

# Group Managing Director's Report



This year's sound results testify to the validity of Power Assets' focus on long-term shareholder value, yielding earnings growth while fulfilling the power needs of our worldwide customer base in an efficient, sustainable and reliable manner.

**Wan Chi Tin**

Group Managing Director

On behalf of Power Assets I would at the outset like to express my gratitude to Mr Tso Kai-sum, who retired from his position as Group Managing Director on 1 January 2013. At the helm of the company for the 16 years in which Power Assets transformed itself into a global investor in power and utility-related businesses, his vision, leadership and ongoing commitment to delivering long term value for our shareholders are central to the company's sustained success.

As Mr Tso's successor my goal is to continue to build upon the foundation for sustainable success that he has so ably laid, with the support and collaboration of my team.

This year's sound results testify to the validity of Power Assets' focus on long-term shareholder value, yielding earnings growth while fulfilling the power needs of our worldwide customer base in an efficient, sustainable and reliable manner. This is especially significant in the context of the challenging financial and weather conditions of 2012.

While Hong Kong has been and remains our core market, our investments outside Hong Kong now contribute more than half of the Group's earnings.

We currently serve a total of over 15 million customers worldwide and have interests in over 10,000 MW of power

generation assets and over 440,000 km of power and gas networks. Today, Power Assets has a diverse portfolio of businesses in power generation, transmission and distribution, sourced from coal, gas and renewable energy.

Over the years we have been expanding our global investment portfolio through a combination of acquisition and green field development activities. In 2012, we expanded in the UK and Australia through acquisitions, while consolidating our presence in mainland China, New Zealand, Thailand and Canada, in addition to retaining our flagship position in Hong Kong.

Three principles underpin our international growth strategy – careful selection of operating markets, a rigorous due diligence process to identify quality assets that will yield stable income, and sharing of best operating practices to ensure synergies and maximum efficiencies. As a result, we have built up a strong portfolio of global assets that can generate stable and predictable returns over a long period.

In Hong Kong, our home for over 123 years, our priority has been to maintain and improve upon our own standards of excellence in supply and service to our customers. 2012 was the sixteenth year since 1997 of maintaining our sterling track record of supply reliability exceeding 99.999%, despite an unusually severe typhoon season.

Our efforts to improve air quality for Hong Kong's residents mean we maintain stringent controls on emissions. In 2012, despite an increase in generation output, we managed to keep our emissions of sulphur dioxide, nitrogen oxide and respirable suspended particulates below the statutory cap levels.

We are pioneers in introducing cleaner energy to Hong Kong. To this end we have been expanding our investment in solar and wind energy sources. Feasibility studies of our offshore wind farm continue to progress well. The one-full-year wind data measurement was completed in February and a feasibility study report will be submitted to the Government of the Hong Kong Special Administrative Region (HKSAR) later this year. We are also evaluating the installation of a new combined cycle gas turbine to take up the base-load generation role of an existing one in order to improve fuel efficiency and emission performance.

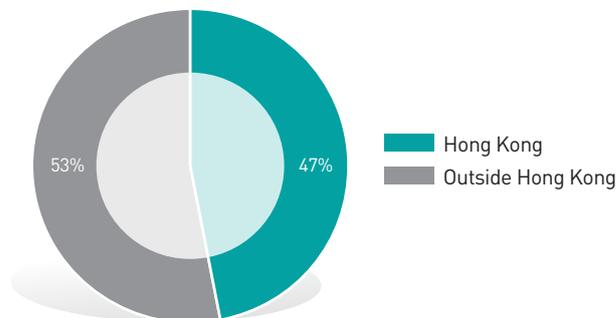
Our contribution to the community, both as an organisation and through our team of volunteers, stays undiminished in the areas dearest to us – caring for senior citizens and the vulnerable, as well as facilitating people to make wiser energy choices.

Our Corporate Social Responsibility (CSR) Committee, comprising members from senior management, in 2012 has successfully charted Power Assets' progress towards a sustainable future, with our efforts gaining widespread recognition.

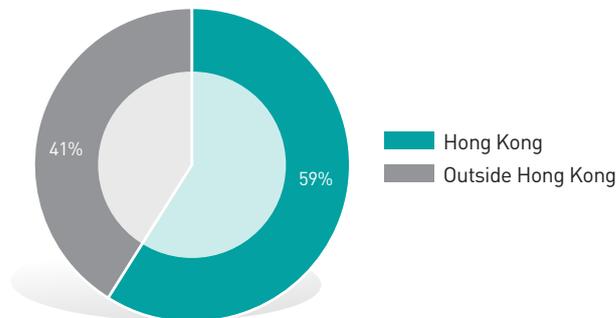
In 2012, we have become the first Hong Kong company to be included in the "Global 500 Carbon Disclosure Leadership Index" of "Carbon Disclosure Project". We are also one of only seven Hong Kong companies selected to be a component of the "Dow Jones Sustainability Asia Pacific Index".

The experience, expertise and commitment of our 2,000-strong team of employees remain our biggest assets. We strongly emphasise training and development of staff across all levels, especially nurturing young talent. The well-being of our employees is of paramount importance to us. Our Employee Wellness Programme offers a wide range of workshops and outreach activities to promote the physical, emotional, intellectual and social wellness of our employees.

### Earnings: HK\$ 9,729 million



### Total Assets: HK\$ 101,646 million



Supply reliability and excellent customer services are central to our way of doing business. In 2012 we once again surpassed the range of customer service standards that we set for ourselves. We also introduced new value added services such as an iPhone App for customers to make service requests, an exclusive web page for small and medium enterprises and e-bills for the visually impaired.

While we are cognisant of the challenges in the macroeconomic environment in 2013, we see opportunity ahead. Our strategy of seeking long term growth via investing in high quality global assets with a high degree of earnings predictability will enable us to build on our successes of 2012. Our Hong Kong operation will, as ever, set benchmarks in world class customer service, operations and dedication to greener energy.

## Group Managing Director's Report Global Markets – United Kingdom



UNITED  
KINGDOM



▲ Engineering and maintenance – a year-round focus at WWU which we acquire in October 2012.

The United Kingdom market has grown significantly to become Power Assets' largest market outside Hong Kong, contributing the highest share of our overseas income in 2012. The UK's transparent regulatory and legal framework has allowed us to effectively pursue our long-term growth strategy. Consequently Power Assets has expanded its UK presence further by acquiring a 30% stake in Wales and West Utilities Ltd, one of the country's eight major gas distribution networks.

Despite a challenging macroeconomic environment, especially in Europe, our investments in the regulated businesses in the UK have delivered an encouraging growth in profit. In response to the weak economy, the operational focus was on driving efficiencies and savings.

Power Assets via its partners was proud to be a part of the infrastructure team that delivered power to the 2012 London Olympics. Our operational and technical expertise in the Hong Kong market came in useful as experts from the Hong Kong transmission and distribution team assisted the UK team on the ground. The event showcased the vast experience and synergies that exist among our electricity distribution networks across the world.

### UK Power Networks

Power Assets has a 40% interest in UK Power Networks (UKPN), acquired at the end of October 2010. UKPN owns, operates and manages three of the 14 regulated distribution networks in the UK, covering an area of 30,000 sq km, and serving 8.1 million customers in London, the South East and the East of England. In addition, UKPN operates a number of private networks serving Network Rail, London Underground, the British Airports Authority and the Ministry of Defence.

During 2012, the financial performance of the business was strong, exceeding expectations. UKPN also improved its operational performance in a number of key areas. UKPN distributed 82,875 Gigawatt hours (GWh) of power in 2012, in line with the previous year. UKPN had 4,890 full time employees at the end of 2012.

The business has achieved significant improvements in the number of times customers experience a loss of supply and the average time each customer is without power. Performance in 2012 improved slightly over 2011 despite an increase in weather related faults during the year. The performance is appreciably ahead of the targets set by the regulator, Office of the Gas and Electricity Markets (Ofgem).



▲ A UKPN engineer inspects an insulator as the company reinforces its distribution networks with enhanced overhead wire technology.

▲ Customer contact – fundamental to NGN's high satisfaction ratings.



## LONDON 2012 OLYMPIC GAMES



▲ Lights on at the London Olympics venues – a UKPN success story.

UKPN completed its works relating to the Olympic Park on budget and ahead of schedule. The seven-year mega project included the construction of four new primary substations and 180 distribution substations, the removal of 76 existing substations and installation of 370 km of cables, which in turn required over 3,500 joints and terminations.



▲ In the spirit of the Games – the enclosure of the tunnel shaft headhouse for the underground cable network is painted with Olympics motifs.

David Cameron, UK Prime Minister, commends UKPN for its contribution to the success of the London Olympics.



In the immediate run up to the Games, a large number of measures were implemented to ensure uninterrupted power supply, including the deployment of over 100 operational staff on-site with over 225 security personnel guarding key substations.

The UKPN network performed exceptionally well during the Games period at the 30 plus Games venues connected to it and there were no power supply interruptions whatsoever.

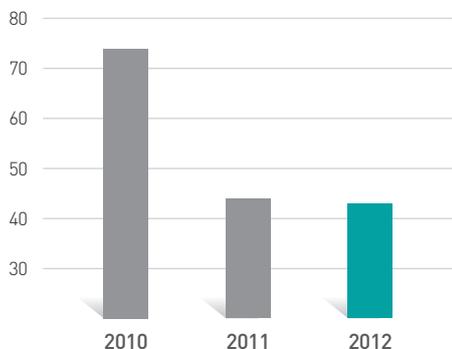
Following the Games UKPN received a large number of congratulatory letters on its successful efforts from major stakeholders of the 2012 Olympics including the Prime Minister of the UK, the Mayor of London and the Chief Executive of Ofgem.

UKPN won the "Utility of the Year" award for the overall performance improvements achieved by the business over the last two years together with the performance of the Olympic network. In addition, the UKPN Olympic team won the "Team of the Year" award for its impressive performance in building and operating the power network for the Olympic Park, without detracting from performance elsewhere.

## Group Managing Director's Report Global Markets – United Kingdom

### UKPN Customer Minutes Lost

Minutes



In 2012 UKPN invested just under £600 million in its planned programme of network enhancement and upgrades.

Under UKPN's ground breaking "Low Carbon London" (LCL) project that aims to develop real smart grid solutions for public adoption, nearly 6,000 smart meters were installed at homes and businesses in the London area, setting the stage for formal smart metering trials in the UK in early 2013.

UKPN made good progress on improving customer services in 2012. Over 99% of new customer connections were completed within the target time set in the "Guaranteed Standards of Performance", well above the government expectation of 90%.

The company's team of advisers has been visiting schools to teach children electricity safety, using on-site games and activities as well as the company's "PowerUp" website. In February 2012, the number of schoolchildren educated reached the milestone of one million.



▲ Seabank operates efficiently with a strong health, safety and environmental record.

### Seabank Power Limited

Power Assets holds a 25% stake in Seabank Power Limited (SPL), which owns a 1,140 MW combined cycle gas turbine power plant near Bristol. All electricity generated by SPL is sold to a local power utility company under a long-term power purchase agreement.

In 2012, SPL in common with other UK gas-fired plants recorded a lower level of running hours due to market conditions. However, SPL's availability based power purchase agreement and a reduction in operating costs resulted in an overall improvement in profit.

### Northern Gas Networks Limited

Power Assets holds a 41.3% stake in Northern Gas Networks (NGN), a gas distribution network that extends from the Scottish borders to South Yorkshire, covering primarily rural areas and four cities – Leeds, Bradford, Newcastle and Middlesbrough. NGN serves 2.7 million customers, representing 11% of the UK population with 37,200 km of gas pipelines.

NGN has extended its strong operational and financial performance of the previous year through 2012, supported by targeted cost reduction and manpower rationalisation.

In 2012, NGN's throughput increased by about 8% to 76 million MWh, which is about 13% of total UK gas usage. It provided over 5,000 new gas connections and responded to over 100,000 gas emergencies.

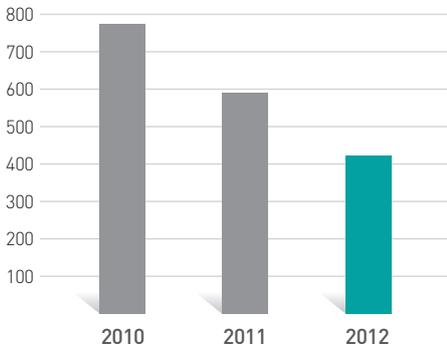
During the year, NGN invested over £35 million in capital expenditure projects – primarily focussed on network enhancement and information technology infrastructure. A key network reinforcement project in Yorkshire has considerably improved the reliability of supply to customers.

Restructuring and relocation of its customer contact teams to a central base has enabled a more cohesive and team-based approach to customer interaction. A wide range of companies and charities has been invited to join a new customer panel for providing ideas and suggestions on service improvements. These and other customer care initiatives have helped reduce the number of customer complaints by 28% since 2011.

NGN was benchmarked on 2011/12 actual costs as the UK's most efficient gas distribution network for the seventh consecutive year and was awarded the largest financial reward by Ofgem under the annual Discretionary Reward Scheme.

## NGN Customer Complaints

No. of Complaints



In order to support its local communities, in 2012 NGN assisted 1,048 households in getting gas connections and helped families hit by fuel poverty with improved insulation. It also upheld its funding of environmentally themed projects run by community and volunteer groups.

The company is at the forefront of harnessing biomethane, an important new source of renewable energy, by seeking to develop a technologically advanced solution to prepare network distribution systems for biomethane distribution.

Other sustainability-related initiatives include remote pressure monitoring and control to minimise network methane waste. Waste to landfill is minimised through recycling initiatives.

## Wales and West Utilities

Power Assets extended its overseas investment by acquiring a 30% stake in Wales and West Utilities Ltd (WWU) in October 2012. The acquisition is in line with Power Assets' stated strategy of investing in strong overseas markets to drive growth.

WWU is one of the UK's eight major gas distribution networks, covering an area of 42,000 sq km, and serving approximately 2.5 million customers in Wales and the South

West of England. WWU owns, operates, maintains and repairs gas distribution networks, and also provides gas emergency services. Its networks comprise 35,000 km of pipelines with 16 gas storage sites.

An ongoing programme of replacing old metallic pipelines with plastic ones has enabled WWU to reduce gas leakage by 16% in five years. In addition, the company launched an intensive community campaign in the last quarter of 2012 to promote carbon monoxide awareness amongst students and the elderly.

The final determination of the regulatory reset on gas distribution network operators for 2013-2021 was completed in 2012. There are a number of improvements over the initial proposal for WWU. The final determination would provide a stable operating environment for WWU in the forthcoming eight-year period.

WWU was selected as the "Utility of the Year" in 2010, and has been named the top performing gas distribution network in customer satisfaction for each of the last four years. WWU will strengthen Power Assets' presence in the UK gas distribution market.

## Outlook

Power Assets' continued strong performance in the UK market despite a weak macroeconomic environment is a validation of our strategy of focusing on the transmission and distribution segments, which are the most stable areas of business in the energy sector. The portfolio, which currently includes two gas distribution networks and three electricity distribution networks, covering about a quarter of the UK electricity and gas distribution market, has to date driven the company's earnings growth. The recent acquisition of WWU will strengthen our position further. With a stable consumer price index projected for 2013, Power Assets intends to keep up its efforts to explore synergies with its operating companies and seek out new avenues for growth in the market.

- ▼ Checking in progress on gas pressure maintenance and control equipment at WWU.

Testing the gas distribution network to prepare for biomethane distribution – An NGN engineer at work.





AUSTRALIA



▲ An electricity reliability benchmarking report confirms CitiPower as the best performer among 16 surveyed businesses.

Our investments comprise SA Power Networks (previously called ETSA Utilities), the primary electricity distributor in the state of South Australia, as well as CitiPower and Powercor, two of the five electricity distributors in Victoria. In addition, we have ventured into renewable energy power transmission in Victoria via a new venture – Transmission Operations Australia.

### Transmission Operations Australia

In September 2012, Power Assets and Cheung Kong Infrastructure Holdings Limited entered into a 50/50 joint venture called Transmission Operations Australia (TOA) with an investment of HK\$268 million. TOA will construct, own and operate a power transmission link in Victoria, which transports renewable energy from the wind turbines at the 130 MW Mt Mercer Wind Farm to Victoria's power grid.

Once completed in November 2013, the network will comprise 21 km of overhead power lines, two transformers and a terminal station. TOA has signed a 25-year off-take agreement with the wind farm, which will help deliver long-term stable returns.

### SA Power Networks

In 2012, ETSA Utilities was rebranded SA Power Networks (SAPN) to reflect its focus on electricity distribution. SAPN is the sole electricity distributor in the state of South Australia, serving 835,000 customers, with a network route length of 87,800 km. Power Assets retains its 27.93% shareholding.

SAPN recorded higher revenue in 2012 due to higher network tariffs as a result of the 2010-15 regulatory reset and appeal outcome. Severe storms in March, August, September and November 2012 impacted the Guaranteed Service Level (GSL) payments linked to the duration and frequency of interruptions. Consequently GSL payments for 2012 were higher.

Currently, Power Assets has a strong portfolio of power transmission and distribution businesses in Australia. The open and well regulated business environment in Australia makes it an important and attractive market for us.

The market environment for the electricity business during 2012 was challenging. Mild weather and a weak overall economy affected sales. A number of important regulatory framework reviews were completed during the year including changes to the way regulated revenues are set for networks and extension of timeframes for stakeholder engagement.



▲ A new brand, renewed clarity – ETSA Utilities rebrands itself SA Power Networks.

In 2012, a number of severe storms negatively impacted our network reliability measured as the annual minutes without supply per customer. However, significant improvements in the way unplanned interruptions are managed have led to SAPN's highest ever customer satisfaction rating. A suite of customer communication and self-service products released in early 2012 has also received positive feedback from customers.

To maintain reliability, SAPN persisted with its strategy of making significant investments in its networks. It is jointly constructing a new A\$16 million Central Connection Point substation in Whyalla, and has invested A\$5 million in a new substation for Mount Gambier. An A\$16 million substation for Glynde is also being planned.

Successful implementation of its "Waste and Recycling Improvement Action Plan" has improved the recycling rate from 8% in 2009 to 27% in 2012. Only 6% of the company's general waste is sent to landfill with the rest being re-processed.



### CitiPower and Powercor Australia

Power Assets holds a 27.93% stake in CitiPower and Powercor Australia. CitiPower owns and operates the distribution network in Melbourne serving 318,000 customers with a reliability rating of 99.99%. Powercor is the largest electricity distributor in Victoria serving 740,000 customers. Its reliability rating of 99.98% is one of the highest for rural distributors nationally. It has been rated the most reputable electricity distributor across Victoria and South Australia for the eleventh successive year.

During the year CitiPower and Powercor extended their strong records in customer satisfaction, with 90% satisfaction ratings amongst major customers. The companies improved upon their track record of success in the "Australian Service Excellence Awards" programme, and secured the "Best of the Best Customer Service Organisation" award for the first time. These awards serve to underscore the companies' sustained commitment to delivering outstanding customer service.

The companies successfully completed capital works programmes that were almost 20% larger than 2011, and delivered on their 2012 smart meter roll out programmes.

CitiPower and Powercor sponsored several events organised by the Country Fire Authority and State Emergency Services during the year. The company also supported Landcare Australia's projects involving revegetation and improvement of natural habitat.

### Outlook

Overall, our approach in Australia will be to consolidate our current investments and aim to achieve excellence in customer service, reliability, safety and efficiency in our businesses. In addition we shall look for other ventures which satisfy our stringent investment and growth criteria.

◀ Rolling out thousands of smart meters – CitiPower and Powercor staff educate customers.



▲ Laoting Wind Farm supplies renewable energy to the Hebei province.

Power Assets' businesses in China are focussed on power generation. As part of our two-fold commitment to environmentally sustainable development and assured shareholder returns, we have invested in two wind farms on the mainland. We have also invested in two coal firing plants in Zhuhai and one in Siping, locations selected for their strong market potential.

In 2012 the mainland China power market was affected by several factors. The overall economic trends on the mainland reduced the growth in demand for power. Additionally, abundant levels of hydro-electric power began to be available from southwestern China.

The fluctuations in coal prices throughout the year necessitated a focus on maintaining capacity utilisation and increasing efficiencies. Our mainland China operations have achieved these and delivered stable results. Plants have begun an equipment upgrade programme to ensure compliance with the new, stricter environmental targets that will come into force in 2014.

### **Dali and Laoting Wind Farms**

Power Assets holds a 45% stake in two wind farms in mainland China – a 48 MW wind farm in Dali, Yunnan Province, and a 49.5 MW wind farm in Laoting, Hebei Province, both operational since 2009.

In 2012, the two wind farms operated smoothly and sold a total of 214 GWh of electricity, comparable to their 2011 levels.

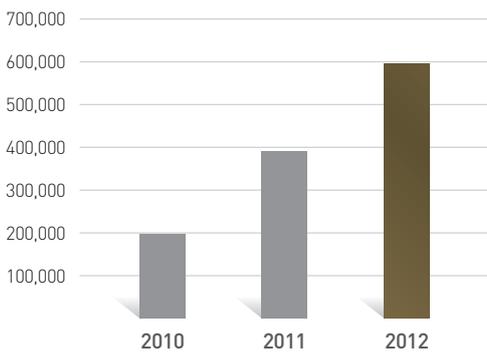
◀ Equipment upgrades at Zhuhai, Jinwan and Siping power plants to meet new emissions targets and enhance air quality.



Both wind farms are registered for the "Clean Development Mechanism" (CDM) under the Kyoto Protocol and have received Certified Emissions Reductions (CERs) from the CDM Executive Board. The renewable energy generated by them during 2012 has reduced 204,600 tonnes of carbon emission.

### Cumulative Carbon Emission Reduction Contributed by Dali and Laoting Wind Farms

Tonnes



### Zhuhai, Jinwan and Siping Power Stations

Power Assets owns a 45% stake in two coal-fired generation plants in Guangdong Province, namely the 1,400 MW Zhuhai

Power Plant and the 1,200 MW Jinwan Power Plant. It also owns 45% of the 200 MW Siping Cogeneration Plant in Jilin Province.

Despite soft demand, the Zhuhai Power Plant managed to deliver slightly more electricity to the grid than the annual contractual minimum quantity and hence made satisfactory returns.

To comply with the new China National Environmental Protection standards, the Zhuhai Power Plant began to upgrade current equipment and install new equipment where required. The initiative will be completed in mid-2013.

The Jinwan Power Plant was able to capitalise on downward adjustments in coal prices to record positive returns. The plant operated for a satisfactory number of hours despite the prevailing soft demand conditions. A major overhaul during the second quarter has enhanced overall plant reliability and efficiency.

A major upgrade of the Jinwan Power Plant's emissions reduction equipment is under way to ensure compliance with targets in 2014.

The Siping Cogeneration Plant maintained stable electricity and heat sales in 2012 relative to 2011, as per existing off-take contracts, despite a weak electricity market in the region. Power generated by the plant decreased marginally by 2%, while heat generated increased by 3%.

All of the plant's three generating units operated in a stable manner in 2012. One of the boilers has been upgraded to improve emissions performance in the year ahead. Additional tariff compensation has been approved for the plant due to the green equipment installed.

### Outlook

Going forward, Power Assets plans to consolidate its existing investments and enhance operational efficiencies in mainland China. We will continue to carefully evaluate all growth opportunities on the mainland for growth potential balanced against risk. We will pursue an aggressive policy of emissions equipment improvement to achieve and exceed the stringent emission targets planned for 2014.



▲ Jinwan Power Plant engineers overhaul Unit 4 generator to enhance overall reliability and efficiency.

## Group Managing Director's Report Global Markets – New Zealand, Canada, Thailand



### **Wellington Electricity, New Zealand**

We are a 50% shareholder in Wellington Electricity, New Zealand's fourth largest electricity distribution network. The network consists of 4,600 km circuit length, serving 165,000 residential, commercial and industrial customers in the Wellington, Porirua and Hutt Valley regions.

In 2012, Wellington Electricity delivered 2,545 GWh, on par with 2011 levels.

Wellington Electricity's underlying network reliability was in line with expectations throughout 2012 notwithstanding the adverse weather conditions during the year. Despite operating in the high-wind Wellington area, the network continues to be one of the best performing electricity supply networks for reliability in New Zealand.

This year, Wellington Electricity was awarded a three-year certificate of compliance with NZS 7901 for its new public safety management system.

In November 2012 Wellington Electricity contributed to a major study on preparedness in the event of a major earthquake, following from the Christchurch earthquakes of 2010 and 2011. Following this report the company will continue to secure key buildings and equipment and to discuss innovative plans for restoring power after a major earthquake.

Wellington Electricity is carrying out a number of network renewal and substation reinforcement projects to ensure continuous and reliable electricity supply.



◀ Maintaining the same high standards worldwide – from left to right: our power plants in Thailand and Canada, and engineers in New Zealand.

**Stanley Power Inc, Canada**

Power Assets holds a 50% interest in Stanley Power Inc, an electricity generation business in Canada. Stanley Power in turn owns the Meridian Cogeneration Plant and has a 49.99% share of TransAlta Cogeneration, which operates five power plants in Ontario and Alberta.

Meridian is a 220 MW cogeneration gas-fired plant in Saskatchewan. The electricity and steam generated are sold to SaskPower and Husky Energy respectively under contracts extending to 2025 and gas is supplied by Husky Energy.

Meridian operates two gas turbines. The second gas turbine and the steam turbine underwent a successful major overhaul in May 2012; work for the first one was carried out in 2011. Work was completed on time and on budget. This has returned the steam turbine to near design performance.

Meridian carried on with its programme to normalise operating and business processes in 2012. Initiatives were underway to further improve and automate key processes. A routine internal audit identified generally low business risk associated with existing business processes.

The five power plants operated by TransAlta Cogeneration L.P. in Ontario and Alberta have a combined capacity of 1,142 MW. Annual production attributable to TransAlta Cogeneration L.P. is 4,731 GWh.

**Ratchaburi Power Company Limited, Thailand**

Power Assets holds a 25% interest in the Ratchaburi Power Company Limited (RPCL) in the Ratchaburi Province in Thailand. RPCL is in the power generation business and has been operating a 2 x 700 MW gas-fired combined cycle power plant since 2008. The electricity generated is sold to the state-owned Electricity Generating Authority of Thailand under a 25-year take-or-pay power purchase agreement.

The plant exceeded targets in availability and thermal efficiency with total electricity generated during the year at 5,974 GWh.

During the year the plant met all local and international emissions requirements and the stipulations of its "Environmental Impact Assessment Report".

RPCL implemented a number of pre-emptive measures to ensure that flooding does not impact operations. The company plays an active part in the social development of the neighbouring communities via medical clinics, scholarships and vocational training. It also contributes to the provincial "Energy Development Fund" on an ongoing basis.

▶ Teaching students to save lives – RPCL's "Basic Fire Fighting Training Project" for schools.



## Group Managing Director's Report Home Market – Hong Kong



▲ Lamma Power Station – powering Hong Kong's success.

### The Hongkong Electric Company, Limited

Established in 1889, the Hongkong Electric Company, Limited (HK Electric), one of the world's longest established utility companies, is the main operating company of Power Assets in Hong Kong, providing reliable electricity to 567,000 customers on Hong Kong Island and Lamma Island. With a 16-year supply reliability record above 99.999% since 1997, HK Electric is recognised globally for operational excellence.

As a vertically integrated utility, HK Electric operates in all areas of power generation, transmission and distribution, supply and customer service, in Hong Kong under a Scheme of Control Agreement with the Government of the HKSAR.

### Generation

#### Lamma Power Station

HK Electric generates power primarily at Lamma Power Station, our 3,737 MW facility located on Lamma Island. During the year, Lamma Power Station met all its reliability and availability targets.

The primary fuel for generation continues to be coal. During the year the coal market softened and enabled the company to secure reliable and quality coal at lower price levels. HK Electric took steps to safeguard its coal supply through close monitoring of the supply chain and diversification of procurement. Coal is now sourced from Indonesia and Australia as well as Russia.



## PERFORMING UNDER ADVERSE CLIMATIC CONDITIONS



Hong Kong's geographic proximity to the South China Sea makes it vulnerable to typhoons in summer. From June to August 2012, five typhoons hit Hong Kong including one at the highest severity – hurricane signal Number 10 – in July. It is a matter of pride that we continued to supply uninterrupted power to our customers even under these adverse weather conditions.

We are maintaining the proportion of natural gas and coal in our fuel mix. Over 30% of the electricity we supplied came from generation units burning natural gas, which is sourced mainly from Australia and Qatar.

Lamma Power Station completed its emissions control programme with the modification of its fuel oil storage and supply system to enable the use of ultra-low sulphur diesel instead of heavy fuel oil for boiler start-up, shutdown and emergency backup. The station has also increased its use of cleaner coal and has been gaining valuable experience in addressing the challenges in handling this variety. Driven by this and other environmental initiatives, HK Electric once again outperformed the statutory emission caps set for Lamma Power Station.

### Renewable Energy Generation

The Lamma Power Station rooftop is the main site for Hong Kong's largest solar power system, one of the cornerstones of our renewable energy programme. The capacity of our thin film photovoltaic system was increased to 934 kW, generating 854,000 units of power during the year. It will be further expanded to 1 MW in 2013.

The expanded solar power system at Lamma Power Station, once fully commissioned in March 2013, will generate over 1,100,000 units of green electricity annually. This will help reduce 915 tonnes of carbon dioxide emission, equivalent to planting more than 39,000 trees.



▲ With over 8,600 thin-film photovoltaic panels, the solar power system at Lamma Power Station is the biggest in Hong Kong.

# Group Managing Director's Report

## Home Market – Hong Kong

▼ Steam turbine at Lamma Unit 4 – upgraded to enhance reliability and efficiency.



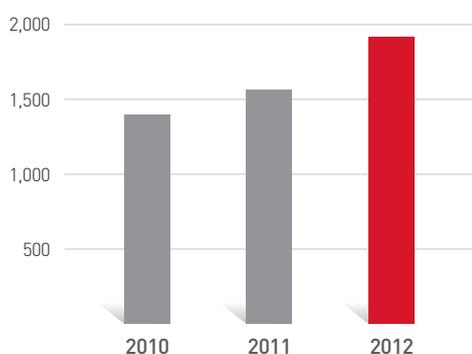
▲ Southwest Lamma – positive conditions for an offshore wind farm.

Renewable energy generated by Lamma Winds, our 800 kW wind turbine on Lamma Island, grew to 1,053,000 units in 2012, due to higher average wind speeds. Electricity generated by Lamma Winds has cumulatively reached 6,362,000 units since operations commenced in 2006.

Wind measurement for the proposed 100 MW offshore wind farm at Southwest Lamma was completed in February 2013. Planned for completion in 2017, the wind farm will annually generate electricity for 50,000 families without producing 150,000 tonnes of carbon dioxide.

### HK Electric Renewable Energy Generation

MWH



### Transmission and Distribution

HK Electric's transmission and distribution network and control system are among the most reliable in the world. We make strategic investments in people, processes, equipment and technologies to maintain top-of-class supply reliability and to ensure our power system is robust and resilient to contingencies.

### Reliability

Our preventive and prudent approach to network design, maintenance, upgrade and repair is the foundation of our reliability performance. We monitor our networks round the clock, and utilise early detection and advanced diagnostic techniques to prevent problems from occurring. In addition, remote control facilities enable prompt restoration of supply after a high voltage fault. As a result of these measures our customer base of 567,000 enjoyed a world-class supply reliability rating of over 99.999%, which translates to less than one minute supply interruption due to unplanned power outage per customer in 2012.



▲ Continuous monitoring and maintenance – the keys to a high level of power supply reliability.

We utilise primarily 275 kV and 132 kV underground and submarine cables in our transmission network, and now only a few 132 kV overhead lines remain in use. Since our cable network is almost entirely underground, our power system is less susceptible to lightning and inclement weather.

We apply advanced cable diagnostic techniques to identify weak components in our 11 kV cable network for replacement, thus enabling us to avert potential cable faults that might adversely affect supply.

### Network expansion and improvement

HK Electric's few existing 132 kV overhead lines and towers are being retired gradually to improve system reliability and to eliminate their visual impact, especially in country park areas.

We aim to phase these out completely by 2016. As part of this process, a new 275 kV circuit was commissioned in 2012 inside the existing 5.7 km Nam Fung – Parker Cable Tunnel.

To enhance the reliability of the network, HK Electric commissioned four new 132 kV ring main units and four 132 kV circuits at various locations across Hong Kong Island. We also completed installing an advanced online partial discharge monitoring system to the gas insulated switchgear in all our 132 kV and 275 kV switching stations to continuously monitor the condition of the switchgear and to detect any sign of abnormality at the incipient stage.

Other projects in 2012 included commissioning 40 new distribution substations, laying 123 km of distribution cable, and continuing to expand our 22 kV network to Hong Kong's eastern and western areas.

### Intelligent systems

HK Electric's System Control Centre uses sophisticated energy management and distribution management systems with smart grid features to ensure safe, reliable and efficient operations across the entire network. In 2012 an intelligent programme was deployed to enhance work efficiency of the system control centre through increased automation of control process. The system was also being upgraded to further expedite supply restoration after 11 kV cable faults.

A roadmap was developed in 2012 to prepare our computer systems for future developments such as low carbon fuel mix, cyber security and the increasing use of smart devices.



▲ Steadily phasing out overhead lines – 275 kV cable inside the Nam Fung to Parker Cable Tunnel.

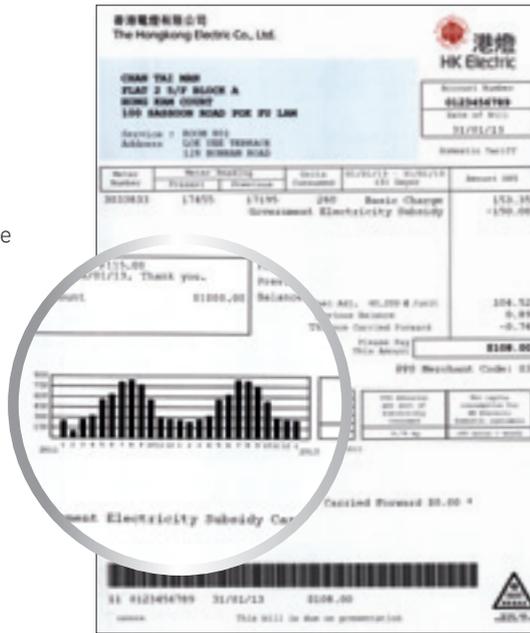
# Group Managing Director's Report Home Market – Hong Kong

## Customer Service Excellence

Customer service excellence is central to the ethos of HK Electric. We made further progress with enhancing our existing services and also launched a range of new services during the year to meet and exceed the expectations of our customers. These included an exclusive web page for small and medium enterprises, an iPhone App for customers to make service requests and e-bills for the visually impaired.

We furthered our efforts to gauge customer opinions and feedback throughout the year via regular meetings with our Customer Liaison Group and routine surveys.

We have pledged ourselves to a rigorous set of 18 customer service standards to ensure we constantly deliver first class services. We achieved or exceeded all our pledged standards in 2012. Average waiting times for telephone enquiry services and counter services at our Customer Centre were less than 9 seconds and 3.5 minutes respectively. The number of commendations we received from satisfied customers reached a record high of 1662.



▲ New electricity bills provide more information on electricity consumption to encourage wise energy use.



▲ An engineer inspects supply installation.

All frontline staff members received further training on customer service skills in 2012 to reinforce the company's service culture. A symposium was held to share ideas with other reputable organisations on latest trends and best practices in customer services.

Serving a diverse population, our customer publications now appear in seven more languages, namely, Tagalog, Indonesian, Urdu, Thai, Japanese, Korean and Nepalese, in addition to Chinese and English.

To encourage smart use of electricity by our customers through better understanding of their electricity consumption pattern, the contents of our domestic electricity bills were enriched to include a chart of electricity consumption in the last 25 months of the customer, the average monthly electricity consumption of domestic customers and carbon dioxide emission per unit of electricity consumed. As in previous years, HK Electric also provided over 50 free energy audits to business customers to help them identify energy-saving opportunities at their work premises.

To encourage saving of paper, we continue to promote our e-bill services with a one-off incentive of HK\$30. Over 48,000 customers have gone paperless, reducing carbon dioxide



▲ From multi-lingual brochures (left) to customer surveys (right), a range of initiatives is implemented to serve customers better.

emissions by 29.7 tonnes and helping conserve about 1,300 trees a year. E-bills were also launched for visually impaired customers in October 2012 with the increasing popularity of screen reading software and refreshable Braille displays.

Restaurants are a large and important customer group in Hong Kong. To help reduce air pollution in public areas and improve the working environment in restaurant kitchens via green cooking, we supported the "Quality Restaurant Environmental Management Scheme" Award Accreditation Ceremony in 2012 and promoted the usage of electric cooking equipment in restaurant kitchens.



▲ One stop support to SMEs - from new business start-up to energy management.

In 2012, our services to small and medium enterprises (SME) resulted in us being named "The Best SME's Partner" by the Hong Kong General Chamber of Small and Medium Business. Our customer services teams have received a variety of industry awards felicitating excellence in service delivery including the prestigious "Service Retailer of the Year" Award in the Retail (Services) Category by the Hong Kong Retail Management Association.



▲ The Customer Liaison Group – an effective channel to engage with customers.

# Group Managing Director's Report Home Market – Hong Kong

## Environment

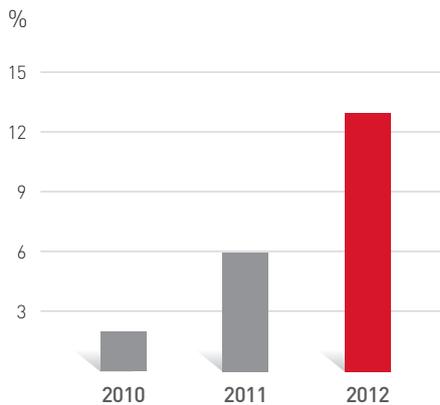
We have persisted with our efforts to reduce emissions and our carbon footprint through the use of clean technology and cleaner fuel, improvements and upgrades within our generation process, and better energy management of our operations. Even with an increase in generation output, our 2012 emissions of sulphur dioxide, nitrogen oxides, and respirable suspended particulates were below the statutory caps.

Six coal-fired units in the Lamma Power Station were originally designed to use heavy fuel oil for start-up, shut down, flame stabilisation and emergency. To reduce emission of sulphur dioxide, we decided to switch from burning heavy fuel oil, which contains up to 3.5% sulphur by weight, to ultra low sulphur diesel (ULSD) containing not more than 0.005% sulphur by weight. All required modifications of the units as well as the oil storage and supply facilities were completed in 2012 without undermining the efficiency and reliability of the units. Since 2012 consumption of heavy fuel oil in the Lamma Power Station has been zero.

We progressed further with our support for the government's promotion of electric vehicles' (EV) usage to improve roadside air quality by building more EV quick charging stations in public car parks across Hong Kong Island, bringing the total number of HK Electric's quick and standard charging stations to 10. Free charging at all HK Electric's EV charging stations has been further extended to the end of 2013.

HK Electric added seven EVs to its vehicle fleet in 2012, taking its total number of EVs to 45. One goods van was installed with a solar air-conditioning system to maintain cooler cabin temperature when idling. We also aim to phase out diesel-engine vehicles in favour of EVs at Lamma Power Station. In the interim, we continue to use bio-diesel in some of our diesel-engine vehicles.

### Percentage of HK Electric Mileage Covered by Electric Vehicles



HK Electric is committed to sustainable growth and protecting the environment of Hong Kong. We have integrated the 4R – reduce, reuse, recycle and recover – policy in all our operations. In 2012, due to a variety of initiatives, we achieved a 3% reduction in both town water and electricity consumption



## EVERY LITTLE HELPS

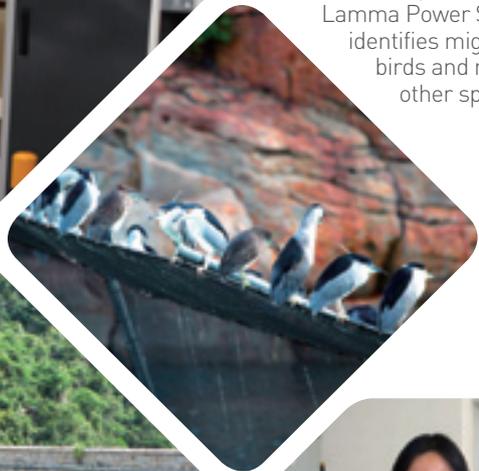
Our two food waste eliminators at the Lamma Power Station were used to process gardening waste in addition to the food waste collected daily from the Canteen. In 2012, 1,182 kg gardening wastes were processed, reducing both the carbon footprint associated with the disposal of grass clippings, and the burden to landfill sites.





▲ HK Electric's free electric vehicle (EV) charging facilities in public car parks promote wider use of EVs.

Tai Tam Country Park – one of the eco-heritage routes under the "Green Hong Kong Green" project. ▶



▼ A biodiversity study at Lamma Power Station identifies migrant birds and many other species.



▲ Over 1,000 employees take part in a campaign supporting the 40th World Environment Day.

in our main office buildings as well as an 8% reduction in paper consumption as compared with 2011. We also donated 166 units of used personal computer equipment to Caritas Hong Kong for reuse and recycling.

To reduce energy consumption at our premises, we replaced 1,500 tungsten halogen and fluorescent lamps with light emitting diode (LED) lamps and another 2,000 fluorescent lamps with types that were more energy efficient. For these and a number of other energy efficiency improvement measures, we won two "Energywi\$e Labels" under the Hong Kong Award for Environmental Excellence Awards Scheme.

Employee behavioural changes are the first step to reduce resource consumption. In August 2012, an Environmental Climate Index (ECI) Survey was carried out at the Lamma Power Station, aiming at identifying the environmental awareness and knowledge of our employees. The ECI score rose by three points as compared with the last survey in 2010, reflecting our efforts in promoting environmental initiatives to our work force.

To contribute to the protection of biodiversity in the local environment, we commissioned a biodiversity study at Lamma Power Station. The study identified many life species around Lamma Power Station including migrant birds, butterflies, dragonflies and damselflies. Action plans were developed to conserve the habitats of these species.

Environmental goals cannot be achieved without public engagement. In 2012, over 3,500 visitors including 1,300 students attended guided tours of Lamma Power Station and Lamma Winds to learn more about power generation and renewable energy.

Following from the success of the "Green Hong Kong Green" and "Green Lamma Green" projects, HK Electric and the Conservancy Association co-organised the first "Green Hong Kong Green" Eco-tour Festival. The programme has developed eight eco-heritage routes with education panels en-route and over 150 voluntary eco-leaders trained to conduct eco-tours for the public.

## Group Managing Director's Report Home Market – Hong Kong



▲ The Low Carbon Bazaar (left) and Smart Power Campaign 2012 (centre) – two major initiatives promoting low carbon lifestyles.

Our employee volunteers share skills with retirees from the U3A Network. ▶

### Engaging with the Community

We are an integral part of the social fabric of Hong Kong, and take our social responsibilities very seriously. A Corporate Social Responsibility (CSR) Committee, chaired by the Group Managing Director with members from senior management, spearheads our wide variety of CSR strategies and campaigns.

Communication with our stakeholders including employees, customers, shareholders, business partners, non-governmental organisations (NGOs), local communities, the government and opinion leaders, is integral to how we approach business. We have an ongoing calendar of formal and informal engagement with each of these groups, and take their suggestions into consideration during our decision making process.

#### Caring for the Elderly

Power Assets maintained its support for the elderly through multiple long-standing initiatives that aim to support and rejuvenate them.

These included ongoing support for the U3A Network, which has entered its seventh year. In 2012, the network conducted about 440 classes for the elderly as well as four knowledge sharing sessions on topics ranging from cookery, handicrafts, healthy diets and physical fitness, to discovering the secrets of magicians. The annual “U3A Fun Day” on 17 November 2012 promoted the network and showcased the achievements of its students.

The “CAREnival for the Elderly” campaign, which began in 2009, offers care and support to the single elderly in Hong Kong and encourages them to reach out to the community. With a network of more than 300 elderly volunteer ambassadors and supported by our own volunteers, the programme assisted about 500 single elders during the year. And over 200 elderly were invited by the ambassadors to join their local elderly centres. In recognition of the benefits brought by the project to the community, the “CAREnival for the Elderly” programme was awarded second runner-up in the “Best Corporate Volunteer Service Project Competition 2011-2012”.

#### Promoting Wiser Energy Choices

The Smart Power Campaign, HK Electric’s flagship initiative to promote energy efficiency and conservation, was themed “Be Green, Be Happy” in 2012. Campaign activities included a “Low Carbon Bazaar”, a “Happy Green School” label programme and essay writing competitions, in which around 90,000 people participated.

Other initiatives to promote renewable energy included the support since 2006 of 116 renewable energy projects by 99 schools under the “Clean Energy Fund” and education of children via the “Clean Energy • iShare” networking platform.



▲ Promoting the benefits of electric cooking through cooking contests at the Home Management Centre.

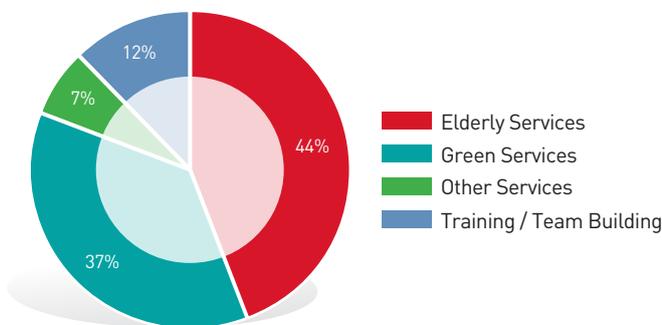
We kept up our initiatives to promote electrical safety and energy efficiency amongst our stakeholders. Nineteen guided tours to the "Smart Power Centre" were arranged for various groups including SMEs, schools, academia and engineering institutions.

To promote the use of electricity in domestic and commercial kitchens, we arranged 30 group visits at our Electric Domestic Kitchen Centre for property developers, electrical and mechanical consultants, elderly centre operators, NGOs and students, and 20 group visits at our Electric Commercial Kitchen Centre for the catering industry. In addition, our Home Management Centre held 520 cooking and special interest courses for over 10,000 students in 2012.

### Helping Hands

Power Assets Volunteers Team took part in more than 3,900 hours of voluntary services, training and related activities in 2012, focusing on caring for the elderly and protecting the environment. Apart from our own efforts, we supported students through scholarships as well as local social enterprises and green groups in their environmental efforts.

#### Volunteer Service: 3,923 hours



▲ Helping create a greener Hong Kong – Power Assets volunteers assist in tree caring activities.

### Sustainability Reporting

Power Assets has become the first Hong Kong company to be included in the "Carbon Disclosure Leadership Index" of the "Carbon Disclosure Project 2012 Global 500 Report". The company, together with 50 other international corporations around the world, was included in the Index for the quality and completeness of its information disclosure relating to climate change. We have been selected as one of only seven Hong Kong companies to be included in the "Dow Jones Sustainability Asia Pacific Index". We also achieved an "AA" rating in the "Hang Seng Corporate Sustainability Index" (HSCSI) up from "A+" of 2011, in the RepuTex Environmental, Social & Corporate Governance Annual Review 2012 of HSCSI constituents.



▲ Working together to keep Hong Kong clean – Power Assets volunteers share a happy moment after cleaning up spilled plastic pellets on Lamma Island.