Capitals

To build a sustainable business, we take a connected view in the management of our Capitals, comprising our most critical resources and relationships, to create value for our stakeholders and maximise synergies.

Value

Synergy

Connection

Financial Capital

2018 was a year full of surprises with heightened financial market volatility and less synchronised geopolitical policies combined with Sino-US trade tensions, resulting in a highly unpredictable macroeconomic environment. It was also a year that further distinguished eminent corporations from other companies as a lack of well-defined and prudent policies and practices would in some cases cause material adversities to the financial position of less disciplined companies.

CLP remained vigilant in weathering the market turbulence and emerged with an even more solid capital structure and greater financial flexibility, continuously applying effective risk management measures to mitigate its exposures in a diversified, expanding portfolio.

Proven and Tested Financial and Treasury Governance

The huge swings in financial market in 2018 started with a sharp adjustment in stock markets in the first quarter which was followed by a spike in interest rates and depreciation of emerging market currencies.

The rate of 10-year US treasury note rose from 2.5% in January to 3.2% in November 2018, while three-month USD London Interbank Offered Rate rose from 1.7% in January to 2.8% in December and three-month Hong Kong Interbank Offered Rate (HIBOR) rose from 1.3% to 2.4% in the same period. Surveys found 60% of a group of 200 CFOs reported an earnings impact from the shifting interest rate environment and 70% of CFOs in the US admitted their companies had suffered from rising rates.

Regional currencies also moved erratically. The Renminbi (RMB) and the Indian Rupee (Rs) fell by up to 10% and 17% respectively against the US dollar.

Even though CLP has a long track record of adopting a very prudent financial philosophy and applying comprehensive risk management policies, we know we cannot afford to be complacent.

The finance and treasury team not only formulated and implemented a cost-efficient, diversified financing plan but also remained highly committed in performing regular, diligent reviews of risk exposures to identify mitigations and actions where and when needed. Moreover, we have continued to enhance the functionality and capability of the Group Treasury Management System (GTMS) and further strengthened operational arrangements. CLP believes these efforts contributed to delivering a high level of reassurance to our stakeholders including governments, customers, shareholders, funds providers, and our business and non-business partners.

Imperative Financing Activities

CLP strives for sustainable, diversified, cost-efficient funding that encompasses multiple tenures to match business needs, ranging from sizable working capital and fuel payments to the long-term (more than a decade) funding of fixed asset investment.

All major CLP entities completed key financing activities for 2018 at preferential terms by the second quarter before the interest rate hike and market tightening, notably CLP Power Hong Kong and CAPCO which entered an expansionary phase of capital spending and corresponding higher borrowing under the SoC Agreement.

These included:

- HK$2.5 billion bank loan facilities for CLP Holdings in May and June
- HK$1 billion 15-year fixed rate private placement bond for CLP Power Hong Kong in March and HK$2.7 billion bank loan facilities for SoC business
- RMB1.1 billion (HK$1.3 billion) offshore bank loans for multiple entities with the majority amount used for SoC business by swapping back to HK$1 billion (RMB800 million) at a sub-HIBOR rate
- A$500 million (HK$2.9 billion) syndicated guarantee facility for EnergyAustralia in March, US$30 million (HK$235 million) early repayment of legacy private bonds, and a 3-year extension in the maturity of a A$300 million (HK$1.7 billion) working capital facility
- RMB450 million (HK$512 million) 14- and 15-year project loan facilities for two renewable energy projects by CLP China to fund business growth
- US$19.5 million (HK$153 million) and Rs7.1 billion (HK$795 million) bank loan facilities of between 1 to 18 years in tenor for CLP India to refinance the existing debt of renewable projects. The US dollar loan proceeds were swapped back to Indian Rupees to mitigate foreign exchange rate risk

To facilitate easy access to debt funding worldwide, CLP Power Hong Kong and CAPCO have Medium Term Note programmes in place under which bonds in aggregate amounts of up to US$4.5 billion and US$2 billion may be issued respectively. As of 31 December 2018, notes with an aggregate nominal value of about HK$26.5 billion and HK$3.9 billion had been issued respectively by the two entities.

Our Material Topic

Responding to Climate Change

Strong financing capability and effective risk management are key prerequisites for energy companies in meeting the large capital needs of the transition to a lower-carbon future. This section discusses our strategies to manage our financial resources to give us the wherewithal and flexibility to fund low-carbon investments.

Successfully Financing Energy Transition

To help fund a lower-carbon trajectory for our business, CLP Holdings launched the Climate Action Finance Framework (CAFF) in July 2017 to diversify our financing for projects with lower-carbon intensity and higher energy efficiency. The US$500 million (HK$3.9 billion) Energy Transition Bond issued by CAPCO in 2017 to finance the construction of the new CCGT project at Black Point Power Station in Hong Kong was the first energy transition bond in the market and an inaugural financing under CAFF. We are contemplating more issuances under CAFF, and the landfill gas power generation project at the West New Territories Landfill site is one option being considered.

CLP's strong credentials in financing were recognised when the arrangement of CAPCO's HK$5.7 billion term loan facilities for funding the CCGT project was awarded the Hong Kong Power Deal of the Year at the Asset Triple A Asia Infrastructure Awards 2018 organised by *The Asset* magazine. This self-arranged financing in 2017 comprised a HK$1.4 billion 15-year export credit facility, and a HK$4.3 billion five-year commercial loan facility which was partially refinanced by the US$500 million inaugural Energy Transition Bond.

The 2018 Climate Action Finance Report, published in the Sustainability Report, contains disclosures as set out in CAFF including effective evaluation of projects, close monitoring of bond proceeds, and undertakings on environmental benefit.

The 2018 Climate Action Finance Report can be found in the appendix of 2018 Sustainability Report.

Implementing Comprehensive, Mandatory Risk Management

CLP operates in different geographical regions and regulatory regimes. We apply stringent and sensible policies to identify, evaluate, and mitigate exposures in foreign currency, interest rate and counterparty. We ensure adequate control and compliance.

Management exercises caution with close monitoring, frequent evaluation, and persistent application of policies, combined with carefully selected hedging, pursuing hedge effectiveness accounting when possible, in order to achieve optimal economic hedge without undue profit and loss impact.

These efforts paid off as CLP went through the foreign exchange, liquidity, and interest rate turbulence with near-to-nil impact. Our policy to apply either natural hedging or economic hedging positions, which are accounting effective for Renminbi and Indian Rupee denominated items, and to achieve a high level of fixed rate borrowings to cover long-term capital expenditure, has preserved our strong financial position and superior credit standing.

CLP Holdings received a strong endorsement of its comprehensive risk management policy when it was named overall winner of the Best Risk Management Solution Award in the Adam Smith Awards Asia 2018. The award was granted in the context of CLP Holdings' successful performance of comprehensive risk management oversight for CLP Group business which was further complemented by effective solutions, including the adoption of the "GTMS" tool.

Embracing Advanced Treasury Technology and High Operation Integrity

CLP is committed to continuous improvement, including the application of innovative technology to enhance treasury governance, monitoring, management, compliance, and reporting. The deployment of a cloud-based GTMS since May 2016 has significantly strengthened CLP's ability to monitor the CLP Group's financing and treasury portfolio with enhanced scrutiny and monitoring of position, faster and useful evaluation, and higher levels of accuracy and efficiency. These are essential factors for effective treasury management against a backdrop of greater market volatility and increased complexity.

After the successful implementation of GTMS in the first phase, management is now shifting its focus to stronger functionality and scalability, faster connection and response to market and regulatory changes, better analytical and reporting capability, and higher cost-efficiency of the treasury system. Further enhancement to the GTMS to reinforce CLP's treasury governance, control, compliance, and analytical power will deliver long-term benefits to the Group.

Managing Debt and Credit Ratings

CLP always strives to maintain strong investment grade credit ratings. In May and June 2018, both Standard & Poor's (S&P) and Moody's affirmed their credit ratings with stable outlook for CLP Holdings, CLP Power Hong Kong, and CAPCO. In August 2018, S&P affirmed the credit rating with stable outlook for EnergyAustralia.

	S&P	Moody's
CLP Holdings CLP Power Hong Kong CAPCO EnergyAustralia	A / Stable A+ / Stable AA- / Stable BBB+ / Stable	A2 / Stable A1 / Stable A1 / Stable n / a
Positives	• Expected growth in cash flow and debt reduction due to contributions from EnergyAustralia and Yangjiang Nuclear Power Station • Transparent regulatory regime of SoC business with timely pass-through of costs to end user • EnergyAustralia secured long-term fuel supply at Mount Piper to support stable operation	• Strong financial profile, well-managed debt maturities, sound liquidity profile • Stable regulatory environment in Hong Kong • Predictable cash flow and low-risk business profile of SoC business
Negatives	• Lowered permitted rate of return under the new SoC Agreement has a moderate impact on CLP Holdings' financials • Uncertainty from legal proceedings against EnergyAustralia on sale of Iona Gas Storage	• Unregulated overseas businesses increase risk profile • Reduction of permitted regulated returns in Hong Kong

Updated information of our credit ratings can be found on our website.

Our Debt Profile as at 31 December 2018

	CLP Holdings HK$M	CLP Power Hong Kong HK$M	CAPCO HK$M	Other Subsidiaries HK$M	CLP Group HK$M
Available Facility [1]	11,290	37,647	11,957	18,463	79,357
Loan Balance	4,400	28,596	10,040	12,262	55,298
Undrawn Facility	6,890	9,051	1,917	6,201	24,059

Note:

1 For the Medium Term Note Programmes, only the amounts of the bonds issued as at 31 December 2018 were included in the total amount of Available Facility. The Available Facility in EnergyAustralia excluded a facility set aside for guarantees.

More information about major financing activities in 2018 and our debt profile can be found on pages 34 and 35 of CLP Holdings 2018 Annual Results Analyst Briefing Presentation.

Analyses of loan balance by types and bond funding by currencies can be found on page 47 of Investor Presentation Introductory Pack.

Strong investment grade credit ratings have enabled CLP to solicit funding in the most competitive terms – covering elements such as pricing, tenor, diversity, market, and currency matching – so as to capture investment opportunities consistent with our business strategies. We strive to maintain a strong balance sheet, a robust financial structure, and healthy cash flow along with strong investment grade credit ratings for unrestricted access to global capital market and bank funding to support our business operations, sustain long-term growth, and guard against contingencies. The diagram on page 74 gives a brief overview of how CLP fended off high uncertainty in financial markets and took swift action to seize opportunities as they emerged.

A volatile financial environment with heightened turbulence has posed significant challenges to corporates in 2018

- All major currencies, especially those in emerging countries, fell against the US dollar
- US dollar and HK dollar interest rates hit their highest levels since the global financial crisis that started a decade earlier
- Market liquidity declined because of tightened monetary policies
- Highly uncertain geopolitical environment including the Sino-US trade conflict and Brexit

Objectives & Strategies	Measures	Key Results in 2018
Well-balanced, strong financial profile Healthy capital structure Diversification and flexibility	• Liquidity of HK$36,185 million including undrawn bank loan facilities plus bank balances • Maintaining long-term business relationships with 41 financial institutions in different locations (Australia 10%, Mainland China 22%, UK and Europe 20%, India 20%, Japan 9%, US 7%, others 12%) • Spreading out loan maturities (beyond 5 years 39%, 2-5 years 22%, 1-2 years 15%, within 1 year 24%) • Diversity of debt instruments and markets (bonds 56%, term loans 33%, money market lines 9%, export credit loan 2%) • Multiple bond denomination currencies (USD 55%, HKD 28%, JPY 8%, INR 5%, AUD 4%) • Strong investment grade credit ratings • Reduction in net debt balance of HK$4,239 million	**Timely, cost-effective financing** • Decreased net debt to total capital ratio by 2.3% • Reduced net finance cost by HK$172 million
Foreign exchange risk mitigation Counterparty exposure risk mitigation Interest rate risk mitigation	• Transaction risk – CLP hedges a high portion of committed and highly probable exposure. Residual risk is low and within tolerable levels • Translation risk – This carries no profit or loss nor cash flow effect. CLP does not hedge for regional equity investment but match funding with local currency debt • Transact with trustworthy and capable parties • As of the end of 2018, the Group's fixed rate debt as a proportion of total debt was 53% (57% if including perpetual capital securities)	**A vigilant, diligent risk management approach** • No undue financial impact despite highly volatile financial markets

Sustainable dividend growth
Ongoing capital investments
Strong cash inflow
	• Dividend – 2018: HK$7,630 million; 2017: HK$7,352 million
	• Scheme of Control – HK$8,430 million
	• Growth – HK$687 million
	• Maintenance – HK$1,210 million
	• Joint venture, associates and others: HK$1,718 million
	• Good operational performance – free cash flow of HK$21,766 million
	• Capital Recycling –
	  • Divestment of CGN Wind: HK$958 million
	  • New strategic shareholder of CLP India: HK$1,433 million
		Focus on shareholder value creation
		• 3.8% dividend growth
		• Shareholders' funds (including retained earnings) increased by HK$356 million

Advanced technology Timely reporting Effective policies and principles	• Adoption of cloud-based GTMS with continued enhancements • Timely and accurate financial reports and compliance checks • Comprehensive set of policies, principles, and guidelines with regular reviews	**Strong governance** • Full treasury compliance • Best Risk Management Solution Award

Manufactured Capital

At CLP, we manage our diverse operating assets in the Asia-Pacific region according to the highest standards of performance, availability, and efficiency. The continuing excellence of our operations provides a strong foundation for the ongoing transition of our business towards a low-carbon and digitalised future.

In 2018, the Group continued to invest in our renewable energy operations, deploying new technologies and processes to optimise their performance. We also applied innovations to our thermal assets across the Group to upgrade their capabilities and efficiency while lowering emissions. These assets serve a vital role in assuring supply reliability in our markets with the integration of more wind, solar, and hydro energy resources into the grid.

Decarbonising Our Generation Portfolio

As part of our efforts to reduce the carbon intensity of our generation in Hong Kong, we made continued progress on the construction of the additional 550MW gas-fired generation unit at Black Point Power Station in 2018. Scheduled for completion in 2020, the new unit deploys advanced CCGT technology capable of efficiency of around 60%, resulting in lower fuel consumption and reduced emissions.

The new CCGT generation unit will allow the gradual phasing out of older coal-fired capacity. Natural gas is expected to account for about 50% of our fuel mix in Hong Kong by 2020 in support of the Government's objectives of reducing carbon and environmental pollutants. Since 1990, our emissions in Hong Kong have fallen by over 80%, while electricity demand has grown by more than 80% over the same period. The carbon intensity of our operations in Hong Kong has been reduced from 0.94kg CO_2 / kWh in 1990 to 0.51kg CO_2 / kWh in 2018.

CLP's Lingyuan Solar Power Station, located in a mountainous part of Liaoning province in northeast China, was successfully commissioned in July. The completion of the new 17MW greenfield project further expanded our renewable energy portfolio in Mainland China.

In India, Veltoor Solar Farm in the southern state of Telangana was fully commissioned in the first quarter of 2018, adding to our renewable energy business in one of the Group's primary growth markets. The 100MW plant, CLP's first solar asset in India, deploys advanced tracking technologies to maximise operating performance and was completed without any lost-time incidents, despite taking more than one million man hours to build. The farm received the world's first project certificate for PV power plants from DNV GL, a global quality assurance company, in recognition of its high standards for safety and technical compliance.

CLP transitioned to a new operating model of wind power assets in India in 2018, phasing out some external contractors to gain increased control over the maintenance and management of plants as well as their health, safety, and environmental performance. Khandke Wind Farm in the western state of Maharashtra was first to adopt the new operating model, and we plan to exercise greater operational control of more wind assets to optimise performance and output. This new operating model paves the way for further growth in India, where we are one of the largest foreign investors in renewable energy.

Enhancing Supply Reliability

Reliable, dispatchable baseload power generation continues to play an important role in supporting the integration of intermittent renewable resources in Australia's energy market. Yallourn Power Station completed a scheduled maintenance programme of one of its four generation units in 2018. The programme, which involved replacement of large sections of high-pressure steam pipes, will improve the plant's reliability and safety.

To further optimise the performance of the Yallourn plant, new data analytics technologies are being trialled to improve monitoring of key generating equipment and to enable early identification of potential issues, further enhancing supply reliability.

The rising penetration of solar and wind energy is reshaping the electricity market in Australia and increasing the need to optimise generation to deal with supply volatility. In response to this, Tallawarra Gas-fired Power Station implemented new upgrades to reduce start-up times for the plant and increase the speed of supply to the electricity grid, as well as improving fuel efficiency and lowering emissions.

Exploring New Technology

New technologies and innovations are helping CLP improve the performance of renewable energy assets in Mainland China and India. CLP continued to explore new data analytics tools in 2018 to track the operations of several wind and solar power plants in the two markets. Performance data is transferred and managed on cloud-based systems for analysis, giving us greater insight into plant operations and potential issues.

As the rollout of the FiT scheme increases the use of clean energy in Hong Kong by households and businesses, CLP trialled new predictive analytics software to evaluate the potential impact on loading of transmission and distribution networks, facilitating the integration of more renewable energy resources into the grid.

At Castle Peak Power Station, we tested new data analytics technologies to optimise boiler performance, tracking operating parameters including air flow and pressure. AI technologies have been introduced at Black Point Power Station to enable diagnosis of potential performance issues through the tracking of equipment noise emissions, further enhancing the plant's reliability.

Rising to the Challenge of Climate Change

In the face of an increasing number of powerful storms and unusual extreme weather events caused by climate change, we need to strengthen our operations and increase our resilience to safeguard supply reliability to customers.

CLP's generation, grid, and interconnection infrastructure in Hong Kong sustained the impact of Typhoon Mangkhut in September, the most powerful storm to hit the city in decades. Our earlier efforts to strengthen major infrastructure, including 400kV overhead line systems and flood management measures, proved effective. Despite this, some customers in remote areas supplied by overhead lines suffered from prolonged supply interruptions as fallen trees and debris made supply restoration challenging.

In a review of our response efforts conducted in the wake of Typhoon Mangkhut, we drew up measures designed to improve our preparations for future storms, including new tree management programmes to mitigate the risk of interference to our overhead line systems.

Our Material Topic

Reinforcing Cyber Resilience

This section discusses how we manage operations and procurement for increased efficiencies and reliability, as we continue to decarbonise our assets portfolio. The section also addresses our efforts to improve our performance using new technologies and strengthen our operations against cyber security risks.

Standing Firm against Cyber Security Threats

Cyber threats continue to proliferate worldwide and we continue to strengthen our cyber security efforts in a coordinated group-wide approach to mitigate risks and minimise the impact of any potential breaches of our systems. This is particularly important given that our operations comprise critical infrastructure, including power generation and distribution assets.

As cyber attacks become increasingly sophisticated and severe, an effective cyber security strategy needs to encompass three aspects: people, processes, and technology. Our employees need to be more alert to cyber risks, and we must establish and follow clear processes, coordinating our threat monitoring across the Group. In addition, we must also increase our investment in threat protection and detection technologies.

We conduct regular workshops and internal trainings to improve cyber threat awareness among employees. We are stepping up recruitment of cyber security experts within individual business units to enable knowledge to percolate throughout the organisation. We also organise simulations to ensure employees across the Group can respond effectively to cyber-attack scenarios.

We continue to upgrade our monitoring efforts across the Group, strengthening coordination between business units to provide increased visibility of risks and activities throughout the organisation. We are also introducing streamlined processes to allow for regular and timely software upgrades to be performed reliably on our information technology systems to reduce their vulnerability to attack.

New technologies are also being deployed to improve our capabilities to protect our systems against cyber attacks, as well as to detect suspected abnormalities and allow potential threats to be more effectively contained. In this context we work closely with cyber security start-ups while also leveraging global insights from established technology providers and cyber risk mitigation professionals.

Promoting Strategic Procurement

The CLP Group has embarked on a transition to a strategic procurement approach to create additional value for stakeholders and to generate commercial synergies.

For critical purchases such as coal, power equipment, information technology, and engineering services, procurement and business units work in close partnership to formulate supplier and sourcing strategies for the Group, providing enhanced insights into supply market and pricing trends. This collaborative Category Management approach has helped increase the Group's ability to negotiate improved terms and commitments from suppliers, resulting in tangible commercial benefits for our businesses.

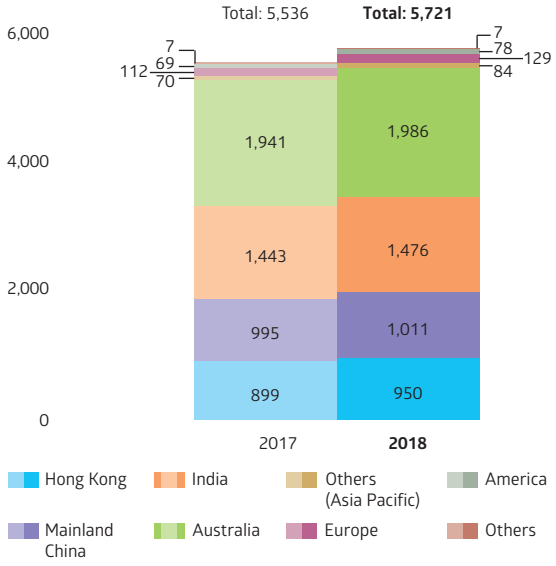
Building from initial efforts undertaken in 2017, we have continued to develop a common Group Procurement Standard to help us implement industry-leading practices and capabilities across our businesses. We have further expanded the adoption of core components of our standard, including responsible procurement and supplier management.

Enhancing Supply Management

We have implemented a group-wide Supplier Risk Management process to identify, assess, and mitigate delivery risks with critical suppliers, supported by management reviews conducted on a quarterly basis consistent with our Corporate Risk Management practices.

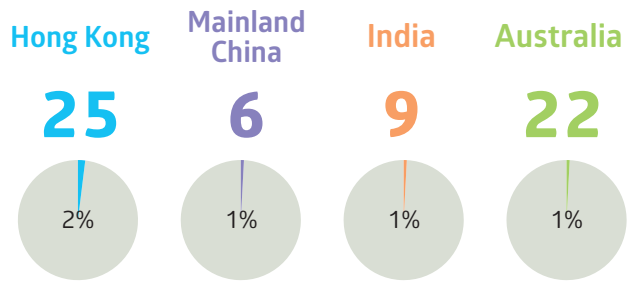
We have also enhanced our Supplier Relationship Management process for our strategic suppliers to allow us to consistently measure their delivery performance, drive continuous improvements, and ensure supplier alignment through year-round operational, business, and executive reviews.

Supplier Distribution by Geographical Region

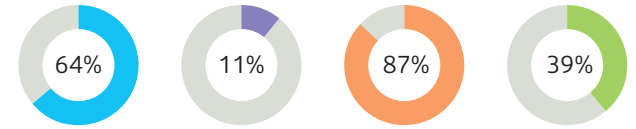


Overview of Strategic Suppliers by CLP Regional Subsidiary

Number of Strategic Suppliers and Percentage among Total Suppliers for Business



Percentage of Total Spend for Business



Championing Responsible Policies

We have pursued collaborative engagement with suppliers in relation to our Responsible Procurement Policy Statement, covering regulatory compliance, safe working environment and conditions, business conduct and code of ethics, and environmental stewardship. We promote greater awareness and adoption of responsible practices by our suppliers to further enhance the sustainability of our supply chain.

Suppliers under consideration for project awards are assessed on their sustainability practices through a combination of questionnaires, tender evaluations, site visits, audits, and performance reviews.

We have also conducted periodical risk assessments on existing contracted suppliers to evaluate improvements in their responsible procurement practices. Our overall assessment and monitoring mechanisms have confirmed there were no significant risk findings in 2018 related to our Responsible Procurement Policy Statement.

Following the publishing of ISO Guide on Sustainable Procurement (ISO 20400:2017), we have completed a review and benchmarking of our Responsible Procurement practices against those of other industry leaders. We have defined and are implementing a roadmap of measures to further enhance our practices and improve the sustainability and risk management capabilities throughout our supply chain.

We are also committed to protecting the company's intellectual property rights and safeguarding data privacy. This is reflected in our procurement policy, as we mandate that our suppliers comply with all applicable laws and regulations in relation to intellectual property rights and data protection.

Intellectual Capital

Our Material Topic

Harnessing the Power of Technology

Digital technologies including artificial intelligence, Internet of Things (IoT) and big data offer energy companies new ways to enhance performance and serve customer needs. This section discusses how innovation and new technologies are creating new opportunities for our business.

Digitalisation is reshaping the energy industry at an unprecedented pace. To achieve our goal of becoming a Utility of the Future, we must harness innovation in technology and explore new business models, building on the deep reserves of intellectual capital and capabilities that have powered our growth for more than 100 years.

To capture business opportunities in the evolving energy market, we have continued to invest in the development of new skillsets and expertise, and broaden our cooperation with a growing network of partners around the world. We are channelling innovation in our business to create sustainable value for stakeholders in the communities we serve, deploying digital technologies to offer smarter and more connected energy services and generate new efficiencies and improvements in our operations.

Expanding our Creative Capacity

We have combined our data science capabilities with the power of big data and artificial intelligence to tackle complex engineering and operational challenges in the energy industry over the past year. We piloted new software tools using big data technology to identify potential cable failures in Hong Kong and avoid outages. We tested machine learning software algorithms to forecast emissions from the combustion of different types of fuel, and to predict wind speed and intensity to improve our preparations for typhoons. We also used data analytics to help detect meter irregularities and conduct short-term load forecasts so as to better plan and manage electricity generation and consumption. While most of the trials were conducted in Hong Kong, many of the new tools can potentially be used in our other markets.

Our growing technology capabilities and the continuing strengths of our core electricity business mean we are well-positioned to play a leading role in building Hong Kong's digital energy infrastructure, supporting the Government's strategies on smart city development. The launch of the FiT scheme for renewable energy generation in 2018 and the programme to install smart meters for all CLP customers by 2025 are important catalysts for the development of data-driven applications and services. These applications will enable consumers and organisations to become more energy-efficient, creating more digitally-connected homes, public spaces, and workplaces to support Hong Kong's emergence as a smart city.

Building the Foundations for a Smart City

We set up the CLP Innovation Hub in 2018, a new centre at Hong Kong Science Park focused on smart energy applications for consumers and businesses. Engineers and developers at the centre create innovative services for customers, such as energy management, consumption forecasting, and operations of battery storage systems. One of the products developed at the hub is Solarhawk, an application that allows users to track and control the output of their rooftop solar installations and other renewable energy systems using their mobile devices.

We opened our Smart Energy@Mong Kok flagship store, offering new products and services for smart homes, including voice-controlled appliances, smart mirror, under-the-floor-heating systems, showing new digitally-enabled lifestyle possibilities for customers.

In 2018, Smart Charge, a joint venture between CLP and HKT Limited, continued to expand its network of electric vehicle charging infrastructure to cover key residential buildings and estates in the New Territories, Kowloon and Hong Kong Island. This strengthens our long-term commitment to support the continued adoption of electric vehicles in Hong Kong's ongoing development as a smart city. We are also strengthening our partnerships with other organisations including the Hong Kong Science and Technology Parks Corporation and the Airport Authority Hong Kong on smart energy innovations.

Beyond Hong Kong, we also deepened our cooperation with public and private sector partners in Thailand in the development of new energy technologies for industrial parks and smart city environments. CLP signed agreements in June with Amata Corporation, one of Thailand's largest industrial park developers, to jointly explore smart energy and microgrid solutions for industrial estates, devising solutions such as utility-scale floating solar systems. In the same month, CLP signed an agreement with the Industrial Estate Authority of Thailand and Provincial Electricity Authority to study new public private partnership models for smart energy infrastructure in industrial estates.

Exploring Opportunities in the Greater Bay Area

On the back of growing demand for renewable energy, distributed energy systems, and energy management technologies, the GBA region will see the ongoing rollout of smart city programmes to sustain economic development and create a greener environment for the region. Covering Hong Kong, Macao, and nine southern Chinese cities including Shenzhen and Guangzhou, the GBA aims to become a global leader in industries such as new energy technologies, advanced manufacturing, transportation, and finance. Our alliances with Chinese partners are opening up new opportunities for CLP in this dynamic economic and technological centre.

To help CLP capture opportunities in the GBA, we began a new joint venture in 2018 with a subsidiary of TUS-Holdings to focus on the development of smart energy technologies for businesses. The venture will focus on providing solutions including microgrids and smart buildings, as well as energy management systems for businesses.

Our plans in the GBA have been further strengthened by our new strategic partnership with Guangdong Energy Group Co., Ltd. on smart energy and smart city technologies. Formerly known as Guangdong Yudean Group Co., Ltd., Guangdong Energy is the largest electricity generation conglomerate in the province, with a diverse portfolio of conventional and renewable energy assets.

Tapping into Capabilities of Innovative Start-Ups

CLP is working with a growing number of innovators around the world by participating in start-up accelerator programmes to keep pace with the rapid evolution in energy digitalisation. In 2018, CLP joined Free Electrons, a global accelerator for start-up companies focused on digital energy technologies with commercial potential. The programme gave CLP first access to advanced digital energy technologies that can be quickly piloted and deployed in our operations. Free Electrons also helped facilitate knowledge-sharing between CLP and other member utility companies, including American Electric Power, TEPCO, Innogy, and SP Group.

CLP participated in STARS, a programme run by the Federation of Hong Kong Industries and the Hong Kong Startup Council to support start-up companies focused on smart homes, microgrid controls, and data analytics. As the programme collaborator, we provided mentorship and business partnership opportunities, and connected start-up companies with potential customers. CLP is also a sponsor of JUMPSTARTER, a Hong Kong start-up accelerator programme organised by the Alibaba Entrepreneurs Fund.

Our partnership with TUS-Holdings will help us capture opportunities in the Greater Bay Area's energy transition.

EnergyAustralia began a three-year partnership with London-based Startupbootcamp in 2018 to organise start-up accelerator programmes for companies focused on digital energy technologies. The inaugural programme which concluded in April supported innovators from Australia, Europe, the Americas, and Asia, generating funding opportunities and facilitating the deployment of new smart energy solutions.

Investing in New Business Models and Technologies

Along with our growing network of industry partnerships, we have continued to selectively invest in companies offering best-of-breed technologies in digitalised energy and sustainability to drive growth and differentiation. CLP completed an investment in AutoGrid, a California-based leading provider in demand response and energy analytics.

The deal is CLP's first direct investment in a start-up, and will see us working with the US company to provide energy management solutions for customers across the Asia-Pacific region.

Working with the Alibaba Entrepreneurs Fund, CLP completed an investment in En-trak, a Hong Kong energy management and smart lighting solutions provider. The investment will help support the further growth of En-trak's business in Hong Kong and other Asia-Pacific markets.

CLP has also invested in Israel Cleantech Ventures, a Tel Aviv-based venture capital fund that invests in companies offering digital energy and transportation technologies. Our investments and partnerships are creating opportunities for CLP to work with some of the world's most dynamic innovators in digital energy technologies and create exciting new growth opportunities.

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As policies for the development of the Greater Bay Area (GBA) are promulgated, Hong Kong will benefit from many new economic opportunities. How will CLP participate in the GBA's development?

Mr Wen Hui
Vice President, TUS-Holdings Co., Ltd.
Chairman, Beijing TUS-Clean Energy Co., Ltd.

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As a key national strategic initiative, the GBA will add fresh impetus to the region's economy, creating demand for reliable supply of clean energy. CLP is ready to explore new frontiers, and we are well-positioned to work with our partners to support the GBA's development, as we were an early champion of cross-border collaboration between Hong Kong and Guangdong Province in the 1970s.

A reliable energy supply is key to the GBA's development as a new engine of economic growth. To promote smart city development in the region, an energy infrastructure that is robust, efficient and clean is required, so are innovative customers services. To achieve this mission, CLP would like to collaborate with various partners with common goals and complementary skills. We are continuing to deepen our long-standing partnership with key energy companies in the region including China Southern Power Grid, China General Nuclear Power Corporation and Guangdong Energy Group.

The evolution of energy landscape also requires new capabilities in digital technologies, Internet of Things and smart energy, therefore we will also work with non-energy companies with innovative technologies and business approaches. This is where our new TUS-CLP joint venture comes in. The partnership is focused on the development of new clean energy and smart city technologies, addressing the evolving energy needs and ongoing digital transformation in the GBA region.

We are also looking for opportunities in clean energy technologies including solar power in GBA. We are excited about opportunities to contribute to the region's sustainable growth.

Betty Yuen
Group Director & Vice Chairman
CLP Power Hong Kong

Human Capital

The digitalisation of the energy sector – combined with the transition to a low-carbon future – has made an agile workforce more important than ever. This is being compounded by broader social and demographic changes creating challenges on the labour supply side. Competition for STEM (science, technology, engineering and mathematics) qualified individuals will intensify as all sectors of the economy digitalise. This has reinforced the need for CLP to maintain an inclusive and sustainable workforce. In all parts of our business, we remain committed to attracting diverse and high-quality talent, and to fostering open communication, mutual understanding, trust and respect.

Ensuring High Safety Standards

We remain committed to ensuring the highest standards of safety at every level of our operations and to continually improve our safety performance to look after our people. However, tragically we had two fatal incidents resulting in the deaths of one employee and one contractor in Australia in 2018.

We have conducted thorough investigations into the fatal incidents and all other incidents over the course of the year with the potential to cause serious injuries. An internal panel has looked into their root causes and reviewed our safety standards and procedures in order to guide future Health, Safety, Security and Environmental (HSSE) policies. While our injury rates have declined by more than a third in the past four years, the number of fatal incidents has plateaued and we are focusing our strategy on reducing the potential for harm and eliminating risks wherever possible. We are also committed to understanding how behaviour affects our safety performance and will continue to support behavioural-safety observation programmes.

We regularly review how each of our assets and regions addresses safety risks. We continue to implement comparable standards across the Group for our risk framework, which includes identifying generic environmental risks. Quarterly HSSE risk reviews are conducted to provide detailed information for the Group HSSE Committee.

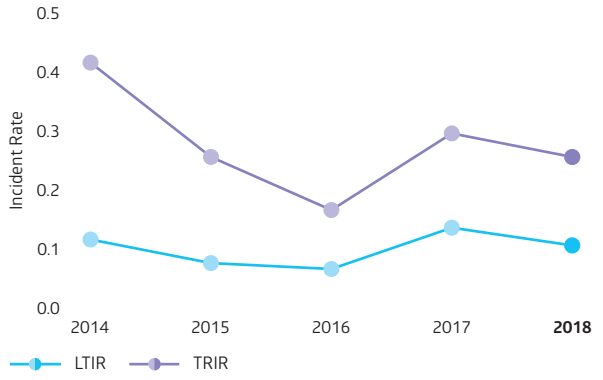
We established a group-wide Health, Safety and Environment (HSE) Improvement Strategy in 2018 under which each region has developed its own action plan. We are committed to working towards a goal of zero harm to all employees, contractors, and the public in all our activities and operations. Our HSE Improvement Strategy is based around five pillars, each of which emphasises a key fundamental principle of effective HSE management. The critical theme across all pillars is a focus to reduce the number of serious incidents. The strategy will be implemented over a three-year period.

Five Pillars of Our HSE Improvement Strategy

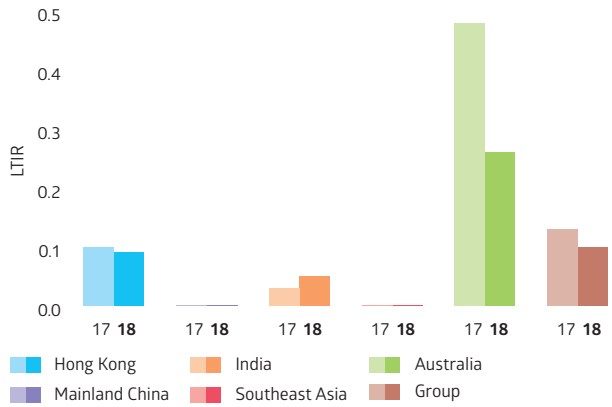
Uplifting Our Safety Culture	We will focus on involving both employees and contractors to build on the existing safety culture across all regions in which we operate. The enhanced safety culture will support more effective intervention by managers, promote questioning attitudes, and encourage vigilance against complacency.
Rethinking Risk	We will rethink our risks to move beyond considering compliance alone as the end goal. We will demonstrate that we learn from incidents both within our own company and in other industries. Our actions will generate a shift towards a proactive culture where risk exposure is continuously analysed and reduced.
Involving Our Stakeholders	Employees, partners, contractors, and local authorities all play important roles in driving HSE performance improvements. Engagement with these stakeholders will be critical for success and we will include contractors as well as all employees in safety culture surveys.
Maintaining a Healthy and Engaged Workforce	Physical and mental wellbeing are central to helping people stay motivated and valued. Occupational health management has so far largely concentrated on regulatory compliance, but this pillar of our HSE Improvement Strategy provides an opportunity to go beyond compliance and support more positive attitudes and innovative thinking in health and wellbeing.
Ensuring Environmental Sustainability	Environmental non-compliance is an emerging risk area for us, particularly with the changing regulatory landscape. We are committed to ensuring we support sustainability by operating in an environmentally-responsible manner.

The following charts show the safety performance of all CLP employees and contractors in the Group and individual regions in terms of Lost Time Injury Rate (LTIR) and Total Recordable Injury Rate (TRIR) in 2018. Our injury rates saw a slight reduction in 2018.

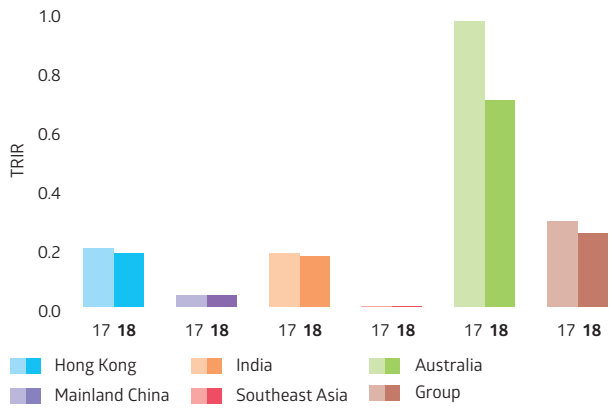
Group Lost Time Injury Rate and Total Recordable Injury Rate



Lost Time Injury Rate at Group and Regional Levels



Total Recordable Injury Rate at Group and Regional Levels



Note:

The LTIR and the TRIR are the number of lost time injuries or recordable injuries measured over 200,000 working hours, which is equivalent to around 100 persons working for one year.

Our Material Topic

Building an Agile, Inclusive and Sustainable Workforce

As decarbonisation and digitalisation offer new opportunities for business growth, we need to continually attract and develop diverse and high quality talent. This section discusses our strategies to expand the capabilities and skillsets of our employees, and develop a work environment that attracts and retains the best talent.

Building an Agile, Inclusive, and Sustainable Workforce

Compared to most other industrial sectors, the utility industry is unusual in that for many years it has not been exposed to the competitive and technological pressures that have driven change in other sectors. A long period of stability has now come to an end as the combined impact of energy policy changes, the low-carbon transition, and digitalisation of the energy sector creates a wave of disruptive change throughout the industry.

Consequently our core task of attracting, developing and retaining a skilled technical workforce has become more complex as we address multiple challenges:

- Managing the skills transition from conventional energy
- Building capabilities and strengthening resources to support the expansion of renewable energy
- Building digital and commercial capabilities to support the increasing digital intensity of all aspects of our business, and resource the new business models emerging from our investments in innovation

The impact of the energy transition and digitalisation on our skills profile is compounded by challenges on the labour supply side.

The first challenge is the impact of demographic changes in the countries in which we operate, although the impact of these changes differs from country to country. In Hong Kong, the population is ageing and the percentage of working age individuals is reducing. However within this the percentage of females of working age is increasing. India on the other hand has a relatively much younger labour force, but conversely a very low rate of female participation in the economy due to cultural factors.

The second supply-related challenge is the increase in demand for STEM-qualified individuals as all sectors of the economy digitalise. This creates more competition for the same talent pool who are our future technicians and engineers.

We are also mindful that we operate in a social context where there is growing concern over inclusive growth and equality of income and opportunity. Consequently employees and other stakeholders expect us to demonstrate values-based management in dealing with potentially divisive social issues.

There is no single solution to maintaining an agile, inclusive, and sustainable workforce in the face of these challenges – it requires a coordinated and integrated range of strategic initiatives.

Building Capability and Our Future Supply of Skills

The transition to renewable energy presents a number of challenges. Whilst some skills are transferrable from the conventional energy business, we also need to build new skills and capabilities. For example any venture into offshore wind will present new technical challenges for us, and will require new capabilities.

We are allocating more resources to our innovation-related teams. There has been a significant expansion in resources allocated over the past two years, and in 2018 we reviewed resource allocation to ensure it was efficient, effective, and aligned with our innovation priorities. We are also strengthening our subsidiary CLP*e* Solutions, formerly-named CLP Engineering, in preparation for it being the vehicle for commercialisation of our innovation business.

The development of our employees to prepare them for the digital economy is important. A key aspect of this is ensuring an adequate level of executive awareness of the challenges presented by the energy transition and digitalisation to prepare them for an increasingly volatile, uncertain, complex, and ambiguous business environment. We continued to work with our partners Chatham House, the International Institute for Management Development (IMD), and École polytechnique fédérale de Lausanne (EPFL) in 2018 to deliver topical industry briefings to key executives.

We also delivered a number of targeted training programmes on digital skills. These programmes included managing digital disruption with IMD, and an intensive data analytics programme that will be delivered by technology educator Decoded. We have also introduced Design Thinking training into our Hong Kong business.

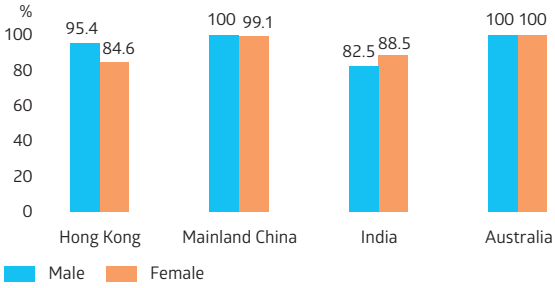
Competitive and Sustainable Benefits

At the end of 2018, the Group employed 7,634 people compared with 7,542 in 2017. A total of 4,264 were employed in the Hong Kong electricity and related businesses and 3,033 by our businesses in Mainland China, India, Southeast Asia, Taiwan and Australia, with the remaining 337 employed by CLP Holdings. Total remuneration for the year ended 31 December 2018 was HK$5,935 million compared with HK$5,573 million in 2017, including retirement benefit costs of HK$584 million compared with HK$561 million in 2017.

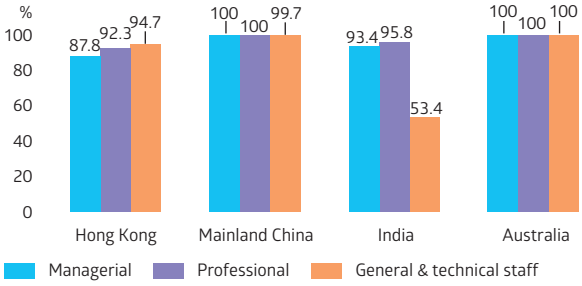
We comply fully with any local legal requirements with respect to minimum wage. In practice, our remuneration and benefits often significantly exceed local legal requirements. We place great importance on treating employees fairly, which includes ensuring competitive pay and benefits, reasonable and legally compliant working hours, and equal and non-discriminatory treatment regardless of gender, race, or other attributes recognised by the laws of the countries in which we operate.

Employee Training

% of Employees Trained by Region and Gender



% of Employees Trained by Region and Professional Category



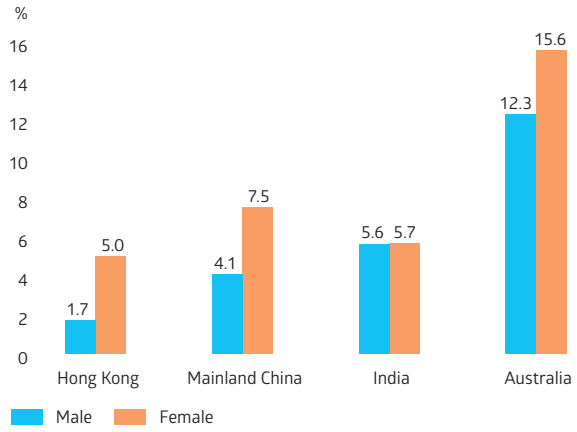
Average Training Hours per Employee	
By Gender	
Male	51.6
Female	28.5
By Professional Category	
Managerial	28.6
Professional	37.9
General & Technical Staff	55.8
By Region	
Hong Kong	55.2
Mainland China	78.2
India	27.1
Australia	21.1

Competitive pay and sustainable benefits play a key role in attracting and retaining employees. We monitor pay carefully to ensure that it is competitive, and reward all employees in relation to individual and company performance. Our core benefits are also reviewed regularly to ensure they are fit for purpose and sustainable. We received the Fair Wage Certificate award from the independent Fair Wage Network for our Hong Kong wage practices in 2018. In recognition of our placing high value on sustainable retirement benefits, we also received a Good MPF Employer award from the Mandatory Provident Fund Schemes Authority in Hong Kong, and an award for the Best ORSO Scheme from the Asia Asset Management publication.

Our ability to retain employees is reflected in our voluntary turnover rates that are generally lower than local market averages.

Voluntary Turnover Rate

By Region and Gender



By Region and Age Group (%)

	Below 18	18 – 29	30 – 39	40 – 49	50 & above
Hong Kong	–	5.9	4.3	1.7	1.1
Mainland China	–	16.4	5.2	1.5	–
India	–	6.4	7.2	2.9	2.5
Australia	–	18.7	15.2	10.5	10.6

Respect for Human Rights

Our human resources policies and procedures are intended to ensure that we comply with all local laws and regulations in relation to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, non-discrimination, and those covering benefits and welfare in the markets where we operate.

Given the technical complexities and ambiguities of some local laws and regulations, the risk of unintended breaches cannot be prevented entirely. We take immediate action to investigate and address any suspected breaches or issues that are brought to our attention.

We also carry out independent audits of our human resources policies and practices to proactively identify any risks of legal non-compliance and take remedial actions if such risks are identified.

Occasionally, there are disagreements with individual employees or unions over the interpretation or application of local laws and regulations. In such cases, we will first attempt to resolve any issues amicably within locally determined procedures. If negotiation or conciliation is not successful, we comply fully with the final decisions of any relevant arbitration, tribunal, or court.

In addition to local legal compliance we respect internationally-proclaimed human rights across our value chain. Our commitment is stated in our CLP's Value Framework. We recognise that our corporate responsibility to respect human rights extends to our network of suppliers and contractors.

2018 was the first year we have reported the number of contractors across regions. As contractors are not our direct employees, reporting of these numbers presents significant data collection and validation issues, and it will take more than one reporting cycle to be able to report fully and completely.

However from this first information we can see that the ratio of contractors to employees varies significantly between our regional operations, with 87% of our total workforce being made up of contractors in India, compared to 37% in Mainland China. In some regions the use of contractors reflects outsourcing of operations and maintenance activities, and in other cases it reflects temporary increases in manpower due to the resourcing of capital projects.

The highest utilisation of labour supply contractors (that is contractor staff under CLP direction and control) is in our Hong Kong business, where it is equivalent to 29% of our employees. Of these contractors, 71% have been working with CLP for one year or more as at the end of December 2018.

In 2018 we carried out an independent review of the wage practices of three major contractors in Hong Kong. We will follow up on the detailed results of this in 2019, but an early conclusion is that we need more transparency over labour practices in sub-contractors.

Employees and Contractors by Region

	Employees	Contractors			Total Workforce
		Labour Supply [1]	Service Contractor and Sub-contractor [2]	Sub-total	
Hong Kong	4,538	1,316	3,993	5,309	**9,847**
Mainland China	596	14	342	356	**952**
India	458	80	2,872	2,952	**3,410**
Australia	2,042	167	1,247	1,414	**3,456**
Total	**7,634**	**1,577**	**8,454**	**10,031**	**17,665**

Notes:

1 Labour supply refers to manpower supplied by contractor companies under labour supply agreements for providing manpower to work under the direction and control of CLP or subsidiary staff. The figures above reflect the average of quarterly reported contractor numbers from our regions.

2 Service contractor refers to the full-time equivalent number of contractors in each region. The numbers above are converted from the number of man-hours incurred in 2018, assuming 48 hours of work per week.

Electricity networks and markets across the world are becoming increasingly complex – how is CLP growing the diversity of views, backgrounds and expertise within the organisation in order to understand this complexity and thrive within it?

Ian Chisholm
Project Development Engineer
Renewable Energy
CLP Group Operations

We have continued to strengthen our innovation team. We are actively building our capabilities to resource our low-carbon strategy and support the digital transition of the business. We continued to strengthen the organisation through strategic hires to enhance our existing core competencies, and have recruited new expertise in the innovation and renewable energy space. We have acquired talent from different industries and backgrounds and attracted talented senior staff from multinational organisations. This demonstrates that CLP is a globally recognised employer brand within the energy sector. As a result, our management group is increasingly diverse with respect to their gender, cultural background, industry experience and origin. The diversity of background and experience strengthens our understanding of the impact of the energy transition.

We have also broadened and diversified our recruitment sources and channels, for example recruiting engineering graduates directly from a number of overseas universities, providing industrial placements for engineering students in Hong Kong from the Universities of Manchester and Aston, and offered internships to engineering students from EPFL and the University of New South Wales.

Roy Massey
Chief Human Resources Officer

Child and Forced Labour

CLP prohibits the employment of child labour or forced labour in any of our operations. We require all our operations to ensure that they do not use child or forced labour.

We have taken steps to prevent such practices, including stringent checking and control procedures in selection and on-boarding processes, and training for our key contractors who provide manpower or services to our operations.

We did not identify any operation or supplier as having significant risk of child labour, young workers exposed to hazardous work, or forced or compulsory labour in 2018. There was no breach of the laws and regulations in relation to child and forced labour across our Group in 2018.

Diversity and Equality of Opportunity

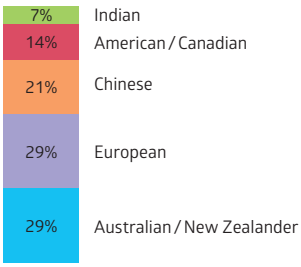
We recognise that we operate in a culturally diverse region, each subsidiary has the freedom to respond appropriately to local diversity and inclusion priorities.

Our management team is increasingly diverse with respect to their backgrounds, experience, and origin. In 2018 we recruited 16 senior strategic hires from diverse locations and sectors. More information can be found in CLP's online Sustainability Report.

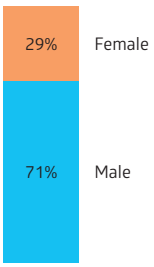
Diversity of Management

Group Executive Committee (GEC) members

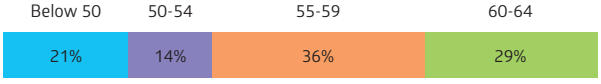
By Nationality [1]



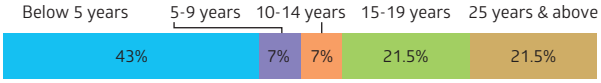
By Gender



By Age Group



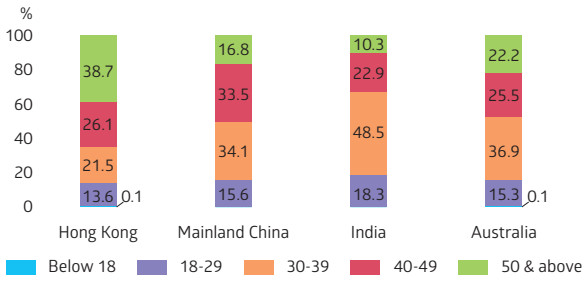
By Length of Service



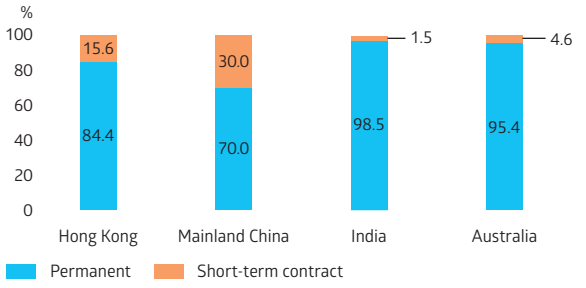
Note:

1 The statistics are based on GEC members' passport nationality, which does not necessarily reflect their ethnic origin.

Age Distribution by Region



Employment Type by Region



Gender Equality

We have set a number of group-wide gender diversity targets, and continue to take initiatives to encourage more females into workforce. Details can be found in CLP's online Sustainability Report.

In Hong Kong we have progressively enhanced maternity related benefits, expanded flexible working possibilities, and are monitoring gender pay equity issues actively.

There are two concepts commonly used to identify and address gender pay issues. Gender Pay Equity is a measure of the median earnings of females compared to males and reflects the demographic profile of the organisation, in particular the percentage of females in senior roles. On the other hand Equal Pay for Work of Equal Value is a measure of relative pay for jobs at the same grade or level.

To assess Gender Pay Equity in our Hong Kong workforce we commissioned an independent audit using the UK gender pay equity disclosure methodology. The results of this confirmed that median actual earnings of our female employees are higher than male employees. This reflects the structure of

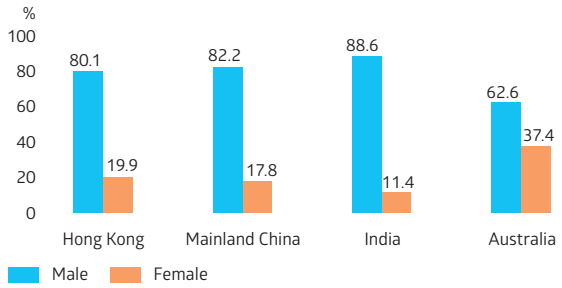
our workforce, with relatively low percentage of females in operational roles, but conversely higher percentages in professional and managerial roles.

We ensure Equal Pay for Work of Equal Value by applying objective and non-discriminatory processes of job evaluation, grading and pay determination. We have confirmed that our processes comply with the Hong Kong Equal Opportunities Commission guidelines on equal pay between men and women under the Sex Discrimination Ordinance.

Our group-wide human resources policy guidelines also require all of our subsidiary businesses to have similarly objective and non-discriminatory processes in place. For example EnergyAustralia undertook a gender pay equity exercise in 2018 to address pay differentials between pay for men and women in salaried positions.

This year we received external recognition with the Family Friendly Employers awards in Hong Kong and were amongst the first signatories in Hong Kong of the Racial Diversity and Inclusion Charter.

Gender Distribution by Region



Discrimination and Harassment

We state in our Value Framework that we are committed to providing a work environment free of harassment or discrimination. We have clear policies in place with respect to complaints about discrimination and harassment, supported by regular employee training. Our group-wide harassment-free policy sets a common framework of principles, and our detailed policies in each country are fully compliant with local legislation.

We are taking a coordinated range of initiatives to build an agile, inclusive and sustainable workforce.

Social and Relationship Capital

Our Material Topics

Growing Our Business with Purpose

Reinforcing Data Protection

In our commitment to the long-term sustainability of our business, we have always managed our operations to create value for different stakeholders. In this section, we discuss how we manage our social and relationship capital in meeting the growing expectation of companies to fulfil their broader business purposes and creating societal value in addition to delivering financial results. This section also discusses our efforts in safeguarding data privacy.

Our business powers the growth of not only this generation, but also the next. To strengthen the long-term viability of both our business and the communities we serve, we rely on our social and relationship capital to help build our reputation and the trust our stakeholders have in us. These multi-faceted stakeholder relationships in turn create the basis for strong partnerships to address pressing challenges central to the future of our society.

The increase in extreme weather events in recent years has highlighted the imminence of climate change and the urgency of decarbonisation. Coupled with globalisation and digitalisation, these trends have caused major disruption to economies and industries, leading to greater uncertainty and division in many societies.

Improving Energy Efficiency

To address climate challenges, we are strengthening our efforts to work with customers and the wider community to promote increased adoption of renewable energy and encourage efficient consumption. We organised a programme of seminars, roadshows and workshops in Hong Kong to engage more than 4,000 people and share information on our FiT scheme for renewable energy generation.

Timely electricity usage information is key to energy saving, empowering customers to pursue new low-carbon lifestyle options that contribute to a greener environment. As such, we began a plan in 2018 to install smart meters for all our customers in Hong Kong by 2025, which we hope could accelerate the development of new services and solutions to enable improved energy management, reliability and efficiency.

To encourage customers to reduce their electricity consumption and adopt greener lifestyles, our new Power Connect programme allows them to earn rewards for energy saving throughout the year. Participating customers are able to designate the beneficiaries of electricity subsidies in the programme, including elderly people, low-income families, and people with disabilities. Each year, the programme will benefit an estimated 40,000 households in Hong Kong, including 10,000 tenants of subdivided units.

We also started our Electrical Equipment Upgrade Scheme to provide subsidies to commercial and industrial customers to replace or upgrade their lighting systems, air-conditioners and other electrical equipment to more energy-efficient models.

In 2018, we continued to hold our successful Power Your Love programme for the fourth consecutive year. The programme has encouraged customers to save energy during the summer, with the savings converted into donations for tens of thousands of underprivileged people. Power Your Love has led to cumulative savings of around 32GWh of electricity since its 2015 launch.

As part of our new initiatives to encourage adoption of clean energy under the new Development Plan, we began our REC programme in January 2019 to provide customers in Hong Kong with a new way to support the development of renewable energy locally, including solar and wind power and landfill gas projects. In addition, we introduced the new CLP Eco Building Fund to support projects which improve energy efficiency in residential and commercial and industrial buildings, including retrofitting projects, retro-commissioning services and the implementation of smart technology. With buildings consuming around 90% of electricity used in Hong Kong, the fund is an effective way to lower energy consumption and emissions. Since October 2018, the fund has received over 130 applications.

To recognise excellence in energy efficiency and the adoption of renewable energy by businesses and organisations, we organised an inaugural Smart Energy Award programme in Hong Kong in 2018. It was supported by the Government and hundreds of organisations, chambers of commerce, environmental groups, and academic and professional bodies.

Committing to Carbon Neutrality

EnergyAustralia has championed carbon-neutral electricity since 2016, when it introduced the *Go Neutral* initiative to enable customers to offset emissions from their electricity consumption at no extra cost. In September 2018, the programme gained further momentum when EnergyAustralia offset the emissions of the iconic MCG stadium and the surrounding Yarra Park precinct during the month. This included not only all electricity consumption, but also the carbon produced by the transportation and preparation of food and beverage for over 400,000 people who attended events at the popular stadium during September. The monthly emissions offset was the equivalent of taking 50,000 cars off the road for a month.

We continue to support efforts towards improved energy efficiency at the Sydney Opera House, which has reduced electricity consumption by 25% in the past three years. EnergyAustralia offset the remaining emissions allowing the Opera House to achieve carbon neutral certification in 2018, five years earlier than planned.

The start of the CLP Carbon Credits programme in 2018 provides a new international e-commerce platform allowing customers to offset their emissions by purchasing credits created by generation from our wind farms in India. Purchasing carbon credits is a way of contributing to the development of renewable energy, supporting clean energy production, and enabling it to be used indirectly in other countries.

Inspiring the Next Generation

We are committed to working with young people to instil hope and positive outlook at a time when economies around the world face unsettling socioeconomic change. Since setting up a dedicated Youth Programme Office in 2017, we have strengthened our work in this important field.

We are stepping up our student outreach efforts, including the Engineer in School programme which aims to generate interest in power engineering among junior secondary school students in Hong Kong. In the last academic year, the programme reached out to some 10,000 students.

Veltoor Solar Farm not only provides renewable energy to India, but also improves the living conditions of local villagers.

To nurture greater environmental awareness among younger children, we produced animated videos and teaching aids designed for kindergarten classes. Featuring the engaging POWER FOUR characters, these educational materials enable children to cultivate good habits and knowledge on energy efficiency in their formative years.

We teamed up with the Hong Kong Federation of Youth Groups for the CLP Energy for Brighter Tomorrows award programme, providing 20 scholarships for secondary school students who overcame challenging circumstances. With the aim of inspiring young people to adopt positive attitudes, the programme invited CLP employees to mentor students, providing individual coaching and guidance.

Under a new Government programme for tertiary students in Hong Kong, we offered internships at our operations in Mainland China and overseas markets including Thailand. Participants were given work placements in roles in engineering, information technology, and marketing, acquiring valuable work experience outside Hong Kong to increase their career prospects.

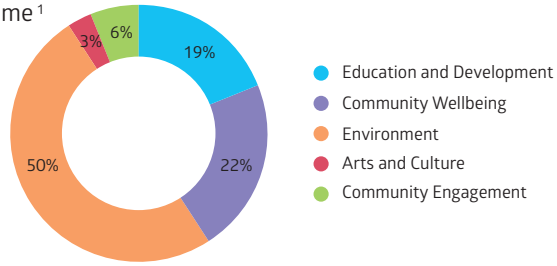
To promote STEM education, we organised workshops at the Maker Faire Hong Kong 2018 x Make Big event at the Hong Kong Polytechnic University in July, hosting around 2,000 visitors. We also partnered with St James' Settlement on a cable jointing workshop that has attracted more than 100 students since it was set up in the fourth quarter of 2018.

Our education sponsorship programme in India has since 2012 supported hundreds of high school and university students in their academic studies and professional development. The CLP India Scholarship Scheme continued to grow in 2018 as we worked with non-government organisations to offer financial assistance to almost 400 students.

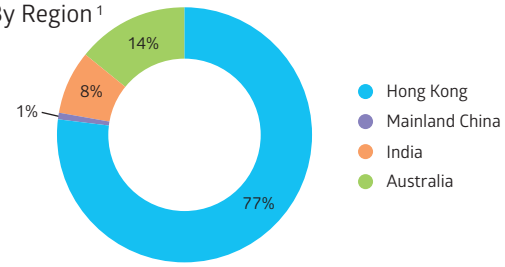
Community Initiatives and Volunteering

Our Community Spending

By Theme [1]



By Region [1]



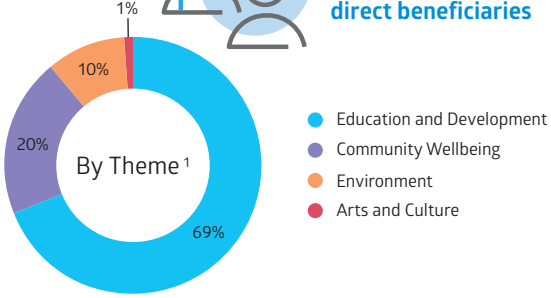
Our Beneficiaries

695 programmes were initiated or supported

434 organisations benefitted

730,362 direct beneficiaries

By Theme [1]



Contributing Our Time

23,661 volunteer hours by CLP staff and family members

Note:

1 Figures include rounding adjustments.

Providing Training for Tomorrow's Challenges

The CLP Power Academy has focused on professional training in power engineering for young people in Hong Kong to nurture talent for the electricity industry since its launch in 2017. In July 2018, the Academy and the Vocational Training Council jointly launched a new part-time diploma programme, providing an alternative career path for young people who are interested in joining the power engineering industry but lack the required academic qualifications.

It also worked with leading universities in Hong Kong and overseas to develop more advanced courses in 2018. We launched a new part-time post-graduate programme in power engineering in partnership with the Hong Kong University of Science and Technology and the University of Strathclyde in Scotland. We also teamed up with the College of Professional and Continuing Education, affiliated to Hong Kong Polytechnic University, to set up a new part-time degree programme in electrical engineering.

Around 15,000 primary school students in 18 Hong Kong schools belonging to Sheng Kung Hui took part in our Green Elites Campus Accreditation programme in 2018, learning about climate change and the importance of green living. We continued to work with kindergartens, primary and secondary schools, colleges, and universities, engaging with young people at all stages of education in the communities we serve in Hong Kong, Mainland China, India, and Australia.

Engaging Stakeholders

In our efforts to build sustainable businesses in the communities we serve, we are committed to fostering trust and deepening our relationships with a growing universe of stakeholders to create positive societal impacts. To provide better understanding of our initiatives on energy conservation and clean generation under the new SoC agreement and the Development Plan, we value our continuous dialogue with stakeholders including members of the Energy Advisory Committee and District Councils in Hong Kong.

Q

I understand CLP has rolled out some measures to help improve the safety and living conditions of subdivided units, including offering subsidies for the landlords to carry out rewiring work needed for the installation of individual electricity meters. How has the reception been? Do landlords support this?

Mr Ho Hei-Wah
Director
Society for Community Organization

A

The living environment of tenants of subdivided units in Hong Kong is among our top-of-mind concerns in our continued efforts to support underprivileged groups. I am grateful to all our partners, including the Society for Community Organization, for working with us to help improve the living conditions in subdivided units. We believe electrical rewiring and the installation of individual meters will help enhance the safety of these flats. We now have 27 community partners who are making referrals to us, and this is helping us channel our resources more effectively to support people who are most in need.

We recognise the critical role of landlords in making this happen. This is why our new Power Connect programme offers one-stop service to assist landlords to undertake rewiring and electricity meter installations projects. Since the programme started on 1 January 2019, one of the first projects we completed was the installation of individual meters for four subdivided unit households. With wider awareness of the initiative, we look forward to receiving referrals by community partners for the applications of meter installation. Separately, we offer one-off HK$500 electricity subsidies to 10,000 subdivided unit households to relieve their financial burden.

Power Connect builds on our longstanding efforts to support tenants of subdivided units and other underprivileged groups including elderly and disabled people. These initiatives are at the heart of our ongoing commitment to the long-term sustainability of the communities we serve.

Quince Chong
Chief Corporate Development Officer
CLP Power Hong Kong

We continue to engage with customers across multiple channels to obtain their feedback and opinions, including our Local Customer Advisory Committees (LCAC). Since they were set up in 1994, the LCACs have been a key conduit between the Company and our customers, enabling ongoing improvements in our services. We recently celebrated the 25th anniversary of the establishment of LCACs, which have served an important role in the development of our world-class energy services in Hong Kong.

Promoting Community Wellbeing

In 2018, we continued to deepen our efforts to promote community wellbeing and support people in need. EnergyAustralia created partnerships with groups including VincentCare, ICAN and the Thriving Communities Partnership to provide assistance to people experiencing financial difficulties, including with the costs of their energy.

In Mainland China, more than 4,800 villagers benefitted in 2018 from CLP-sponsored water purification projects in Shandong Province, as well as our road construction and water pipe restoration in Guangdong Province. We donated daily necessities to more than 6,000 people in need, including elderly home residents, underprivileged children and villagers in provinces across the country.

More than 5,800 people living near our Samana and Mahidad wind farms in India benefitted from water projects supported by CLP last year. The construction of new water structures at our Khandke Wind Farm improved water access to hundreds of farmers. We also supported projects to provide solar street lights and solar lanterns, and offered polio immunisations to 1,800 children near our Paguthan gas-fired plant.

Our colleagues across the region have continued to contribute thousands of hours of their time and expertise to support projects in their local communities. EnergyAustralia began new partnerships with charities including the Foodbank Breakfast Club and Sacred Heart Mission in 2018. In Mainland China, our volunteers participated in projects that benefitted the elderly and school children.

Safeguarding Data Privacy of Customers

To maintain the long-term sustainability of our business, we are guided by deep-rooted values that have driven our success for more than 100 years. Our commitment to protect the customer data entrusted to us is motivated by our value of respect for people and their privacy. In 2018, in our Hong Kong retail business, no customer privacy and data loss cases were reported or noted.

Our EnergyAustralia retail business received six privacy complaints relating to information being provided to unauthorised parties. Of these complaints, three were received from the Australian Privacy Commissioner regarding potential breaches of customer privacy (two of these relate to the same customer). Following investigation of the complaints, however, the Commissioner closed all files on the basis that EnergyAustralia had not interfered with the customer's privacy [1]. EnergyAustralia has resolved the remaining complaints.

EnergyAustralia had three notifiable breaches that have been reported to the Office of the Australian Information Commissioner (OAIC) and the affected individuals since the notifiable data breach reporting obligations came into effect [2]. Remediation has also been undertaken to prevent reoccurrence.

Notes:

1 One of these cases was reopened in December 2018 with the customer requesting further information.

2 As of 31 December 2018, there was also a potential notifiable data breach that was still under investigation. This was confirmed as notifiable and reported to the OAIC in January 2019.

Our Material Topic

Responding to Climate Change

This section discusses our strategies to reduce carbon emissions and minimise other environmental impacts of our business, as part of our contributions to global efforts to mitigate the impact of climate change.

To build a sustainable future for our business and the communities we serve, we are committed to a path of decarbonisation as part of the global efforts to combat climate change. Progress at the United Nations Climate Change Conference in Poland in December 2018 delivered a "rule book" to provide guidance for countries on how to practically implement the Paris Agreement. This is a small but welcomed step forward.

Leading Asia towards a Low-Carbon Future

As the first power company in Asia to set carbon intensity reduction targets in 2007, we have continued to tighten our goals under Climate Vision 2050, our commitment to confront the challenges of climate change. In our latest review, conducted in 2017 and announced in 2018, we set a cornerstone target to reduce carbon intensity by 80% by 2050 compared with 2007 levels. We also set new clean energy targets for 2030, committing the Group to further diversify into renewable and zero carbon energy generation. Going forward, we will review the targets for Climate Vision 2050 at least every five years.

In Hong Kong, our new Development Plan covering the period from 2018 to 2023 includes key capital projects to aid our transition to gas generation and cleaner energy sources in support of the Government's environmental policy. Progress in our plans to build an offshore LNG terminal continued in 2018 with an environmental impact assessment completed and approved in October. The project will provide a long-term alternative gas supply to meet the fuel needs of Hong Kong and enhance the diversity and security of our gas supply. The Development Plan also includes plans for additional gas-fired generation capacity and cross-border transmission networks to facilitate the import of clean energy.

Growing Our Renewable Energy Portfolio

In India, a new strategic partnership with leading global institutional investor CDPQ marked an important step in CLP India's plans to expand investment in renewable energy operations as well as transmission, distribution, and other customer-focused services.

The full commissioning of the 100MW Veltoor Solar Farm in the state of Telangana meanwhile further expanded CLP India's renewable energy portfolio. CLP India also acquired interests in two operational solar projects in the state of Maharashtra – the 50MW Gale Solar Farm and the 20MW Tornado Solar Farm.

In Mainland China, we acquired the remaining 49% equity stake in the 85MW Jinchang solar plant in Gansu province in May. We also commissioned the 17MW Lingyuan solar plant in Liaoning province and committed to Phase III of our Laiwu wind plant in Shandong province. This expansion will make Laiwu CLP's largest wind asset in China with a capacity of around 149MW.

EnergyAustralia expanded its renewable energy portfolio after entering into long-term offtake arrangements with solar and wind energy producers in eastern Australia as part of a programme to financially underpin 500MW of renewable energy projects. EnergyAustralia also agreed to operate two grid-connected battery projects in Victoria with a combined storage of 80MWh. The projects will charge and dispatch energy into the NEM, supporting the integration of more renewable energy sources into the grid.

These investments and initiatives across Asia Pacific are increasing the scale of the Group's renewable energy business and supporting our ongoing clean energy transition. However, renewable energy as a share of our generation portfolio (including equity generation in operation and under construction as well as long-term capacity and energy purchase) marginally decreased to 12.8% at the end of 2018, compared with 13.1% a year earlier. This reduction resulted from the accounting for the sale of a 40% equity interest to CDPQ in CLP India, which had a renewable portfolio of over 1,000MW as at 31 December 2018. CLP India continues to be responsible for the operation of these wind and solar assets following the transaction. Barring this adjustment, our renewable energy portfolio would have increased in 2018 by more than 300MW in equity generation and long-term energy and capacity purchases.

Nuclear power – currently the only commercially-viable zero carbon solution available to meet baseload demand – also plays a key role in our decarbonisation journey. Full-year contributions from our investment in Yangjiang Nuclear Power Station, combined with higher output from our renewable assets in China and India, and the completion of new long-term purchase agreements in Australia, helped lower our carbon intensity to 0.66kg CO_2/kWh (based on equity and long-term energy and capacity purchase). The share of non-carbon energy in our portfolio increased to 24.1% from 23.2% in 2017.

Balancing Diverse Needs and Energy Targets

In drawing up our decarbonisation strategies, we are keenly aware of the diverse needs in the different markets in which we operate. Electricity has been lifting millions of people out of poverty and will continue to play a pivotal role in economic growth and human development in India, Southeast Asia and Mainland China. Ensuring reliable and safe access to competitively-priced electricity remains a priority in these markets. In markets where fossil-fuel based generation assets remain essential to meet baseload demand in the short-term, we will work with Governments and industry stakeholders to develop tailored and appropriate decarbonisation strategies.

In more developed economies such as Hong Kong and Australia, transitioning from existing fossil-fuelled power plants requires careful planning. The differing needs of our operations in different parts of the world mean we will continue to calibrate the pace of energy transition against the goals of different jurisdictions as reflected in their pledges under the Paris Agreement.

Raising Environmental Standards

In CLP's Value Framework, we commit to continuously improve our environmental performance in line with technological advances and evolving stakeholder expectations. We have drawn up a Group Environmental Policy Statement supported by a range of standards and guidelines at the Group and business unit levels to address the environmental issues we face.

We require power generation facilities over which we have operational control to achieve third-party certified ISO 14001 environmental management certification within two years of acquisition or the beginning of operations. In 2018, all our assets in this category have successfully completed the upgrade from ISO 14001:2004 to ISO 14001:2015.

We continued to expand and strengthen our data governance and management system to ensure our data reporting and analytical work is robust. CLP's recent performance in key environmental categories is summarised in the table below.

Air Emissions

Regulatory requirements on air emissions are becoming more stringent in jurisdictions where we operate, and we continue to explore technological solutions to ensure we fulfil or exceed our compliance requirements.

Our total air emissions slightly decreased to 145.5kT in 2018 even though our total electricity generation increased. In Mainland China, our emissions control retrofit at Fangchenggang Power Station was completed in October. In India, we completed the enhancement of our FGD unit

Environmental Category	Aspect	Parameters	2018	2017
Emissions	Greenhouse gases	Total CO_2 emissions (from power generation) Carbon intensity	**52,048kT** **0.74kg CO_2 per kWh / 0.66kg CO_2 per kWh [1]**	47,921kT 0.80kg CO_2 per kWh / 0.69kg CO_2 per kWh [1]
	Air pollutants	Total SO_2 emissions Total NO_x emissions Total particulate matter emissions	**76.1kT** **60.9kT** **8.5kT**	81.6kT 59.3kT 8.3kT
	Water discharged	Total water discharged	**5,103 Mm^3**	4,437.7 Mm^3
	Waste	Total solid waste produced Total liquid waste produced	**12,906T** **1,737kl**	21,191T 1,523kl
Resource Use	Fuel	Total coal consumed Total gas consumed Total oil consumed Non-carbon % Renewable energy %	**521,568TJ** **83,359TJ** **3,774TJ** **20.9% / 24.1% [1]** **12.5% / 12.8% [1]**	471,976TJ 91,426TJ 5,069TJ 22.4% / 23.2% 14.2% / 13.1%
	Water	Total water withdrawal	**5,154 Mm^3**	4,480.8 Mm^3

Note:

1 Equity basis / Equity basis as well as long-term energy and capacity purchase arrangements

at Jhajjar Power Station in order to meet more stringent emissions requirements for 2019. This led to a reduction of sulphur dioxide (SO_2) emissions from Jhajjar.We are also conducting studies to enable us to improve our nitrogen oxides (NO_x) performance at Jhajjar to meet the new limits. In Hong Kong, a new emission limit on mercury will be imposed at Castle Peak Power Station in April 2019. In Australia, we continue to monitor the introduction of tightened new emissions requirements.

Waste

Waste management programmes and initiatives continued to be implemented across the Group in 2018. A plastic reduction campaign was launched in Hong Kong, for example, to avoid single-use plastic products to reduce plastic pollution. Meanwhile, we arranged for more than 1,000 damaged solar panels from our Jinchang Solar Power in Mainland China to be taken back by the manufacturer to reduce waste.

Water

We are committed to using water resources responsibly and sustainably in all our operations, and to ensure our assets withdraw water according to licence entitlements. In 2018, water supplies at Jhajjar Power Station in India were reduced because of water scarcity in the peak summer and winter seasons. The power station is currently exploring the possibility of building an additional reservoir to mitigate the effects of future water shortages.

The quantity of water withdrawal and discharge in CLP's operations is dominated by thermal plants where large quantities of seawater are used for cooling and returned to the sea with only a slight increase in temperature. As in previous years, the total water withdrawal and discharge were related to the total electricity generation of our operating assets.

We employ the World Business Council for Sustainable Development's global water tool to assess our operating assets and mitigate any risks identified. In 2018, we continued to participate in the CDP's Water Survey, consulting with industry peers to benchmark and share good practices in water resource management.

Environmental Regulatory Compliance

Our Jhajjar plant in India was notified by the Haryana State Pollution Control Board to pay Rs 50 million, after the National Green Tribunal (NGT) announced penalties in November 2018 on thermal power plants that did not meet ash disposal requirements. Our view is Jhajjar is compliant[1]. We continue to explore viable options for ash utilisation, which remains a key environmental challenge for the Jhajjar plant.

There were two licence limit exceedance incidents in 2018. One licence limit exceedance was particulate emissions at Jhajjar, which was a minor incident related to operation that did not result in any penalties. The other was an exceedance of carbon monoxide for three brief periods at Yallourn in Australia. It was assessed that there was no harm to the environment and Environment Protection Authority Victoria was notified. Corrective action has been taken to prevent a repeat of this incident.

Environmental Regulatory Non-Compliances and Licence Exceedances

	2018	2017	2016	2015	2014
Environmental regulatory non-compliances resulting in fines or prosecutions	**0**[1]	0	0	1	1
Environmental licence limit exceedances & other non-compliances	**2**[2]	13	2	13	3

Notes:

1 Jhajjar collaborated with the Association of Power Producers and filed a petition before the Supreme Court, pursuant to which the Supreme Court has stayed the NGT order and directed the thermal power stations to approach the NGT.

2 The significant reduction of licence limit exceedance in 2018 was due to the enhancement of pollution control equipment at Jhajjar.

Rising to the Challenges of New Regulations

In India, coal-fired power stations face more stringent requirements on the emission of particulates, NO_x, SO_2, and mercury, as well as new requirements on water use and the need for full ash utilisation. We comply with these new emission requirements through enhancement of the FGD unit and NO_x control. There are also new national guidelines in Australia for the regulation of per- and poly-fluoroalkyl substances (PFAS). Although the standards have not yet been incorporated into individual state legislation, several states have already introduced state based legislation to phase out the use of certain groups of per-fluorinated chemicals in our firefighting equipment. We are investigating the extent and risk profile of the chemicals used at our sites and establishing appropriate control process and replacement plans across the Group.