

CEO'S REPORT



Tsai Chao Chung, Charles
Chief Executive Officer

Power Assets is a global investor in energy companies that operate in the energy generation, transmission and distribution sectors across coal, gas, renewables and oil. Since our inception, we have focused on creating a diversified portfolio of assets that offers predictable, long-term revenue streams in stable and well-regulated markets. This enables us in turn to offer long-term growth to our investors in all market conditions.

Our operations span Asia, Australia, North America and Europe. The Group has more than 15 assets worldwide, which are each dedicated to their own strategies, and leverage their unique strengths to succeed. Together, they are united in the pursuit of excellence in customer services, operating efficiencies and environmental sustainability.

UNITED KINGDOM

- UK Power Networks
- Northern Gas Networks
- Wales & West Utilities
- Seabank Power
- Energy Developments

NETHERLANDS

- Dutch Enviro Energy Holdings B.V.

PORTUGAL

- Iberwind

HONG KONG

- HK Electric
-
-

MAINLAND CHINA

- Zhuhai Power
- Jinwan Power
- Siping Cogeneration
- Dali Wind Power
- Laoting Wind Power

THAILAND

- Ratchaburi Power

AUSTRALIA

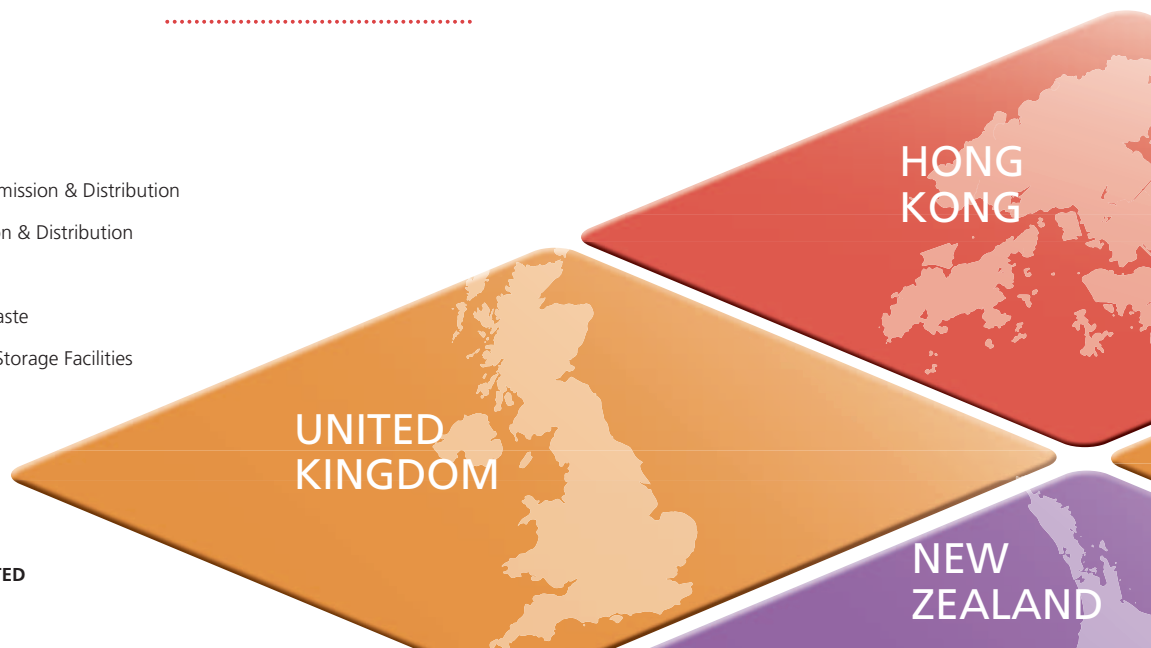
- Australian Gas Networks
- SA Power Networks
- Victoria Power Networks
- Australian Energy Operations
- United Energy
- Dampier Bunbury Pipeline and DBP Development Group
- Multinet Gas
- Energy Developments

NEW ZEALAND

- Wellington Electricity Lines

Legends

- Generation
- Electricity Transmission & Distribution
- Gas Transmission & Distribution
- Renewables
- Energy-from-waste
- Oil Pipelines & Storage Facilities



UNITED KINGDOM

HONG KONG

NEW ZEALAND

In 2017, we acquired a 20% stake in the DUET Group (DUET), an owner and operator of energy assets in Australia and other markets. The transaction was completed in partnership with CK Infrastructure Holdings Limited and CK Asset Holdings Limited which acquired the remaining 80% of DUET.

Three of DUET's four companies operate in electricity and gas transmission and distribution, making them a good fit for our core business. DUET is also in the alternative and very low-emission energy generation business, including energy-from-landfill gas, energy-from-coal mine gas, renewables and remote energy generation solutions. DUET's income is mostly governed by long-term contracts, offering stable revenue streams for the Group. In addition, through one of its operating companies, it has technical know-how in the specialised area of energy-from-waste that will be valuable for other companies in the Group.

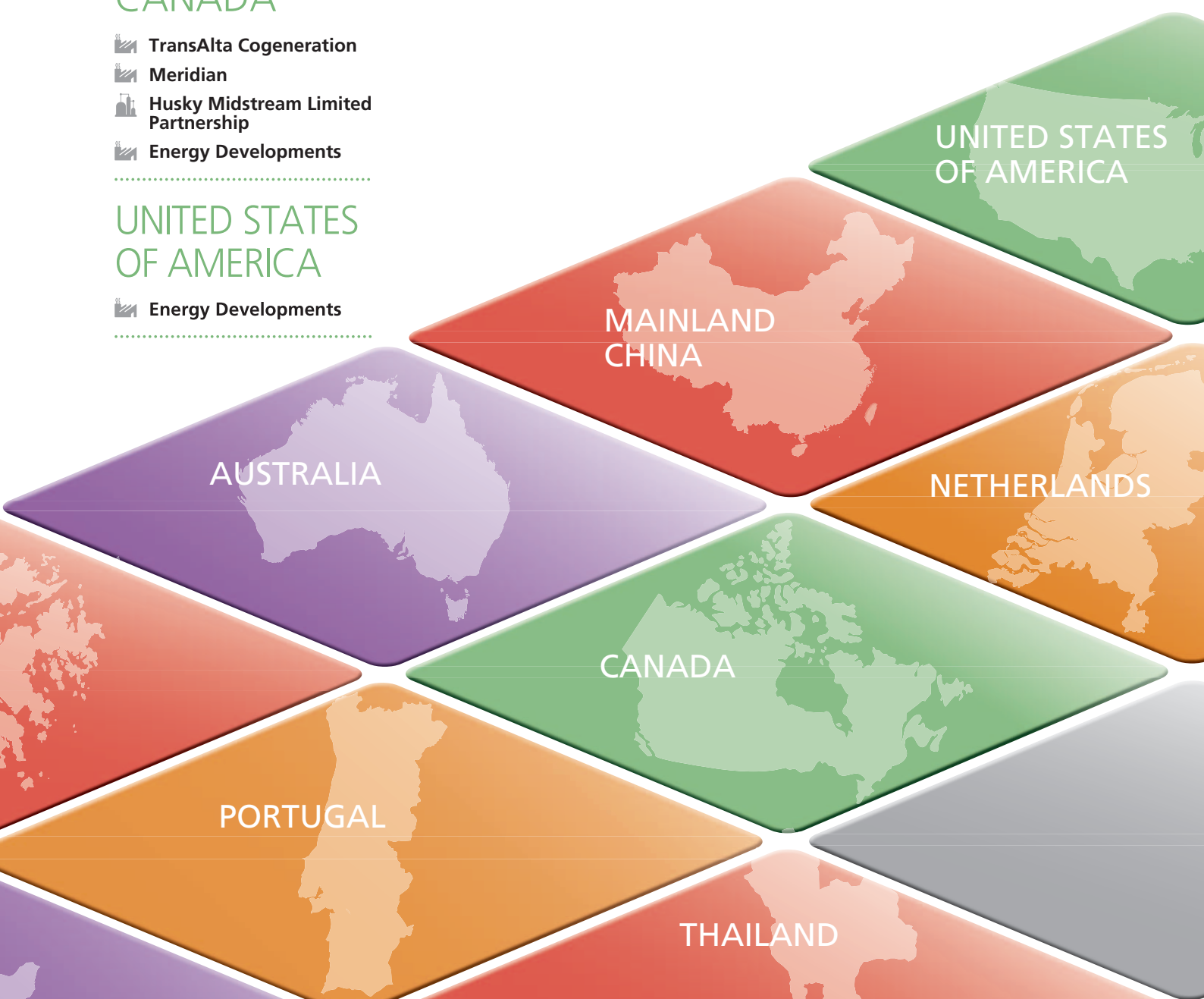
Governments across the world are establishing stringent new carbon emission targets in order to achieve the goals of the Paris UN Climate Change Conference (COP 21) agreement. As a Group, we believe that it is only through innovation and the adoption of the latest technologies that the sector as a whole can support the move to a low-carbon future. From blending hydrogen with natural gas to reduce emissions and using carbon dioxide emissions for greenhouse cultivation, to supporting the use of electric vehicles and accepting distributed solar generation into the network, our companies are at the forefront of innovation to develop energy while minimising emissions.

CANADA

-  **TransAlta Cogeneration**
-  **Meridian**
-  **Husky Midstream Limited Partnership**
-  **Energy Developments**

UNITED STATES OF AMERICA

-  **Energy Developments**





WWU's pipelines enable it to keep more than 2.5 million customers safe and warm.

The UK is the Group's largest market. With a presence in the geography since 2005, today we have four companies spanning the electricity generation, electricity and gas distribution sectors. They have a combined domestic, commercial and industrial customer base of over 13 million, generation capacity of 1,150 MW, and a combined electricity network length of 188,000 km and gas pipeline length of 71,100 km in the country.

Notwithstanding the uncertainties associated with ongoing Brexit negotiations, all four Group companies achieved good operating results during the year as they are mostly regulated with tariffs indexed to the retail price index. The companies led their respective sectors in reliability and customer satisfaction, qualifying for incentive payments from the UK regulator Ofgem in most cases.

Through the third carbon budget of the Climate Change Act 2008, the UK Government is committed to cutting greenhouse gas emissions by 37% by 2020 compared to 1990 levels. We fully support the Government in these aspirations and over the last year our companies have invested significantly in research and innovation to reduce carbon emissions both in day-to-day operations and at a more strategic level.

UK Power Networks

UK Power Networks (UKPN) owns, operates and manages three of the 14 regulated electricity distribution networks in the UK. It is one of the largest electricity distribution network owners in the UK covering an area of approximately 30,000 km². UKPN also operates a number of private networks on behalf of clients including the British Airports Authority and the Ministry of Defence. The Group owns 40% of the company since 2010.



UKPN offers extensive technical training to all engineers to ensure the highest standards are maintained.

Hydrogenisation to improve carbon performance of gas networks

Blending hydrogen with natural gas significantly reduces carbon emissions on combustion, as the by-product of hydrogen upon combustion is harmless water vapour. In the UK city of Leeds, NGN is conducting a major study on the feasibility and logistical challenges involved in converting the entire city to an all-hydrogen network. NGN's study is highly significant in expanding the body of knowledge available to the industry as a whole.



In 2017, UKPN distributed 79,114 GWh of power, a 1.2% decrease compared to 2016 levels. UKPN ended the year with 8.28 million (2016: 8.25 million) customers. The company had a particularly strong year with respect to efficiency and continues to have the lowest 'use of system' charges of any distribution network operator in the UK.

UKPN upheld its strong track record in customer service, securing its highest ever score of 87.5% in the annual customer satisfaction survey conducted by Ofgem in 2017. UKPN has consistently improved on its own customer satisfaction ratings every year since 2010.

The company invested more than £620 million (2016: £570 million) to conduct proactive maintenance and upgrade works on its networks. Network reliability improved with customer interruptions (CIs) and customer minutes lost (CMLs) standing at 37 and 32 respectively (2016: CIs 41, CMLs 33). UKPN once again secured significant incentive revenues from Ofgem for supply reliability.

In 2016, UKPN established the ED1SON Alliance, a formal alliance arrangement involving experts from the company and four of its major contractor partners to undertake

major capital projects. The Alliance offers a significant pool of skilled resources with respect to delivery of capital projects.

The ED1SON alliance has been contracted to supply power to the redevelopment of the 42-acre Battersea Power Station site, one of the largest ongoing urban regeneration projects in London. Construction works progressed during the year with the completion of a 320-metre-long spur tunnel in April 2017.

Northern Gas Networks

Northern Gas Networks (NGN) has been with the Group since 2005. It operates one of the eight gas distribution networks in the UK, transporting more than 13% of the UK's gas over 36,100 km of gas distribution pipelines. It also conducts maintenance of distribution and gas mains and provides essential gas connections and gas emergency services.

NGN's total gas throughput for 2017 was 68,974 GWh (2016: 71,852 GWh). The number of customers was stable at 2.7 million.



An NGN Customer Care Officer brings a customer up to speed with planned replacement work in his neighbourhood to ensure good community relations.

NGN's efficiency and customer satisfaction levels were very strong. The company received an average rating of 9.2 out of 10 in the Ofgem benchmark customer satisfaction surveys. It also retained its rank as a top two UK gas distribution network and was named by the regulator as the most efficient of the UK's eight gas distribution networks.

Network improvement and replacement to improve system efficiency, safety and reliability is an ongoing priority for NGN. Over 580 km of old iron mains were decommissioned during the year as part of this effort, while progress was made on an ongoing network extension programme to alleviate fuel poverty. About £3.9 million was invested in these projects as well as in upgrades to IT infrastructure of £21.3 million.



NGN engineers carry out works on a gas main in Bradford to maintain network reliability.

Wales & West Utilities

Wales & West Utilities (WWU) has been a member of the Power Assets Group since 2012. WWU is a gas distribution business operating 35,000 km of gas pipelines in Wales and the South West of England, covering 17% of the UK's surface area.

In 2017, WWU distributed 62,009 GWh of gas to 2.53 million supply points, a decrease in throughput of 4% over 2016. The company achieved or exceeded all its regulatory target outputs and met all its guaranteed standards of performance during the year, improving safety and operating performance. WWU upheld the Group's standards of excellence in customer satisfaction, scoring 9.17 in the most recent Ofgem survey.



A WWU engineer at a customer's premises. WWU is lauded for its commitment to supporting vulnerable groups in the community.

In order to uphold network reliability and safety, the company laid 425 km of new mains and removed 485 km of iron mains off risk during the regulatory year ended 31 March 2017.

WWU is committed to the development of low-carbon heating networks, and has been working to reduce emissions by connecting biomethane and other green gas contributions to the gas network. Cumulatively, WWU has connected 17 biomethane producers to the network, which equates to 1.5 GWh. It also collaborated with the Government, regulators and industry to develop policies and regulations governing connection of green gases to the network.



WWU's extensive and complex networks are at the core of its operations.

WWU's process transformation programme is a significant company-wide initiative that will upgrade customer services and future proof work processes for the longer term. Work continued in 2017 on upgrading IT systems, including capabilities like real time management information reporting.

As the only independent gas network that was awarded contract work on smart meter installation, one of the biggest nationwide projects in the sector, WWU entered the rollout stage and installed 5,241 smart meters during the year.

Seabank Power

Seabank Power (SPL) is the Group's UK generation business and has been a part of Power Assets since 2010. The Seabank power station is located in South Western England and has two combined-cycle gas turbine generating units with a total capacity of 1,150 MW. SPL's output is governed by a multi-year power purchase agreement based on plant availability.

SPL exceeded budget for availability, thermal efficiency, forced outage, starting performance and plant trips during 2017. The plant generated 5,786 GWh of electricity, against a budget of 4,243 GWh.

SPL delivered satisfactory results during the year, maintaining emissions levels, delivering operating efficiencies and achieving continued compliance with all relevant regulations. Positive relationships were maintained with its sole customer.

Research to create low carbon homes

WWU has conducted ground-breaking research into the future role of gas from a consumer's perspective, building a computer model that enables low carbon alternatives to be evaluated at the individual property level. It has also built an investment model assessing the impact of new technologies such as hybrid heating systems on the network. The data received to date from these models is encouraging and suggests that by using renewable energy when available, households can reduce carbon emissions by around 80% at a comparatively low cost. The Director of Asset Management at WWU received a Gold Award from the Institution of Gas Engineers and Managers for the development of this model.





HK Electric's Lamma Power Station is in the process of renewing its infrastructure to increase gas-fired generation.

The Hongkong Electric Company

The Hongkong Electric Company (HK Electric) is the Group's flagship company, established in Hong Kong in 1889. It generates and supplies power to the Hong Kong SAR's Hong Kong and Lamma Islands through a 6,400 km electricity network. With installed generation capacity of 3,487 MW, HK Electric is one of the world's most reliable electricity suppliers.

In 2017, HK Electric's customer base increased to 577,000 from 575,000, driven by growth in the residential sector. Electricity sales met budgets at 10,615 GWh, with per-capita electricity consumption in Hong Kong showing a downward trend due to a dry spring season, milder weather in the first half of 2017, and continual energy efficiency and conservation initiatives undertaken by the public and private sectors.

The signing of the new Scheme of Control Agreement (SCA), the regulatory contract that will shape the sector from 2019 onwards, marked an important milestone for HK Electric during the year, and the culmination of months of negotiation and discussion with the Government and stakeholders. The new SCA sets the permitted rate of return at 8% and will be effective for 15 years from 1 January 2019. This will allow customers to continue enjoying world-class service at affordable prices while investors will remain assured of long-term value. The stability provided by the new SCA is particularly vital to HK Electric as it progresses with the investments needed

to achieve the objectives of the energy and environmental policy, and the targets of aggressive carbon reduction, as set out by the Government.

HK Electric is presently working closely with the Government to finalise the implementation details of the new SCA, including on items such as the introduction of feed-in-tariffs and renewable energy certificates.

The construction of two new gas-fired generating units, L10 and L11, at Lamma Power Station progressed on schedule, and the units are on track for commissioning in 2020 and 2022 respectively. Together, the two units will increase the proportion of the company's gas-fired generation to 55% from the present 34%. While one coal-fired unit L1 has retired, another unit L2 has undergone a major upgrade to extend its operating life by five years to 2022.



HK Electric signs the new Scheme of Control Agreement with the Government, effective for 15 years.

HK Electric receives the HKMA Grand Award for quality

The Hong Kong Management Association (HKMA) presented HK Electric with its coveted Quality Award in recognition of the company's commitment to total quality management. HKMA commended HK Electric's management team for communicating the company's corporate vision, mission and core values clearly to all its employees. HKMA also complimented the company for its organisational agility and operational flexibility in adapting to changing circumstances in the strategic planning process, as well as on its customer-centric approach.



In order to enhance the security of natural gas supply and our negotiating power with gas suppliers, the company is planning to develop an offshore liquefied natural gas terminal using floating storage and regasification unit technology. The environmental impact assessment report for the project was submitted to the Government in February 2018. The unit is expected to be commissioned by 2020/21 if approvals are received on time.

HK Electric continued to meet the tightening stipulated emissions allowances in all categories through ongoing investment in advanced equipment and efficiency management. The company also worked with the Government to agree on new and more stringent emissions allowances from 2022 onwards. Under the new regulations, the emissions allowances have been further reduced by 23% for sulphur dioxide (SO₂), 21% for nitrogen oxides (NO_x) and 8% for respirable suspended particulates (RSP) as compared to the levels for 2021.

Despite a number of extreme weather events in August 2017, HK Electric once again achieved a world-leading supply reliability level in excess of 99.999%, exceeding its pledged standard for the 21st consecutive year. Customer satisfaction remained high with the company meeting or surpassing all its pledged service standards once again and qualifying for financial incentives from the regulator.

To help improve the quality of roadside air, HK Electric continued to support the adoption of electric vehicles (EV) in Hong Kong, by expanding the network of charging

facilities available across the city in public and private spaces. The company now operates 13 public EV charging stations offering free charging until the end of 2018. It also provided technical consultancy services to residential and commercial building operators interested in installing EV charging facilities on their premises.

A pilot exercise was initiated during the year to evaluate the effectiveness of smart meters and Advanced Metering Infrastructure (AMI) technology in the Hong Kong environment for different customer demographics. More than 2,300 new smart meters were installed. The experience gained will be valuable for supporting larger deployments in the future for modernisation of customer services and network operations.

The Smart Power Fund, designed to help aged residential buildings improve energy efficiency, doubled the size of its subsidy for project upgrades. The Fund supported 20 projects during the year, including replacements of lift motors and control systems, public lighting and air conditioners, with more energy efficient models.

HK Electric honoured its 2013 pledge to freeze net tariffs for five years. Overall tariffs were reduced significantly in 2017. A small upward adjustment was made from 1 January 2018; however tariffs for 2018 remain much lower than those that prevailed from 2013 to 2016.



Australian Energy Operations operates the Elaine terminal station to connect the Ararat wind farm to the state grid.

Australia is a key market for the Group. Since entering the market in 2000, we have steadily increased our presence across generation, transmission and distribution and our five operating companies serve approximately 4.6 million households and businesses. The acquisition of DUET during the year under review has also positioned us to participate in the growing energy-from-waste and biogas sectors in Australia.

The fast-increasing uptake of distributed energy generation via rooftop solar panels and battery storage is dramatically reshaping the Australian electricity sector. Our Australian businesses are working proactively to understand new generation and consumption patterns, and determining how our networks must be re-engineered to accommodate for two-way electricity flow and other new trends.

The Australian energy market is facing a number of important legislative and regulatory changes that are intended to reduce emissions, make energy more affordable and improve the reliability and security of energy provision. These include implementing the recommendations of the report on Australia's National Electricity Market by Dr. Alan Finkel, Australia's Chief Scientist. We support and endorse the Government's goals and our companies are working alongside the Australian Energy Regulator (AER) to innovate and make the appropriate investments in systems, networks and processes to realise this vision.

DUET

This is DUET's inaugural year as part of the Power Assets Group. DUET owns and operates four energy companies – Dampier Bunbury Pipeline and DBP Development Group (collectively known as "DBP"), Energy Developments Pty Ltd (EDL), Multinet Gas (MG) and United Energy (UE). The four businesses combined operate 12,500 km of gas pipelines and 12,900 km of electricity network in Australia and have 983 MW generation capacity in Australia, North America and Europe.

DBP owns and operates gas transmission pipelines in Western Australia, delivering 339 million GJ of gas during the year. System availability was high at 100%. The company spent A\$71.8 million in capital works to enhance network safety and reliability.



The DUET acquisition offers synergies with and access to new energy sectors in Australia.

Creating a more reliable gas supply for Western Australia

In September 2017, DBP completed the construction and commissioning of a 42 million GJ underground gas storage facility in Western Australia. The facility, representing A\$74.2 million in capital expenditure in total, is the largest gas storage facility in Western Australia and received approximately 5 million GJ of gas in 2017. It will help improve storage services for natural gas shippers, while also improving supply security and reliability in the region.



EDL focusses on the generation of clean energy and remote energy in Australia, North America and Europe. During the year, EDL expanded into the highly specialised landfill-gas-to-energy generation sector in North America with the acquisition of Lidya Energy LP and Lidya Energy Inc in Canada, and Granger Energy Services in the USA. The acquisitions take EDL's North American clean generation capacity to 204 MW, making it one of the top three landfill-gas-to-energy businesses in the region. It also expanded its production of wind energy in Australia with the acquisition of the 12 MW Wonthaggi wind farm. EDL's generation output grew by 7% during the year due to expanded operations through these acquisitions and the expansion of existing sites.



United Energy deploys advanced network infrastructure.

MG is a gas distributor in Victoria, serving 705,000 customers throughout Melbourne's inner and outer east areas, the Yarra Ranges and South Gippsland. In 2017, the company delivered 56.4 million GJ of gas. It invested A\$42 million in its ongoing mains replacement programme to enhance network safety and efficiency. Customer satisfaction levels were good at 83%.

UE is an electricity distribution business in Victoria with a customer base of 677,000 connections. During the year UE sold 7,833 GWh of electricity. It secured a capital grant from the regulator to deploy dynamic voltage management capabilities across its network to help manage electricity supply during peak utilisation. UE was the only Australian electricity distribution business to be awarded funding under this initiative.

UE introduced a new technology that can automatically locate and isolate faults on high voltage feeders, restoring supply to customers quickly and safely. It is the first organisation in Australia (and the second in the world) to use this Fault Location, Isolation and Service Restoration (FLISR) technology. Following rollout last year, FLISR saved the business more than A\$200,000 by restoring supply to customers in less than 60 seconds.

Embracing temporary generation to increase capacity

On behalf of the South Australian Government, SAPN has completed a project to create temporary generation capacity in the region. The project is aimed to avoid rotational load shedding over the next two summers. The company installed and operated nine turbines and six transformers with an aggregate capacity of 276 MW. The Government intends to purchase the generators and move them to a long-term site by 2020. The temporary infrastructure was commissioned in December 2017.



Australian Gas Networks

Australian Gas Networks (AGN) is one of Australia's leading distributors of natural gas and the Group has owned 27.51% of the company since 2014. AGN operates 25,400 km of gas distribution pipelines, transporting over 25% of the natural gas used by residential and commercial customers in Australia annually.

In 2017, AGN delivered 103.6 million GJ, an increase from the 2016 performance of 101.3 million GJ. The company grew its customer base by 2% over 2016 to 1.272 million households and businesses, driven primarily by an increase in domestic customers.

AGN outperformed on key performance targets and bettered its own 2016 performance on the customer service front, including responding to 99% of public leak reports within two hours and exceeding performance target levels for class 1 and 2 leak repairs. Response times for both emergency and customer calls were also ahead of target at 92% within 10 seconds and 85% within 30 seconds respectively. The company's mains replacement programme upgraded 329 km of pipelines.

AGN played a leading role in the production of the Gas 2050 Vision which was released in March 2017 by Energy Networks Australia (ENA) together with four other apex bodies representing the gas industry. The vision highlights both the critical importance of gas in Australia's energy

mix and the picture for a decarbonisation pathway for gas through to 2050 and beyond. Work has commenced on the implementation of the vision, with the ENA having publicly released its scoping study on the broad approach to decarbonising gas networks across Australia.

AGN completed construction of a gas pipeline to the Port of Bundaberg in Queensland, a project that supplies natural gas to a new plasterboard factory and which is also expected to contribute to the economic growth of the whole region. The contract for construction work on the critical Murarrie Looping project has been awarded with work to commence in the second half of 2018. This project includes the installation of a second Brisbane River gas pipe crossing, aimed at eliminating the single asset gas pipeline risk currently faced by Brisbane customers.

SA Power Networks

SA Power Networks (SAPN) has been part of the Group since 2000 and is the sole electricity distributor in the state of South Australia. It operates 89,200 km of electricity distribution pipelines.

SAPN sold 10,205 GWh of electricity to 865,000 customers during the year, as compared to 10,188 GWh to 856,000 customers in 2016. Efficiency performance was outstanding and the company was named the most efficient distributor in Australia on a state wide basis by AER for the third year running. By the end of 2017, SAPN had connected 879 MW of distributed solar generation capacity to the network.

Reliability and customer service performance were above statutory targets, qualifying SAPN for a financial incentive from the regulator. 'Annual minutes without supply' per customer for 2017 stood at 140 minutes compared to the annual target of 168 minutes. 77% of faults and emergency calls were answered within 30 seconds against a target of 67.8%.

SAPN experienced a 100% increase in enquiries to connect distributed generation at the commercial size (30 kW and above) to the network, and completed connections for approximately 80% of these projects. The company is closely monitoring this trend and has already established defined processes and governance for dealing with this type of connection.

In September 2017, SAPN launched the 'Enerven' business to handle non-regulated activities such as construction and maintenance services as well as energy solutions. Enerven has won a number of major contracts, including transmission construction and maintenance, the buildout of the new high-speed 'NBN' broadband network, network connection for Bungala Solar Farm, solar installations for commercial customers, and the installation of 30,000 new LED lights for three major councils.

Victoria Power Networks

Victoria Power Networks (VPN) comprises the CitiPower and Powercor electricity distribution businesses. The Group has owned 27.93% of both companies since 2002 and 2000 respectively. CitiPower and Powercor operate 95,300 km of electricity distribution pipelines in Victoria.

VPN distributed 16,689 GWh of electricity during the year, a 1% increase on 2016 levels. New customer connections were 12.3% above 2016 levels at 23,099 connections. Following systematic and proactive investment in the network and customer support, both reliability and customer satisfaction levels were at their highest levels across the two businesses. CitiPower and Powercor customers benefited from network availability of 100% & 99.97% respectively. Combined customer satisfaction was at the highest level to date at 86% and the businesses maintained the lowest rate of complaints compared with all distributors for the second year running.

Powercor opened three new depots across Victoria to guarantee safety and maintain customer service at the highest standards. The company also commissioned a new terminal station at Deer Park to expand supply to western Melbourne. The commissioning of the station is the culmination of eight years of preparations by Powercor, the Australian Market Operator, and a number of other industry participants.

Beon Energy Solutions, a VPN undertaking, connected Victoria's largest, hyperscale data centre, Air Trunk. The 66/22KV substation with diverse high voltage power feed was delivered ahead of schedule. The data centre, located south west of Melbourne, has a total capacity of over 50MW.



VPN's rigorous maintenance programme keeps power lines safe and functioning optimally.

Australian Energy Operations

Australian Energy Operations (AEO) became a Group company in 2012. AEO built, owns and operates 42 km of electricity transmission lines and terminal stations that connect the Mt Mercer and Ararat wind farms to the national grid.

During the year under review, AEO delivered a stable income stream for the Group. The company's revenues from the two wind farms are on a fixed monthly basis irrespective of the volume of units transmitted.

Preliminary works were undertaken in the year to study the feasibility of connecting additional wind farms to AEO's Elaine terminal station, which will serve to expand AEO's revenue base.



Jinwan Power Plant has increased steam output and plans to step up production even further.

The Power Assets Group has had a presence in mainland China since 2007. Today, the Group's presence consists of five power companies: two wind farms in Dali (Yunnan province) and Laoting (Hebei province), two coal-fired plants in Zhuhai and Jinwan (Guangdong province), and a cogeneration plant in Siping (Jilin province). The five units have a combined capacity of 2,898 MW.

The Chinese Government is transitioning away from providing subsidies for renewable energy and in July launched the trading of green certificates. Under this scheme, producers of solar and wind energy receive tradeable certificates that can be purchased by private enterprises in the open market. The Group is monitoring developments on an ongoing basis and will take appropriate action to comply with the Government directives.

Zhuhai, Jinwan and Siping power plants

The Group acquired a 45% share in the Zhuhai, Jinwan and Siping thermal generation power plants in 2009. The three plants together have seven coal-fired generating units and a combined capacity of 2,800 MW.

In the context of power sector reform and coal price movements in 2017, the three plants delivered satisfactory results. Total electricity sold stood at 11.99 billion kWh (an increase of 7.4% over 2016), while total heat sold was 4.99 million GJ (an increase of 12.9% over 2016). Both Zhuhai and Jinwan plants achieved the 'Close to Zero' emissions standard and qualified for tariff subsidies during the year.

Typhoon Hato hit Zhuhai in August, forcing temporary outages in the Zhuhai and Jinwan plants.

The Zhuhai power plant produced 6.53 billion kWh of power in 2017. The plant continued to complete its environmental upgrade program, installing the last wet electrostatic precipitator in Unit 1, one of its generating units.

The Jinwan power plant produced 4.65 billion kWh of electricity and 644,811 tons of steam, an increase of 32.4% and 40.4% respectively over 2016. This growth is attributable to an increasing demand for processing steam. Plans are under way to improve the plant's steam supply capability to meet the future growth in demand for steam.

The Siping power plant delivered acceptable performance in 2017, achieving power sent-out of 808.77 million kWh and heat sold of 3 million GJ, on par with 2016 levels. The plant has implemented a comprehensive retrofit scheme for its cogeneration units to improve environmental performance, reducing NO_x, SO₂ and particulate emissions to meet the stringent new emissions caps.

Dali and Laoting wind farms

The Group holds a 45% share in two wind farms in Dali (since 2007) and Laoting (since 2008), with a combined capacity of 97.5 MW.

In 2017, performance was stable with 192 GWh of electricity generated. The renewable energy generated by the two wind farms over the course of 2017, has cumulatively reduced carbon emissions by 200,600 tonnes within the respective provinces.



Ratchaburi power plant achieves all its operational parameters.

Ratchaburi Power Company

Ratchaburi Power Company (RPCL) has been a Group company since 2001. It is a generation company situated in the Ratchaburi province in southern Thailand, with an installed capacity of 1,400 MW. All power generated is sold to the Electricity Generating Authority of Thailand under a 25-year take-or-pay power purchase agreement.

RPCL's electricity generation output in 2017 of 8,749 GWh was in line with its production plan. The plant's generating units achieved availability of 90.1% and 92.6% for Blocks 1 and 2 respectively.

THAILAND

Wellington Electricity Lines

Wellington Electricity Lines (WELL) has been a Group company since 2008. WELL operates electricity distribution services in New Zealand's Capital City, Wellington, with 4,700 km of electricity distribution lines.

In 2017, WELL distributed 2,326 GWh of electricity to 167,000 customers across domestic, commercial and industrial sectors.

For the regulatory year ended 31 March 2017, the company remained one of New Zealand's most reliable networks, despite exceeding two key system reliability metrics as a result of storm conditions. WELL's system average interruption duration index (and system average interruption frequency index) exceeded the regulatory limits due to storm interruption and an earthquake event in November 2016.

EV adoption in New Zealand is accelerating with the Government seeking to have 64,000 electric vehicles on the roads by the end of 2021. To support this mandate, WELL is working with the Wellington City Council and transport providers to support charging to help the introduction of 10 electric buses to the Wellington area. The company has also undertaken a study to understand the impact EVs would have on the network and the role tariffs could play in influencing EV charging behaviour to manage reduction of peak network loads. This will lead to less demand congestion and more efficient network utilisation and performance.



Proactive network maintenance lies at the heart of WELL's reliability record.

WELL partnered with one of New Zealand's largest energy retailers to trial solar and battery energy storage solutions in the Wellington area. If successful, the trial will enable WELL to evaluate areas where expanded capacity can be provided without having to add to traditional infrastructure in the area. The trial will also enable the company to understand the consumption patterns of households in the area, in order to determine smart tariff structures, strategies to manage peak loads better, and reduce higher demand costs through the introduction of further value added customer services for managing new technology operations across the existing network.

NEW ZEALAND



HMLP is in the process of expanding its pipeline systems to serve more customers.

The Power Assets Group has had a presence in Canada since 2007, which was further expanded in 2016. Our two operating companies, Canadian Power Holdings and Husky Midstream Limited Partnership, operate in the power generation as well as oil transmission and storage space and are spread across Saskatchewan, Ontario and Alberta.

The evolution of climate policies and energy technologies continued to play an important role in Canada's plans to transition to a lower carbon economy with an increasing emphasis on non-hydroelectric renewables and natural gas. In anticipation of further tightening of carbon limits, we are studying the feasibility of modifying our existing generation infrastructure to improve emissions performance and support distributed intermittent generation.

In this context, Canadian Power Holdings delivered ahead of budget on all operating parameters and achieved improved operating efficiencies compared to the previous year. Husky Midstream Limited Partnership performed well in 2017, with our investment yielding higher earnings and cash distributions than planned.

Canadian Power Holdings

Canadian Power Holdings (Canadian Power) has been a part of the Power Assets Group since 2007. Canadian Power is an electricity generation business which operates the Meridian Cogeneration gas-fired plant (Meridian) in Saskatchewan. The company also owns a 49.99% share of TransAlta Cogeneration, which operates five power plants in Ontario and Alberta. Meridian and TransAlta Cogeneration have capacity of 220 MW and 1,162 MW respectively.

In 2017, the Meridian plant generated 1,664 GWh of electricity and 1,490 kT of steam, compared to 1,762 GWh and 1,448 kT achieved in 2016. Steam was sold to Husky Energy under a long-term offtake contract. Availability performance was 93%, down from 98% in 2016, as a result of a planned outage in the second quarter of 2017. The plant successfully completed a planned outage during a site-wide maintenance turnaround at its thermal host to ensure ongoing reliability.

The five plants operated by TransAlta Cogeneration produced 3,192 GWh of electricity during the year, compared to 4,142 GWh achieved in 2016.

TransAlta Cogeneration's Windsor plant completed an outage to ensure reliable service under a new capacity-based contract with the Ontario Independent Electric System Operator (IESO). The Mississauga plant has been taken offline through an agreement with the IESO, with no associated negative financial impact, to allow the IESO to optimise the supply situation in the region.

Husky Midstream Limited Partnership

Husky Midstream Limited Partnership (HMLP) became part of the Group in 2016. It operates 1,900 km of oil pipelines and the Hardisty terminal (oil storage capacity of 4.1 million barrels) in Alberta and Saskatchewan. Its pipeline gathering system has a capacity of nearly 309,000 barrels per day and the Hardisty Terminal has a throughput of more than 630,000 barrels per day.

In 2017, HMLP served 12 customers on its pipeline system and 56 customers within the Hardisty terminal. With advantaged assets and long-term contracts with major Canadian producers, the investment in HMLP generates secure and predictable returns for the Group.

In 2017, work advanced significantly on the LLB Direct pipeline project. Upon completion in the second half of 2018, the pipeline will transport heavy oil production from Alberta to the Hardisty terminal for blending and distribution to third-party export pipelines. Work was initiated on the second phase of expansion of the Saskatchewan Gathering System, which will transport heavy oil from Saskatchewan to the Hardisty terminal. Additional connectivity projects are underway in Hardisty to provide customers with increased market flexibility for crude oil transportation.

Dutch Enviro Energy Holdings B.V.

Dutch Enviro Energy Holdings B.V., which in turn owns AVR-Afvalverwerking B.V. (AVR), is an energy-from-waste producer based in Rotterdam, that has been a member of the Group since 2013. AVR has a total installed electricity generation capacity of 145 MW and thermal capacity of 700 MWth (heat and steam), of which approximately 60% is classified as renewable energy.

In 2017, AVR continued their stable production process and energy output of steam, heat and electricity, generating 410 kT, 5,540 TJ and 527 GWh respectively. Plant availability remained strong and production performance was optimised.

AVR's biomass-fired power plant in Rozenburg underwent an upgrade with the installation of a condenser and associated pipeline connections. The modification enables the plant to expand its supply portfolio, offering power and heat to the Rotterdam district, as well as steam to industrial customers. The plant is expected to commence operations in combined heat and power mode from 2018, delivering approximately 370 GWh of renewable energy each year.

This year, AVR and its long-term partner, the Dutch Packaging Waste Fund, embarked on a plan to build municipal waste separation facilities at its plant in Rozenburg. This major initiative will enable AVR to separate and recycle plastics from residual municipal waste. It creates a new



AVR's Rotterdam plant expands its supply of steam to industrial customers.

proposition for existing and future municipal clients and will lead to additional revenue streams going forward.

In October 2017, AVR launched a sustainable paving stone in partnership with the recycling and concrete industries. The stone is made partly from residues of the incineration process of AVR, which are treated, cleaned and used to create a clean granulate that can be used in the concrete industry. The granulate is both strong and stable and an effective replacement for sand and gravel in the production of recyclable concrete.



Iberwind's ongoing wind farm repowering programme improves output and efficiency.

Iberwind

Iberwind, a member of the Power Assets Group since 2015, is a wind energy company based in Oeiras, Portugal, with 31 wind farms. With an installed capacity of 726 MW and 339 wind turbines, Iberwind is an important part of the Group's renewables portfolio and the third largest wind energy generator in Portugal.

During 2017, Iberwind produced 1,756 GWh of electricity, avoiding near 700,000 tonnes of CO₂ emissions.

Iberwind runs an ongoing repowering programme to modernise its wind farms, an exercise that improves efficiency and output. Repowering ensures wind turbines do not just remain productive, but perform better than ever. Following the successful repowering of the Lagoa Funda wind farm in 2011 that almost doubled capacity, Iberwind completed repowering the Villa Lobos wind farm and operations recommenced in April 2017.