industry

Increasing knowledge in the sector is a commitment AEMO also continues to uphold, through the delivery of training courses to professionals in the energy industry.

During 2017/18, AEMO delivered more than 70 courses totalling 460 hours to over 1,300 industry professionals. The demand for these courses continues to grow and the education training calendar for the next financial year will see a significant increase in the number of courses offered, including a new course on the fundamentals of gas markets.

Courses – Face to face	Number of courses run	Days	Attendance (approx.)
National Electricity Market (NEM) Overview	21	21	525
National Electricity Market (NEM) Fundamentals	7	1.4	126
Metrology in the NEM	2	6	40
Market Settlement and Transfer Solutions (MSATS)	1	2	21
Network and FCAS Constraints in the NEM	2	4	40
Short Term Trading Market (STTM) Overview	4	4	80
Declared Wholesale Gas Market (DWGM) Overview	4	4	80
Wholesale Electricity Market (WEM) Introduction (WA)	10	5	168
Reserve Capacity Mechanism (WA)	11	5	128
Energy Markets, STEM Balancing and LFAS (WA)	10	5	110
Total	72	57.4	1318

Online courses	Enrolments
National Electricity Market (NEM) Overview eLearning	683
Gas Markets Overview eLearning	200
Total	883



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Over the last year, AEMO delivered more than 70 courses totalling 460 hours to over 1,300 industry professionals.



People and Capability

AEMO is an organisation with passionate and highly intelligent people, committed to making a difference for Australian energy consumers. We are dedicated to attracting, retaining, and developing the right skills that position us to lead the energy transition.

We strive to cultivate the best and brightest people who are highly regarded in the industry for technical excellence, strategic thinking, and solving complex problems in partnership with the industry. Through our commitment to our people, our culture, and diversity, we will build an environment in which our people are proud to work.

Attracting the best and the brightest

In a highly competitive market, we have streamlined our candidate acquisition processes to ensure we attract and onboard exceptional talent into the organisation, in reduced timeframes, as well as consistently improving the recruitment experience. Our candidates now experience higher quality interviewing from hiring managers due to hands on coaching, an improved digital offer process, and our enhanced on boarding and induction experience.

Nurturing our top talent

Our future depends on how we cultivate our best and brightest talent as an investment in our future. It is critical that we actively nurture our top talent and provide an environment where they can flourish.

We do this by putting a strong focus on developing talent programs that are focused on on-the-job stretch assignments, coaching, and participation in leadership development opportunities.

We pride ourselves in our ability to attract, develop, and retain great technical talent and strive to maintain our technical excellence across our key capabilities: engineering, data analytics, economics, and technology and digital. We achieve this by investing in management capability, technical capability, coaching for performance, and providing strong linkages to on-the-job development.

Recruiting for the future

The success of future AEMO not only depends on our best and brightest but also on our ability to attract the right skills mix for the future. It is important that we invest, not only in the leaders of today, but also in the next generation of AEMO.

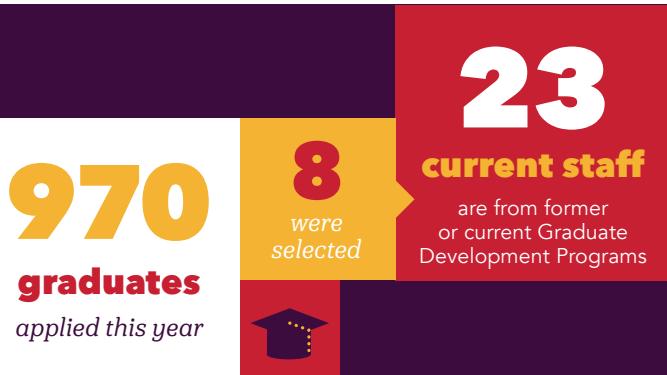
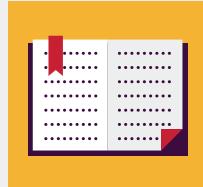
As the opportunities and challenges we face in the sector become more complex and require more sophisticated problem-solving, we at AEMO must plan strategically to evolve our workforce to meet these needs. We are investing in more sophisticated strategic workforce planning capability and enhanced workforce planning methods, and seeking to attract talent that provides AEMO with the skills and capability we require now and for tomorrow.

Looking ahead, we will continue to evolve our talent management program so we have the right skills to build an adaptive organisation model that enables us to solve the complex problems of the future power system and markets.

Employee engagement

AEMO ran an employee engagement survey in September 2017 which saw an employee participation rate of 78%. The overall engagement level of 70% was 6% higher than in the previous year's survey. Studies show that engagement leads to greater productivity and greater outcomes.

The positive feedback that came out of the survey confirmed our people are proud to work for AEMO, and are contributing to AEMO's organisational goals. Areas identified as opportunities for improvement included feedback and recognition, with a focus on both celebrating our successes and identifying areas of development and growth for employees.



AEMO's Graduate Development Program

Negotiating a successful Enterprise Agreement

AEMO commenced the negotiation of a new Enterprise Agreement for employees in early 2018 and worked closely with representatives of the Australian Services Union, the Australian Workers Union, Professionals Australia, and employee bargaining representatives to put forward a new three-year agreement.

The new proposed agreement returned a resounding Yes (95% of total votes) when put forward to employees in June 2018, and was successfully submitted to Fair Work Australia for ratification later that month.

The strong engagement levels from employees suggested not only a keen interest in individual progression, but also a drive for company-wide success.

AEMO's graduate program forms a key part of our succession and talent planning and has employed many high-quality graduates into the business.

AEMO targets graduate skillsets to include information technology, electrical engineers (focus on power systems), econometricians, data scientists, mathematicians, and statisticians. This ensures AEMO has a diverse knowledge base which can help tackle some of the complex challenges facing the energy industry.

“

The graduate program allowed me to do rotations over the course of the program which provided a great insight about where you want your career to go. When joining the graduate program, I looked at this as a stepping stone, but I see myself at AEMO well into the future. The most exciting thing is how dynamic the industry is and that we get to overcome so many challenges.”

– Rob Selbie (2016 Graduate cohort)

“

When coming out of university I knew that AEMO had a highly regarded Graduate Development Program, and as the nation's independent system operator, I knew it would allow me to learn a lot more about the NEM. I have really enjoyed going into the control rooms. For me it's the place where everything comes together at AEMO. All that knowledge, expertise, and innovation eventually feeds into the control room at the end of the day. It's the place where you see the assets and all the infrastructure working together like a big machine and I just think it's fantastic!”

– Jacqui Mills (2016 Graduate cohort)

Workplace Health, Safety, and Environment (WHSE)

Commitment to health and safety

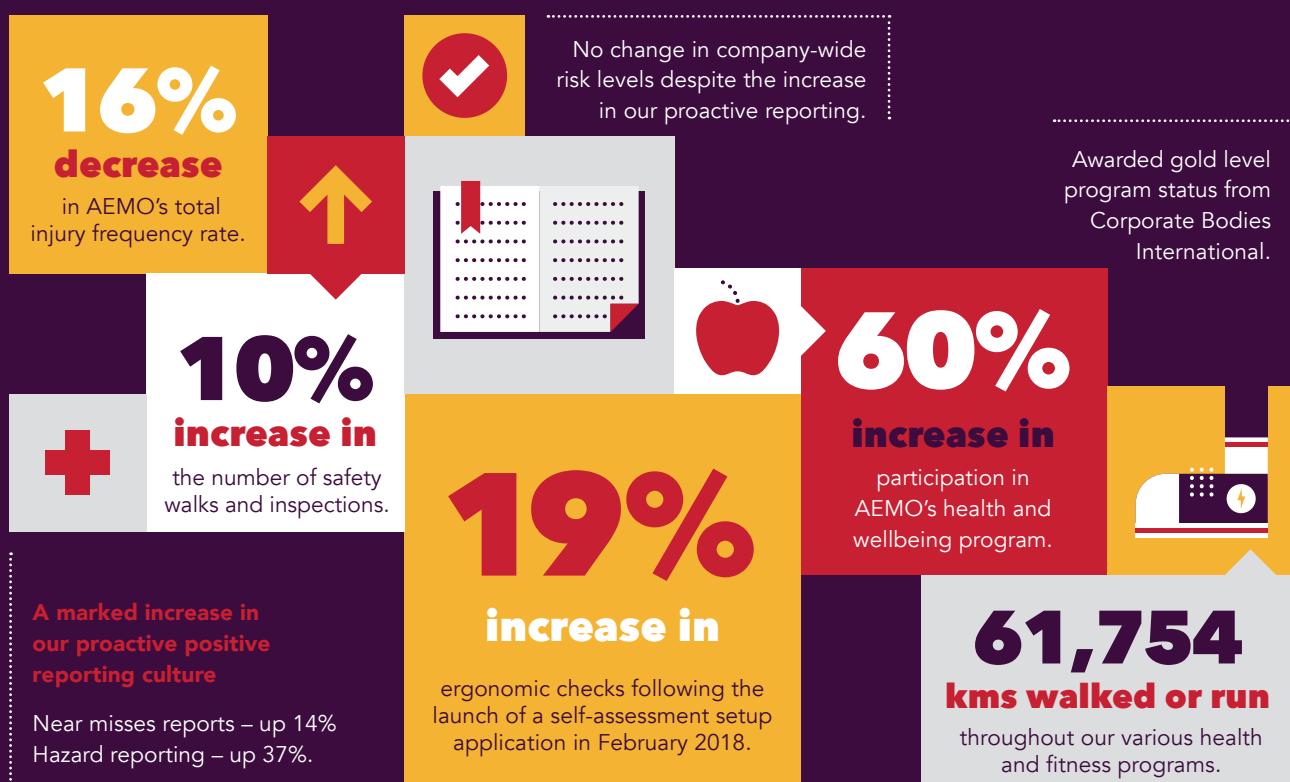
Health and safety is important in everything we do at AEMO. It means we take care of ourselves and each other and speak up if we don't feel things are okay. WHSE at AEMO enjoys great success thanks to the efforts of more than 120 dedicated volunteers who help support the various programs the WHSE function runs.

Safety

At AEMO, we support our people through a wide range of initiatives that aim to provide increased awareness and reduce injury and illness in a proactive way. To measure our success, AEMO developed a WHSE Performance Scorecard,

with 15 targets covering both lead (preventative) and lag (incident/ injury) indicators. All 15 targets were met over 2017/18, meaning AEMO achieved a 100% Performance Scorecard result.

Statistics compared to 2016/17 Financial Year



“

At AEMO we seek to build a workplace that is as diverse as it is dynamic, where the qualities that make each of us unique aren't just embraced – they're valued.

This is why I passionately believe that to reach our full potential as AEMO it is important we support our people's health, safety and wellbeing.”

Katherine Henry,
Executive General Manager,
People and Culture.

Engaging in the community

Our community programs focus on providing AEMO with avenues to make a positive impact in the communities where we live. AEMO has focused on building the following four key strategic partnerships with community organisations.

Power of Engineering: Power of Engineering is a not-for-profit organisation that runs events for high school students to demonstrate the number of opportunities available through careers in science, technology, engineering, and mathematics (STEM). AEMO continues to present at these events and facilitate workshops on a regular basis.

Foodbank: AEMO employees across the nation volunteered their time to pack food orders for FoodBank to help fight hunger in Australia. The food packs made are either distributed directly to a family seeking support, or opened by the charity to use in their meal program or community pantry program.

Red25: In early 2018, AEMO joined the Red25 Ambassadors in association with Australian Red Cross Blood Service, through our Healthy Communities program. Red25 aims to ensure 25% of Australian blood donations are secured by uniting with workplaces, community groups, schools, and universities around Australia.

Clean Up Australia day: As a part of the WHSE Reduce, Reuse, and Recycle month, AEMO's Healthy Communities Champions organised Clean Up Australia day events at all sites.



Introduction of a new procurement partnership with Supply Nation, enabling access to more than 1,400 Indigenous suppliers.



AEMO's community partnership with FoodBank across three states enabled the deployment of more than 30,000 meals for disadvantaged Australian families.

56%
increase in
workshops held

through AEMO's Community Partnership with Power of Engineering, reaching more than 500 Year 9-12 students in our communities.

AEMO's blood donation has been growing and we are proud to report we have saved an estimated 140 lives by regularly donating blood.



Corporate governance

Corporate governance principles

Robust corporate governance arrangements encourage the Board and management to pursue objectives that are in the interests of the company and its members and stakeholders. There is a clear correlation between a culture focused on achieving and maintaining high standards of corporate governance, and creating value for AEMO's members and the broader community.

AEMO is committed to ensuring a robust corporate governance framework is in place and has used a range of sources to continue to refine our approach to corporate governance, including the ASX Corporate Governance Principles and Recommendations, AICD Good Governance Principles and Guidance for not-for Profit organisations and overseas trends, modifying where necessary to be consistent with our corporate structure and Constitution. As part of our corporate governance framework, the Board has established corporate governance related policies and charters, which are published on AEMO's website. Key points are outlined within this section.

Composition of the Board

The Board, with the assistance of Board Committees, oversees AEMO's business affairs to meet the company's objectives and responsibilities under relevant law and regulatory regimes. It also monitors the performance and cost-effectiveness of AEMO's operations and systems. As at 30 June 2018, AEMO had nine Board members: an independent Chairman, the Managing Director (who is also Chief Executive Officer) and seven non-executive directors. Collectively the Board possesses the core skills prescribed in the AEMO Constitution

and provides a broad and diverse range of skills and experience necessary to face the challenges from an industry undergoing transformation.

The selection process for a new Chair or directors is overseen by the Nomination Committee of the Board with the interview process and recommendations for appointment being made by the independent COAG Energy Council Appointments Selection Panel. In addition to the required core skills and experience as set out in the Constitution, other factors such as independence, diversity, and succession planning are considered as part of the selection process.

AEMO's members (government and industry) approve the Appointment Selection Panel's recommendations before they are submitted for approval by the COAG Energy Council.

In relation to director reappointments, the Chairman reviews all directors whose term of appointment is due to expire and who are eligible for reappointment and then compiles a list of those directors whom the Chairman recommends for reappointment.

AEMO's members approve the submission of the list to the COAG Energy Council for approval. Directors are eligible under the Constitution for appointment of a term of up to four years.

Director induction and continuing education

Prior to commencement on the Board each director goes through a full induction program. This commences with the letter of appointment and a Deed of Indemnity and insurance. Corporate governance documentation is also provided including the AEMO Constitution, Board Charter, Board Committee Charters, key corporate

policies, and an overview of AEMO's strategic objectives and operations. The induction program also includes briefing sessions with executives and senior managers on key aspects of AEMO's operations and site visits with the program tailored to meet the needs of the new director.

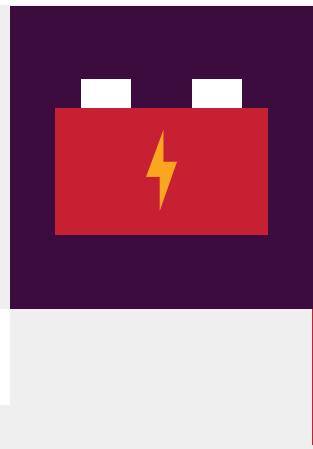
Directors are encouraged to continue their education and development by attending training and education relevant to their role. Briefings and workshops are also regularly held in conjunction with Board meetings.

Review of the Board, Chief Executive Officer, and Executive Leadership Team

The Board has delegated day-to-day management of the company to the Chief Executive Officer, assisted by the Executive Leadership Team. Each executive has a formal position description and their performance is monitored and measured in accordance with the performance management process. The Board, assisted by the People and Remuneration Committee, assesses the performance of the Chief Executive Officer and the Executive Leadership Team.

The Board is committed to the ongoing development of individual directors and the Board as a whole. The Board regularly undertakes an assessment of its performance. This assessment can be:

- Qualitative, quantitative or both.
- Informal or formal.
- A whole of Board review, or individual directors.
- Self-administered, administered by the Chair, or administered by an independent expert.
- Focused internally on the directors or involving the wider body of corporate stakeholders including, but not limited to, AEMO members.



Following an external review in 2016/17, the Board conducted an internal review during this financial year that covered the performance of the Board generally, the effectiveness of Board committees and the performance of the Chair.

Director independence

The Constitution requires a majority of directors, including the Chair, to be independent, and includes a definition of independence. As a general principle, a director is considered independent if he or she is not a member of management and is free of any business or other relationship that could materially interfere with exercising unfettered and independent judgement, or could reasonably be perceived to do so.

The independent directors during 2017/18 were Dr Marxsen, Mr Hubbard, Ms Krieger, Mr Pittard, Ms Tongs, Mr Clarke, Dr Davis, and Mr Orr.

Responsibilities

The Board acts in the best interests of the company and is accountable to the members for the overall direction, management, and corporate governance of the company.

The Board's responsibilities include:

- Overseeing the company's activities to achieve the objectives set out in the Constitution.
- Ensuring that induction procedures are in place to allow new senior executives to participate fully and actively in management decision-making at the earliest opportunity.
- Setting the company's goals and strategy.

These responsibilities are set out in the Board Charter.

Directors' access to information and advice

The directors have unrestricted access to all company records required to fulfil their responsibilities.

They have access to the Company Secretary with regard to any matter related to their role as director, and can seek information and opinion from any employee.

The directors also have the right to seek independent professional advice at AEMO's expense to help them carry out their duties.

Conflicts of interest

Directors are required to avoid conflicts of interest and breaches of duty. Specifically, they must act in good faith in the best interests of the company. Directors must not use their positions for personal benefit or the advantage of another person or organisation at AEMO's expense or use AEMO property inappropriately or place themselves in positions where they owe a duty to a third party that conflicts with their duty to AEMO.

Directors are required to immediately declare any interest or duty that conflicts with their duties to AEMO, or that might lead to or be perceived as a conflict of interest. Conflicts of interest are managed in accordance with the Directors' Interests Protocol.

No director has received or become entitled to receive a benefit because of contractual arrangements between AEMO and the director other than as declared in the Annual Report or through their contract of employment or engagement with AEMO.

Board committees

The Board seeks assistance and support from a number of Board committees to discharge its duties effectively.

Each Board committee has a formal charter that outlines its responsibilities. Board committees have access to internal and external resources, including access to advice from consultants and specialists, as required. The Chair of each Board committee briefs the Board on the outcomes of each committee meeting. The Managing Director attends all Board committee meetings.

Board committee membership 2017/18

	Risk and Audit	People and Remuneration	Technical and Regulatory
Dr Anthony Marxsen*		Member	Chair
Mr Drew Clarke AO PSM**	Member	Member	Member
Mr Tony Concannon		Member	Member
Dr Peter Davis		Member	Chair
Ms Betsy Donaghey	Member	Member	Member
Mr Jon Hubbard	Chair		Member
Ms Sibylle Krieger	Member	Chair	
Mr John Pittard		Member	Member
Mr Stephen Orr	Member		Member
Ms Jane Tongs***	Member	Member	

* Dr Marxsen retired from Board on 1 Nov 2017.

** Mr Clarke appointed to Board as Chairman 2 Nov 17.

*** Ms Tongs retired from Board on 1 Nov 2017.

Mr John Pittard has also been appointed by the Board as the Independent Chair of the Information Exchange Committee, which is established under the National Electricity Rules for approval of B2B procedures in the NEM.

The composition of the Nomination Committee can vary depending on the role being targeted.



Board members



Dr Anthony Marxsen

Retired 1 Nov 2017



Mr Drew Clarke AO PSM

Appointed 2 Nov 2017



Dr Peter Davis



Ms Jane Tongs

Retired 1 Nov 2017



Mr Jon Hubbard



Mr John Pittard



Ms Sibylle Krieger



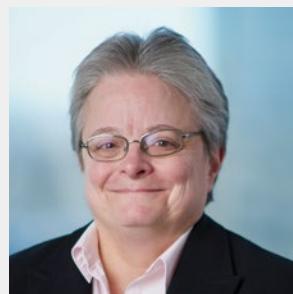
Mr Stephen Orr



Ms Audrey Zibelman



Mr Tony Concannon



Ms Betsy Donaghey



Board committee focus areas

The purpose of each Board committee and some of their respective focus areas during 2017/18 are described below.

Risk and Audit Committee

This committee assists the Board to fulfil its responsibilities for oversight and governance of financial, risk, audit, corporate governance, and compliance matters.

The Committee met four times during 2017/18. Its activities included:

- Risk management strategy and reporting, including reviewing AEMO's strategic and key operational risks, the system of identifying, assessing, monitoring, and managing material risk throughout the company.
- Review of the Annual Financial Report and the appropriateness of AEMO's material accounting policies and procedures, significant estimates, judgements, and notes to the financial statements.
- Approval of the internal audit plan, considering the findings of the internal auditor and the effectiveness of the internal audit function.
- Approval of the approach for the external market audits conducted for all markets and systems operated by AEMO, considering the findings of the market auditors for gas and electricity, and the effectiveness of the market audit function.
- Compliance reporting and analysis, including the development and ongoing review of appropriate regulatory compliance programs.
- Consideration of reports on capital expenditure and projects undertaken by the organisation.

People and Remuneration Committee

This committee assists the Board to fulfil its responsibilities in the management of its people and their remuneration.

This Committee met three times during 2017/18. Its activities included:

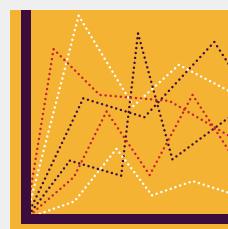
- Review of strategies for resourcing, the recruitment and retention of people, including their health, safety and wellbeing.
- Consideration of succession planning.
- Review of remuneration strategies, including performance payments and other monetary and non-monetary benefits, and the Enterprise Agreement.
- Monitoring AEMO's compliance with workplace health and safety obligations.
- Evaluating the performance of AEMO's people, including that of the Chief Executive Officer and the Executive Leadership Team, as well as company performance.
- Consideration of people-related matters such as workforce diversity.

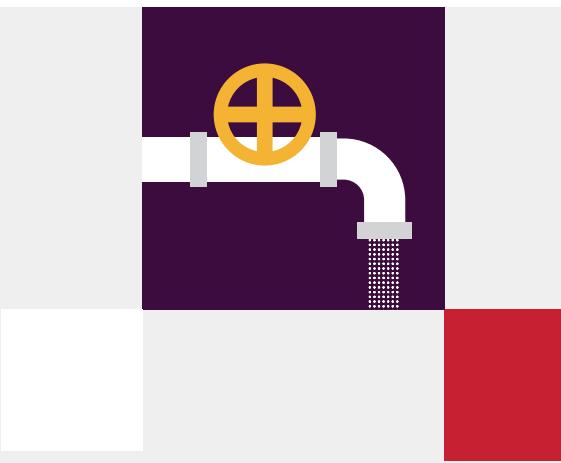
Technical and Regulatory Committee

This committee assists the Board to fulfil its responsibilities for the oversight and governance of technical matters, including information technology, technical publications, emergency preparedness, and regulatory matters.

This committee met four times during 2017/18. Its activities included:

- Review of information technology performance.
- Oversight of the strategic direction and high-level structure and content of key AEMO forecasting and planning publications including the first Integrated System Plan, the Electricity and Gas Statement of Opportunities.
- Implications for future power system operations.
- Reviewing energy market performance.
- Consideration of regulatory reforms and proposals for regulatory reform.





Nomination committee

This committee assists the Board in relation to the process for appointing a new CEO, chair, or directors to the Board.

During 2017/18, the committee met on numerous occasions.

This involves identifying the skills to be targeted through a search, the appointment of a search firm to undertake the search, and assessing the suitability of potential candidates and providing input to the independent COAG Energy Council Appointment Selection Panel.

Risk management

AEMO faces a variety of risks given the nature of our operations. These include industry transformation, cyber security, regulatory, compliance, financial, prudential, reputational, people, and operational risks. At AEMO, risk management includes the culture, processes, and structures that are directed to taking advantage of potential opportunities and managing potential threats or adverse consequences.

AEMO is committed to a comprehensive and integrated risk management framework that has the effect of embedding risk identification, treatment, and review into every business activity, function, and process. This enables AEMO to identify and manage risks that may have a material

adverse impact, including strategic and emerging risks. AEMO's objective is to achieve a high performing, continually improving risk management function, aligned to the International Risk Management Standard ISO 31000:2009.

During 2017/18, improvements were made to the processes and systems that support risk management, including reporting to the Risk and Audit Committee and the Executive Leadership Team, what if scenarios, benchmarking and various other initiatives to improve risk culture across AEMO. In addition to its overarching risk management policy, supported by internal procedures and control systems, AEMO has several other policies and procedures that directly or indirectly serve to reduce, manage, or mitigate risk. These cover matters including:

- IT security.
- Site security.
- Regulatory compliance.
- Financial compliance.
- Financial information management.
- Privacy.
- Competition and Consumer Law.
- Workplace Health Safety and Environment Policy.
- Fraud and corruption prevention.
- Whistleblower Protection.
- Diversity.

Ethical standards and Code of Conduct

AEMO is committed to sound and ethical corporate practices and decision-making. This entails not only complying with legal obligations, but also considering the reasonable expectations of stakeholders including members, market participants, employees, energy market governance bodies, consumers, and the broader community.

AEMO has a Code of Conduct which sets out the required standards of behaviour and legal, ethical and other obligations applicable to employees and contractors. Each employee and contractor is given a copy of the Code of Conduct when joining AEMO. The Code of Conduct provides guidance on the following:

- Honesty and integrity.
- Respect for people.
- Responsibility and accountability.
- Efficiency and economy.

Employees are encouraged to report known or suspected inappropriate conduct either to management or an independent whistleblower hotline service that reports directly to the Company Secretary and the Chair of the Risk and Audit Committee.

Financial reporting

The Risk and Audit Committee, which includes non-executive directors with finance experience, oversees accounting and reporting practices and reviews AEMO's financial statements. The committee is responsible for the performance and objectivity of the internal auditor and the performance and independence of the market auditors.

The external auditor is not permitted to provide any services to AEMO that might compromise its independence or give rise to an actual or perceived conflict with assurance and compliance roles.

Timely and balanced disclosure

AEMO endeavours to ensure that all company announcements are factual and balanced, and that timely access to material is given to stakeholders and to the market where possible. All non-confidential reports are published in PDF format and available on the company's website. AEMO is committed to maintaining transparency on matters related to the operation and administration of its markets.

Respect the rights of members and stakeholders

Efficient and effective outcomes are the result of teamwork and contributions from a range of different sources, including all of AEMO's varied stakeholders. AEMO's corporate governance framework recognises that its interests and those of its stakeholders are served by fostering co-operation and interaction.

AEMO's industry and government members have rights and obligations under the AEMO Constitution. Annual General Meetings are held in accordance with the Corporations Act. At these meetings all members are able to participate in the decision-making process in accordance with their voting rights under the Constitution.

AEMO wants to give all relevant stakeholders a fair and full opportunity to participate in the ongoing operation, development, and planning of Australian energy markets. AEMO strives to be a constructive facilitator, bringing stakeholders together so that all viewpoints are heard and considered, building consensus on the right way forward where possible.

AEMO fulfils this role by providing and disseminating information and market data and by facilitating processes, programs, committees, and other consultative forums for stakeholders to provide input on emerging energy market issues and opportunities, and to provide feedback on AEMO's proposals and operational performance.

These consultation processes are vital to maintaining effective day-to-day operations, developing and refining effective new market mechanisms, and the integrity of AEMO's long-term planning.

Remunerate fairly and responsibly

Non-executive directors were remunerated for fulfilling both their Board and Board committee duties in accordance with relevant industry benchmarks. At AEMO's Annual General Meeting on 1 November 2017, the members approved an annual remuneration pool to be applied for three years. The remuneration pool was determined on the advice of an independent Board remuneration adviser.



AEMO members

Government members

As at 30 June 2018

- Commonwealth of Australia
- Australian Capital Territory
- New South Wales
- South Australia
- Tasmania
- Queensland
- Victoria
- Western Australia

AEMO Industry members

As at 30 June 2018

- Advanced Energy Resources
- AETV Pty Ltd
- AER Retail Pty Ltd
- A-Star Electricity Pty Ltd
- AGL Energy Ltd
- AGL Loy Yang Marketing Pty Ltd
- AGL Macquarie
- Agora Retail Pty Ltd
- Allgas Energy Pty Ltd
- APA EE Holdings Pty Ltd
- APA GasNet Australia (Operations) Pty Ltd
- Alinta Sales Pty Ltd
- Alinta Energy Retail Sales Pty Ltd
- Amanda Energy PL
- APT Facility Management Pty Ltd
- APT Petroleum Pipelines Pty Ltd
- APT Pipelines (NSW) Pty Ltd
- Ararat Wind Farm Pty Ltd
- Attunga Capital Pty Ltd
- Aurora Energy Pty Ltd
- Australian Gas Networks Limited
- Australian Pipeline Trust
- Aus Gas Trading Pty Ltd
- Ausnet Electricity Services Pty Ltd
- Ausgrid
- Bluewaters Power 1 Pty Ltd
- Bluewaters Power 2 Pty Ltd
- Central Ranges Pipeline Pty Ltd
- CitiPower Pty Ltd

- Click Energy Pty Ltd
- Collgar Wind Farm Pty Ltd
- Covau Pty Ltd
- Delta Electricity
- Denmark Community Windfarm Ltd
- Diamond Energy Pty Ltd
- Directlink Joint Venture (ABN 16 779 340 889) (Directlink (No. 1) Pty Limited ABN 85 085 123 468, Directlink (No. 2) Pty Limited ABN 87 095 439 222, and Directlink (No. 3) Pty Limited ABN 86 095 449 817 trading as Directlink Joint Venture)
- Dodo Power & Gas Pty Ltd
- East Australian Pipeline Pty Ltd
- EDL Group Operations Pty Ltd
- ElectrAg Pty Ltd
- ElectraNet Pty Ltd
- Endeavour Energy
- Energex Limited
- EnergyAustralia Gas Storage Pty Ltd
- EnergyAustralia Pty Ltd
- EnergyAustralia Yallourn Pty Ltd
- Energy Pacific (Vic) Pty Ltd
- EnerNOC Pty Ltd
- Enova Energy Pty Ltd
- Epic Energy South Australia Pty Ltd
- ERM Power Ltd
- ERM Power Retail Pty Ltd
- ESCO Pacific Pty Ltd
- Essential Energy
- Flinders Operating Services Pty Ltd
- FPC 30 Ltd
- GSP Energy Pty Ltd
- Hydro-Electric Corporation
- Hydro Power Pty Ltd
- ICAP Australia Pty Ltd
- Infigen Energy Markets Pty Ltd
- Infratil Energy Australia Pty Ltd
- Jemena Ltd
- Kiamal Solar Farm Pty Ltd
- LMS Energy Pty Ltd
- Millmerran Energy Trader Pty Ltd
- Murraylink Transmission Company Pty Ltd
- Newcrest Mining Limited
- NewGen Power Kwinana Pty Ltd
- New Gullen Range Wind Farm Pty Ltd
- OneSteel Manufacturing Pty Ltd
- Onsite Energy Solutions Pty Ltd
- Origin Energy Electricity Ltd
- Origin Energy Eraring
- Overland Sun Farming Company Pty Ltd
- Pacific Hydro Challicum Hills Pty Ltd
- Pacific Hydro Clements Gap Pty Ltd
- Pacific Hydro Portland Wind Farm Pty Ltd
- Pacific Hydro Retail Pty Ltd
- Perth Energy
- Phoenix Energy Australia Pty Ltd
- Pooled Energy Pty Ltd
- Powercor Australia Pty Ltd
- Queensland Electricity Transmission Corporation Limited (trading as Powerlink Queensland)
- Reach Solar Energy Management Co Pty Ltd
- RE Oakey Pty Ltd
- Santos Ltd
- Simcoa Operations Pty Ltd
- SIMEC ZEN Energy Retail Pty Ltd
- Solar Reserve Australia II Pty Ltd
- South East Australia Gas Pty Ltd
- Snowtown Wind Farm Pty Ltd
- Snowtown Wind Farm Stage 2 Pty Ltd
- Snowy Hydro Pty Ltd
- Strategic Gas Market Trading Pty Ltd
- Tasmanian Gas Pipeline Pty Ltd
- TasNetworks Pty Ltd
- TransGrid
- Vicpower Trading (State Electricity Commission of Victoria trading as Vicpower Trading)
- Water Corporation
- Wesfarmers Kleenheat Gas Pty Ltd
- Western Downs Solar Project Pty Ltd
- Westpac Banking Corporation
- WINconnect Pty Ltd

Financial Statements

For the year ended 30 June 2018

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Australian Energy Market Operator Limited
ABN 94 072 010 327

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Directors' Report

Your directors present their report on the Australian Energy Market Operator Limited (AEMO) for the year ended 30 June 2018.

Directors

The following persons were directors for the full financial year and up to the date of this report, with the exception of Dr Anthony Marxsen and Ms Jane Tongs who retired effective 1 November 2017 and Mr Andrew (Drew) Clarke AO who was appointed to the Board effective 2 November 2017.

- Dr. A.L. Marxsen (retired 1 November 2017)
- A. Clarke AO, PSM (appointed 2 November 2017)
- A.P. Concannon
- Dr. P.L. Davis
- E.A Donaghey
- J.G. Hubbard
- S. Krieger
- S.C. Orr
- J. Pittard
- J.A. Tongs (retired 1 November 2017)
- A. Zibelman (appointed 1 July 2017)

Principal activities

AEMO's principal activities over the 2017–18 year comprised the following:

- Market operation of the National Electricity Market (NEM) and the Wholesale Electricity Market (WEM).
- System operation and security of the NEM interconnected grid, Western Australia's South West Interconnected System (SWIS) and the Victorian Gas Declared Transmission System (DTS).
- Victorian electricity Transmission Network Service Provider (TNSP) responsibilities (including transmission network connections and procurement services).
- Operation of the Victorian Declared Wholesale Gas Market (DWGM).
- Facilitation of Full Retail Contestability (FRC) for electricity and gas in eastern and south-eastern Australia and gas in Western Australia.
- Operation of the Short-Term Trading Market (STTM) for gas at the Adelaide, Sydney and Brisbane hubs.
- Operation of the Wallumbilla and Moomba Gas Supply Hubs.
- Management of the National Gas Bulletin Board (NGBB) and the West Australian Bulletin Board.
- National integrated electricity system planning (NTP).
- Independent electricity and gas demand forecasting.
- Emergency management responsibilities for electricity and gas and the National Gas Emergency Response Advisory Committee (NGERAC).

Corporate Strategy

As the national energy market operator and planner, AEMO plays an important role in supporting the industry to deliver a more integrated, secure, and cost effective national energy supply.

Along with carrying out its core functions, AEMO also committed to deliver other initiatives in 2017–18.

Activities include but are not limited to:

A continued uplift in AEMO's forecasting and planning publications, to deliver insights that support Australia's energy industry transformation, and to also better meet stakeholder needs. In addition to releasing reports to support this focus, AEMO also provided a range of advice to government departments, advisors and jurisdictions.

Providing analysis to assist the Commonwealth government in its development of the Australian Domestic Gas Security Mechanism.

Initiating a program of work to undertake proof-of-concept trial of new technologies to enable AEMO to maintain security and reliability, and to provide confidence in managing the grid of the future. This program of work included partnerships with third-party organisations such as ARENA and other institutions, and has resulted in trials such as AEMO/ARENA demand response trial and the Hornsdale Wind Farm FCAS trial.

Further cementing AEMO's commitment to demystifying the complexity of the energy industry by launching an energy literacy website – Energy Live – on 1 December 2017. The website is a dedicated media and content platform that provides simple, clear and easy-to-access information on various energy related topics for Australian consumers.

Continued leadership and participation in advisory groups - such as the Reliability Panel and Gas Market Reform Group - that aim to identify present and future challenges to Australia's energy markets and grid.

Implementing 11 of 14 recommendations from the Independent Review into the Future Security of the National Electricity Market that relate to AEMO, and being on track for the remaining three.

Leading a program of work alongside market participants, the Australian Cyber Security Centre, and the Critical Infrastructure Centre on a framework to improve the cyber security resilience of the grid.

Building a robust Summer Readiness program of work amid heightened scrutiny on power system operations. This included broader engagement with industry, government jurisdictions, media and the community on the plans AEMO put in place for summer.

The successful implementation of the Power of Choice program of work, launched 1 December 2017.

Membership on the inaugural Energy Security Board that led to the design of the National Energy Guarantee.

Ongoing work on Wholesale Electricity Market reform in Western Australia.

Following extensive consultation and modelling, AEMO published the inaugural Integrated System Plan (ISP) for the National Electricity Market (NEM) on 17 July 2018. Predicated on sound engineering, the ISP builds on the work of AEMO's annual National Transmission Network Development Plan and is a comprehensive evaluation of the likely changes that will be occurring over the next 20 years across the NEM. It was developed in response to the COAG Energy Council's decision in 2017 to adopt the recommendations made in the Independent Review into the Future Security of the National Electricity Market, specifically pertaining to the need for a strategic national plan.

Review of operations

AEMO is a not-for-profit public company limited by guarantee incorporated under the Corporations Act 2001. The Company membership comprises government and industry members with government owning 60% and industry 40%. Government members are the Commonwealth, New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania and the Australian Capital Territory.

Registered market participants are eligible to become members of AEMO.

AEMO has statutory powers to recover all costs including under- and over-recoveries in any of its functions in the next or subsequent financial years. This is achieved by including surpluses or deficits in future budgets for specific AEMO functions.

Directors' qualifications and experience

Name, qualifications and responsibilities	Age	Current Board appointments
Mr Andrew Clarke AO, PSM, MSc, BAppSc, FTSE, MAICD <ul style="list-style-type: none">• Non-executive Chairman• Independent Director	64	Director, NBN Co; Director, CSIRO
Mr Anthony P. Concannon BSc (Hons) <ul style="list-style-type: none">• Non-executive Director	54	Director, Reach Solar
Dr. Peter L. Davis BSc (Hons), BEd, MBA, PhD, FAICD, FIEAust <ul style="list-style-type: none">• Non-executive Director	58	Director, Clean Energy Regulator, Director, University of Tasmania Built Environment and Infrastructure Committee
Ms Elizabeth A. Donaghey BSc, MSor <ul style="list-style-type: none">• Non-executive Director	60	Director, Cooper Energy
Mr Jon G. Hubbard BCom, CA, GAICD <ul style="list-style-type: none">• Non-executive Director• Independent Director	54	Infocus Wealth Management Ltd (and related companies)
Ms Sibylle Krieger LLB (Hons), LLM, MBA, FAICD <ul style="list-style-type: none">• Non-executive Director• Independent Director	61	Chair of Xenith IP Group Limited (ASX: XIP); Director, MyState Limited (ASX: MYS); Director, Vector Limited (NZX: VCT)
Mr Stephen Orr BEng (Mech) <ul style="list-style-type: none">• Non-executive Director• Independent Director	66	Nil.
Mr John Pittard BSc <ul style="list-style-type: none">• Non-executive Director• Independent Director	65	Chair, RXP Services Ltd (ASX: RXP); Non-executive Director, Barnardos Australia; Chair, Information Exchange Committee
Ms Audrey Zibelman BA, J.D <ul style="list-style-type: none">• Managing Director• Chief Executive Officer	61	Nil.

A majority of Directors, including the Chair, must be independent Directors.

The AEMO Constitution defines the independence requirements for Directors.

Information pertaining to directors' benefits is detailed in Note 14 – Key Management Personnel Disclosures.

Company secretary

The company secretary is Mr Brett Hausler. Mr Hausler has previously been a company secretary for several energy companies and prior to this worked as a lawyer in private and corporate practice.

Meetings of directors

The number of meetings of the company's Board of Directors and of each Board committee held during the year ended 30 June 2018, and the number of meetings attended by each director were:

	Full meetings of directors		People and Remuneration		Risk and Audit		Technical and Regulatory		Nomination	
	A	B	A	B	A	B	A	B	A	B
A. Clarke AO	5	5	2	2	2	2	4	4	2	2
A. P. Concannon	8	8	3	3	-	-	4	4	-	-
Dr. P. L. Davis	7	8	2	3	-	-	4	4	2	2
E. A. Donaghey	8	8	3	3	4	4	-	-	-	-
J. G. Hubbard	8	8	-	-	4	4	4	4	2	2
S. Krieger	8	8	3	3	4	4	-	-	2	2
Dr. A. L Marxsen	3	3	1	1	-	-	-	-	-	-
S.C. Orr	8	8	-	-	4	4	4	4	-	-
J. Pittard	8	8	3	3	-	-	4	4	-	-
J. A. Tongs	3	3	1	1	1	1	-	-	-	-
A. Zibelman	8	8	-	-	-	-	-	-	-	-

A = Number of meetings attended

B = Number of meetings held during the time the director held office or was a member of the committee during the year which they were eligible to attend.

The Managing Director attends all committee meetings. All directors are eligible to attend committee meetings. Where a director is not a committee member, their attendance at meetings is not reflected in the table above. When a director is unable to attend a meeting they have endeavoured to provide written comments prior to the meeting.

Contributions on winding up

The Company is incorporated under the Corporations Act 2001 and is a company limited by guarantee. The Constitution states that each Member undertakes to contribute to the Company's property if the Company is wound up during, or within one year after the cessation of, the Member's membership on account of:

- a. Payment of the Company's debts and liabilities contracted before they ceased to be a Member;
- b. The costs of winding up; and
- c. Adjustment of the rights of the contributories among themselves, an amount not to exceed \$1.00.

At 30 June 2018, the total maximum amount that members of the Company are liable to contribute under the

Constitution if the Company is wound up is \$103 (2017: \$103).

Rounding

The amounts contained in the financial report have been rounded to the nearest \$1,000 (where rounding is applicable and where noted (\$'000)) under the option available to the Company under ASIC Corporations (Rounding in Financial/Directors' Reports) Instrument 2016/191. The Company is an entity to which the Instrument applies.

Auditor's independence declaration

A copy of the auditor's independence declaration as required under Section 307C of the Corporations Act 2001 is set out on page 9.

Auditor

Grant Thornton continues in office in accordance with Section 327 of the Corporations Act 2001.

Resolution

This report is made in accordance with a resolution of directors.



A. Clarke, AO, PSM
Chairman, Melbourne

6 September 2018

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W www.grantthornton.com.au

Auditor's Independence Declaration

To the Directors of Australian Energy Market Operator Limited

In accordance with the requirements of section 307C of the Corporations Act 2001, as lead auditor for the audit of Australian Energy Market Operator Limited for the year ended 30 June 2018, I declare that, to the best of my knowledge and belief, there have been:

- a no contraventions of the auditor independence requirements of the Corporations Act 2001 in relation to the audit; and
- b no contraventions of any applicable code of professional conduct in relation to the audit.



Grant Thornton Audit Pty Ltd
Chartered Accountants



B A Mackenzie
Partner – Audit & Assurance

Melbourne, 6 September 2018

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Statement of Profit or Loss and Other Comprehensive Income

Year ended 30 June 2018

	Notes	2018 \$'000	2017 \$'000
Revenue			
Transmission income	2	504,538	518,799
Settlement residue	2	67,812	67,609
Electricity Market income	2	120,924	113,842
Gas Market income	2	45,944	47,953
Other Revenue	2	14,766	9,998
	2	753,984	758,201
Expenses			
Network charges	3	(547,738)	(549,442)
Employee benefits	3	(115,277)	(100,577)
Depreciation	6	(5,333)	(4,515)
Amortisation	7	(11,145)	(13,863)
Consulting, contracting and outsourcing		(22,231)	(22,445)
Information technology		(19,534)	(19,114)
Insurance		(2,173)	(2,428)
Finance Costs	3	(595)	(1,705)
Travel and accommodation		(3,243)	(2,504)
Participant Compensation Fund expenses		-	(5,529)
Occupancy		(6,933)	(6,064)
Other expenses		(8,971)	(7,575)
		(743,173)	(735,761)
Surplus before income tax		10,811	22,440
Income tax expense		-	-
Surplus for the year		10,811	22,440
Other comprehensive income			
Re-measurement of net defined benefit superannuation liability	12	2,971	4,355
Total comprehensive surplus		13,782	26,795

The Statement of Profit or Loss and Other Comprehensive Income should be read in conjunction with the accompanying notes.

Statement of Financial Position

As at 30 June 2018

	Notes	2018 \$'000	2017 \$'000
Assets			
Current Assets			
Cash and cash equivalents	4	67,489	62,463
Trade and other receivables	5	84,375	82,878
Defined benefit superannuation	12	863	-
Total current assets		152,727	145,341
Non-current assets			
Trade and other receivables	5	1,337	-
Property, plant and equipment	6	34,747	30,500
Intangible assets	7	48,889	37,747
Total non-current assets		84,973	68,247
Total assets		237,700	213,588
Liabilities			
Current liabilities			
Trade and other payables	8	83,058	94,790
Borrowings	9	1,822	3,226
Provisions	10	24,212	22,307
Other current liabilities	11	30,457	9,732
Defined benefit superannuation	12	-	1,640
Total current liabilities		139,549	131,695
Non-current liabilities			
Trade and other payables	11	8,098	3,760
Borrowings	9	11,200	13,022
Provisions	10	1,456	1,496
Total non-current liabilities		20,754	18,278
Total liabilities		160,303	149,973
Net assets		77,397	63,615
Equity			
Capital contribution of members		7,093	7,093
Participant compensation fund reserve	13	6,349	5,235
Land reserve		2,720	2,493
Accumulated surplus	18	61,235	48,794
Total equity		77,397	63,615

The Statement of Financial Position should be read in conjunction with the accompanying notes.

Statement of Changes in Equity

Year ended 30 June 2018

	Capital contribution of members \$'000	PCF reserve \$'000	Land reserve \$'000	Accumulated surplus \$'000	Total equity \$'000
At 1 July 2016	7,093	10,557	2,266	15,753	35,669
Surplus for the year	-	-	-	22,440	22,440
Other comprehensive income	-	-	-	4,355	4,355
Total comprehensive surplus	-	-	-	26,795	26,795
- Acquired surpluses	-	-	-	1,151	1,151
Transfer to/(from) reserves					
- PCF Reserve	-	(5,322)	-	5,322	-
- Land Reserve	-	-	227	(227)	-
As at 30 June 2017	7,093	5,235	2,493	48,794	63,615
At 1 July 2017	7,093	5,235	2,493	48,794	63,615
Surplus for the year	-	-	-	10,811	10,811
Other comprehensive income	-	-	-	2,971	2,971
Total comprehensive surplus	-	-	-	13,782	13,782
Transfer to/(from) reserves					
- PCF Reserve	-	1,114	-	(1,114)	-
- Land Reserve	-	-	227	(227)	-
As at 30 June 2018	7,093	6,349	2,720	61,235	77,397

The Statement of Changes in Equity should be read in conjunction with the accompanying notes.

Statement of Cash Flows

Year ended 30 June 2018

	Notes	2018 \$'000	2017 \$'000
Cash Flows from operating activities			
Receipts from customers		848,130	838,918
Payments to suppliers and employees		(813,922)	(801,095)
Payment of claims from the PCF		-	(5,529)
		34,208	32,294
Interest received		1,316	1,520
Interest and other finance costs paid		(643)	(1,894)
Net cash inflow from operating activities before movements in security deposits		34,881	31,920
Receipts of participants security deposits		589,050	1,680,465
Repayment of participants security deposits		(583,812)	(1,726,934)
Net cash inflow/(outflow) from operating activities		40,119	(14,549)
Cash flows from investing activities			
Payment for acquisition, net of cash acquired		-	(497)
Payments for plant, equipment and intangible assets		(31,867)	(26,826)
Net cash outflow from investing activities		(31,867)	(27,323)
Cash flows from financing activities			
Proceeds from borrowings		-	27,743
Repayment of borrowings		(3,226)	(42,595)
Net cash outflow from financing activities		(3,226)	(14,852)
Net increase/(decrease) in cash and cash equivalents		5,026	(56,724)
Cash and cash equivalents at the beginning of the financial year		62,463	119,187
Cash and cash equivalents at end of the financial year	4	67,489	62,463

The Statement of Cash Flows should be read in conjunction with the accompanying notes.

Notes to the Financial Statements

Year ended 30 June 2018

1. Introduction

This financial report covers the Australian Energy Market Operator Limited (AEMO). AEMO is a not-for-profit public company limited by guarantee, incorporated and domiciled in Australia. Its registered office and principal place of business is:

Level 22, 530 Collins Street
Melbourne, Victoria, 3000

The financial report was authorised for issue by the directors on the date of the directors' declaration.

The principal accounting policies adopted in the preparation of the financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

a) Basis of preparation

The financial statements are general purpose financial statements which have been prepared in accordance with Australian Accounting Standards, other authoritative pronouncements of the Australian Accounting Standards Board and the Corporations Act 2001.

The company complies with International Financial Reporting Standards (IFRS), except that it applies accounting for government grants and other non-reciprocal transfers received in accordance with the applicable Australian Accounting Standard, which differs from IFRS.

The financial statements are presented in Australian Dollars and all values are rounded to the nearest thousand dollars ('000) unless otherwise stated.

Historical cost convention

These financial statements have been prepared under the historical cost convention, as modified by the revaluation of financial assets and liabilities (including derivative instruments) at fair value through profit or loss.

Critical accounting estimates

Preparation of financial statements that conform with the Australian Accounting Standards requires the use of certain critical accounting estimates. It also requires management to exercise judgement in the process of applying the company's accounting policies. Areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements, are tabled below:

Area	Estimate assumption
Defined benefit superannuation	Actuarial assumptions are used in determining the defined benefit obligations and the related carrying amounts are discussed in Note 12.
Depreciation and amortisation	The estimation of the useful lives of assets has been based on historical experience as well as manufacturers' warranties (for plant and equipment) and lease terms. In addition, the condition of the assets is assessed at least once per year and considered against the remaining useful life. Adjustments to useful lives are made when considered necessary.
Use of assets for network services	AEMO has ongoing Transmission Network Service Provider Agreements under which AusNet Services and Murraylink provide network services to AEMO in relation to the Victorian electricity transmission network. The charges levied on AEMO by AusNet Services and Murraylink for the provision of transmission services under the agreements are regulated by the Australian Energy Regulator (AER). AEMO incorporates these charges into its fees to network users. AEMO has determined that these arrangements are not, and do not contain, a lease in accordance with AASB Interpretation 4 Determining whether an Arrangement contains a Lease.

b) Currency

Functional and presentation currency

The financial statements are presented in Australian Dollars, which is AEMO's functional and presentation currency.

c) Goods and Services Tax (GST)

Revenues, expenses and assets are recognised net of the amount of associated GST, unless the GST incurred is not recoverable from the taxation authority. In this case it is recognised as part of the cost of acquisition of the asset or as part of the expense. Receivables and payables are stated inclusive of the amount of GST receivable or payable. The net amount of GST recoverable from, or payable to, the taxation authority is included within other receivables or payables in the Statement of Financial Position. Cash flows are presented on a gross basis. The GST components of cash flows arising from investing or financing activities that are recoverable from, or payable to, the taxation authority, are presented as an operating cash flow.

d) New accounting standards and interpretations

Accounting standards and interpretations issued but not yet effective

Australian Accounting Standards and Interpretations that have recently been issued or amended but are not yet effective and have not been adopted by the company for the annual reporting period ending 30 June 2018 are outlined below:

Details of new standard/amendment/interpretation

AASB 9 – Financial Instruments (Effective date: 1 July 2018)

AASB 9 introduces new requirements for the classification and measurement of financial assets and liabilities.

These requirements improve and simplify the approach for classification and measurement of financial assets compared with the requirements of AASB 139. The main changes are:

- a. Financial assets that are debt instruments will be classified based on:

- 1) the objective of the entity's business model for managing the financial assets; and
- 2) the characteristics of the contractual cash flows.

- b. Allows an irrevocable election on initial recognition to present gains and losses on investments in equity instruments that are not held for trading in other comprehensive income (instead of in profit or loss). Dividends in respect of these investments that are a return on investment can be recognised in profit or loss and there is no impairment or recycling on disposal of the instrument.

- c. Financial assets can be designated and measured at fair value through profit or loss at initial recognition if doing so eliminates or significantly reduces a measurement or recognition inconsistency that would arise from measuring assets or liabilities, or recognising the gains and losses on them, on different bases.

- d. Where the fair value option is used for financial liabilities the change in fair value is to be accounted for as follows:

- 1)The change attributable to changes in credit risk are presented in other comprehensive income (OCI); and
- 2)The remaining change is presented in profit or loss.

If this approach creates or enlarges an accounting mismatch in the profit or loss, the effect of the changes in credit risk are also presented in profit or loss.

Otherwise, the following requirements have generally been carried forward unchanged from AASB 139 into AASB 9:

- 1) Classification and measurement of financial liabilities; and
- 2) Derecognition requirements for financial assets and liabilities.

AASB 9 requirements regarding hedge accounting represent a substantial overhaul to hedge accounting that will enable entities to better reflect their

risk management activities in the financial statements.

Consequential amendments arising from AASB 9 are also contained in various other accounting standards.

Furthermore, AASB 9 introduces a new impairment model based on expected credit losses. This model makes use of more forward-looking information and applies impairment accounting.

When this standard is first adopted for the year ending 30 June 2019, there will be no material impact on the transactions and balances recognised in the financial statements.

AASB 15 Revenue from Contracts with Customers (Effective Date: 1 January 2018)

Replaces AASB 118 Revenue, AASB 111 Construction Contracts and some revenue-related interpretations:

- establishes a new revenue recognition model
- changes the basis for deciding whether revenue is to be recognised over time or at a point in time
- provides new and more detailed guidance on specific topics (e.g., multiple element arrangements, variable pricing, rights of return, warranties and licensing)
- expands and improves disclosures about revenue

When this standard is first adopted for the year ending 30 June 2019, there will be no material impact on the transactions and balances recognised in the financial statements.

AASB 16 Leases (Effective Date: 1 January 2019)

Replaces AASB 117 Leases and some lease related Interpretations:

- requires all leases to be accounted for 'on-balance sheet' by lessees, other than short-term and low value asset leases
- provides new guidance on the application of the definition of lease and on sale and lease back accounting
- largely retains the existing lessor accounting requirements in AASB 117
- requires new and different disclosures about leases

AEMO is yet to undertake a detailed assessment of the impact of AASB 16. However, based on our preliminary assessment, the likely impact on the first-time adoption of the Standard for the year ending 30 June 2020 includes:

- there will be a significant increase in lease assets and financial liabilities recognised on the balance sheet
- the reported equity for AEMO will reduce as the carrying amount of lease assets will reduce more quickly than the carrying amount of lease liabilities
- EBIT in the statement of profit or loss and other comprehensive income will be higher as the implicit interest in lease payments for former off-balance sheet leases will be presented as part of finance costs rather than being included in operating expenses
- operating cash outflows will be lower and financing cash flows will be higher in the statement of cash flows as principal repayments on all lease liabilities will now be included in financing activities rather than operating activities. Interest can also be included within financing activities

2. Revenue

IN SUMMARY

This section provides detail on the services that AEMO provides and the revenue received to recover the costs of providing those services.

Electricity transmission income is received in our role as the Victorian Electricity Transmission Network Service Provider. This income represents greater than 65% of our total revenue and primarily relates to the recovery of network asset charges paid to the transmission network asset owners.

IN SUMMARY CONT...

Settlement residue income (intra-regional) is received in our role as Victorian TNSP. Settlement residue arises in the NEM when the amount paid by market participants to AEMO for spot transactions differs from the amount paid by AEMO to other market participants for the same transaction. The income is determined through a mathematical outcome uncontrollable by AEMO. Any settlement residue surpluses received during the financial year are returned to Victorian TNSP participants the following year.

Settlement residue income (inter-regional) represents the net position of settlement residue auction proceeds of positive and negative settlement residues received and paid during the financial year.

AEMO assessed the impact of the revenue recognition changes under the Australian Accounting Standards, effective 1 January 2018. This standard AASB 15 Revenue from Contracts with Customers, is discussed in Note 1 page 16. AEMO reviewed its current revenue recognition i.e. revenue recognised in the period when services are rendered, and compared it with the new standard. The current recognition is aligned with the new standard and there is no material impact to AEMO's revenue recognition.

Revenue comprises fees charged for the recovery of expenditure incurred primarily in relation to providing the following services:

- Victorian Electricity Transmission Network Service Provider (TNSP).
- National Electricity Market (NEM).
- Electricity Full Retail Contestability (FRC).
- Victorian Declared Wholesale Gas Market (DWGM).
- Gas FRC in Victoria, South Australia, New South Wales, Queensland and Western Australia.
- Short Term Trading Market (STTM).
- National Transmission Planning.
- South Australian Planning.
- Western Australia Wholesale Electricity Market (WEM).
- Western Australia Gas Services Information (GSI).
- Western Australia Systems Management (SM).
- Gas Supply Hub
- Gas Statement of Opportunities (GSOO)
- Gas Business to Business (B2B)
- Gas Bulletin Board
- Settlement Residue Auctions

Revenue is recognised as the services are provided.

The National Electricity Rules and National Gas Rules each require AEMO to establish and maintain a Participant Compensation Fund. Note 13 provides further details of AEMO's participant compensation funds.

Contributions to the funds and interest earned on fund investments are recognised as revenue and transferred to the Participant Compensation Fund Reserve.

Interest revenue is recognised as earned at the effective interest rate.

	2018 \$'000	2017 \$'000
From continuing operations		
TUOS income	470,053	485,008
Funded augmentation income	34,485	33,791
Electricity Transmission income	504,538	518,799
Settlement residue – intra-regional (TNSP)	52,265	64,178
Settlement residue auctions – inter-regional (TNSP)	15,547	3,431
Settlement residue	67,812	67,609
NEM fees	74,621	69,515
FRC electricity fees	12,864	10,289
Registration fees	1,584	834
National Transmission Planner fees	3,868	2,901
WEM fees	12,293	16,754
WA System Management fees	15,694	13,549
Electricity market income	120,924	113,842
DWGM fees	22,609	22,968
FRC gas fees	8,272	9,284
STTM fees	9,908	10,776
Gas SOO fees	1,818	1,610
Registration fees	484	348
Other gas revenues	1,381	1,149
GSI fees	1,472	1,818
Gas market income	45,944	47,953
PCF interest	123	206
PCF contributions received	997	-
Bank interest revenue	1,172	1,228
Government advice	1,111	207
New connection assessments	4,436	1,494
Other	6,927	6,863
Other revenue	14,766	9,998
	753,984	758,201

3. Expenses

IN SUMMARY

This section provides detail on the key expenditure items of the company.

Network charges represent a large portion of AEMO expenses. These are charges paid to transmission network asset owners for use of the transmission network. Wages and salaries reflect the largest controllable cost component of our expenses to operate the functions under our remit. Amortisation and depreciation expenditure mainly reflects improvements to our electricity and gas wholesale and retail market systems for operations, metering and settlements and long-term energy forecasting tools.

AEMO is income tax exempt on the basis that it qualifies as a public authority constituted under an Australian law. During 2017/18, the ATO extended the income tax exemption for a further 10 years from 1 July 2018 to 30 June 2028.

	2018 \$'000	2017 \$'000
Surplus before income tax includes:		
Network Charges	547,738	549,442
Amortisation expense	11,145	13,863
Depreciation expense	5,333	4,515
Wages and Salaries	87,660	76,210
Defined contribution superannuation expense	8,975	8,047
Defined benefits superannuation expense	468	480
Other employee benefits expense	18,174	15,840
Employee benefits	115,277	100,577
Employee benefits above exclude capitalised employee costs of:	6,850	6,085
Bank fees	140	263
Interest expense	455	1,442
Finance costs	595	1,705
Rental expenses related to operating leases	5,815	5,126

4. Cash and Cash Equivalents

IN SUMMARY

AEMO's cash and cash equivalents is segregated into three different categories which determine the purpose and availability for company use.

- Cash at bank and on hand is the company's operating funds
- Security deposits and early settlement proceeds are funds received from market participants, that are not available for AEMO's operational use, and are held on behalf of participants in accordance with the National Electricity Rules.
- Participant compensation funds are collected and held for participants under the NEM, DWGM and STTM for compensation as a result of scheduling errors. These funds are not available for AEMO's operational use.

	2018 \$'000	2017 \$'000
Cash at bank and on hand	34,904	31,785
Security deposits and early settlement proceeds not available for use	26,322	25,449
Participant Compensation Fund (PCF)	6,263	5,229
	67,489	62,463

For Statement of Cash Flows presentation purposes, cash and cash equivalents include cash on hand; and deposits held at call with financial institutions that are readily convertible to cash on hand and are subject to an insignificant risk of a change in value.

5. Trade and Other Receivables

IN SUMMARY

Trade and other receivables largely comprise wholesale market settlement transactions that have occurred but are yet to be settled and transmission use of system (TUOS) fees which are billed to transmission network users one month in arrears.

AEMO's credit risk for trade and other receivables is low.

	2018 \$'000	2017 \$'000
Current		
Participant fees receivable	23,762	22,781
TUOS revenue receivable	44,924	50,367
Other receivables	10,686	5,402
Prepayments	5,003	4,328
	84,375	82,878
Non Current		
Prepayments	1,337	-
	1,337	-

Financial risk management - credit risk

Credit risk arises where one party to a financial instrument will cause financial loss to the other party by failing to discharge an obligation. AEMO has exposure to credit risk on cash and cash equivalents, prepaid expenses, and receivables.

Exposure to credit risk is mitigated by a rigorous market prudential regime that requires credit support from either a bank guarantee or deposit equivalent to the level required by the National Electricity Rules and National Gas Rules.

Guarantees will only be accepted from banks that have a credit rating which is either:

- 1) A rating of A-1 or higher for short-term unsecured counterparty obligations of the entity, as rated by Standard and Poor's (Australia) Pty Ltd, or
- 2) A rating of P-1 or higher for short-term unsecured counterparty obligations of the entity, as rated by Moody's Investor Service Pty Ltd.

If there is to be a change to the credit support (expiry or termination) then at least 10 business days prior to the time at which the existing credit support is due to expire or terminate, the market participant must procure a replacement.

Prepayments represent payments made for services to be provided or consumed over future months. Insurance agreements represent a large proportion of these, with the remainder comprised mostly of IT support. These prepayments are supported by underlying service agreements which would be legally enforceable in the event of default of service. In many instances the services are the result of a competitive process where the financial viability of the vendor has been examined.

Property, Plant and Equipment

IN SUMMARY

This section represents capitalised assets for our wholesale and retail market systems and our corporate systems. Land and buildings reflect the fit out of our offices along with the site at Norwest in Sydney that AEMO owns and occupies.

	Electricity Systems (NEM, FRC and WEM) \$'000	Gas Systems (DWGM, GSH and FRC) \$'000	Short-term Trading Market Systems \$'000	Plant and Equipment \$'000	Land and Buildings \$'000	Total \$'000
At 30 June 2017						
Cost	17,644	3,309	525	24,391	41,013	86,882
Accumulated depreciation	(15,523)	(3,221)	(525)	(19,427)	(17,686)	(56,382)
Net book value at 30 June 2017	2,121	88	-	4,964	23,327	30,500
Reconciliation of carrying amount:						
Year ended 30 June 2017						
Carrying amount at 1 July 2016	832	181	24	3,619	23,368	28,024
Additions	1,590	-	-	3,250	2,151	6,991
Transfers	-	-	-	-	-	-
Disposals	-	-	-	-	-	-
Depreciation	(301)	(93)	(24)	(1,905)	(2,192)	(4,515)
Carrying amount at 30 June 2017	2,121	88	0	4,964	23,327	30,500
Reconciliation of cost:						
Cost amount at 1 July 2016	16,332	3,309	525	21,147	38,862	80,175
Additions	1,590	-	-	3,250	2,151	6,991
Transfers	-	-	-	-	-	-
Disposals	(278)	-	-	(6)	-	(284)
Cost amount at 30 June 2017	17,644	3,309	525	24,391	41,013	86,882
At 30 June 2018						
Cost	18,086	3,320	525	29,030	44,532	95,493
Accumulated depreciation	(15,135)	(3,201)	(525)	(21,864)	(20,021)	(60,746)
Net book value at 30 June 2018	2,951	119	-	7,166	24,511	34,747
Reconciliation of carrying amount:						
Year ended 30 June 2018						
Carrying amount at 1 July 2017	2,121	88	-	4,964	23,327	30,500
Additions	954	31	-	5,078	3,519	9,582
Transfers	-	-	-	-	-	-
Disposals	-	-	-	(2)	-	(2)
Depreciation	(124)	-	-	(2,874)	(2,335)	(5,333)
Carrying amount at 30 June 2018	2,951	119	-	7,166	24,511	34,747
Reconciliation of cost:						
Cost amount at 1 July 2017	17,644	3,309	525	24,391	41,013	86,882
Additions	954	31	-	5,078	3,519	9,582
Transfers	-	-	-	-	-	-
Disposals	(512)	(20)	-	(439)	-	(971)
Cost amount at 30 June 2018	18,086	3,320	525	29,030	44,532	95,493

Property plant and equipment

AEMO initially recognises items of property, plant and equipment that qualify for recognition as an asset at cost.

After initial recognition as an asset, an item of property, plant and equipment is carried at its cost less any accumulated depreciation and any accumulated impairment losses. This methodology is applied to each class of property, plant and equipment.

Depreciation of assets is calculated on a straight-line basis to write off the net cost of each item of property, plant and equipment (excluding land) over its expected useful life. Estimates of remaining useful life are made on a regular basis for all assets, with annual reassessments for major items. Land is not depreciated.

Depreciation is charged from the month the asset commences service.

Expected useful life periods are as follows:

- | | |
|--|-------------|
| • IT systems hardware | 3–5 years |
| • Furniture and equipment | 3–5 years |
| • Office and technology infrastructure | 7–10 years |
| • Building fit out | 10–15 years |
| • Buildings – Norwest | 30 years |

Intangibles

IN SUMMARY

This section represents costs to establish our markets and enhancements to software to run those markets, along with corporate software costs.

The major additions in 2017-18 included systems to automate and enhance the accuracy of long-term forecasts and transmission planning, the power of choice retail project completion and technology systems modernisation for electricity and gas functions.

	NEM Establishment costs \$'000	FRC Establishment costs \$'000	Software - Electricity (NEM, FRC and WEM) \$'000	Software - Gas (DWGM, GSH and FRC) \$'000	Software - Short-term Trading Market \$'000	Other \$'000	Total \$'000
At 30 June 2017							
Cost	44,473	27,330	113,692	19,177	21,502	10,137	236,311
Accumulated amortisation	(44,473)	(27,330)	(89,262)	(10,976)	(19,922)	(6,601)	(198,564)
Net book value at 30 June 2017	-	-	24,430	8,201	1,580	3,536	37,747
Reconciliation of carrying amount:							
Year ended 30 June 2017							
Carrying amount at 1 July 2016	-	-	15,031	9,964	4,516	2,264	31,775
Additions	-	-	16,536	1,021	125	2,153	19,835
Amortisation	-	-	(7,137)	(2,784)	(3,061)	(881)	(13,863)
Carrying amount at 30 June 2017	-	-	24,430	8,201	1,580	3,536	37,747
Reconciliation of cost:							
Cost amount at 1 July 2016	44,473	27,330	97,155	18,156	21,377	8,013	216,504
Additions	-	-	16,537	1,021	125	2,153	19,835
Disposals	-	-	-	-	-	(29)	(29)
Cost amount at 30 June 2017	44,473	27,330	113,692	19,177	21,502	10,137	236,311
At 30 June 2018							
Cost	44,473	27,330	125,150	22,953	21,577	17,097	258,580
Accumulated amortisation	(44,473)	(27,330)	(94,550)	(13,903)	(21,048)	(8,387)	(209,691)
Net book value at 30 June 2018	-	-	30,600	9,050	529	8,710	48,889
Reconciliation of carrying amount:							
Year ended 30 June 2018							
Carrying amount at 1 July 2017	-	-	24,430	8,201	1,580	3,536	37,747
Additions	-	-	12,069	3,776	75	7,771	23,691
Asset write-off	-	-	(611)	-	-	(794)	(1,405)
Amortisation	-	-	(5,289)	(2,927)	(1,126)	(1,803)	(11,145)
Carrying amount at 30 June 2018	-	-	30,600	9,050	529	8,710	48,889
Reconciliation of cost:							
Cost amount at 1 July 2017	44,473	27,330	113,692	19,177	21,502	10,137	236,311
Additions	-	-	12,069	3,776	75	7,771	23,691
Asset write-off	-	-	(611)	-	-	(794)	(1,405)
Disposals	-	-	-	-	-	(17)	(17)
Cost amount at 30 June 2018	44,473	27,330	125,150	22,953	21,577	17,097	258,580

Intangibles

AEMO's intangible assets have finite useful lives, are amortised on a straight-line basis over their useful life, and are carried at cost less accumulated amortisation and impairment losses.

AEMO has had increased capital project investments in the current year and will continue this trajectory in future years across a number of areas as necessary investments are made to deliver modernised systems which are fit for purpose as the industry transforms.

The main areas of intangible asset investments are:

Modernisation of technology platforms within the gas and electricity systems and databases;

Automation and improvements in the accuracy of short and long term energy forecasts and transmission planning to adapt to increased numbers and types of generation sources;

New market services to industry and end consumers such as the Power of Choice system implemented to increase retail competition in December 2017;

Development and implementation of regulatory rule changes to evolve with reform and industry changes.

Software

Acquired software

Acquired computer software licences are capitalised on the basis of the costs incurred to acquire and install the specific software.

Internally developed software

Expenditure on the research phase of the projects to develop new customised software for IT and telecommunication systems is recognised as an expense as incurred.

Costs that are directly attributable to a project's development phase are recognised as intangible assets, provided they meet the recognition requirements of AASB138.

Development costs not meeting these criteria for capitalisation are expensed as incurred.

Directly attributable costs include costs incurred on software development along with an appropriate portion of relevant overheads.

Subsequent expenditure on computer software maintenance is expensed as incurred. Software asset useful lives vary according to the type of asset.

Assets are amortised over their estimated useful lives as follows:

- NEM and FRC market management systems software: 5 years.
- DWGM and FRC Gas IT system software: 5 years.
- STTM system software: 5 years.
- IT systems software: 3 years.
- Business applications software: 5 years.
- WEM software: 5 years.
- GSI software: 5 years.

Significant assets that have now been fully depreciated mainly relate to:

i. NEM establishment costs

NEM establishment costs represent the expenditure incurred to establish the NEM. These costs were recovered from registered participants over a 10-year period commencing 13 December 1998 and ending 31 December 2008. The straight-line method of amortisation was used and the asset is now fully amortised.

ii. Electricity FRC costs

Electricity FRC costs represent the expenditure incurred during the period January 2002 to June 2003 to develop and implement the electricity FRC market. These costs were recovered from FRC market participants over a 10-year period commencing 1 July 2003 and ending 30 June 2013. The straight-line method of amortisation was used and the asset is now fully amortised.

iii. STTM establishment costs

The STTM establishment costs represent the expenditure incurred to develop and implement the gas short term trading market during the period September 2008 to September 2010 for the Sydney and Adelaide market and to December 2011 for the Brisbane market. Costs were recovered over a 7-year period.

Additions of assets

The purchase cost method of accounting is used for all acquisitions. Cost is determined as the fair value of the assets at the date of acquisition plus costs directly attributable to the acquisition. Subsequent costs are included in the asset's carrying amount or are recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to AEMO and the cost can be reliably measured.

All other repairs and maintenance are charged as expenses during the financial period in which they are incurred.

An asset is capitalised if AEMO has control over the asset and will gain future economic benefit. Expenditure directly incurred in making the asset operational is also capitalised. All other expenditure is treated as operating expenditure.

Impairment of assets

Intangible assets that have an indefinite useful life are not subject to amortisation and are tested annually for impairment, or more frequently if events or changes in circumstances indicate that they might be impaired. Other assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use.

For the purpose of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash inflows that are largely independent of the cash inflows from other assets or groups of assets (cash generating units). Non-financial assets that suffer impairment are reviewed for possible reversal of the impairment at each reporting date.

8. Trade and Other Payables

IN SUMMARY

Trade and other payables represent liabilities for goods and services provided to the company prior to the end of the financial year that remain unpaid. The amounts are unsecured and are usually paid within 30 days of recognition.

Participant security deposits relating to the NEM and Gas Supply Hub are monies held by AEMO (in cash and cash equivalents) and are held on behalf of the registered market customers for prudential requirements.

	2018 \$'000	2017 \$'000
Current		
Accounts payable and accrued network charges	56,947	50,656
Finance costs payable	67	115
Participant security deposits	7,036	26,362
Other creditors and accruals	19,008	17,657
	83,058	94,790

9. Borrowings

IN SUMMARY

AEMO's loans relate to the Norwest land and building and major capital expenses in the WEM and are for a fixed term to align with the life of the asset being depreciated.

In August 2016, AEMO executed a new debt facility with a five-year facility term with the Commonwealth Bank of Australia.

	2018 \$'000	2017 \$'000
Current		
Bank loans		
Norwest	700	700
WEM	1,122	2,526
	1,822	3,226
Non-current		
Bank loans		
Norwest	11,200	11,900
WEM	-	1,122
	11,200	13,022
TOTAL	13,022	16,248

The above borrowings are unsecured.

Borrowing Costs

Borrowing costs are recognised as expenses in the period in which they are incurred, except where they are included in the costs of qualifying assets.

Financial risk management - market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. It comprises three types of risk: interest rate risk, currency risk, and other price risk. In AEMO's case only interest rate risk and currency risk are relevant.

Interest rate risk arises from long-term borrowings issued at variable rates.

On occasions AEMO enters into contracts denominated in foreign currency.

Financial risk management - Liquidity risk

Liquidity risk arises where there is a possibility that AEMO will encounter difficulty in meeting obligations relating to financial liabilities and will not have sufficient funds to settle a transaction on the due date.

To manage this risk AEMO continually forecasts and monitors cash flow and invests surplus funds in highly liquid markets. To mitigate this risk AEMO has a revolving cash advance facility and trade finance working capital facility provided by Commonwealth Bank of Australia.

Undrawn borrowing facilities

	Limit \$'000	Balance \$'000	Undrawn \$'000
30 June 2018			
Total facility available	63,000	13,022	49,978
30 June 2017			
Total facility available	65,905	16,248	49,657

Loan repayment commitments

Total loan repayment (combining both principal and interest) commitments are as follows:

30 June 2018

Institution	Loan name	< 1 year \$'000	1–5 years \$'000	> 5 years \$'000	Total \$'000
CBA	Norwest land and buildings	1,053	4,027	9,911	14,922
	WEM	1,127	-	-	1,127
Total Commitments		2,180	4,027	9,911	16,049

30 June 2017

Institution	Loan name	< 1 year \$'000	1–5 years \$'000	> 5 years \$'000	Total \$'000
CBA	Norwest land and buildings	922	3,564	10,174	14,660
	WEM	2,566	1,126	-	3,692
Total Commitments		3,488	4,690	10,174	18,352

10. Provisions

IN SUMMARY

The company provisions relate to employee benefits (annual leave and long service leave).

'Current' liability - Short-term employee benefits including annual leave – Current liabilities include long service leave estimated to be payable within 12 months and the total annual leave liability.

'Non-current' liability - Long service leave- Long service leave not payable for more than 12 months from the reporting date is recognised as a non-current liability measured at the present value of expected future payments. Consideration is given to expected future wage and salary levels, experience of employee departures, and periods of service.

	2018 \$'000	2017 \$'000
Current		
Provision for employee entitlements	24,212	22,307
	24,212	22,307
Non-current		
Provision for employee entitlements	1,456	1,496
	1,456	1,496
Total	25,668	23,803

11. Other Liabilities

IN SUMMARY

Prepaid revenue mainly relates to revenue received in advance from DWGM and STTM market participants, who are close to their credit limits to enable them to continue trading in their respective markets in accordance with the National Gas Rules.

Government grants received during the year include Gas Bulletin Board scoping study and the Electricity Consumer rights data platform and the distributed energy register.

Other current liabilities are primarily office lease incentive benefits to be amortised within the current period. The non-current liability of lease incentive relates to office lease benefits (i.e. cash incentives or rent-free periods) which are amortised over the course of the lease to the profit and loss statement beyond twelve months from balance date.

	2018 \$'000	2017 \$'000
Current		
Prepaid revenue	19,344	8,203
Government grants received in advance	9,377	-
Other liabilities	1,736	1,529
	30,457	9,732
Non-current		
Lease incentive	8,098	3,760
	8,098	3,760

12. Defined Benefit Superannuation Plan

IN SUMMARY

This plan was transferred to AEMO as part of the business combination with VENCorp on 1 July 2009. The plan is closed to new members.

The defined benefit superannuation obligation to its members is required to be revalued at fair value annually in accordance with the Australian Accounting Standards and presented as an asset or liability on the balance sheet. The company uses an actuarial expert annually for this revaluation.

The plan comprises 8 employees and 7 pension members at 30 June 2018.

Defined benefit members receive either lump sum benefits or pension benefits on retirement, death, disablement or withdrawal.

The defined benefit superannuation asset at 30 June 2018 is \$0.863m. This asset was previously a liability of \$1.640m at 30 June 2017 primarily due to stronger investment returns and departing fund members taking a lump sum superannuation payment instead of a pension.

i. Defined contribution plans

AEMO's default employee superannuation fund is an accumulation benefit fund. Employees have the choice of joining the AEMO-nominated fund or another superannuation fund of their choice. Superannuation contributions are included within expenses for the year.

ii. Defined benefit plans

Through the business combination that occurred on 1 July 2009 AEMO acquired responsibility for the defined benefit superannuation plan from VENCorp. No new members are permitted to join the plan; however, it is continuing for the benefit of existing members. The defined benefit plan comprises 8 employees and 7 pension members.

The liability recognised in the statement of financial position for defined benefit plan is the present value of the Defined Benefit Obligation ('DBO') at the reporting date less the fair value of plan assets.

The Company calculates the DBO annually with the assistance of an independent actuary. This is based on assumptions and estimates as disclosed below.

Re-measurement gains and losses arising from experience adjustments and changes in actuarial assumptions are recognised directly in other comprehensive income.

Service cost on the net defined benefit liability is included in employee benefits expense.

Reconciliation of the assets and liabilities recognised in the statement of financial position

	2018 \$'000	2017 \$'000
Defined Benefit Obligation	16,881	21,713
Fair value of plan assets	(17,744)	(20,073)
Net defined benefit superannuation (asset)/liability	(863)	1,640

Reconciliation of the Net Defined Benefit Liability

Financial year	2018 \$'000	2017 \$'000
Net defined benefit liability at start of the year	1,640	5,515
Current service cost	418	511
Net Interest	50	144
Actual return on plan assets (gains) less interest income	(842)	(1,718)
Actuarial losses arising from changes in demographic assumptions	-	2
Actuarial losses/(gains) arising from changes in financial assumptions	167	(961)
Actuarial gains arising from liability experience	(2,296)	(1,678)
Net actuarial gains on re-measurement of net defined benefit superannuation liability	(2,971)	(4,355)
Employer contributions	-	(175)
Net defined benefit (asset)/liability at end of the year	(863)	1,640

Reconciliation of the present value of the defined benefit obligation

Financial year	2018 \$'000	2017 \$'000
Present value of defined benefit obligations at beginning of the year	21,713	27,795
Current service cost	418	511
Interest cost	731	813
Contributions by plan participants	95	106
Actuarial losses arising from changes in demographic assumptions	-	2
Actuarial (gains)/losses arising from changes in financial assumptions	167	(961)
Actuarial (gains)/losses arising from liability experience	(2,296)	(1,678)
Benefits paid	(3,897)	(4,747)
Taxes, premiums and expenses paid	(50)	(128)
Present value of defined benefit obligations at end of the year	16,881	21,713

Reconciliation of the fair value of plan assets

Financial year	2018 \$'000	2017 \$'000
Fair value of plan assets at beginning of the year	20,073	22,280
Interest income	681	669
Actual return on plan assets less Interest income	842	1,718
Employer contributions	-	175
Contributions by plan participants	95	106
Benefits paid	(3,897)	(4,747)
Taxes, premiums and expenses paid	(50)	(128)
Fair value of plan assets at end of the year	17,744	20,073

Fair value of plan assets

Financial year ended 30 June 2018	Total \$'000	Quoted prices in active markets for identical assets – Level 1 \$'000	Significant observable inputs – Level 2 \$'000	Unobservable inputs – Level 3 \$'000
Investment funds	17,744	-	17,744	-
Total	17,744	-	17,744	-

As at 30 June	2018 %	2017 %
Australian equity	16	24
International equity	17	19
Fixed income	18	11
Property	8	9
Growth alternatives	16	15
Defensive alternatives	9	11
Cash	16	11

Fair value of plan assets

The fair value of plan assets does not include any amounts relating to:

- Any of the company's own financial instruments.
- Any property occupied by, or other assets used by, the Company.

Principal actuarial assumptions at the balance sheet date

Assumptions to determine defined benefit superannuation cost	2018 % p.a.	2017 % p.a.
Discount rate (active members)	3.6	3.2
Discount rate (pensioners)	3.6	3.2
Expected salary increase rate	2.9	2.9
Expected pension increase rate	2.5	2.5

These rates are used to calculate the expected defined benefit cost for the year.

Assumptions to determine defined benefit obligation	2018 % p.a.	2017 % p.a.
Discount rate* (active members)	3.5	3.6
Discount rate (pensioners)	3.5	3.6
Expected salary increase rate	2.9	2.9
Expected pension increase rate	2.5	2.5

* The discount rate used is based on a Corporate bond yield of 7 years duration.

These rates are used to calculate the defined benefit obligation (future obligation) at year end.

Sensitivity Analysis

The defined benefit obligation as at 30 June 2018 under several scenarios is presented below.

Scenario A and B relate to discount rate sensitivity. Scenario C and D relate to salary increase rate sensitivity. Scenario E and F relate to pension indexation rate sensitivity.

	Base Case	Scenario A	Scenario B	Scenario C	Scenario D	Scenario E	Scenario F
		-0.5% pa discount rate	+0.5% pa discount rate	-0.5% pa salary increase rate	+0.5% pa salary increase rate	-0.5% pa pension increase rate	+0.5% pa pension increase rate
Discount rate	3.5% pa	3.0% pa	4.0% pa	3.5% pa	3.5% pa	3.5% pa	3.5% pa
Salary increase rate	2.9% pa	2.9% pa	2.9% pa	2.4% pa	3.4% pa	2.9% pa	2.9% pa
Pension increase rate	2.5% pa	2.5% pa	2.5% pa	2.5% pa	2.5% pa	2.0% pa	3.0% pa
Defined benefit obligation (\$'000)	16,881	17,745	16,077	16,697	17,070	16,299	17,509

The defined benefit obligation has been recalculated by changing the assumptions as outlined above, whilst retaining all other assumptions.

Asset-Liability matching strategies

No asset and liability matching strategies have been adopted by the plan.

Funding arrangements

The Equipsuper Contribution and Funding Policy provides for a review of the financial position of the Plan each six months, as at 30 June and 31 December, with the Company contribution rate comprising a long-term contribution rate and an adjustment to meet the financing objective of a Target Funding Ratio of 105%.

The Target Funding Ratio reflects the proportion of salary related benefits and the allocation to "growth" assets for the Plan. The Funding Ratio is the ratio of assets to accrued liabilities, being the greater of vested benefits and the present value of past membership benefits.

Where the Funding Ratio is greater than 100% the financing objective is to achieve the Target Funding Ratio over five years. Where the Funding Ratio is less than 100% the primary financing objective is to achieve 100% over three years and Target Funding Ratio over five years.

In the most recent review of the financial position as at 31 December 2017 the actuary recommended a Company contribution rate of Nil. The next review of the financial position and Company contribution rate is due at 30 June 2018.

The Company continues to contribute salary sacrifice contributions and at the required rates for accumulation members.

Expected contributions

Financial year	2019 \$'000
Expected employer contributions	-

Maturity profile of defined benefit obligation

The weighted average duration of the defined benefit obligation as at 30 June 2018 is 7 years.

Expected benefit payments for the financial year ending on	\$'000
30 June 2019	1,110
30 June 2020	1,260
30 June 2021	1,185
30 June 2022	1,201
30 June 2023	1,170
Following 5 years	6,797

The weighted average duration of the defined benefit obligation at 30 June 2017 was 7 years.

13. Reserves

Nature and purpose of reserves

Participant Compensation Fund Reserve

AEMO maintains the following participant compensation funds:

National Electricity Market

Established under the National Electricity Rules, the purpose of this fund is to pay compensation to certain types of participants for scheduling errors as determined by the Dispute Resolution Panel. The funding requirement for each financial year is the lesser of \$1,000k and \$5,000k minus the amount which AEMO reasonably estimates will be the balance of the PCF at the end of the relevant financial year.

Victorian Declared Wholesale Gas Market

Established under the National Gas Rules, the purpose of this fund is to pay compensation to market participants for unintended scheduling results as determined by the dispute resolution process. The funding requirement for each financial year is the lesser of \$500k and \$1,000k minus the amount AEMO reasonably expects to be the balance of the fund at the end of the financial year.

Short Term Trading Market

Established under the National Gas Rules, the purpose of these funds is to pay compensation to market participants for unintended scheduling results as determined by the dispute resolution process. The funding requirement for each financial year is:

- i. **Sydney hub:** The lesser of \$335k and \$670k minus the amount AEMO reasonably expects to be the balance of the fund at the end of the financial year.
- ii. **Adelaide hub:** The lesser of \$115k and \$330k minus the amount AEMO reasonably expects to be the balance of the fund at the end of the financial year.
- iii. **Brisbane hub:** The lesser of \$225k and \$450k minus the amount AEMO reasonably expects to be the balance of the fund at the end of the financial year.

The balances for all PCFs, except the National Electricity Market PCF, have reached the funding requirements under the Rules. No further PCF fees will be charged for these markets unless there is a claim against the funds, however interest will continue to be earned on these funds. The National Electricity Market PCF has fallen below the funding requirement and therefore PCF fees of \$1m have been charged in the 2017-18 financial year in line with the National Electricity Rules.

The balance of each of the Participant Compensation Fund reserves at 30 June are:

	PCF NEM \$'000	PCF Vic Wholesale Gas \$'000	PCF STTM Sydney hub \$'000	PCF STTM Adelaide hub \$'000	PCF STTM Brisbane hub \$'000	Total \$'000
2017						
Balance 1 July 2016	5,330	3,579	791	397	460	10,557
Contributions during the year	-	-	-	-	-	-
Interest earned during the year	83	84	19	10	11	207
Claim payments made from the PCF during the year	(5,413)	(116)	-	-	-	(5,529)
30 June 2017	-	3,547	810	407	471	5,235
2018						
Balance 1 July 2017	-	3,547	810	407	471	5,235
Contributions during the year	993	-	-	-	-	993
Interest earned during the year	4	80	18	9	10	121
Claim payments made from the PCF during the year	-	-	-	-	-	-
30 June 2018	997	3,627	828	416	481	6,349

Land Reserve

AEMO has established the Land Reserve to recover the cost of the purchase of land at Norwest from participants.

14. Key Management Personnel Disclosures

Directors

The following persons were directors of AEMO during the financial year:

Chairman – non-executive

A. Clarke AO, PSM (appointed 2 November 2017)

Dr. A. L. Marxsen (retired 1 November 2017)

Chief Executive Officer and Managing Director

A. Zibelman

Non-executive directors

A.P. Concannon

Dr. P.L. Davis

E.A. Donaghey

J.G. Hubbard

S. Krieger

S.C. Orr

J. Pittard

J. A. Tongs (retired 1 November 2017)

All of the above persons were directors for the full financial year and up to the date of this report, with the exception of Dr Anthony Marxsen and Ms Jane Tongs who retired effective 1 November 2017 and Mr Andrew Clarke who was appointed as Chairman of the Board effective 2 November. Ms Audrey Zibelman was appointed Managing Director on 1 July 2017.

Key management personnel compensation

	2018 \$'000	2017 \$'000
Directors' compensation		
Short-term employee benefits	2,176	1,250
Post-employment benefits	156	125
Other long-term and termination benefits	25	110
	2,357	1,485
Other key management personnel		
Short-term employee benefits	3,551	3,909
Post-employment benefits	229	220
Other long-term and termination benefits	577	670
	4,357	4,799
	6,714	6,284

The amounts for Directors' compensation above for 2018 also include the Managing Director remuneration due to her appointment as a director on 1 July 2017.

Directors' compensation

Chairman and the Non-executive Board members:

The benchmarks for determining remuneration for the Chairman and non-executive Board members were considered by the members when assessing the annual remuneration pool. This was based on external advice and was approved at the annual general meeting on 6 November 2014. The annual remuneration pool is reviewed every three years with the members approving a revised annual remuneration pool of \$1.35 million to apply from 2 November 2017 and to be reviewed in three years.

The annual remuneration pool reflected the inclusion of fees for a director chairing the Information Exchange Committee, the inclusion of a standing Nomination Committee and projected increases over the three year period.

Managing Director and Chief Executive Officer:

The position of the Managing Director and Chief Executive Officer is evaluated based on advice received from several remuneration and benefits specialists. The Board approves the Total Employment Cost based on this advice. The Board approves any increase to be applied based on both market movement and individual performance.

Other key management personnel

All positions have a job profile that is evaluated using the Hay Group evaluation methodology. This determines their Total Employment Cost. Each year AEMO seeks remuneration advice from Hay Group regarding market movements for this group. Any movements are approved by the Board.

15. Remuneration of Auditors

During the year the following fees were paid or payable for services provided by the auditor of the entity, its related practices and non-related audit firms:

	2018 \$'000	2017 \$'000
Statutory financial audit services		
Services provided by the financial auditor Grant Thornton		
Statutory audit of the financial statements of the company	123	124
Other services		
Other audit services not provided by AEMO's financial auditor *	606	1,585

* Other audit activities include gas and electricity market audit services, which include the review of AEMO's control procedures and its compliance with the Rules. A significant portion of these services are on behalf of registered participants and the review reports are distributed to them. This balance also includes internal audits of the company, review and accreditations, and other advisory services. None of these services were performed by the external auditor during the year.

16. Contingent Liabilities

IN SUMMARY

A contingent liability is a liability that may be incurred but is dependent on an uncertain future event.

From time to time AEMO may be involved in disputes with registered participants. As referred to in Note 13 Reserves, AEMO maintains PCFs for payment of compensation to market participants for unintended scheduling results and scheduling errors as determined under various dispute resolution processes. Where the probable outcome against the company can be measured, an appropriate liability is recognised in the financial statements. Where the outcome is unknown and the company is defending the action, or it is unlikely that any significant liability will arise, an amount is not recognised in the financial statements. Disclosure of details of claims are not provided where the directors consider that this would be prejudicial to AEMO in resolving the disputes. Payment of claims are capped to the extent of the funds available in the applicable PCF.

	2018 \$'000	2017 \$'000
Not later than one year	7,003	6,011
Later than one year but not later than five years	25,905	14,085
Later than five years	4,797	7,658
	37,705	27,754

Lease commitments payable are based on AEMO's current lease rates and include agreed future increments. Operating lease payments are charged on a basis which is representative of the pattern of benefits derived from the leased property.

Incentives received under non-cancellable operating leases in the form of rent free periods and contributions to fit-out costs are recognised as a liability. The liability is reduced by allocating lease rental payments between rental expense and reduction of the liability on a straight-line basis over the remaining term of the lease.

17. Commitments

Capital commitments

	2018 \$'000	2017 \$'000
Not later than one year	2,963	4,290
Later than one year but not later than five years	-	791
Later than five years	-	-
	2,963	5,081

Operating lease commitments

IN SUMMARY

This section details operating lease commitments which are mainly office leases contracted for at balance date but not recognised as liabilities.

The leases relate to the following:

- Melbourne CBD premises – lease agreement to 31 October 2023.
- Sydney CBD premises – lease agreement to 28 February 2021.
- Brisbane CBD premises – lease agreement to 31 January 2026.
- Adelaide CBD premises – lease agreement to 15 July 2019.
- Perth CBD premises – lease agreement to 31 August 2028.

18. Accumulated Surplus/(Deficit)

The accumulated surplus / (deficit) attributable to AEMO's functions is detailed below:

	2018 \$'000	2017 \$'000
NEM	(10,810)	(1,267)
Electricity FRC	1,546	359
Victorian TNSP	47,759	30,141
DWGM – capital contribution	8,704	8,704
DWGM	7,665	5,732
Gas FRC (excluding WA)	3,258	2,743
WA Gas FRC	1,393	1,614
STTM	5,169	930
NTP	351	634
Gas Supply Hub	(5,045)	(4,275)
WEM	1,624	2,432
GSI	410	733
WA Systems Management	(3,348)	(2,815)
Other functions	2,559	3,129
	61,235	48,794

AEMO has statutory powers to recover all costs as well as under and over recoveries in any of the specific functions in the next financial year or subsequent financial years. It does this by including surpluses or deficits in future budgets and

applying these to future fee recoveries for specific AEMO functions. Accordingly, the accumulated surplus / (deficit) attributable to each of AEMO's functions is reconciled and managed on an ongoing basis.

The DWGM – capital contribution amount relates to VENCorp contributed capital that was required to be treated as an accumulated surplus at the commencement of AEMO.

19. Events Occuring after Balance Sheet Date

During 2015-16, AEMO acquired the majority of the WEM and GSI operating functions performed by the Independent Market Operator (IMO). Since the acquisition, the IMO has still continued in existence but for limited purposes specified in the Electricity Industry (Independent Market Operator) Repeal Regulations 2018.

On 27 April 2018, the IMO concluded its work for the WEM and GSI functions and ceased operations. The final surplus distributed following IMO ceasing operations for the WEM and GSI were \$0.3m and \$0.1m respectively, and AEMO received these funds on the 9 August 2018 as a gain on acquisition.

20. Reconciliation of Surplus/ (Deficit) to Net Cash Inflow/ (Outflow) from Operating Activities

	2018 \$'000	2017 \$'000
Surplus	10,811	22,440
Depreciation and amortisation	16,478	18,377
Non-cash defined benefit expense	468	480
Unrealised foreign exchange gain	-	(32)
Change in operating assets and liabilities		
(Increase)/decrease in trade and other receivables	(2,833)	4,790
Increase/(decrease) in creditors and accruals	8,092	(16,081)
Increase/(decrease) in participant security deposits	5,238	(46,469)
Increase in provisions	1,865	1,946
Net cash inflow / (outflow) provided by operating activities		
	40,119	(14,549)

21. Related Party Transactions

All directors comply with the Directors Interests Protocol adopted by the Board, which abides by the Corporations Act 2001 provisions and sets out the policy for each director's responsibility to disclose conflicts of interest, declaration of interests, and management of conflicts.

There is one director occupying a role in another energy company which pays fees to AEMO. All related party transactions for the year ended 30 June 2018 were transacted at arms-length.

These transactions are not considered related-party transactions as defined by accounting standards and are therefore not disclosed in this note, as the relevant director of AEMO is not considered to have significant control over any of the entities with which AEMO transacts.

Directors' Declaration

The directors of Australian Energy Market Operator Limited declare that:

1. The financial statements, comprising the statement of profit or loss and other comprehensive income, statement of financial position, statement of changes in equity, statement of cash flows, and accompanying notes, are in accordance with the Corporations Act 2001 and:
 - (a) comply with Accounting Standards as described in Note 1 to the financial statements and the Corporations Regulations 2001; and
 - (b) give a true and fair view of the company's financial position as at 30 June 2018 and of its performance for the year ended on that date in accordance with the accounting policies described in Note 1 to the financial statements.
2. In the directors' opinion, there are reasonable grounds to believe that the company will be able to pay its debts as and when they become due and payable.

This declaration is made in accordance with a resolution of the Board of Directors and is signed for and on behalf of the directors by:

A. Clarke AO, PSM

Chairman

Melbourne

6 September 2018

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Independent Auditor's Report

To the Members of Australian Energy Market Operator Limited

Report on the audit of the financial report

Opinion

We have audited the financial report of Australian Energy Market Operator Limited (the Company), which comprises the statement of financial position as at 30 June 2018, the statement of profit or loss and other comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, and the Directors' declaration.

In our opinion, the accompanying financial report of the Company is in accordance with the *Corporations Act 2001*, including:

- a giving a true and fair view of the Company's financial position as at 30 June 2018 and of its performance for the year ended on that date; and
- b complying with Australian Accounting Standards and the *Corporations Regulations 2001*.

Basis for opinion

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Report* section of our report. We are independent of the Company in accordance with the *Corporations Act 2001* and the ethical requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants* (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Information other than the financial report and auditor's report thereon

The Directors are responsible for the other information. The other information comprises the information included in the Company's Director's report for the year ended 30 June 2018, but does not include the financial report and our auditor's report thereon.

Our opinion on the financial report does not cover the other information and accordingly we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial report, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial report or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Directors' for the financial report

The Directors of the Company are responsible for the preparation of the financial report that gives a true and fair view in accordance with Australian Accounting Standards and the *Corporations Act 2001*. The Directors' responsibility also includes such internal control as the Directors determine is necessary to enable the preparation of the financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

In preparing the financial report, the Directors are responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Directors either intend to liquidate the Company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial report

Our objectives are to obtain reasonable assurance about whether the financial report as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this financial report.

A further description of our responsibilities for the audit of the financial report is located at the Auditing and Assurance Standards Board website at: http://www.auasb.gov.au/auditors_responsibilities/ar4.pdf. This description forms part of our auditor's report.



Grant Thornton Audit Pty Ltd
Chartered Accountants



B A Mackenzie
Partner – Audit & Assurance

Melbourne, 6 September 2018

*Australian Energy
Market Operator Limited*

ABN 94 072 010 327

www.aemo.com.au