CEO's Strategic Review



CLP's solid operating performance in 2018 is all the more pleasing to report amid rapidly evolving international conditions and the new realities brought by climate change. The widespread power interruptions caused by Super Typhoon Mangkhut in the region in September is a case in point that we will have to be increasingly vigilant in ensuring that our systems are sufficiently robust.

At the same time, we have seen further reduction in the cost of producing zero- and low-carbon energy and the emergence of increasingly sophisticated digital tools which enable us to manage a system that is becoming more and more complex.

Against this backdrop, CLP has continued to deliver on our purpose which is to provide reliable, clean and affordable electricity to our customers. Our strategy is to transform into a Utility of the Future which engages directly with our customers and progressively decarbonises our portfolio. We do this by leveraging new and emerging technologies so that we can continue to deliver on our purpose and grow the business. I am pleased to report that, in the past year, we made further strides in this direction.

Hong Kong

The new SoC Agreement took effect on 1 October with a lower permitted rate of return, as did the first 5-year Development Plan under the Agreement that provides for a capital spending of HK\$52.9 billion. The investments contemplated under the plan will help us support Hong Kong in meeting its carbon reduction goals and ensure supply security. Expansion of our Black Point Power Station with the two advanced combined-cycle gas turbine generation units enables the gradual retirement of the four oldest coal-fired units at Castle Peak Power Station. Meanwhile, we are constructing an offshore LNG terminal that will guarantee

the diversity, and thus the security and cost competitiveness, of future gas supplies. We will also increase the transmission capacity of the existing cross-border transmission overhead line circuits connecting Hong Kong and Mainland China. The new SoC Agreement is our greenest so far and includes important initiatives to promote local renewable energy development, energy efficiency, and conservation. A Feed-in Tariff scheme, Renewable Energy Certificates, and a new CLP Eco Building Fund were launched to support these goals.

Hong Kong, one of the world's most densely populated and vertical cities, is an ideal laboratory for developing technologies that will improve our customers' experiences. Among other measures, we began a general rollout of smart meters for our customers. This technology not only enables our customers to better manage their electricity consumption, but also helps CLP improve supply reliability and the efficiency of our operations.

In 2018, electricity sales in Hong Kong grew by 1.5%, underpinning the need to continue investing in energy security, capacity, and reliability. Our basic tariff was cut 3.7% on 1 October, in line with the lower return under the new SoC Agreement.

During the year, operating earnings from our Hong Kong electricity business decreased 3.4% to HK\$8,558 million.

Mainland China

We continued to support Mainland China's transition to a low-carbon economy through our investments in nuclear and renewable energy sources, which contributed the bulk of our earnings in the country.

Yangjiang Nuclear Power Station in Guangdong for the first time made a meaningful contribution to our earnings, following the completion of the acquisition of our 17% equity interest in the facility in December 2017. The operation of Daya Bay Nuclear Power Station remained strong and our long-term investment in the plant continued to constitute a stable component of the Group's earnings.

In 2018 our Mainland China renewables portfolio benefitted from ample wind and sun resources and lower grid curtailment. Our solar portfolio expanded to 292MW after the purchase in May 2018 of the remaining 49% of a project in Gansu Province and the commencement of commercial operation of a new plant in Liaoning Province in July 2018. New wind projects in Shandong Province, one preparing for connection to the grid and one committed to construction, will further strengthen our wind portfolio going forward. Our renewable portfolio now amounts to over 1,700MW while zero-carbon generating capacity (including nuclear) is more than 4,200MW.

Performance of Fangchenggang Power Station improved, reporting a higher output as it benefitted from the economic growth in Guangxi Autonomous Region and less competition from hydro generation. However, our coal projects continued to face the triple challenge of high coal cost, low tariffs and low utilisation.

Operating earnings for the year were up 74.7% to HK\$2,163 million, driven by the growth and strong operating performance of our zero-carbon assets.

India

In 2018, energy produced by our renewable energy assets in India was the highest ever, as resources were more favourable than usual, the availability of our assets had been high and the Veltoor solar project made its first full-year contribution.

Our coal-fired Jhajjar facility performed well despite a longer-than-projected planned outage. Utilisation rate and sent-out reached new records, reflecting the importance of our asset in responding to growing demand. Unfortunately, we continued to be affected by coal shortage and quality issues in connection with the industry's logistic challenges at large. The Power Purchase Agreement for our gas-fired Paguthan power plant expired in December 2018. This is an excellent asset and we continue to explore long-term options for the project, although the lack of affordable natural gas makes this challenging.

Meanwhile, our new partnership with CDPQ will allow us to grow our zero-carbon electricity generating portfolio in one of the world's largest and fastest-growing economies at a time when the industry is ripe for consolidation.

During the year, operating earnings of our India business dropped 11.6% to HK\$572 million.

Southeast Asia and Taiwan

Our operations in Taiwan returned to normal after the completion of a planned major overhaul at the Ho-Ping coal-fired power plant. The Lopburi solar plant in Thailand recorded stable and satisfactory operations.

In the past decade, Vietnam's policy has, consistent with its pledges under the Paris Agreement, called for coal-fired generation to support its economic growth. In 2018, we continued negotiations with Vietnamese authorities regarding the commercial and financial arrangements for the Vung Ang II and the Vinh Tan III projects. Looking forward, CLP will continue to assist Vietnam explore options to meet its energy needs.

In 2018, operating earnings in Southeast Asia and Taiwan reached HK\$162 million, reflecting the good performance of our projects and higher coal costs.

Australia

2018 was again a year of very tight supply-demand balance, resulting in high wholesale prices while our generating assets continued to perform well. On the other hand, fierce competition and our restraint in passing through higher costs to customers led to lower sales and margins.

While wholesale electricity prices were high during most of 2018, pricing is expected to soften in 2019 as a large number of wind and solar projects come online. Now more than ever, careful planning will be required to ensure stable and reliable electricity supply. EnergyAustralia's initiatives to help the country transition to clean energy include pumped hydro, battery storage, and gas-fired generation, which will provide the flexible and affordable capacity for meeting peak demand. Fundamentally, a national energy policy is required along with comprehensive planning to help ensure adequate electricity supply and to stabilise prices as Australia moves towards a low-carbon electricity generation.

Volatile electricity prices are not in the interests of either the country or its electricity supply companies. They also brought about high retail prices which caused difficulties for customers. To ease cost pressures, EnergyAustralia rolled out a range of programmes to lower the cost of energy and put our customers in control of the energy they use.

In 2018, operating earnings from EnergyAustralia increased 20.6% from a year earlier to HK\$3,302 million.

Performance Highlights

Operating Earnings 1 by Market



Customer accounts² **5.15** million

92.3 TWh

Notes:

- 1 Before unallocated expenses.
- 2 Including 2.60 million in Hong Kong and 2.55 million in Australia.
- 3 Equity basis as well as long-term capacity and energy purchase arrangements.

Safety

Safety always comes first at CLP. As the Chairman noted, during the year we were saddened by the deaths of one employee and one worker of our contractor in Australia. I reported previously that in 2017 we carried out a thorough review of our health and safety practices under the supervision of the Board, which approved a new Health, Safety and Environment Improvement Plan in May 2018. Our goal is to raise our safety culture, rethink our risks, and build a healthy and engaged workforce. The fatal accidents remind us that we must continue to relentlessly develop our efforts to understand the cause of such tragic accidents and prevent them because, as I have said before, a job is not done well if it is not done safely.

Innovation

Recognising what the digital evolution means to the world and our industry, we have made innovation a priority in our long-term goals for the Group. Seeing it as a key enabler for our transition, we have made direct investments to bring in the best-of-breed technologies for optimising our existing operations and developing new products and services for our customers. We are also committed to developing the right tools for our customers so that they can have more visibility and control of their energy usage. And we have teamed up with new partners including start-ups and universities to speed up the development of smarter and cleaner energy services.

During the year we invested in AutoGrid, an energy management software developer based in Silicon Valley. Along with Alibaba Entrepreneurs Fund, we also made an investment in En-trak, a Hong Kong-based energy management and smart lighting solutions provider. Our collaboration with TUS-Holdings Co., Ltd., which is affiliated with Tsinghua University in Beijing, will focus on new energy and smart city technologies throughout the Greater Bay Area, building on our decades of investment in the Pearl River Delta and continuing our collaboration with leading Chinese institutions. To tap into the capability of the world's most dynamic innovators, we joined Free Electrons, a global accelerator programme bringing utility companies and start-ups together to develop digital energy technologies with commercial potential. In Australia, EnergyAustralia formed a partnership with Startupbootcamp to scout for new ideas for the energy industry from start-ups around the world.

Outlook

In spite of the challenges in the rapidly-changing energy sector, our business continued to grow steadily in the last few years as we have focused on managing our operations professionally and delivering a dependable, increasing return to our shareholders. Looking ahead, our transformation pathways through decarbonisation and digitalisation are clear and they provide us with good opportunities to grow.

Electricity will play a growing role in a zero-carbon economy. The Energy Transitions Commission, an international industry organisation of which CLP is a member, projects that the world must achieve net zero emissions around 2060 to avoid potentially catastrophic climate change. To achieve that in a cost-effective way will require electricity's share of the total energy mix to rise from 20% to 60%, with annual generation quintupling from 20,000 TWh to 100,000 TWh.

By the sheer size of their population, the impact of the energy transition will be very material in Mainland China and India, CLP's major growth markets. Nuclear power can contribute to this transition, but most of the new generating capacity will come from renewable sources – wind, solar and water. While the economics of renewable energy have changed in recent years such that renewables can increasingly compete against conventional sources of power without subsidies, the market place is also becoming more competitive. Based on our strong foundations in China and India, we will continue to strengthen our capabilities as a regional renewable energy developer and operator to seize the opportunities amid this growing competition.

CEO's Strategic Review

In Hong Kong, our focus will be on delivering the investments and initiatives under the 5-year Development Plan which all aim at contributing to the city's cleaner, smarter and less carbon-intensive future. CLP will continue to support the Hong Kong Government's future clean energy policies including the recommendations arising from the upcoming public consultation on long-term decarbonisation strategy. In Australia, we will continue to invest in clean and flexible capacity to ensure the reliability and affordability of power supply as the country moves away from fossil fuels towards renewable energy sources.

As power grids become increasingly decarbonised, customers both produce and consume power and assets become increasingly distributed across the grids, the task to build and operate power grids becomes more complex. We expect to see an accelerated development of a diverse range of products including transmission, storage, distributed energy as well as digital and customer-facing solutions, making decarbonisation and digitalisation interdependent. We have the ambition to become a Utility of the Future capable of managing the additional complexity, developing new

products, services and solutions along the entire value chain, and empowering customers to become active participants of a power system.

By combining our extensive experience, capability and partnership network developed through various innovation initiatives over the past few years, the Group has already laid a solid foundation for developing customer-oriented and technology-enabled energy solutions. CLP is well-positioned to take advantage of the accelerating pace of technological advance and respond to climate change in an industry with positive growth prospects.

Al Lah

Richard Lancaster Hong Kong, 25 February 2019

As one of Asia's biggest investor-owned power businesses, how does CLP see its role in contributing to the smart city development in regions where you operate?

A smart city is about deploying data and technology to make a city more liveable and to function more efficiently. We are in an exciting era where digitalisation is reshaping the energy sector. Power no longer moves from centralised generation plants through bulk transmission and distribution systems to end customers, but now flows both ways as customers produce and manage their own energy needs. This opens up new possibilities but at the same time creates a more complex electricity grid that needs more sophisticated tools to manage. The launch last year of our plan to install smart meters for our customers in Hong Kong is an example of what we are doing in this regard. It underlines our efforts to provide the necessary infrastructure to help the development of a smart grid and encourage smart living.

In addition to deploying smart technologies, we are working with partners such as TUS-Holdings to provide integrated energy solutions and smart energy services for customers in industrial parks in Mainland China. Within CLP, we have set up an Innovation Hub that focuses on creating new applications that can be used for smart lighting, smart offices, battery storage and microgrids in Hong Kong and our other markets.

Electricity plays a pivotal role in a smart city. CLP aims to leverage innovation and technology to improve our operational performance and reliability, enhance our customer relationship and introduce new products and services that can offer better solutions to the communities where we operate. Through data insights, we can assist customers to better manage their energy needs and help create smarter cities.



