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.

Financial Capital

2020 was an unprecedented year, characterised by tumultuous developments across global health, geopolitical, social, and economic frontiers.

The COVID-19 pandemic caused severe disruptions to economic activities and presented perilous challenges to corporate financiers and treasurers amid extreme turbulence in financial markets.

Firstly, global financial markets experienced huge swings in foreign exchange, interest rate, debt and equity capital sectors. Ten-year US treasury yield collapsed from 1.88% in early January 2020 to 0.54% by early-March 2020 when panic spread globally. Major regional currencies such as the Australian dollar, the Indian Rupee, the Renminbi tumbled 18%, 7% and 4% respectively in the same period.

Secondly, the unforeseen, unpredictable nature of pandemic, and the lack of effective preventive measures had unsettled global asset valuations which caused global equity and bond markets to plummet in the first quarter of 2020. The Dow Jones Industrial Index fell 24% while stock indices of Shanghai, Shenzhen and Hong Kong dropped 11%, 5% and 17% over the period respectively. The uncertainty of valuations also temporarily stalled most fund-raising activities in the equity and bond markets until late March 2020, and caused spikes in credit spreads and other disruptions in commercial terms such as pricing and tenor for funding, especially for the borrowers who are less financially-strong.

Thirdly, the restrictions on economic and social activities, including lockdown measures to contain the spread of the virus by certain authorities, had significantly reduced revenues in most business segments and caused severe liquidity drain in the financial markets. In Hong Kong, the one-week Interbank Offered Rate rose from 0.7% to 2.6% in about three weeks in March 2020 when a large number of businesses rushed to replenish working capital and shore up liquidity to survive.

CLP remained financially strong despite an interim, moderate decline for electricity demand due to lower business activity in the first quarter of 2020. Demand was gradually recovered from the second quarter onwards with the resumption of economic momentum in Hong Kong and overseas markets where we invest or operate in. CLP was not immune from market challenges in 2020 but had promptly taken actions to identify possible pitfalls, formulate contingency plans and fully mitigate the residual risks.

CLP's strong financial foundations stem from its well-established corporate governance and prudent risk management philosophies, with strong disciplines to execute. We are mindful that persistent application of tenacious vigilance, at good or bad times, would differentiate eminent corporations from others.

We are pleased to report that the disruptions due to the pandemic and geopolitical issues have not affected CLP in any material way. CLP remains financially strong with affirmation of credit ratings and stable outlooks by all credit rating agencies, and face no undue financial risk exposures.

Vigilance, Cautious and Earnest Actions at Opportune Time

CLP recognises that the power sector is capital-intensive and requires sustainable, diversified, cost-effective funding to maintain operations and support selective business growth opportunities.

CLP had closely monitored the development of pandemic and the increasing tension of the Sino-US relationship since the turn of 2020 to guard against adversities in the financial markets. Notably the Hong Kong Scheme of Control (SoC) business would incur more long-term capital spending to further reduce the emission levels in the city under the Five Year Development Plan from 2018-2023.

Hong Kong

Scrupulous financial planning for the SoC business required the consideration of the cyclical funding and long payback nature of the investments. These factors guide CLP Power Hong Kong and CAPCO in reviewing the pros and cons of various financing options. Management reiterated that both companies needed to guard against financial market uncertainties and must avoid speculation on the development of the aforementioned issues. Requests were issued for financing proposals right after the Chinese New Year, to secure early debt funding at the best available commercial terms. The outcomes were remarkable. CAPCO finalised discussions with preferred lenders and received financing commitments with very favourable terms as soon as in mid-February 2020 for up to HK$6.0 billion to fund the offshore LNG terminal in Hong Kong waters, with plans to diversify into long-tenured financing when justified by cumulated capital spending. CLP Power Hong Kong also received overwhelming responses and finally accepted funding commitments for HK$6.9 billion at preferential terms in early March 2020.

When financial markets settled in mid-2020, CLP observed our financing and treasury policies to optimise the debt portfolio by spreading out the debt tenor and achieving more diversification in terms of geography, instruments and lenders, by way of Export Credit Agency- (ECA) covered loans and public bonds.

On 15 June 2020, CAPCO successfully issued a US$350 million (HK$2.7 billion) Energy Transition Bond at 2.2% fixed rate, which was reported to be the lowest coupon bond that a corporate has ever issued in Hong Kong at the date of placement, to partially replace the shorter-tenured bank

loans for the offshore LNG terminal project. The bond was priced at a 1.625% margin over 10-year US Treasury Notes and received more than US$1.7 billion of orders from global fund managers and Environmental, Social and Governance (ESG) investors. This was the second Energy Transition Bond issued by CAPCO and has also been selected as the best energy transition bond in *The Asset* magazine's Country Awards 2020.

Leveraging on the strong investor support for the CAPCO bond issuance, on 22 June 2020, CLP Power Hong Kong issued US$750 million (HK$5.8 billion) 10-year, 2.125% bond, and US$250 million (HK$1.9 billion) 15-year, 2.5% bond. They carried 1.6% and 1.9% credit spreads respectively over 10-year US Treasury Notes, and replaced some of the short-term bank facilities in the debt portfolio. The 10-year tranche received more than US$3.0 billion of orders, which represented more than four times over-subscription, from over 170 global investors. The longer tranche was the first 15-year public US dollar bond issued by a Hong Kong corporate since 2012, when CLP Power Hong Kong pioneered this class of debt securities in the region. According to the arranging banks, the dual-tranche bonds set the lowest coupon record for 10- and 15-year bonds issued by Hong Kong-based corporates at the time of placement. The full amounts of the bond proceeds raised by CLP Power Hong Kong and CAPCO were swapped into Hong Kong dollar fixed rates to mitigate foreign currency and interest rate risks.

The above financings were adequate to fully cover CLP Power Hong Kong and CAPCO's 2020 funding needs, apart from the usual annual rollover of a moderate amount of short-term bank facilities. At the same time, CLP Holdings also timely communicated with lending institutions to secure commitment for the majority of its 2020 funding needs in the early part of the year to mitigate funding uncertainties and to serve as contingency and firepower.

Both 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$2.0 billion may be issued respectively. As at 31 December 2020, notes with an aggregate nominal value of about HK$29.3 billion and HK$6.8 billion had been issued by the two entities respectively.

Outside Hong Kong

Our business units continued to receive good support from lending institutions in 2020 and were able to obtain debt funding as required including new financing for selected new business expansion. In Australia, EnergyAustralia maintained no debt status, good liquidity position and achieved higher operating cash inflow than in 2019. CLP India issued Rs3.0 billion (HK$315 million) of two- and three-year green bonds, arranged Rs7.3 billion (HK$777 million) of 4- to 13-year project loan facilities and issued Rs1.0 billion (HK$106 million) of three-year bond at very competitive rates. In Mainland China, CLP received an in-principle offer for a RMB200 million (HK$238 million) 15-year, non-recourse bank loan facility for a solar project.

The Group

Reduced business activities and lower business revenues due to the pandemic had challenged the ability of most corporates in managing their liquidity positions and funding capabilities, along with their abilities to manage multiplicity of risks. Although CLP has put financing principles and treasury policies in place, with periodic reviews of committed funding, liquidity buffers and contingency thresholds especially during times of uncertainty, CLP quickly determined in the first quarter of 2020 to perform a Group-wide stress test on liquidity and earnings to evaluate the changing dynamics under different parameters and business scenarios, and to scrutinise the respective impacts to various business units and the Group. This comprehensive study facilitated the management to fully appreciate the challenges and volatilities that CLP entities might encounter, and to come up with the right measures to combat the challenges if necessary, in addition to the existing protocols in business and financing. The result showed that CLP entities would face no undue liquidity issues, apart from potential reduction in revenue and earnings under certain circumstances.

The continuous upholding of corporate governance has enabled CLP to navigate uncharted waters and emerge in good shape from the pandemic and a more volatile financial environment in 2020.

Material Topic

Responding to Climate Change

This section discusses CLP's strategies on sustainable financing to give the Group the wherewithal and flexibility for funding of climate actions.

Perseverance in Sustainability Financing

Notwithstanding the formidable financial market challenges which required dedicated management efforts, CLP is devoted to its sustainability financing trajectory with continuous enhancements in line with market best practices.

CLP updated its Climate Action Finance Framework (CAFF) in June 2020 to reflect the increased climate-related commitments in the Group's updated Climate Vision 2050 published in December 2019 and the broader range of financial transactions that CLP is considering to raise funding for its climate actions.

CAPCO executed inaugural HK$3.3 billion medium-term banking facilities and 15-year ECA facility, covered by China Export & Credit Insurance Corporation (Sinosure), with energy transition elements to fund the remainder of the budget for offshore LNG terminal project. These Energy Transition Finance Transactions were arranged under the updated CAFF to show our strong commitment to sustainable financing. The ECA facility was also the first ESG export credit facility in Hong Kong covered by Sinosure.

CLP joined the Sustainable and Green Exchange (STAGE) established by Hong Kong Exchanges and Clearing Limited as one of the inaugural members in August 2020. STAGE is an online repository of information for sustainability, green and social bonds which are listed on The Stock Exchange of Hong Kong Limited. By joining STAGE, CLP will display the associated information and post-issuance reports of its Energy Transition Bonds on a platform that can be accessed by global investors.

CLP endeavours to further diversify and expand its sustainability financing portfolio. We envisage that most of CLP Power Hong Kong and CAPCO's financing transactions going forward will take the form of green bonds and loans, Energy Transition Bonds or sustainability-linked loans. This will enable CLP to meet pre-determined ESG performance targets in a more meaningful way.

See CLP Climate Action Finance Framework updated in June 2020.

See DNV GL Second Party Opinion Report on CAFF.

Case Study

Energy Transition Financing for Hong Kong Offshore LNG Terminal Project

The construction of an offshore LNG terminal in Hong Kong waters is one of the approved capital projects of Castle Peak Power Company Limited (CAPCO) under the 2018-2023 Development Plan. The project, which can receive and store LNG and then deliver regasified LNG by subsea pipeline to Black Point Power Station, will further improve Hong Kong's long-term natural gas supply stability by diversifying supply sources, and enable procurement of natural gas at competitive prices from the global market. The implementation of the offshore LNG terminal is therefore a critical step in supporting the Hong Kong Government's plan to increase the percentage of natural gas used for power generation and reduce carbon intensity in the city.

CLP is committed to sustainability in its business and financing activities. In line with this commitment, the Group updated its Climate Action Finance Framework (CAFF) in June 2020 to support a broader range of financial transactions from bonds to other types of financing including loans. This enables us to further diversify the sources of debt and access a wider pools of capital committed to socially-responsible and sustainable financing. All these stem from our recognition of the significant role played by the offshore LNG Terminal project in CLP's transition into a lower-carbon future, therefore Environmental, Social and Governance (ESG) components were embedded in the associated financings.

In view of the long-term nature of the project, and to optimise the debt funding arrangement, a financing package was arranged which includes:

- an inaugural HK$3.3 billion medium-term commercial bank facility which carried the Energy Transition element. This followed a rigorous environmental and social due diligence process by the lenders, including a joint objective to comply with the Equator Principles 4, an international framework to assess environmental and social risks;
- an US$350 million Energy Transition Bond. The 10-year bond came with an attractive long-term fixed coupon rate of 2.20%. The issuance received overwhelming support of investors, including ESG investors, with 4.9 times over-subscription. The bond was selected as the best energy transition bond in *The Asset* magazine's Country Awards 2020, reflecting the recognition of CLP's leading position in energy transition financing by market participants;

- a HK$2.0 billion long-term Energy Transition Loan facility covered by China Export & Credit Insurance Corporation (Sinosure). This Export Credit Agency-covered facility, together with the above HK$3.3 billion medium term commercial bank facility, were the first Energy Transition credit facilities after the enrichment of the CAFF. According to Sinosure, this transaction was also the first ESG export credit facility extended by Sinosure in Hong Kong.

These financings, which were executed in an unprecedented COVID-19 environment and a challenging financial market in 2020, underscore the strong commitments of CLP and CAPCO to sustainable and ESG financings, complementing the Group's efforts on business sustainability.

Proven, Resilient Risk Management

At CLP, we understand that effective risk management is indispensable. Our long-established risk management policies and periodic review functions throughout the Group have protected CLP from unfavourable financial and market risk exposures.

Again, our approach is to identify risk exposures and apply natural hedge or straight-forward, pre-approved financial derivative instruments that can qualify for effective accounting hedge, with no adverse profit-and-loss or cash flow impact, to offset the underlying economic obligations and risks. This approach has proven to be effective and efficient. CLP's conscientious management of risk and regular re-assessment have reassured our key stakeholders including government authorities, customers, shareholders, financial institutions, bond investors and business partners that residual risks remained very low and the Group is capable of taking up business assignments and obligations for the very long-term.

Digital Transformation

Since CLP's first initiative and subsequent success to implement a cloud-based software-as-a-service Group Treasury Management System (GTMS) in 2016, we have been continuously exploring ideas to realise greater automation, analytical capability, straight-through processes and paperless work cycle. It is essential for CLP to adopt and maintain an agile treasury system that can keep pace with technological advancements and the high complexities of a dynamic financial market, taking into account the fast, vigorous and effective solutions from the fintech evolution. An upgrade of the GTMS implemented by the Treasury team was in progress in 2020, which will enhance the functionality and scalability of the system, and to achieve greater straight-through processing and perform better analyses with automatic matching process, consolidation of end-to-end workflows and improvement of cash flow forecasting visibility, efficiency and accuracy.

Debt Profile as at 31 December 2020

	CLP Holdings HK$M	CLP Power Hong Kong HK$M	CAPCO HK$M	Other Subsidiaries HK$M	CLP Group HK$M
Availability Facility [1]	6,500	38,274	19,071	16,240	80,085
Bank Loans and Other Borrowings	–	29,684	13,573	11,091	54,348
Undrawn Facility	6,500	8,590	5,498	5,149	25,737

Note:

1 For the Medium Term Note Programmes, only the amounts of the bonds issued as at 31 December 2020 were included in the total amount of Available Facility. The Availability Facility in EnergyAustralia excluded a facility set aside for guarantees.

Credit Ratings

CLP always strives to maintain good investment grade credit ratings. This not only enables CLP to source financings with the best terms (amount, pricing, tenor, diversity) but also maintains high credibility when negotiating commercial contracts. With robust financial structure and healthy cash flow, CLP can maintain broad access to global capital and bank markets to fund operations, growth opportunities and contingencies even in challenging market circumstances.

Standard & Poor's (S&P) and Moody's affirmed their credit ratings with stable outlooks for CLP Holdings, CLP Power Hong Kong, and CAPCO between May and August 2020. S&P affirmed its credit rating with a stable outlook for EnergyAustralia in August 2020.

	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 Not applicable
Positives	• Transparent and predictable regulatory framework in Hong Kong • Highly visible and stable operating cash flows of SoC business • More timely fuel-cost adjustment in Hong Kong • EnergyAustralia's position as one of the largest integrated energy utilities in Australia, with strong balance sheet capacity to undertake growth-related investments	• The Group's strong and adequate financial metrics despite moderation, well-managed debt maturities and sound liquidity profile • Good access to the domestic and international banks and capital markets • Large earnings contribution from CLP Power Hong Kong with strong and highly predictable cash flow supported by a highly stable regulatory environment
Negatives	• Unregulated power generation business outside of Hong Kong, with the Australian business being more volatile and profitability under near-term pressure • EnergyAustralia's operating challenges including coal quality issues at Mount Piper Power Station and aging assets amid competitive energy market	• The Group's significant electricity business exposure outside Hong Kong will remain manageable but faces challenges of carbon transition risks • Increasing capital spending in the SoC business with reduced regulatory rate of return

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

More information about major financing activities in 2020 and our debt profile can be found on pages 34 and 35 of the CLP Holdings 2020 Annual Results Analyst Briefing Presentation.

Analyses of loan balance by types and bond funding by currencies can be found on page 46 of the Investor Presentation Introductory Pack.

A tumultuous year of severe disruption to global economic activities, impacting foreign exchange, interest rate and corporate funding markets. These posed challenges to many corporates in 2020.

- Significant volatilities in exchange rates of major currencies. Maximum swings of 35% in Australian dollar, and 9% in Renmenbi, against US dollar during 2020
- Spikes in credit spreads for financing for many corporates and liquidity drain in the market
- Sharp tightening in funding market caused by the COVID-19 pandemic especially in the early part of 2020
- COVID-19, increasing tension of Sino-US relationship and other geopolitical uncertainties

Objectives & Strategies	Measures	Key Results in 2020
Well-balanced, strong financial profile Healthy capital structure Diversification and flexibility	• Liquidity of HK$37.4 billion including undrawn bank loan facilities plus bank balances • Maintaining long-term business relationships with 37 financial institutions in different locations (Australia 10%, Mainland China 22%, UK and Europe 22%, India 22%, Japan 8%, US 8%, others 8%) • Spreading out loan maturities (beyond 5 years 50%, 2-5 years 23%, 1-2 years 11%, within 1 year 16%) • Diversity of debt instruments and markets (bonds 68%, term loans 24%, money market lines 6%, export credit loan 2%) • Multiple bond denomination currencies (USD 64%, HKD 21%, JPY 8%, INR 4%, AUD 3%) • Good investment grade credit ratings • Reduction in net debt balance of HK$1.4 billion • The US$350 million Energy Transition Bond issued by CAPCO was selected as the best energy transition bond in *The Asset* magazine's Country Awards 2020 • CLP Power Hong Kong successfully issued US$1.0 billion dual-tranche 10– & 15– year public bonds at very attractive terms	**Timely, cost-effective financing** • Decreased net debt to total capital ratio by 1.6% • Reduced net finance cost* by HK$158 million • Early action to secure funding commitments * Included the distribution to perpetual capital securities holders
Foreign exchange 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-and-loss nor cash flow effect. CLP does not hedge for regional equity investment but match funding with local currency debt	**A vigilant, diligent risk management approach** • No undue financial impact despite extreme turbulence in financial markets • Proactive assessment and regular evaluation of liquidity position
Counterparty exposure risk mitigation	• Transact with trustworthy and capable parties	
Interest rate risk mitigation	• As of the end of 2020, the Group's fixed rate debt as a proportion of total debt was 63% (65% if including perpetual capital securities)	
Sustainable dividend	• Dividend – 2020 : HK$7,832 million ; 2019 : HK$7,782 million	**Focus on shareholder value creation** • Increase of dividend despite the adverse market environment • Shareholders' funds (including retained earnings) increased by HK$6,745 million
Ongoing capital investments	• Scheme of Control – HK$8,686 million • Growth – HK$452 million • Maintenance – HK$1,999 million • Joint ventures, associates and others – HK$554 million	
Strong cash inflow	• Good operational performance – free cash flow of HK$20,418 million • Dividend inflow from joint ventures and associates – HK$2,320 million	
Advanced technology	• Adoption of cloud-based GTMS with continued enhancements	**Strong governance** • Full treasury compliance • Continually exploring areas of improvement
Timely reporting	• Timely and accurate financial reports and compliance checks	
Effective policies and principles	• Comprehensive set of policies, principles and guidelines with regular reviews	

Manufactured Capital

CLP's portfolio of operating assets in the Asia-Pacific region spans key segments of the power sector value chain, including generation, transmission and distribution. The Group remains committed to safely managing these assets to high standards of performance, even during unplanned global events such as the COVID-19 pandemic. As always, CLP remains focused on maintaining reliable electricity provision and delivering value-adding energy services to customers.

Material Topics

- Harnessing the Power of Technology
- Responding to Climate Change
- Reinforcing Cyber Resilience

This section discusses the strategies deployed in CLP operations to manage the challenges of the COVID-19 pandemic, strengthen cybersecurity, and continue the Group's journey to decarbonisation.

Operational Resilience

CLP's business operations have continued to demonstrate high levels of resilience throughout 2020, navigating the many challenges flowing from the COVID-19 global pandemic.

Prior to the outbreak, CLP regularly reviewed and refreshed relevant business continuity plans and procedures as part of its ongoing planning against potential emergencies. CLP's well-established response plans are constantly reinforced by organisational learnings from past events such as SARS in 2003 and Super Typhoon Mangkhut in 2018, and reflect the Group's commitment to long-term business sustainability.

While the COVID-19 pandemic was unique and unprecedented, these existing preparations enabled CLP to take rapid action across its Asia-Pacific operations from the beginning of the outbreak, subsequently learning and updating its management approach quickly as further information became available in the rapidly unfolding situation.

Controls were implemented across all CLP's operating regions to minimise the risk of virus transmission and to respond appropriately in the event of positive COVID-19 cases being suspected or identified. Special arrangements were immediately put in place to protect the health, safety and wellbeing of workers in all CLP locations. For example, heightened hygiene and sanitation measures, body temperature screening, and meticulous cleaning in offices and work sites were swiftly introduced.

Special work arrangements were implemented, and essential and non-essential operations were identified. Working-from-home and split teams arrangements were introduced, and CLP ensured workers had access to adequate supplies of personal protective equipment. Where necessary, mission-critical employees and resources were deployed to locations prior to travel constraints and lockdowns being implemented. In support of the COVID-19 response measures, CLP adopted remote working, while the use of digital technologies was increased to maintain effective communications across the business.

Case Study

The benefits of digitalisation

CLP decided several years ago to move some of the Group's key software tools to cloud computing. This decision established capabilities that underpinned the ability for employees in Hong Kong, Mainland China, India, and Australia to efficiently perform their duties away from work premises, even in extended periods of national or regional lockdown.

Thanks to key enterprise software tools becoming available for remote users as part of CLP's ongoing rollout of cloud-based intranet services in Mainland China, employees working from home were able to continue cooperating with on-site colleagues to manage power plant operations, as the COVID-19 outbreak escalated in early 2020.

For many large energy businesses with geographically diverse operations, enterprise software tools remain vital to effective and efficient operations. For CLP China, these tools also allow users to control and manage capital projects, authorise equipment purchases, and carry out other critical actions. Before the scope was extended in January 2020 to include remote users working from home, the enterprise software tools were being routinely accessed in CLP China's offices and work sites for operational purposes.

Cloud computing technologies enabled CLP China employees to keep projects on track while working from home through video or audio conference calls. Within a few weeks, near the beginning of the COVID-19 outbreak, the level of conference calls increased approximately tenfold.

In recognition of its efforts to maintain normal operations and safeguard employees' health, CLP China's regional head office won a national award in November 2020 for health management innovation in the 2020 People's Workplace Health Management Forum organised by the People's Daily Online.

EnergyAustralia meanwhile quickly upgraded network services and accelerated the rollout of digital telecommunications, computerised tools and other remote working information technology devices to enable employees and contractors to switch to working from home, enabling individuals to collaborate efficiently with colleagues based at generation sites and contact centres. New software was fast-tracked to enable real-time communication and collaboration between sites, allowing workers to share information and conduct virtual meetings.

Continuous planning and investments in proven and secure information technology systems including virtual private networks enabled CLP India to quickly transition employees to remote working in the national lockdown, while maintaining reliable operations. New communication software was introduced to ensure CLP India employees continued to collaborate effectively, both from the safety of their homes or when on-site.

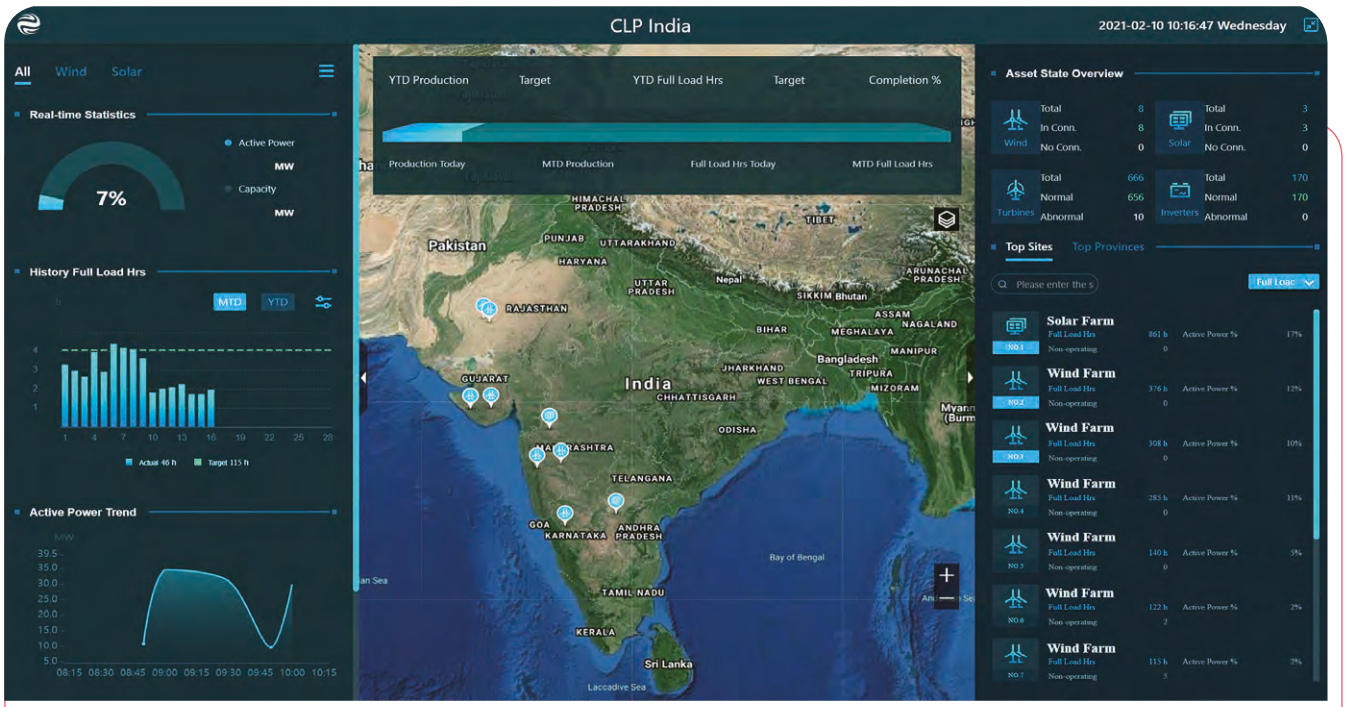
Enhancing Asset Reliability and Quality

CLP continued to invest in maintaining and upgrading the Group's generation assets in the Asia-Pacific region to ensure reliable energy supply.

EnergyAustralia completed an extensive maintenance programme at its Mount Piper Power Station in New South Wales in December, which prepared it for the seasonally-high levels of power demand experienced in the Australian summer. The maintenance programme required an 87-day planned outage on one of the power station's steam turbine generating units and was the plant's most significant upgrade in recent years. Major boiler works were also carried out, supporting continuing improvements in the power station's levels of operational reliability and efficiency.

COVID-19 required extensive levels of additional planning and operational controls to be implemented, especially given that over 1,100 workers were required to be on site to carry out the works.

Stringent safety measures were also established to protect workers during an outage at EnergyAustralia's Yallourn Power Station in Victoria. The works involved major boiler maintenance to further boost levels of operational reliability.



CLP's data analytics platform supports continuous improvements in the performance of renewable energy assets in Mainland China and India. *(Screenshot of Envision EnOS system, printed with permission from Envision)*

CLP continued the rollout of an analytics platform covering all of its renewable energy plants operating in Mainland China and India. Digital technologies including artificial intelligence and data analytics support CLP in optimising the performance of its assets continuously, enabling real-time monitoring of plant operations, and providing performance-enhancing predictive analytics capabilities. The data analytics system also supports CLP in the effective management of wind and solar assets, identifying potential faults and managing a scheduled programme of maintenance and cleaning. The data analytics platform will be fully implemented across CLP's renewable energy assets in Mainland China and India in 2021.

Deployment of technologies to improve safety outcomes accelerated during the pandemic, reducing the need for manual labour in hazardous activities. Automated drones with thermal cameras are now used across CLP's fleet of solar energy plants in Mainland China and India, allowing for more effective and efficient inspection of plant performance and the detection of malfunctioning systems. Drones have also been trialled to inspect wind turbine blades in India.

Progressing Carbon Emissions Reductions

CLP maintained its progress in reducing the carbon intensity of its energy portfolio through the commissioning of a new combined cycle gas turbine generating unit at Black Point Power Station in Hong Kong. With a high efficiency level, the new natural gas-fired generating unit is a key investment to strengthen CLP's efforts to reduce emissions from generation and support Hong Kong's transition to a lower-carbon future.

CLP commissioned the 50MW Laiwu III Wind Farm in the Shandong province in September, the latest addition to its portfolio of renewable energy assets in Mainland China.

Two solar plants acquired by CLP India in 2020 in the southern state of Telangana reported solid operating performance. CLP India meanwhile continued to make progress with its new 250.8MW wind energy project in Sidhpur in Gujarat, with construction starting in the first quarter of 2021.

Robust Supply Chains

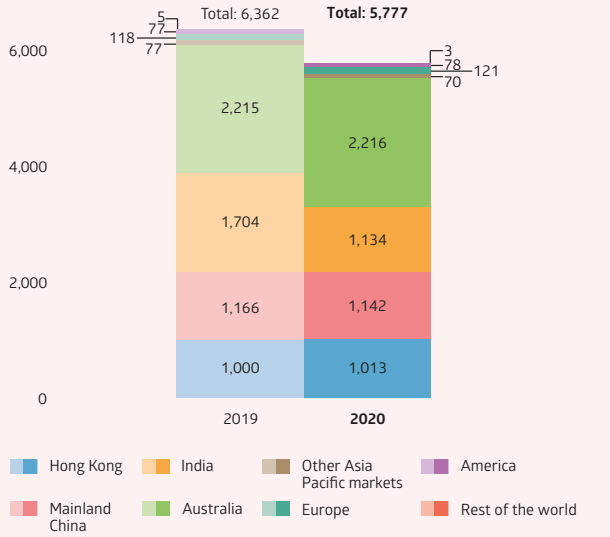
The COVID-19 pandemic has presented supply chain challenges for many energy utilities around the world. CLP's multi-regional supply chains remained resilient to these challenges and were able to adapt and provide continuity of supply. For example, collaboration across CLP's regional businesses ensured sufficient supplies of personal protection equipment, including face masks and hand sanitisers, to the workforce amid a global shortage in the early stages of the outbreak.

This level of operational flexibility and adaptability played a key role in maintaining the safety and reliability of the Group's operations. This also highlighted the value of developing and maintaining positive partnerships with suppliers.

CLP remains committed to responsible procurement practices and proactively engages with suppliers to promote those practices that are key to a sustainable supply chain, including regulatory compliance, safe working conditions, ethical business conduct, environmental responsibility, and protection of intellectual property.

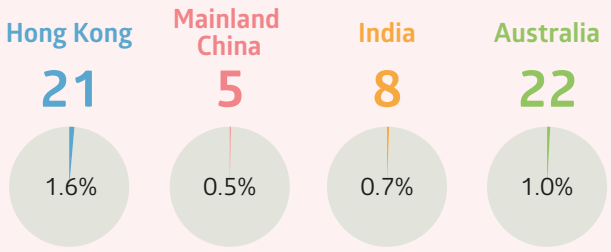
The commitment to ongoing enhancement and improvement of CLP's procurement capabilities is vital to support the ongoing needs of the Group's operations, in addition to growth projects. CLP continues to develop its internal capabilities to better understand global supply chains, risk management and supplier relationships. The Group will also focus on the benefits of adopting digital technologies, especially data analytics for improved insights into suppliers' performance and supply chain management. Digitalisation will help deepen CLP's collaboration with strategic suppliers, enhancing the Group's access to resources and capabilities in support of business objectives.

Supplier Distribution by Geographical Region

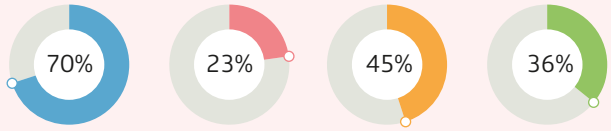


Overview of Strategic Suppliers by CLP Regional Subsidiary

Number of Strategic Suppliers and Percentage among Total Suppliers for Business



Percentage of Total Spend for Business



Strengthening Cybersecurity Management

As new digital technologies and business models continue to help transform CLP into a Utility of the Future, the Group has recognised the critical need to protect and defend its business operations against growing cyber threats. In addition, the COVID-19 pandemic further compounded cybersecurity challenges for businesses globally, with remote working becoming commonplace and criminal activity on the internet increasing to unprecedented levels.

During 2020, CLP accelerated investments in detection and response technologies across the Group in order to mitigate cyber risks. Appointments of senior subject matter experts in the past year further strengthened CLP's cybersecurity planning and organisational capabilities, allowing the Group to implement a centralised, joined-up approach to counter rapidly evolving threats to its assets located across the Asia-Pacific region.

In addition to the constant monitoring of potential cyber threats on an ongoing basis, CLP is focused on continually developing its security risk management strategy to deliver holistic, coordinated protection to the Group's operations, and to apply new techniques and technologies as appropriate.

Comprehensive security awareness and training programmes were delivered throughout 2020 with the aim of improving employees' current levels of understanding of the threat and to continually promote and reinforce good cyber hygiene, thus encouraging staff to play their part in protecting the Group's physical and digital assets.

Intellectual Capital

CLP is investing in technological capabilities and expanding its partnerships to accelerate innovation in new services and business models for energy users, and increase operational efficiencies across the organisation. In the Group's mission to become a Utility of the Future, CLP is focused on providing low-carbon, technology-enabled energy solutions in tandem with global efforts to combat climate change. The COVID-19 crisis has meanwhile highlighted the urgent need for businesses and organisations globally to increase the sustainability and resilience of their operations.

Material Topics

Harnessing the Power of Technology

Responding to Climate Change

Innovative technologies are key for consumers and businesses to improve energy efficiency and reduce emissions. This section focuses on investments in new capabilities and partnerships that are making it possible for CLP to develop lower-carbon, technology-enabled energy services for customers.

Mobilising the Energy-as-a-Service Strategy

As governments around the world accelerate plans to decarbonise their economies, electricity utility companies with strong digital technology capabilities have increased opportunities to offer customers a more diverse range of innovative, low-carbon energy solutions. An energy-as-a-service model allows utility companies to deliver and manage multiple service offerings more effectively and build on their core electricity business to maximise synergies and value for customers. This allows the companies to meet growing demand for services such as energy management, corporate power purchase agreements, electric vehicle charging, and microgrids.

The development of Smart Energy Connect (SEC) exemplifies the energy-as-a-service strategy favoured by CLP. Since its launch in 2019, SEC's digital applications platform has provided an expanding range of energy management solutions and services to help businesses and organisations improve energy efficiency and become more sustainable. Innovation in smart digital energy services, deploying technologies such as artificial intelligence and the Internet of Things, offers customers new tools to make workplaces safer, more energy-efficient and automated.

In 2020, SEC partnered with shipping companies Wah Kwong Maritime Transport and Pacific Basin to offset the greenhouse gas emissions from their operations using carbon credits from CLP India's wind farms, as demand for decarbonisation solutions from businesses continue to grow.

CLP*e* Solutions, the Group's subsidiary focused on energy and infrastructure solutions, is helping a growing number of commercial customers find new ways to improve energy efficiency and make their operations more sustainable. In November, CLP*e* Solutions completed the installation of a new solar energy system at HSBC Building Tseung Kwan O in Hong Kong, providing a one-stop solution for system design, construction, operations, and maintenance. CLP*e* Solutions and SEC deployed an artificial intelligence-enabled building analytics system to help the Airport Authority Hong Kong optimise energy use at Terminal 1 of Hong Kong International Airport.

The Smart Energy Connect digital applications platform exemplifies CLP's energy-as-a-service strategy.

Case Study

Smart Technology Saves Energy for Shopping Mall and Keeps Temperature Optimal

Machine learning and big data technologies help run the central chiller equipment at Olympian City 3, a 130,000 square feet retail complex in Hong Kong, improving energy efficiency and ensuring shoppers receive precisely the right level of air-conditioning.

Central chillers are among the most energy-intensive parts of a commercial building. Through CLP's Smart Energy Connect (SEC), Olympian City 3 deployed an advanced artificial intelligence-based solution that analyses the chiller equipment's operational data in real-time, and automatically adjusts the system to run at the most energy-efficient settings. CLP*e* Solutions provided installation and engineering support on the new system, which has generated energy savings of more than 10% for Olympian City 3.

"We needed to increase energy efficiency, while at the same time maintaining a comfortable environment for shopping mall users," says Nelson Chiu, Associate Director at Sino Estates Management Limited, which manages Olympian City 3. "The Sino Group is always looking for the best environmental technologies on the market."

The solution deployed by Olympian City 3 is powered by proprietary machine learning technology to analyse reams of operational data from continuous monitoring of the chiller, and precisely calculate system settings needed for the equipment to perform at optimal energy efficiency.

Smarter, More Sustainable Energy Solutions

The COVID-19 pandemic is changing the way offices and commercial premises are designed and used, with building managers deploying smart digital technologies to optimise access control, energy efficiency, and space utilisation, according to a 2020 study by consultancy Guidehouse commissioned by CLP. Particularly in the Greater Bay Area, the market for smart building solutions integrating digital technologies will more than double to over US$1.4 billion annually by 2025, the study estimates.

CLP's plans in the Greater Bay Area will benefit from increased access to innovative Chinese energy technologies through the CSG Energy Innovation Equity Investment Fund. Established in November by China Southern Power Grid Co., Ltd in partnership with investors including CLP, the new fund will focus on investment opportunities in energy technologies, including renewable energy, the digital grid, and electric vehicle charging.

TUS-CLP Smart Energy Technology Co. Ltd., the joint venture between CLP and TUS-Clean Energy, is focused on developing smart energy solutions for customers in the Greater Bay Area and other regions of southern China. Meanwhile CLP formed a partnership with CYZone, a leading Chinese provider of event and information services supporting technology innovators, to identify the most promising smart energy technologies in Mainland China. The partnership further expanded CLP's opportunities to work with providers of advanced energy technologies and business models, including those for energy management, storage, smart buildings and e-mobility.

Empowering Energy Digitalisation

Ongoing investments in digitalisation have continued to support CLP's efforts to deliver smarter, more user-centric energy services to customers. In Hong Kong, the newly-upgraded CLP mobile app is designed to cover the whole digital customer journey, from new account registration and access to bill information to advice on managing electricity use. It also supports online shopping and provides a range of digital content, including cookery videos for customers spending more time at home because of COVID-19.

The continued rollout of CLP's smart meter installation programme is providing more Hong Kong customers with access to consumption data, giving them the ability to improve their energy efficiency and participate in demand response programmes to reduce power consumption. As electricity demand from customers in Hong Kong increased to a new record of 7,264MW on 14 July 2020, some users were prompted to reduce power consumption by demand response technologies deployed by CLP, thereby improving system reliability. Without the demand response programme, peak power demand would have been more than 100MW higher. Technology from AutoGrid Systems, a Silicon Valley energy management company, further enhanced the demand response programme's operation. AutoGrid is among CLP's portfolio of investments in energy technology companies and venture capital funds in global innovation centres including Mainland China, the US and Israel.

In Australia, meanwhile, integrated solar energy and battery storage systems allow households to benefit from low-carbon electricity with long-term cost savings, although some users may be deterred by the upfront costs of installation. EnergyAustralia's new Solar Plus plan helps customers avoid some of the costs by charging only a fixed-rate fee. Through the use of virtual power plant technology, the solar and battery systems installed at customers' premises are managed by EnergyAustralia, improving the stability of the electricity grid. The new service is part of the "On by EnergyAustralia" platform, which focuses on innovative energy services. EnergyAustralia also uses the platform to offer flat-rate electricity subscription plans similar to mobile phone services, allowing customers to manage their energy expenses more effectively.

CLP is continuing to strengthen its data science capabilities by developing new software to improve the performance of its operations. Artificial intelligence and machine learning technologies are providing CLP with new tools to enhance efficiency by creating accurate ways to predict key operational parameters such as system loads, emissions from power generation, and cable faults. CLP provided machine learning-based solution to Sarawak Energy, an electricity utility in Malaysia, for power theft detection.

Smart Charge (HK) Limited, CLP's joint venture with telecommunications company HKT Limited, has continued to step up efforts to install new electric vehicle charging infrastructure in residential estates in Hong Kong in response to growing demand. Government support is increasing for private residential car parks to install charging systems, providing new opportunities for Smart Charge which has put forward proposals to build EV charging infrastructure for more than 400 residential car parks. CLP also continued to offer free electric vehicle charging services through a network of more than 50 charging stations across its supply area, while its new Eco Charge 2.0 service offers support for Hong Kong customers applying for Government subsidy to install electric vehicle charging infrastructure.

Accessing the Best Energy Innovations

CLP continued to participate in the Free Electrons global energy accelerator programme, gaining access to the most innovative energy technologies from providers in Europe, the Americas, and Asia, despite the challenges of the pandemic. Collaboration between utility companies and start-up companies in the programme was made possible through video conferencing and other remote working tools, supporting the development of pilot projects with potential for commercialisation. CLP also strengthened its partnerships with technology providers around the world through other programmes including the Alibaba JUMPSTARTER programme and the Australian Technology Competition.

EnergyAustralia continued the annual accelerator programme it runs in conjunction with Startupbootcamp, overcoming restrictions imposed by COVID-19 to work with technology providers from around the world to speed up innovation in services and solutions for Australian energy users.

CLP is adopting an energy-as-a-service model to provide a wider range of energy services to customers. What are the market segments and opportunities that you are prioritising in the coming year?

Mr Charles Wong
CEO, R&B Technology Holding Co. Ltd.

As digitalisation continues to accelerate in the energy sector, CLP's energy-as-a-service strategy will help us provide multi-faceted, digitally-connected solutions for energy consumers and support increased sustainability.

The continuing growth in the data centre market in Hong Kong and the Greater Bay Area has increased opportunities for CLP to supply energy to infrastructure operators and pursue new business models, including equity investments and co-development of facilities, in addition to providing energy-related services and energy technology solutions.

Demand for renewable energy from large businesses with multinational operations makes the corporate power purchase agreement (CPPA) market one of the fastest-growing segments of the global energy industry. CLP's capabilities in renewable energy development and innovative energy-as-a-service business models make us well-positioned in this nascent sector of the market, and we are committed to providing competitive, technology-enabled CPPA services to companies including conglomerates and data centre providers.

CLP is continuing to explore commercial opportunities in the microgrid market for businesses that need off-grid or grid-complementary power services at a competitive cost, combining decentralised power generation, battery storage, and energy management technologies.

Austin Bryan
Senior Director - Innovation

Human Capital

Last year, the COVID-19 pandemic brought unique workforce and work environment challenges to CLP's operations. CLP's response safeguarded people's wellbeing, enabling continued progress in building an agile, inclusive and sustainable workforce to address the global energy transition.

In 2020, the impacts of COVID-19 were felt across the world. In response to the COVID-19 outbreak, all of CLP's businesses rapidly introduced a comprehensive range of measures to safeguard the wellbeing of employees and contractors to ensure continued safe and reliable operations and help impacted customers. CLP has not needed to stand down any employees due to the pandemic.

With health and safety as the foundation, this year, CLP continued to focus on addressing the significant opportunities and challenges presented by digitalisation and decarbonisation of the energy sector, together with intensifying demographic and labour supply issues and social and political uncertainties.

New and refreshed programmes at different career levels were introduced in Hong Kong to accelerate development of pipelines of future general managers and engineering leaders in preparation for energy transition and digitalisation, and to address future skills shortages. Employment branding was strengthened to enhance CLP's attractiveness to younger and non-traditional talent. CLP continued to resource innovation and energy-transition-related activities.

Efforts to increase gender diversity continued with progress on key metrics and an aspirational target set to achieve gender balance over time in the Hong Kong Graduate Trainee intake in order to address significant under-representation of women in operational professional and leadership roles.

The complexities of energy transition, digital evolution and increasing social and political uncertainties and expectations in CLP's markets drive the need for greater organisational agility. Implementation of action plans to upskill and empower employees to respond rapidly to changing customer needs, provide work environments that facilitate collaboration, and equip employees to leverage new technologies gathered pace.

As a company with hundreds of work sites in the Asia-Pacific region, ensuring that everyone who works for CLP is safe, secure, treated fairly and with respect, is at the core of how CLP works, and underpins long-term success. In 2020, CLP's Value Framework was refreshed, expressing respect for all internationally-recognised human rights relevant to CLP's operations as a core belief, and embedding human rights in the promises made to stakeholders about how CLP upholds its values.

Material Topic

Building an Agile, Inclusive and Sustainable Workforce

A Utility of the Future needs a Workforce of the Future. This section discusses CLP's strategies to develop its organisation capability to enable business growth and transformation.

Recognition of CLP Power Learning Institute at the Award for Excellence in Training and Development 2020, organised by the Hong Kong Management Association.

Keeping People Safe and Well

The COVID-19 Response

Starting in January 2020, country- and site-specific pandemic plans were enacted encompassing special access controls to ensure business continuity and special work arrangements including work-from-home, flexible working hours and reduction of non-essential works. CLP provided necessary protective equipment to the workforce, increased deep cleansing and temperature testing at work sites, offered physical and mental health and wellbeing support and assistance to all employees and also provided special leave for purposes of self-isolation, care and family reunion. Proactive communications with employees and their families continue.

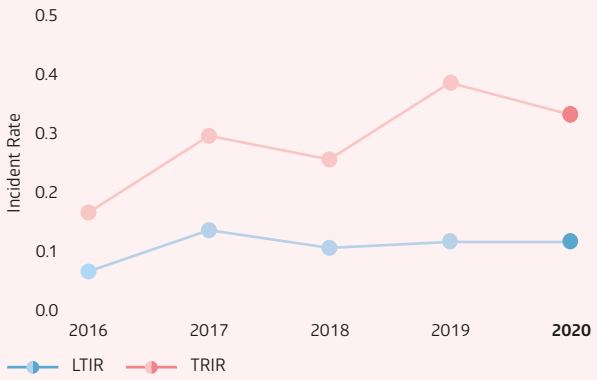
CLP is committed to ongoing improvements in safety in its operations. The Group reported a reduction in its Total Recordable Injury Rate (TRIR) in 2020. Whilst the Lost Time Injury Rate (LTIR) was unchanged from 2019, the number of injuries decreased. Injuries in major projects were significantly reduced, as project activities were lower. CLP continued efforts to promote health and safety for employees and contractors, with a focus on addressing risks from high-consequence, low-probability events. The Group reported no workplace fatality for employees and contractors in 2020, the first time since 2015.

CLP aims to provide an operating environment that encourages the reporting of safety-related incidents, as the development of a mature safety culture is a key goal of the Group's ongoing efforts to improve performance on health, safety and the environment (HSE). Safety leadership programmes were offered across business units in the region to provide leaders with the skills to support their teams and spread best practices among employees and contract workers.

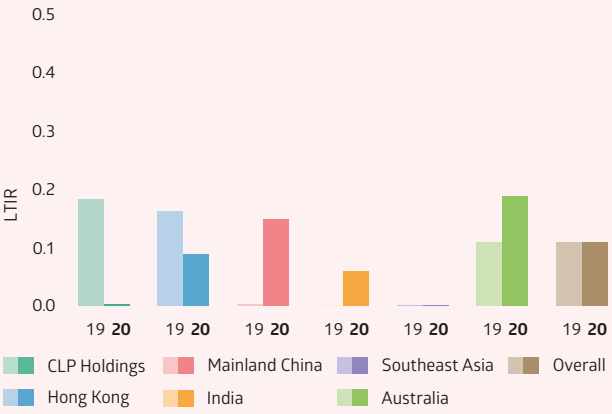
Rethinking risk is a key pillar of CLP's HSE improvement strategy, as the Group is committed to proactive measures to improve safety, moving beyond compliance. In 2020, CLP developed a new framework for Safety in Design (SiD), where risk is minimised in the design stage instead of relying upon post-design mitigations. This is supported by training to further increase capabilities in this area.

To help support the management of safety risks across business units, the Group is upgrading its internal management system to provide clear standards, with a focus on operations carrying higher safety risks. New documentation was released to support the revamped management system.

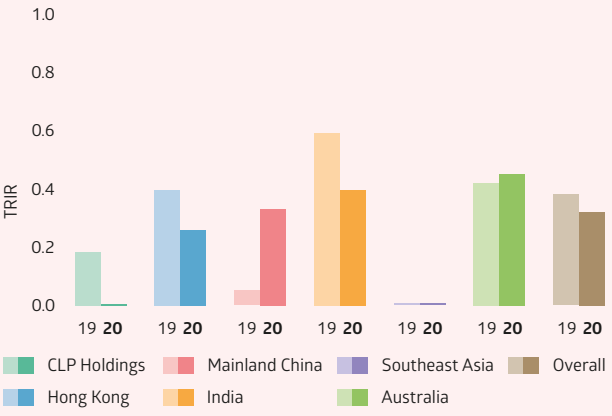
Group Lost Time Injury Rate and Total Recordable Injury Rate



Lost Time Injury Rate at Group and Regional Level



Total Recordable Injury Rate at Group and Regional Level



Notes:

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

2 To reflect the organisational restructuring of CLP*e* Solutions in 2019, its LTIR and TRIR are reported under CLP Holdings while the category of Overall represents the total LTI and total TRI divided by the total man-hour.

Key Performance Summary

At the end of 2020, CLP had 8,060 full-time and part-time employees, compared with 7,960 a year earlier. A total of 3,910 employees were engaged in the Hong Kong regulated electricity business, 417 in Hong Kong non-regulated electricity-related businesses, 609 in Mainland China, 2,762 by the businesses in India, Southeast Asia, Taiwan and Australia, with the remaining 362 employed by CLP Holdings in Hong Kong. Total remuneration for the year ending 31 December 2020 was HK$6,368 million compared with HK$6,054 million in 2019, including retirement benefit costs of HK$606 million compared with HK$593 million in 2019.

	2020	2019
Total Workforce [1]	**17,621**	18,979
Total Employees [2]	**8,060**	7,960
Workforce fatalities	**0**	1
Lost Time Injury Rate [3] (Workforce)	**0.11**	0.11
Gender Diversity		
– Group Executive Committee [4, 5]	**64% / 36%**	64% / 36%
– Employees [2, 4]	**74% / 26%**	74% / 26%
– Women in Leadership positions [6]	**27.3%**	24.2%
– Women in Engineering [7]	**11.5%**	11.4%
Voluntary Turnover [8]	**4.4%**	5.9%
New Hires	**711**	857
Percentage of employees on permanent contract [2]	**88%**	88%
Percentage of labour supply [9] and service contractors [10] in workforce	**55%**	59%
Percentage of employees who received training [2]	**97%**	94%
Average training hours per employee [2]	**42.5**	40.1

Notes:

1 Includes full-time and part-time employees, labour supply and estimated service contractors on a full-time equivalent (FTE) basis. FTE calculations are based on the number of man-hours incurred and country-specific average working hours.
2 Full-time and part-time employees.
3 See note 1 under Total Recordable Injury Rate at Group and Regional Level.
4 Male / female ratio. Data of other gender identities is tracked. It is statistically insignificant and is not separately disclosed.
5 Includes Executive Directors (Chief Executive Officer and Chief Financial Officer).
6 Leadership positions are defined as positions at Hay Reference Level 19 and above.
7 Employees with a bachelors' degree or above qualification in engineering.
8 Includes permanent employees only except for Mainland China, which includes both permanent and fixed-term contract employees due to local employment legislation.
9 Labour supply refers to manpower supplied by contractor companies under labour supply agreements. Reporting based on quarterly averages.
10 Estimated service contractors FTE are calculated based on the number of man-hours incurred and country-specific average weekly working hours.

Addressing Strategic Workforce Challenges

Industry, regional, social and demographic drivers are bringing unprecedented change to CLP and are redefining the people agenda. There is no single solution to meeting these challenges – it requires a coordinated and integrated range of strategic initiatives to build an agile, inclusive and sustainable workforce.

While conventional energy needs will reduce in significance, the resourcing needs of low-carbon energy, new energy solutions businesses and digitalised operating models will increase, together with addressing labour market challenges of an ageing workforce and increased competition for science, technology, engineering and mathematics (STEM)-qualified people. In 2021, millennials will make up around 44% of CLP's employees; this is expected to increase to 67% by the end of 2025. This digital-native generation of employees brings different expectations of work and how CLP should engage and support them. In this context, CLP must find ways to attract and retain a more gender- and culturally-diverse, multi-generational workforce and share talent effectively across the Group portfolio of businesses. Facilitating youth development, strengthening organisation capability to support CLP's new businesses in Hong Kong and the Greater Bay Area, equipping leaders to lead transformation under increasingly complex social and political influences, and accelerating gender diversity progress are key priorities in 2021.

Energy transition, digital evolution, and increasing social and political uncertainties and expectations in CLP's markets are driving the need for greater organisational agility: the ability to adapt and succeed in a rapidly changing environment. Early steps in CLP's path to agility are upskilling and empowering employees to respond rapidly to changing customer needs and drive breakthrough improvements, providing physical and virtual work environments that facilitate collaboration, and equipping employees to leverage new technologies. In 2021, cultural change efforts to encourage idea generation, experimentation and ownership will accelerate, along with helping employees adapt to structure and process changes over time.

As the energy industry evolves, CLP is committed to supporting its people to thrive in change. This means helping them to embrace change, strengthening their wellbeing and resilience and developing more inclusive workplaces, supporting increased gender, age and cultural diversity. In 2020, CLP invested in tools and resources to support employees' physical and mental wellbeing and also enhanced flexibility policies as part of its COVID-19 response. This focus will continue in 2021 as employees return to the workplace.

CLP is mindful that it operates in a social context where there is increasing concern over inclusive growth, and the preservation of basic rights and freedoms in the workplace along with equality of income and opportunity. Consequently, employees and other stakeholders expect CLP to demonstrate values-based management in dealing with potentially divisive social issues. The Group is focused on providing competitive, fair and sustainable benefits and support to employees in need. Work to operationalise CLP's commitments to respecting internationally-recognised human rights through the application of Group labour standards continues.

Attracting and Retaining Tomorrow's Workforce

Retaining the wealth of knowledge among CLP's employees, together with transferring skills to a new generation of managers and team members, is essential to CLP's long-term success, as is developing skills for a low-carbon, digitally enabled future.

Investing in building pipelines of skilled engineers and technicians in preparation for the energy transition and to address future skills shortages continue to be a key priority. A suite of new and refreshed development programmes targeted at Graduate Trainee and early- to mid-career levels was launched in Hong Kong in 2020, focusing on building future leadership capabilities and technical competencies, and accelerating the readiness of young engineers to take up leadership positions. These programmes aim to progressively develop technical, innovation, project, commercial and change leadership skills at different career stages and to increase exposure to different cultures through experiences in CLP's operations in Mainland China and further afield. In 2020, 32 Graduate Trainees and 27 Leaders of the Future management trainees commenced programmes. In addition, 16 high-potential engineers successfully concluded their participation in a cross-business engineering development programme. CLP continued to strengthen resourcing of innovation, major projects, business development and energy transition-related activities and projects, recruiting 32 senior hires in 2020 into critical roles. CLP's Group careers website was relaunched to enhance attractiveness to candidates interested in the new careers and opportunities that energy transition presents.

CLP's Executive Development Programme, targeted at enterprise leaders, was refreshed to strengthen development of the skills required to lead transformation under complex social and political influences. The programme combines leadership, energy transition and business simulation elements, and is conducted in partnership with the International Institute for Management Development (IMD), École Polytechnique Fédérale de Lausanne (EPFL), and Tilt Global.

In order to be ready for the opportunities provided by Greater Bay Area development, CLP continued to provide cross-cultural training opportunities for staff in 2020 through virtual delivery of programmes focused on national affairs, business leadership and management, offered by institutions including the Tsinghua School of Economics and Management and Ivey Business School. Over 70 professional and managerial staff participated in programmes in 2020. Staff based in Hong Kong and Mainland China continue to participate in cross-border secondment opportunities.

Recognising the challenges faced by students graduating during the COVID-19 outbreak, 59 graduate interns joined CLP in Hong Kong to gain work experience, half of which were in environmental fields (See case study on page 100). In total, CLP more than doubled the work opportunities for university and vocational college graduates in Hong Kong for 2020, compared to 2019.

In 2020, CLP's employees received 42.5 hours of internal and external training and development on average, compared with 40.1 hours in 2019. This reflected a strong focus on delivering critical health and safety, operational and compliance training together with pivoting to virtual delivery wherever possible.

Employee Training

	Average Training Hours per Employee	% of Employees Trained
By Gender		
Male	47.7	97.1%
Female	27.6	98.5%
By Professional Category		
Managerial	26.8	95.4%
Professional	34.9	98.1%
General & Technical	52.2	97.0%
By Region		
Hong Kong	49.5	98.4%
Mainland China	66.8	100.0%
India	33.8	69.9%
Australia	23.2	100.0%
Group Total	42.5	97.4%

Supporting Diversity and Inclusion

A diverse workforce and an inclusive culture support high performance and CLP's ability to operate effectively in the many communities in which it operates.

CLP has set several Group-wide gender diversity targets which support UN SDG's, particularly the commitment to SDG 8 – Decent Work & Economic Growth. Female representation at all levels was maintained or increased in 2020. CLP's Women in Leadership percentage increased to 27.3%, while Women in Engineering increased to 11.5%. This progress reflects the Group's commitment and efforts in attracting and developing female employees, and the focus on creating a diverse and inclusive workplace.

Increasing female representation in Graduate Trainee Programmes, ensuring that women are well-represented in development programmes, and retaining experienced female staff are key priorities. In 2020, CLP set an aspirational target to achieve gender balance over time in its Hong Kong Graduate Trainee intake (19% female in 2020) in order to address significant under-representation of women in operational professional and leadership roles. Efforts to develop women continued across the Group in 2020, including the mentoring programme for more than 40 female engineering students in Hong Kong to provide exposure to CLP's operations and help them become more work-ready, the annual Female Engineer Networking event with 26 female engineers participating from across the Group, and establishing a local Diversity and Inclusion Council in India. To date, seven female engineers have progressed from mentoring into CLP's Graduate Trainee Programme.

Inclusion is an essential ingredient that unlocks progress. Recognising this, EnergyAustralia established Gender Affirmation guidelines and new LGBTIQ+ community groups, receiving recognition for its efforts at the 2020 Australian Workplace Equality Index Awards.

Building Organisational Agility

The complexities of the energy transition, digital evolution and increasing social and political uncertainties and expectations in CLP's markets drive the need for greater organisational agility – the ability to adapt and succeed in a rapidly changing environment.

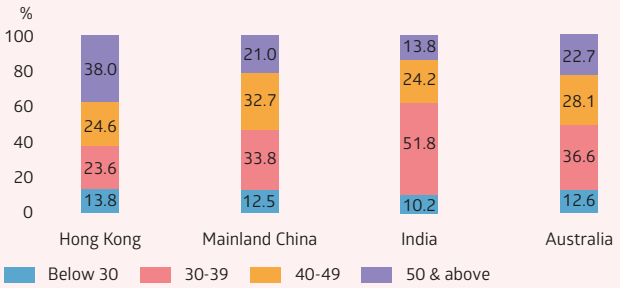
In response, the Group is developing and implementing action plans to upskill and empower employees to respond rapidly to changing customer needs and drive breakthrough improvements, provide physical and virtual work environments that facilitate collaboration, and equip employees to leverage new technologies. Looking ahead, cultural change efforts to encourage idea generation, experimentation and ownership will accelerate, along with helping employees adapt to structure and process changes.

More than 3,900 Hong Kong employees have now participated in Design Thinking training since launch in early 2019. The Design Thinking programme is intended to nurture a people-centric innovation culture in CLP Power, providing practical problem-solving frameworks for product and service development with users' needs in mind. To date, employees have applied Design Thinking in projects spanning across digital transformation, productivity, safety and customer service.

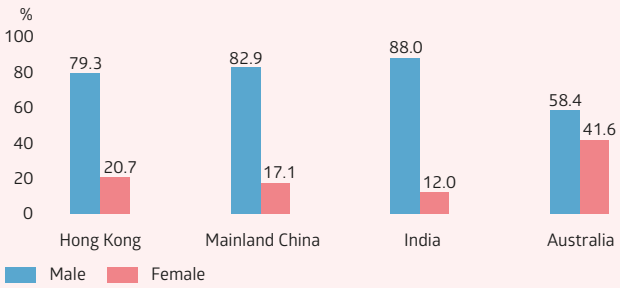
Across the Group, more agile team structures and working environments were established in Hong Kong and Australia to encourage collaboration and speed up decision-making. COVID-19 accelerated ongoing digital transformation and adoption of new ways of working to facilitate collaboration, with implementation of tools and policies supporting remote and flexible working.

In 2020, over 30 employees gained professional accreditation in data analytics skills, building their capability to leverage technology and data in new and insightful ways to enhance the customer experience and operation excellence. During the year, data analytics training was extended with over 300 employees completing courses ranging from awareness to advanced analytics skills.

Age Distribution by Region



Gender Distribution by Region



Note: Data of other gender identities is tracked. It is statistically insignificant and is not separately disclosed.

Voluntary Turnover Rate (%)

By Gender	
Male	3.6%
Female	6.7%
By Age Group	
Below 30	7.9%
30 – 39	5.6%
40 – 49	3.6%
50 & above	2.8%
By Region	
Hong Kong	3.1%
Mainland China	1.3%
India	4.7%
Australia	7.7%
Group Total	4.4%

Supporting CLP's People to Thrive in Change

As the energy industry evolves, CLP is committed to supporting all its people to thrive in change. In CLP, this means engaging and helping people to embrace change, strengthening their wellbeing and resilience, and developing more inclusive workplaces.

An engaged workforce is critical for CLP to deliver value. In 2020, CLP conducted employee engagement surveys across its Hong Kong and Mainland China and EnergyAustralia workforces. Pleasingly, response rates were high and employee engagement scores improved. While there is more to do to develop CLP's culture to support and enable transformation into a Utility of the Future, the improvement over the past three years is proof that actions taken are making a difference.

This year, CLP Power Hong Kong entered international human resources firm Randstad's Hall of Fame as one of the world's 12 most attractive employers in 2019, after having won "Most Attractive Employer in Hong Kong" three times in five years.

Through its Boost Health and Wellbeing programme in Hong Kong and similar programmes in India, China and Australia, CLP provided resources and training to support employees' long-term physical, mental, financial and social wellbeing and address additional stresses and challenges brought by COVID-19. CLP provided mental health first-aid training, online mental health wellbeing resources on how to stay mentally well during COVID-19, and training for over 300 managers in dealing with mental health and emotional issues in the workplace. CLP was recognised as a "Mental Health Friendly Supreme Organisation" by the Advisory Committee of Mental Health and Department of Health in Hong Kong for its ongoing efforts to promote mental health awareness and employee resilience. Additionally, an enhanced support programme for employees with long-term injuries or illness was launched in Hong Kong, providing individualised rehabilitation support to assist recovery and return to work.

CLP continued to help employees in Hong Kong to address housing affordability issues through its Home Loan scheme, which provides additional financial support for employees seeking to buy a first home. Since the scheme was launched in early 2019, 74 employees have received assistance. Company support for employees to undertake advanced degree studies was also enhanced.

Demonstrating Fair Work Practices

The Group's human resources policies and procedures are intended to ensure compliance 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 harassment, and those covering benefits and welfare in the markets in which it operates. CLP takes immediate action to investigate and address any suspected breaches or issues that are brought to its attention and carries out independent audits to identify any risks of legal non-compliance and to take remedial action if any risks are identified.

Beyond compliance, CLP recognises its responsibility to respect human rights at work, as laid out in international principles, standards and laws. CLP became a signatory of the World Business Council for Sustainable Development's Call to Action for Business Leadership on Human Rights, and of the Good Employer Charter established by the Labour Department of Hong Kong, pledging to be an employee-oriented employer implementing good human resource management practices. Human rights due diligence continued, with reviews of compliance with the Group's labour standards conducted in all business units, and with selected contractors in Hong Kong in preparation for progressively embedding CLP's standards into procurement requirements. Opportunities to strengthen controls on working hours in emergency and non-emergency situations were identified and are being addressed.

CLP prohibits the employment of child labour or forced labour in any of its operations. The steps it takes to prevent such practices included stringent checking and control procedures in selection and on-boarding processes, and training for key contractors who provide manpower or services to operations. CLP did not identify any operation or supplier as having a significant risk of child labour, young workers exposed to hazardous work or forced or compulsory labour in 2020. There was no breach of laws and regulations in relation to child and forced labour across CLP in 2020.

CLP monitors pay carefully to ensure that it is competitive and rewards employees for individual and company performance. It complies fully with any local legal requirements with respect to minimum wage, and in practice its remuneration and benefits often significantly exceed local legal requirements. Following certification of CLP's Hong Kong operations as a Fair Wage Employer in 2018, a follow-up assessment was conducted in 2020. This reaffirmed the certification, and recognised the market competitiveness of CLP's remuneration, progress made in providing pay progression opportunities for technical staff that encourage multi-skilling, and in enhancing employment status and pay for technical trainees to encourage them to take up careers in the power industry.

Core employee benefits are reviewed regularly to ensure they are fit for purpose and sustainable. Recognising its efforts to provide sustainable retirement benefits, CLP again received Good Mandatory Provident Fund (MPF) Employer and e-Contribution awards from the MPF Schemes Authority in Hong Kong, and an award for the Best ORSO (Occupational Retirement) Scheme in the 2020 Best of the Best Country Awards granted by Asia Asset Management.

Businesses around the world switched to working from home and flexible working arrangements during the pandemic. What has the impact been of these new ways of working on CLP, and how effectively do employees communicate, connect, and create in a virtual environment?

Grace Tam
Project Engineer
LNG Terminal Project
CLP Power Hong Kong

At CLP, we believe that providing employees with flexibility in their working arrangements helps to attract and retain a diverse, multi-generational workforce. We offer many forms of flexibility today and are mindful of offering choices that can be accommodated operationally given the nature of our business and that are fair across groups of employees with different work roles and home situations.

Since the outbreak of COVID-19 in 2020, our offices and sites in Hong Kong and other regional markets adopted flexible ways of working to ensure the safety of our employees while maintaining the continuity of business operations. These special work arrangements included work-from-home and flexible working hours.

Employees pivoted rapidly to working remotely or in split team arrangements for extended periods of time with team meetings, gatherings and training conducted via online conferences, webcasts or other tools. CLP's employees have demonstrated their resilience in delivering major projects, collaborating on business plans and maintaining community outreach efforts, all through virtual channels. Policies to embed flexible working post-COVID are now being piloted in Hong Kong, and EnergyAustralia is introducing a new team-based approach to flexible working.

Greater flexibility, including blended remote and office working, using virtual collaboration tools, more flexible office configurations and more flexible hours and work contracts, will become the norm. 2020 has accelerated putting the "hardware and wiring" in place – technology, policies and processes, and trialling new office environments. Our next step is to strengthen the "software". We are mindful of the need to support employees to manage the physical and mental health impacts of extended remote working, to feel safe and secure in transitioning back to the office and opening more digital channels for collaboration and two-way dialogue.

Eileen Burnett-Kant
Chief Human Resources Officer

Social and Relationship Capital

CLP is committed to working on solutions to address major societal challenges with its partners in communities across the Asia-Pacific region. Action and investment to build stronger communities and enhance their wellbeing not only fulfil the Group's responsibilities to the people it serves but also support the long-term, sustainable development of CLP's business as a leading energy provider.

Combatting the Pandemic Together

Global events in 2020 were overshadowed by the COVID-19 pandemic, an unprecedented crisis that mandated extraordinary policy measures to protect public health, and precipitated profound changes in the way people live and work. Millions of people around the world were infected by the virus, and strict social distancing and economic restrictions disrupted the lives of billions, with underprivileged groups in society and industry sectors such as travel and catering among the most severely impacted.

From the beginning of the outbreak in January 2020, CLP continued to support communities in its operating areas to improve the wellbeing of people in need and mitigate the socioeconomic impact of the pandemic. In keeping with CLP's long-standing commitment to effect positive change in society, the Group was determined to stand alongside communities and combat the pandemic together.

CLP Standing Alongside Its Communities to Combat the Pandemic

Hong Kong

- **Surgical masks** and **daily necessities** donated to the Hospital Authority, frontline medical staff, elderly, residents of subdivided flats, catering personnel and underprivileged groups
- **Disinfectant sprays** provided to around 70% of restaurants in Hong Kong to fight the virus and strengthen confidence among diners
- ***POWER FOUR* face shields** with energy saving tips cards distributed to kindergarten students
- **Dining coupons** provided for customers on Concessionary Tariffs for the Elderly and disadvantaged households
- **Laptop computers** donated to underprivileged groups to bridge digital divide during pandemic; **virtual visits** to elderly in elderly homes and day care centres using video conferencing software
- **Goody bags** given out to elderly people and the residents of subdivided flats
- Connecting **electricity supply** to Penny's Bay Quarantine Centre in record time to support anti-virus efforts

Mainland China

- **Medical supplies** including ventilators, temperature detectors, and sanitisers donated to hospitals, medical workers and residents
- Supporting installation of **water purifying systems** in schools near Sihong Solar Power Station to improve hygiene
- Distributing **caring kits** with face masks, sanitisers and leaflets on personal hygiene to local residents and students

India

- Partnership with the Confederation of Indian Industry and the Akshaya Patra Foundation to provide **anti-virus supplies** and **food**, benefitting 80,000 individuals
- Continuing programme to provide **food** and **hygiene kits** to students near CLP India's Veltoor plant
- Launching **COVID-19 resilience building programme** including sanitation improvement and emergence response training

Australia

- Size of **customer support team** for customers in financial distress significantly increased to handle increased enquiries
- Increased programme to help residential customers **manage energy bills** amid economic uncertainty
- Protecting financially-challenged customers from service disconnections

CLP donated surgical masks and daily necessities to the Hospital Authority in Hong Kong to support the needs of frontline medical staff in the early stages of the outbreak. CLP also partnered with non-governmental organisations including the Hong Kong Community Anti-Coronavirus Link and the Lok Sin Tong Benevolent Society, Kowloon to distribute anti-virus supplies to schools and needy families. The CLP Volunteer Team worked with charitable organisations including Sik Sik Yuen to distribute daily essentials to elderly people and tenants of subdivided units (SDU). Surgical masks and hand sanitisers have also been distributed to catering personnel through the Occupational Safety & Health Council. One million pieces of masks have also been donated to around 20,000 SDU tenants.

In Mainland China, CLP delivered medical supplies including ventilators, temperature detectors, and sanitisers to hospitals, medical workers, and residents, with a focus on communities near its operations. CLP also supported the installation of water purifying systems in schools near Sihong Solar Power Station in Jiangsu Province to improve hygiene as part of its anti-virus efforts. CLP India meanwhile went into partnership with the Confederation of Indian Industry and the Akshaya Patra Foundation to provide anti-virus supplies and food for people in communities near its operations.

Targeted, Impactful Community Support

In addition to its devastating public health impact, the COVID-19 pandemic led to massive economic challenges in countries around the world. CLP focused on devising targeted programmes tailored to practical community needs.
In Hong Kong, CLP provided dining coupons for customers on concessionary tariffs and underprivileged families, boosting business for restaurants during the challenging economic environment. Disinfectant spray was also given out to around 12,000 restaurants – about 70% of the total in Hong Kong – to help give customers more confidence in dining out.

CLP announced in November that more customers would receive dining and retail coupons, with 800,000 households benefitting along with more than 2,000 participating outlets in 2021. The new CLP Retail and Catering Coupons programme is part of more than HK$160 million worth of projects to be funded by the CLP Community Energy Saving Fund, supporting people in different sectors of society and stimulating consumer spending in a challenging economic environment. Increased retail spending has a multiplier effect and is an effective way to inject momentum into the economy. Funding will also go to other projects, such as electricity subsidies for tenants of subdivided units and assistance to help people in transitional housing purchase energy-efficient electrical appliances.

As an essential service provider, CLP is committed to its responsibility to deliver a reliable energy supply to customers as more people work from home and school classes are held remotely. CLP maintained consistently reliable services to customers in the Asia-Pacific region throughout 2020 as the COVID-19 situation unfolded, prioritising measures to safeguard the health and safety of customers, employees, and contractors.

Bridging the Digital Divide

Digital communication tools have been necessities amid steps to reduce interpersonal contact and limit the spread of COVID-19, leaving underprivileged people without access to technology at risk of becoming further disadvantaged.
To help bridge the digital divide, CLP provided laptops to low-income families in Hong Kong to support remote learning for children during the pandemic. CLP volunteers also provided computer training to parents to help them use digital technology effectively at home.

Although social-distancing restrictions reduced the opportunities for physical meetings, CLP used digital technology to support people in need. Virtual visits to elderly homes and day care centres using video conferencing software were held in Hong Kong in June to celebrate the Tuen Ng Festival as part of the Sharing the Festive Joy programme. Organised in partnership with Po Leung Kuk, the Tung Wah Group of Hospitals, and Yan Chai Hospital, the online visits were the first of their kind in Hong Kong and opened a new window for people to maintain regular external interactions despite COVID-19 restrictions. Digital technology also allowed CLP volunteers to continue a programme supporting the families of elderly people with early signs of dementia, despite home visits being suspended.

Increasing Opportunities for Young People

CLP continued to focus on initiatives to promote youth development, recognising the importance of empowering young people and creating opportunities for them to flourish and contribute to a brighter future.

The economic shocks of the COVID-19 pandemic have impaired the employment prospects for workers around the world, in particular younger people with limited work experience. In response to the increased challenges faced by graduates, CLP more than doubled its recruitment of university and vocational college graduates in Hong Kong in 2020 compared with a year earlier. Around 60 one-year internships were offered for university graduates in engineering, environmental affairs, information technology, finance, sales and marketing, and human resources under the CLP Graduate Internship Programme. CLP also took on around 70 university graduates and secondary school students through the CLP Graduate Trainee Programme and the CLP Technician Trainee Programme.

Case Study

CLP Graduate Internship Programme

Winnie Ma, who graduated from Lingnan University in Hong Kong with a major in Human Resources Management in 2020, had to rethink her job-hunting strategy after failing to get any response to around 30 applications.

"The job market is very challenging, and I didn't receive a single reply to my initial job applications," says Ms Ma. Instead of focusing only on finding full-time roles in the finance, consumer goods, and technology sectors, she started to consider part-time or temporary employment in other industry sectors before eventually securing a two-month role as an office administrator at Lingnan University. After completing her temporary contract at the university, Ms Ma became one of the successful new recruits in the CLP Graduate Internship Programme in 2020, with a position in the Human Resources department.

"The internship programme has helped to open up more opportunities for graduates, at a time when economic conditions have reduced the number of full-time openings in the job market," Ms Ma says.

Ken Ng, who graduated in Energy Science and Engineering from the City University of Hong Kong in 2020, also joined CLP as a recruit in the Graduate Internship programme in September 2020, eight months after making his first job application.

"A lot of students were aware 2020 was going to be a tough year so we started planning early," says Mr Ng, who joined the commercial department in CLP's Mainland China business through an internship based in Hong Kong.

"There are many exciting new developments in the energy sector at the moment, and many of the trends I used to learn about at university are happening in the real world right now," Mr Ng says.

To provide financial assistance to students on vocational and professional education and training (VPET) courses, CLP set up a new HK$1.5 million award programme. Up to 75 students enrolled in VPET programmes run by the Vocational Training Council will receive subsidies of HK$20,000 each to support their academic and career development.

The CLP Power Academy, established in 2017, continued to provide a range of part-time accredited programmes for individuals seeking a career in power engineering, from junior secondary school leavers lacking relevant qualifications to existing industry practitioners. The academy works in partnership with tertiary institutions in Hong Kong and overseas to provide programmes from diplomas to bachelor's and master's degrees. In 2020, the CLP Power Academy established exchange and cooperation agreements with the Guangzhou Mechanics and Electronics Technician College and Guangzhou Public Utility Technician College to jointly promote professional training and mutual recognition of training programmes by Guangzhou and Hong Kong.

CLP continued to strengthen efforts to promote energy efficiency and conservation education in the community. Since January 2020, schools, educational institutions and non-profit making organisations in Hong Kong could apply to the CLP Education Fund for financial support for education and publicity projects on energy efficiency and conservation. Seven applications have been approved, supporting programmes and events including seminars, workshops, competitions and web-based learning, benefitting more than 28,000 members of the public including students, teachers and parents.

CLP joined the City University of Hong Kong's "Industry Ready Programme" to offer mentoring guidance and on-the-job training to undergraduates in the School of Energy and Environment. The programme will equip students with well-rounded theoretical and practical knowledge related to energy audit and energy management, and help them prepare for future career development in the energy, environmental and sustainability fields. In addition to CLP, six professional bodies and companies also joined the programme.

CLP India teamed up with the School of Vocational Education at the Tata Institute of Social Sciences on a programme to train 2,000 youths in renewable energy and healthcare skills, using online technologies because of the pandemic. Students who benefited from CLP India's midday meals programme near the Hubli and Veltoor plants continued to receive meals along with hygiene kits when COVID-19 forced schools to close.

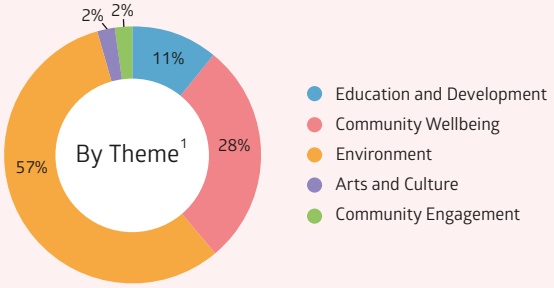
Building a Brighter Future Together

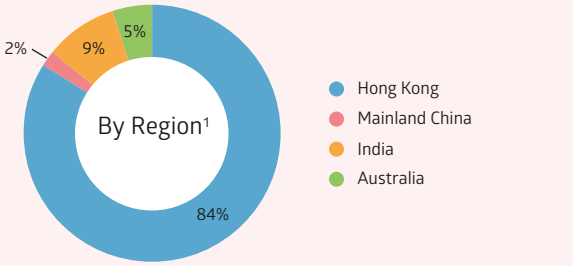
CLP worked closely with community partners in the Asia-Pacific region through a traumatic and testing year and remains committed to providing further support and action as billions of people globally are affected by the pandemic.

As CLP marks its 120th anniversary in 2021, the Group is determined to make the milestone year one in which it deepens its cooperation with partners across the region to continue to create a positive impact and support communities recovering from the effects of the pandemic. CLP will stay true to its long-cherished core values and support projects and programmes that help people in need and promote community wellbeing, working alongside partners as it pursues its mission to create "Energy for Brighter Tomorrows".

Community Initiatives and Volunteering

Our Community Spending



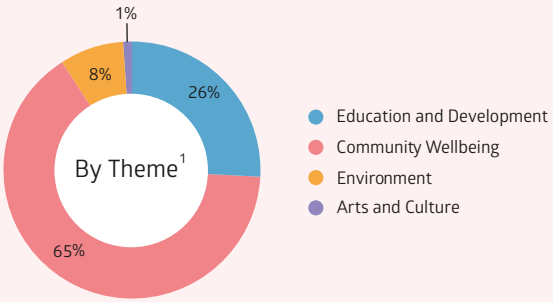


Impact

468 programmes were initiated or supported

263 organisations benefitted

918,555 direct beneficiaries



Contributing Our Time

10,973 volunteer hours by CLP staff and family members

Note:

1 Figures include rounding adjustments.

Material Topic

Reinforcing Data Protection

This section discusses how our efforts to build long-term stakeholder relationships help tackle key societal challenges and contribute to the long-term sustainability of our business. The section also discusses our efforts to protect the data of our customers.

Safeguarding Customers' Data Privacy

Respect for people is a core value of CLP, and the Group is committed to protecting the data of its customers at all times. In 2020, no customer privacy and data loss cases were reported or noted in CLP's operations in Hong Kong,

Nine notifiable data breaches involving EnergyAustralia were reported to the Office of the Australian Information Commissioner (OAIC) in 2020. The breaches were predominantly associated with phishing by impersonators. The breaches did not result in any penalty or sanction and EnergyAustralia is reviewing the implementation of additional or improved controls to uplift customer verification before accessing account information.

CLP is committed to decarbonising its business and pursuing low-carbon investment opportunities as the challenge of climate change becomes more urgent. The scale of destruction by wildfires in Australia and on the US west coast, and the increasing frequency and severity of extreme weather events such as tropical storms, have further galvanised international efforts to reduce greenhouse gas emissions. The global COVID-19 pandemic meanwhile focused attention on the critical importance of taking timely action based on scientific evidence.

Material Topic

Responding to Climate Change

This section discusses CLP's strategies for decarbonising its business and minimising environmental impact as the Group continues to contribute to global efforts to address the challenges of climate change.

Towards Decarbonisation

CLP continued its ongoing transition into a lower-carbon business in 2020 by moving forward with key decarbonisation projects in the Asia-Pacific region despite the challenges of COVID-19. Carbon intensity fell to 0.57 kg CO_2 / kWh, below the Group's interim target of 0.60 kg CO_2 / kWh under Climate Vision 2050. CLP remains committed to meeting future targets, which will be further strengthened as part of a review of Climate Vision 2050 currently underway.

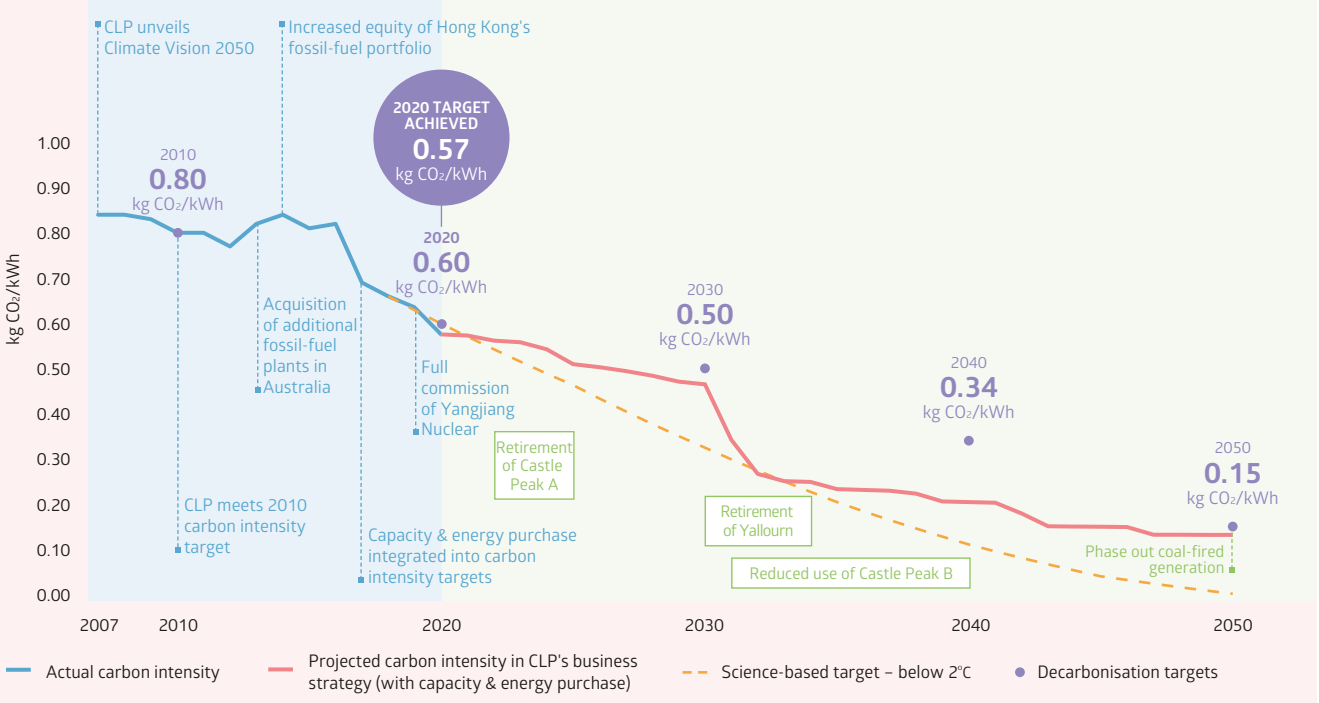
The commissioning of the new 550MW CCGT gas-fired generation unit at Black Point Power Station enabled an increase in the use of natural gas to about 50% of CLP's fuel mix in Hong Kong in 2020, and reduced the proportion of coal power. The 10MW West New Territories Landfill project began operations, using landfill gas as a renewable energy source.

CLP commissioned its new 50MW Laiwu III Wind Farm in Shandong province in September, further expanding its renewable energy operations in Mainland China. CLP India meanwhile acquired two operational solar farms, with capacities of 30MW and 50MW, in the southern state of Telangana.

While CLP achieved its 2020 decarbonisation target to reduce carbon intensity under Climate Vision 2050, the Group did not meet two supporting clean energy objectives. Renewable energy capacity was 13.5% of CLP's overall portfolio as of 31 December 2020, short of the target of 20%. Non-carbon-emitting generation capacity was 24.4%, against a target of 30%.

The Group's clean energy portfolio was reduced by the partial divestment of CLP India in 2018. Meanwhile reductions in government subsidies for renewable energy in Mainland China and India in recent years have affected the business models of new projects and curtailed potential revenue streams. Going forward, opportunities for renewable energy investment are expected to increase due to lower-cost solar and wind energy technologies.

CLP Group's Carbon Intensity



Note: The plant retirement timeframes are indicative only.

Climate Vision 2050 is integrated into CLP's strategies on asset portfolio management, including those for acquisitions and divestments, guiding the Group in managing climate-related opportunities and risks. Under Climate Vision 2050, CLP has committed not to make any additional investments in coal-fired generation capacity, and to phase out all remaining coal assets. In October, CLP sold its interests in the Vung Ang II coal-fired project in Vietnam, and is in the process of exiting the Vinh Tan III project in the country.

Exploring New Low-Carbon Opportunities

In line with Climate Vision 2050, CLP is focused on investment opportunities in emerging low-carbon businesses, including renewable energy generation, nuclear energy, transmission and distribution, energy storage, and smart energy services, to support the Group's future growth as coal-based assets are progressively phased out.

Construction in CLP India's new 250.8MW Sidhpur wind project in the western state of Gujarat started after engineering, procurement, and construction contracts and operation and maintenance agreements were finalised with project partners. Despite a delay caused by logistical issues related to COVID-19, the new project will be a significant addition to CLP India's renewable energy capabilities when it is completed in the first half of 2022. It will be the largest wind energy asset in the CLP Group in terms of generation capacity.

The Chinese Government announced in September it intends to make the country carbon-neutral by 2060. This goal is favourable to the development of a clear and stable policy environment to support the long-term investments in clean energy needed to further decarbonise the electricity sector and the wider economy.

CLP continued to move ahead with plans to construct the new Qian'an III Wind Farm in Jilin province. Unlike other renewable energy assets in CLP's portfolio in Mainland China, Qian'an III is a grid-parity project that is not dependent on Government subsidies, as the declining cost of wind energy infrastructure enables the Group to take advantage of an important new commercial model for the development of clean energy.

Lower-cost wind power technologies are also opening up opportunities for CLP in Hong Kong. Advances in wind turbine equipment and improved cost efficiency may make offshore wind power development more commercially viable as CLP studies the feasibility of a project in Hong Kong's south-eastern waters. As the Hong Kong Government formulates policies for long-term decarbonisation to achieve carbon neutrality in 2050, potential reductions in the cost of offshore wind power may add impetus to renewable energy development in the city, where scarcity of land has been a limiting factor.

Alongside the newly-commissioned CCGT generation unit at Black Point, CLP continued to make progress with the development of a second additional gas-fired generator at the power station using similarly emission-efficient technologies. Both projects will help facilitate the retirement of older coal-fired power generation capacity at Castle Peak A Power Station and support the ongoing lower-carbon transition of Hong Kong's electricity market.

EnergyAustralia signed an offtake agreement with Genex Power Limited for full dispatch rights to the 250MW Kidston pumped storage hydro project in northern Queensland on a site converted from disused gold mines. The arrangement adds to EnergyAustralia's commercial interests in the Ballarat and Gannawarra battery storage projects in Victoria, supporting the development of a cleaner electricity market in Australia by addressing the intermittency of renewable energy sources.

Concerted Action to Fight Climate Change

Recent climate commitments from the Chinese and Hong Kong Governments, in addition to similar announcements from policymakers in Europe and Asia, are welcome signs of increasing momentum in efforts to address climate change. Despite concerns that the COVID-19 pandemic may derail climate action in the private sector, corporations around the world have stepped up initiatives to decarbonise and make businesses more sustainable, while ESG investments have provided returns on capital that have matched or exceeded the performance of traditional investments.

More than 1,500 organisations around the world have embraced recommendations for transparency in reporting by the Task Force on Climate-related Financial Disclosures (TCFD), 85% more than a year earlier, according to data released in October. CLP continued to enhance its disclosure with reference to the recommendations from the TCFD. Throughout 2020 focus was placed on enhancing climate-related risk assessment and developing bespoke climate scenarios for the markets where the Group is present. More information is available in CLP's Sustainability Report. SR

Changes in political leadership in the US and other major economies in 2021, combined with intergovernmental forums including the United Nations COP26 climate summit in November 2021, are expected to add to momentum for concerted action to combat climate change by policymakers, businesses, and financial investors.

Care for the Environment

CLP is determined to achieve continuous improvements in its environmental performance, supported by the latest technologies and an undertaking to further strengthen data reporting. Under CLP's updated Health, Safety, Security, and Environmental Policy issued in May, the Group affirmed care for the environment as one of its core commitments. CLP's performance in key environmental areas is summarised in the table below.

Environmental Category	Aspect	Parameters	2020	2019
Emissions	Greenhouse gases	Total CO_2 emissions[1]	**43,808kt**	50,412kt
		Carbon intensity	**0.65kg CO_2 per kWh / 0.57kg CO_2 per kWh**[2]	0.70kg CO_2 per kWh / 0.62kg CO_2 per kWh[2]
	Air pollutants	Total SO_2 emissions	**48.0kt**	44.7kt
		Total NO_x emissions	**43.2kt**	47.0kt
		Total particulate matter emissions	**6.9kt**	7.7kt
	Water discharged	Total water discharged	**5,200.3Mm^3**	5,337.1Mm^3
	Waste	Total solid waste produced	**19,404t**	14,206t
		Total liquid waste produced	**1,094kl**	1,637kl
Resource Use	Fuel	Total coal consumed	**403,379TJ**	485,453TJ
		Total gas consumed	**134,776TJ**	107,183TJ
		Total oil consumed	**2,243TJ**	2,620TJ
		Non-carbon emitting generation capacity %	**20.9% / 24.4%**[2]	21.1% / 24.9%[2]
		Total renewable energy capacity%	**12.8% / 13.5%**[2]	12.8% / 13.7%[2]
	Water	Total water withdrawal	**5,229.2Mm^3**	5,377.4Mm^3

Notes:

1 Scope 1 & 2 CO_2 emissions of CLP's generation and energy storage portfolio on an operational control basis. Energy storage assets include pumped storage and battery storage. Prior to 2020, the portfolio included generation assets only.

2 Equity basis / equity plus long-term capacity and energy purchase basis

Power generation facilities under CLP's operational control are required to achieve third-party certified ISO14001 environmental management certification within two years of acquisition, or from the beginning of operations. All assets in this category have successfully certified their environmental management system to the ISO14001: 2015 standard in 2020.

Air Emissions

New technologies and practices continued to help CLP meet and exceed increasingly stringent regulatory requirements on air emissions in the markets in which it operates.
The operation of the new CCGT generation unit at Black Point Power Station supported CLP's air emissions performance in Hong Kong, where it continued to fully comply with emission limits. CLP continued to be vigilant to prevent the leak of sulphur hexafluoride (SF_6), a greenhouse gas, throughout the life cycle of the electrical equipment in transmission line assets. CLP has also explored non-SF_6 gas equipment in the market and trial-used 11kV non-SF_6 gas switchgear.

Full operation of the flue gas desulphurisation (FGD) units at CLP India's Jhajjar Power Station since 2019 supported a continuing improvement in sulphur dioxide (SO_2) emissions. Jhajjar is the first and only power station in the National Capital Region to have FGD technology installed, helping reduce air pollution and contributing to a healthier environment around the plant and in nearby regions.
In Mainland China, Fangchenggang Power Station continued to perform well after earlier upgrades of emission control equipment for SO_2 and nitrogen oxide (NO_x). Across the Group, SO_2 emissions increased due to higher generation at Mount Piper Power Station in New South Wales.

In South Australia, the installation of a new fast-start gas generator at Hallett Power Station increased fuel efficiency. The new generator uses less fuel than other units at the plant, improving its NO_x and carbon dioxide (CO_2) emissions performance.

Waste

Total solid and liquid waste generated was higher, as construction waste from projects increased at Castle Peak Power Station and Black Point Power Station, while hazardous solid waste increased from maintenance activities at Fangchenggang and Yallourn power stations. Despite the challenges of COVID-19, CLP continued to implement waste management programmes and initiatives across the Group.

Despite the national lockdown, Jhajjar Power Station achieved a 100% utilisation rate for ash generated by its processes. Apart from its enhanced ash handling systems, Jhajjar ensured contracts were in place with cement manufacturers, construction industries, and other traders for reuse and recycling of ash, as well as pursuing other opportunities, including brick manufacturing and bridge construction projects.

In Hong Kong, CLP continued to encourage employees to reduce the use of single-use plastics for take-away meals and home delivery since the outbreak of COVID-19. The rollout of a new electronic meal ticket system in the canteens of Castle Peak and Black Point power stations has helped to save about 260,000 paper tickets a year.

In 2020, Fangchenggang Power Station used around 1,150 tonnes of white mud waste by-product from paper mill factories to partially replace the use of limestone in the FGD process. Since 2017, Jinchang Solar Power Station has been returning damaged solar panels to manufacturers for recycling. More than 2,000 solar panels have been recycled since the initiative's launch.

Water

CLP is committed to using water resources responsibly and sustainably in all of its operations and to ensure its assets withdraw water according to their licence entitlements.

Thermal plants use large quantities of sea water for cooling, and there is a slight temperature increase when the water is returned to the sea. As in previous years, the total water withdrawal and discharge from freshwater and municipal sources by CLP was determined by the electricity generation of its operating assets.

The Springvale mine water treatment plant was commissioned in the first quarter of the year to supply Mount Piper Power Station with around 80% of its daily water needs. The initiative has resulted in significantly less water being drawn from river catchments for the plant, and has lowered the risk of contaminated water from the mine entering rivers. Mount Piper is one of three coal-fired power stations in the CLP Group to adopt a zero-liquid discharge approach to conserve water, while other generation assets continued to implement water-saving initiatives.

Sihong Solar Power Station in Mainland China and Veltoor Solar Farm in India successfully deployed robotic cleaning, with brushes replacing the use of water. These projects not only eliminated the use of water for cleaning but could also potentially increase the efficiency of electricity generation by making the panels more productive. In 2020, Huai'an Solar Power Station started to implement the technology, while Sihong has expanded its deployment to cover increased areas of the plant.

CLP continued to participate in the international CDP Water Survey, working with industry peers to benchmark and share best practices related to water resource management.

Environmental Conservation

The Hong Kong Offshore LNG Terminal Project, jointly developed by CLP Power Hong Kong and The Hongkong Electric Company, established two funds to support environmental enhancement initiatives for marine ecology and conservation and sustainable development of the fishing industry.

The first – the Marine Conservation Enhancement Fund – supports initiatives related to the conservation and enhancement of the marine habitat, including initiatives on eco-tourism and education. The second – the Fisheries Enhancement Fund – supports initiatives for fisheries-related education and tourism, enhancements to fisheries resources, sustainable fishery development, and fishery equipment upgrade programmes, such as the purchase of environmentally-friendly fishing equipment. Both funds were opened for a first round of applications from October to November.

Environmental Regulatory Compliance

In 2020, there were no environmental regulatory non-compliance incidents resulting in fines or prosecutions at any of CLP's operating sites.

There was one minor licence limit exceedance incident for NO_x emissions at Jhajjar in India that did not result in any penalties.

In Australia, three environmental license non-compliances were reported. There was a minor chemical spillage incident at Newport Power Station, involving ferrous sulphate, and there was also a minor brine waste leakage incident at Mount Piper. Environmental agencies were notified and no fines or penalties were imposed. At Mount Piper, there was also an administrative breach of water quality monitoring requirements under the new license. Corrective action has been taken to prevent a repeat of these incidents.

Environmental Regulatory Non-Compliances and Licence Limit Incidents

	2020	2019	2018	2017	2016
Environmental regulatory non-compliances resulting in fines or prosecutions	**0**	0	0	0	0
Environmental licence limit incidents and other non-compliances	**4**	10	2	13	2

Regulatory Developments

CLP has started discussions with the Hong Kong Government on the review of the latest Technical Memorandum for new emissions caps for power stations from 2026. Since the first memorandum in 2010, emission allowances for SO_2, NO_x and respirable suspended particulates (RSP) have been reduced by 71%, 44%, and 44% respectively. With the new CCGT unit at Black Point and another gas-fired unit of similar capacity planned for commissioning by 2023, emissions will be further reduced along with other improvements in generation efficiency.

In India, Jhajjar Power Station made preparations to comply with revised NO_x emission limits. The revision was formally gazetted in October.

In Australia, Mount Piper is implementing measures and controls to ensure compliance with the tightened emission limits specified in its new license. The Environment Protection Authority in Victoria released a draft licence for Yallourn Power Station which covers a variety of environmental matters, including tightened emission limits and monitoring requirements. EnergyAustralia is engaging with the authority and hopes to finalise the licence in early 2021. Detailed site investigations of per- and polyfluoroalkyl substances (PFAS) in soil and groundwater at the Jeeralang and Newport power stations have been completed and a remediation action plan developed to guide a clean-up strategy which will be deployed in 2021. New State Government environmental legislation due to come into effect in Victoria in July has been deferred by 12 months because of COVID-19. Planned new legislation on greenhouse gas emissions reduction targets in the state has also been deferred until 2021.

What opportunities and challenges are being presented to CLP as China officially launched the National Emission Trading Scheme early this year? Any opportunities and challenges for other countries?

Mr Dennis Ip

Regional Head of Power, Utilities, Renewables & Environment Research, Daiwa Capital Markets Hong Kong Limited

Progress in the development of the emission trading scheme at a national level this year is a significant step by the Chinese Government to further expand the use of market-based mechanism to reduce greenhouse gas emissions. In the first stage, the national scheme covers more than 2,000 power plants across the country, before expanding to other sectors of the economy. The national scheme builds on the experiences from the operations of earlier pilot emission trading schemes at provincial levels, and CLP's Fangchenggang Power Station in the Guangxi Zhuang Autonomous Region has been taking active steps to use the new trading mechanism to optimise carbon emission management and reduce carbon emission.

Internationally, the latest data from the World Bank showed that just over 20% of global greenhouse gas emissions are now covered by carbon pricing or emission trading schemes, and there is clearly potential for the proportion to increase further. Market-based mechanisms have a major role in creating the economic incentives needed to accelerate progress in decarbonisation.

Non-carbon businesses including renewable energy and nuclear energy now contribute most of CLP's operating earnings in Mainland China, and we continue to focus on pursuing low-carbon opportunities in the market. The costs for wind and solar power generation technologies have been steadily decreasing, making new projects commercially competitive with fossil fuels. We expect that the Chinese Government's target to achieve carbon neutrality by 2060 will underpin a stable, long-term framework that is necessary to drive investments to decarbonise the country's energy industry and other sectors of the economy.

Decarbonisation is integral to the CLP Group's business. We achieved our cornerstone interim target to reduce the Group's carbon intensity to below 0.6 kg CO_2 per kWh in 2020 and we plan to further strengthen the Group's targets for decarbonisation this year, to reflect developments in the policy environment and emerging technologies.

David Simmonds

Group General Counsel and Chief Administrative Officer, Company Secretary