

Enabling our enduring focus on long-term growth, creating value for our stakeholders.

Overview

CLP provides sustainable energy solutions to create value for capital providers, customers, employees and the wider community. We aim to be a leading responsible energy provider, from one generation to the next, in order to deliver our purpose: to Power Brighter Tomorrows.

Major utilities like CLP have an important role to play in the functioning of society, acting as trusted partners to customers, governments, regulators and the community as a whole in our collective journey to a decarbonised future. We have also been the employer of choice to engineering and other top talent, and form a key part of the energy value chain, both as a consumer and provider of energy and related services. We understand the responsibilities inherent in serving the community as a utility and strive to set a benchmark for excellence in our service delivery.

As we seize the opportunities associated with the industry's growth, driven in large part by the decarbonisation, electrification and digitisation of infrastructure, we are mindful of the benefits that a strategic approach to sustainability can bring.

That's why CLP conducts comprehensive annual materiality assessments to evaluate and respond to the sustainability matters most likely to impact our business and stakeholders. These assessments ensure our corporate strategy and sustainability ambitions remain aligned, help us respond to evolving stakeholder needs, uncover emerging sustainability risks and opportunities, and support transparent public reporting.

Adopting the double materiality approach

This year, CLP continues to adopt the double materiality approach, which was first applied in 2021 based on a three-year cycle. The double materiality concept expands the traditional focus of materiality on stakeholder impacts to also consider the financial effects of sustainability topics that may reasonably be expected to affect the business's cash flows, access to finance or cost of capital in the short, medium and long term, and these topics are covered by this *Delivering Our Sustainability Agenda* chapter in the Annual Report. The <u>Sustainability Report</u>, meanwhile, focuses on sustainability topics that have a material impact on people, the environment and the economy. With 2023 being Year 3 of the cycle, the focus of the assessment was on revalidation of the findings from Year 1 and Year 2, and the incorporation of incremental changes. The double materiality assessment complements CLP's risk management process, which is detailed in the *Risk Management Report* in the Annual Report and takes into account the material topics identified by the assessment.

When preparing the 2023 reporting suite, we voluntarily made reference to the recently released International Sustainability Standards Board's (ISSB's) IFRS S1 and S2 Standards, which relate to general purpose sustainability financial disclosures and climate-related financial disclosures respectively. While our Annual Report does not meet all the provisions of the standards yet, we have made strong progress in closing the gap. In addition, our materiality assessment process and results were externally assured for the first time to underline the rigour of our methodology and long-standing commitment to best practice sustainability strategy and reporting.

Identifying and assessing our sustainability agenda

In 2021, we identified nine megatrends that were most likely to affect our business and operating environment. Following a detailed review in 2023, the megatrends are confirmed to remain relevant in CLP's current operating context.

The megatrends form the basis for us to identify and assess sustainability-related impacts, risks and opportunities (IROs). In addition, we drew on a range of internal and external sources – including CLP strategy and risk documentation, extensive interviews collating views from internal stakeholders, and scrutiny of the latest reporting standard to determine those IROs.

This comprehensive process initially identified 69 IROs, which were then assessed for materiality using our own enterprise risk framework and by incorporating the latest ISSB and Global Reporting Initiative (GRI) guidelines.

After evaluating for magnitude/severity and likelihood, 49 IROs were assessed as "High" or "Extreme" and therefore material to CLP. These sustainability-related IROs were organised under six material topics and 18 sub-topics. The six topics play a key role in informing CLP's strategy, keeping its risk register up-to-date, supporting its reporting initiatives and generating sustainable returns for CLP's capital providers in 2024 and beyond.

The assessment process was conducted by a working group of internal and external materiality experts, with participation from CLP's Group Sustainability, Group Risk Management, Investor Relations and Corporate Affairs teams. Assessment outcomes were refined and validated by the Sustainability Executive Committee and endorsed by the CLP Holdings Sustainability Committee.



6 Material Topics and 18 Sub-topics

- Transition to Net Zero
- Energy Growth Opportunities
- Energy Security and Reliability
- A Safe, Future-Ready Workforce
- Business Resilience
- Community Stewardship

What are IROs?

Sustainability-related financial risks and opportunities

CLP seeks to manage and respond to those sustainability-related financial risks and opportunities which may reasonably be expected to affect our cash flows, access to finance or cost of capital in the short, medium and long term. With reference to the IFRS guidance, we then disclose material information about these risks and opportunities to investors in this *Delivering Our Sustainability Agenda* chapter in the Annual Report. Information is considered material if omitting, misstating or obscuring it could reasonably be expected to influence investment decisions.

Stakeholder impacts

CLP also manages and responds to significant positive or negative impacts on people, the environment and the economy. These impacts, which are set out in the GRI Standards, are covered in the <u>Sustainability Report</u> and address the concerns of a broad range of stakeholders on CLP's positive and negative contributions to sustainable development.

CLP's sustainability agenda

The following six sections are dedicated to the discussion of the sustainability-related financial risks and opportunities that were considered "High" or "Extreme" by the assessment.



TRANSITION TO NET ZERO

CLP is decarbonising its existing asset base, investing in electricity infrastructure, ensuring the delivery of reliable and reasonably priced energy, and acting as a trusted partner for customers, communities, governments and investors in the transition to a just and fair energy future.

ENERGY GROWTH OPPORTUNITIES

Different regulatory environments across CLP's markets affect growth opportunities locally. In Mainland China, especially in the Greater Bay Area, opportunities are significant due to the region's large population and its proximity to CLP's home market of Hong Kong. This offers prospects for mutually beneficial joint venture partnerships with public and private sector partners to accelerate the energy transition in line with government objectives, scale up electricity generation to meet rising demand as other sectors electrify, and introduce new energy products and services that meet customer needs.

Ű

ENERGY SECURITY AND RELIABILITY

Energy security and reliability have been impacted by an uncertain geopolitical environment and supply chain disruptions over recent years. Higher fuel prices have resulted in assets running at reduced capacity, which has increased costs for CLP and its customers alike. The Group must balance two vital and sometimes competing objectives: providing customers with reliable and affordable energy while continuing to make progress with its decarbonisation objectives.



A SAFE, FUTURE-READY WORKFORCE

CLP's long-term success relies on its capability to attract, develop and retain a workforce that is safe and healthy, diverse and inclusive, skilled for the future, and well-supported to fulfil the customer demands of today, as well as to adapt rapidly to the social and technological changes brought by energy transition. Workplace safety, wellbeing and flexibility are top priorities. So too is the attraction, development and retention of diverse talent, with a focus on the skills needed to advance CLP's critical decarbonisation and digitalisation agendas.



BUSINESS RESILIENCE

The accelerating pace of environmental, technological, regulatory and social changes has reinforced the importance of business resilience. CLP recognises the strategic value of anticipating, withstanding and learning from disruptive events, especially in response to the growing threats posed by climate change and cybercrime.



COMMUNITY STEWARDSHIP

CLP recognises its obligations to meet evolving stakeholder expectations around the positive role businesses should play in society. This includes demonstrating leadership in its decarbonisation ambitions, investing in green energy solutions that support the electrification of society, and transparently reporting on its ESG performance. Environmental stewardship extends to actively managing CLP's dependencies and impacts on nature. Employee and supplier wellbeing is another priority. The Group recognises the importance of ensuring ethical human rights practices in its value chain, as well as of supporting employees and communities impacted by the closure of its fossil fuel assets.

Our material topics

Торіс	Sub-topic	Risk and opportunity	Value chain	Time horizon
Transition to net zero	Responding to evolving regulatory landscapes	Financial risk: Evolving net-zero policies internationally may push CLP to accelerate its coal-fired power plant closures, forcing it to bear the transition costs (such as revenue, decommissioning and transition costs) ahead of schedule.	Own operations	Long-term
		Financial risk: Failing to respond to regulatory changes in different geographies means CLP could face legal and regulatory sanction, a diminishment in government trust and thus reduced prospects for partnership, and a potential loss of market share.	Upstream	Medium-term
	Investing in zero- carbon energy infrastructure	Financial opportunity: War in Ukraine has brought energy security to the fore, which could lead to a faster development of renewables to replace gas in some markets. CLP can benefit from its investment in renewables and firming capacity to support long-term decarbonisation while maintaining energy security.	Own operations	Short-term
		Financial opportunity: Investments into battery projects to meet energy storage requirements of renewable energy systems, at both household (for rooftop solar) and industrial (>100MW) scales.	Own operations	Short-term
		Financial opportunity: Over the life of the assets, the cost of nuclear power generation is comparable with that of fossil-fuel electricity generation. By renewing/expanding its nuclear energy infrastructure, CLP could lower the cost of energy production, while also supporting decarbonisation.	Own operations	Short-term
	Navigating geopolitical instability	Financial risk: International capital flows in and out of open economies such as Hong Kong may be sensitive to geopolitical developments, potentially affecting CLP's ability to raise capital and its share price and requiring the Group to further diversify its financing channels.	Downstream	Short-term

Торіс	Sub-topic	Risk and opportunity	Value chain	Time horizon
	Acting as a trusted partner in the clean energy transition	Financial opportunity: Carbon markets will play a key role in the decarbonisation of hard-to-abate sectors of the economy and in achieving our collective net-zero ambition. Development of a pipeline of carbon offsets would represent both a commercial opportunity and a useful asset for CLP's own net-zero ambitions.	Own operations	Medium-term
		Financial risk: Failure to meet investor expectations that CLP acts in line with environmental regulation and in the best interests of the community and the environment may risk CLP's reputation with investors, and become a barrier to raising capital.	Own operations	Short-term
		Financial risk: Potential changes in energy market regulations may constrain CLP's financial resources and weaken its ability to invest in zero-carbon energy and new business models, undermining its competitiveness, reputation and investability.	Own operations	Long-term
Energy growth opportunities	Deploying customer-facing energy solutions	Financial opportunity: The provision of expertise, products and services including smart grid technology to enhance customers' energy efficiency may enhance CLP's market share and raise revenues through new, innovative product/service lines.	Own operations	Short-term
		Financial opportunity: New customer-facing energy solutions (e.g. micro-grids and smart meters) and Energy-as-a-Service business models may potentially be developed into scalable and profitable businesses for CLP.	Own operations	Short-term
	Developing Energy- as-a-Service business models	Financial risk: CLP's digitalisation agenda could be derailed by cost and time over-runs, an inability to scale, disruptions caused by imperfect implementation and/or failure to meet customer expectations.	Own operations	Short-term
	Deepening CLP's value proposition with partners	Financial risk: Without timely investments in decarbonisation infrastructure and technology, CLP's growth potential in core markets will be limited. CLP's advantage as an integrated utility in Hong Kong may be difficult to replicate in other energy markets with different regulations.	Own operations	Medium-term
	Creating new revenue streams as other sectors electrify	Financial opportunity: CLP's support of the electrification of the economy will help it retain and attract customers (e.g. EV owners and EV fleet operators) and establish it as an enabler of the Hong Kong Government's net-zero plans.	Own operations	Medium-term

Торіс	Sub-topic	Risk and opportunity	Value chain	Time horizon
Energy security and reliability	Providing customers with reliable and reasonably priced energy	Financial risk: With energy affordability a continued concern for Hong Kong customers and the Government, CLP may face negative sentiment and regulatory uncertainty in the longer term.	Own operations	Long-term
	Navigating geopolitical instability	Financial risk: A lapse in the security of fuel supply in some markets could tarnish CLP's reputation due to deteriorated supply reliability and could lead to a significant loss in revenue hurting CLP's financial performance.	Upstream	Medium-term
		Financial risk: Deglobalisation and geopolitical tensions could result in restrictions on trade with the Mainland. These could impact CLP's ability to procure semiconductors and other critical technologies, as well as capital, commodities, talent and other drivers of business continuity and success.	Own operations	Short-term
		Financial risk: Geopolitical tensions could impact CLP's operating environment. Potential impacts include supply chain disruptions, increased business costs, currency fluctuations and adverse changes in international trade policies.	Upstream	Medium-term
•••••				
A safe, future-ready workforce	Promoting workforce safety and wellbeing	Financial risk: High safety incident rates or fatalities could lead to legal liabilities and reputational harm.	Own operations	Short-term
	Attracting and developing diverse future talent and capabilities	Financial risk: Failing to develop the talent and ways of working required for a digitally enabled, low-carbon future will hamper CLP's ability to meet its strategic objectives and expand capabilities in new areas.	Own operations	Short-term
	Embedding agile and innovative ways of working, mindsets and behaviours	Financial risk: A lack of organisational agility and entrepreneurial culture may limit CLP's ability to explore emerging energy solutions and new business models, and to compete against disruptive new market entrants.	Own operations	Medium-term

Торіс	Sub-topic	Risk and opportunity	Value chain	Time horizon
Business resilience	Building resilience in the face of climate change and evolving business	Financial risk: The potential changes to regulation and decentralisation of energy generation and transmission could impact CLP's future revenue streams.	Own operations	Long-term
*	environment	Financial risk: Physical risks to CLP's physical infrastructure and operations resulting from climate change, including extreme temperatures, extreme weather events, increased rainfall, drought, flooding, and bushfires.	Own operations	Short-term
		Financial risk: CLP's hydro power plants located in areas of high water stress may experience lower performance during periods of low rainfall.	Own operations	Short-term
		Financial opportunity: Al and data analytic tools may be deployed to improve CLP's data collection and analysis from across its operations, enabling better tracking of ESG-relevant data, such as energy consumption, waste management, employee wellbeing and community engagement, and supporting better decision-making and compliance with relevant regulation and policies.	Own operations	Medium-term
	Reinforcing cyber resilience and data protection	Financial risk: A major cyber-security breach could present a serious risk to CLP's financial position and reputation.	Own operations	Short-term
•••••				
Community stewardship	Reducing environmental impacts	Financial risk: Failing to manage pollutants, including high emissions associated with nitrogen oxides (NO _x), sulphur oxides (SO _x), particulate matter (PM), lead and mercury, in densely populated areas could result in regulatory penalties and public health concerns.	Downstream	Short-term

Please see the following chapters for further information on how CLP manages and responds to its sustainabilityrelated financial risks and opportunities:

- **Governance approach is outlined in** *Governance* chapter.
- Strategy and performance can be found in *Delivering Our Sustainability Agenda*.
- Risk management framework is detailed in the Risk Management Report.
- Metrics and targets are available in *Delivering Our Sustainability Agenda* and *Five-Year Summaries*.

Transition to Net Zero

Decarbonisation is CLP's foremost priority as the electricity sector has a crucial role to play in enabling the transition to a sustainable, lower-carbon future for all. Electricity companies worldwide need to keep abreast of evolving climate policies to ensure their decarbonisation plans and actions are in line with regulations. They also need to stay attuned to decarbonisation technologies to invest in non-carbon energy infrastructure such as wind and solar power, nuclear power and battery energy storage systems (BESS) as coal-fired generation is being phased out.

Decarbonisation requires huge amounts of capital. Energy providers, acting as a trusted partner in the energy transition, have a responsibility to maintain sound financial foundations and to meet the rising expectations of investors on acting in the best interest of the community and the environment. Carbon markets offer potential solutions for decarbonising hard-to-abate sectors of the economy, and energy companies need to support efforts to improve their quality and consistency.

CLP's rev

0.26kg CO₂e/kWh

CLP's revised GHG emissions intensity target for 2030 under updated Climate Vision 2050 (previous target 0.3kg CO₂e/kWh)

> **49%** Proportion of CLP's capital investments in non-carbon generation assets, and transmission, distribution and retail operations

CLP's operating **85%** J cash flow increased in 2023's as the Group strengthened its financial position to enable ongoing investments in decarbonisation

Responding to evolving regulatory landscapes

Governments around the world agreed to transition away from fossil fuels and speed up the adoption of renewable energy at the 28th United Nations Climate Change Conference (COP28) in Dubai during another year of record global temperatures.

In Hong Kong, under the Government's Climate Action Plan 2050, the ratio of zero-carbon energy in the fuel mix for electricity needs to increase to 60-70% by 2035 on the way to net-zero power generation by 2050.

China strengthened cooperation with the US in November to step up development of renewable energy. The initiative underscored the Chinese Government's steadfast commitment to decarbonisation, guided by its dual carbon targets of peaking carbon emissions by 2030 and achieving carbon neutrality by 2060. Driven by these goals, China already leads the world in solar energy and BESS technology.

In Australia, steps were taken at both federal and state levels to enable the energy transition, with increased support for low-carbon electricity infrastructure to boost supplies and mitigate the risk of shortfalls as coal-fired power stations are retired. The Capacity Investment Scheme to develop renewable energy and energy storage systems was expanded in November, and Federal and State Governments agreed to work closely together to prevent a repeat of the energy shocks of 2022 that affected suppliers.

Meanwhile, the Indian Government aims to more than double the country's renewable energy capacity to 500 gigawatts (GW) by 2030, and continued to roll out policies to drive investments in infrastructure to support the energy transition, including transmission and advanced metering infrastructure (AMI).

Accelerating the pace of decarbonisation

CLP's decarbonisation efforts are reflected by a 12% decrease in total greenhouse gas (GHG) emissions (Scope 1, 2 and 3) across the value chain to 52,988 kilotonnes of carbon dioxide equivalent (kt CO_2e) on an equity basis in 2023. The GHG emissions intensity of electricity sold dropped to 0.54kg CO_2e per kilowatt hour (kWh), lower than the 0.55kg CO_2e per kWh a year earlier. Energy sent out from coal and gas assets fell 12%.

CLP's <u>Climate Vision 2050</u> decarbonisation blueprint has guided its business strategy since 2007. This blueprint has undergone regular reviews and updates to ensure its targets stay in line with changing climate science, technologies and policies. Following a review concluded in early 2024, Climate Vision 2050 was updated to strengthen targets to decarbonise the Group's business at a faster pace. Under the updated edition entitled Climate Vision 2050: Powering an orderly transition, CLP committed to reducing the GHG emissions intensity of electricity sold to 0.26kg CO_2e/kWh by 2030, compared to the previous target of 0.3kg CO_2e/kWh .





Notes:

ะ

- 1 CLP's trajectory from 2007 to 2020 was based on the Group's carbon emissions intensity (kg CO₂/kWh). Since 2021, in line with global best practices, CLP has reported its GHG emissions intensity based on kg CO₂e/kWh.
- 2 CLP's trajectory from 2017 to 2050 is on an equity plus long-term capacity and energy purchase basis.

CLP is maintaining its target to reduce absolute Scope 3 GHG emissions from the use of sold products by 28% by 2030, from 2019 levels. This refers to the emissions from customers' combustion of the natural gas sold by EnergyAustralia. In addition, the Group's targets to reduce GHG emissions intensity of electricity sold to 0.1kg CO₂e/kWh by 2040, and achieve net zero by 2050 remained unchanged. The Group is committed to reviewing its targets for Climate Vision 2050 at least every three years.

Please see CLP's <u>Climate Vision 2050 – Powering</u> an orderly transition for further information on the latest decarbonisation strategies and targets.

EnergyAustralia released its inaugural Climate Transition Action Plan (CTAP) in August. The plan outlines how the company will achieve net-zero Scope 1 and Scope 2 emissions by 2050 through a combination of actions including the retirement of coal-fired power plants and the development of renewable energy and energy storage capacity. EnergyAustralia will publish its decarbonisation plan for Scope 3 emissions, including customer energy-use emissions, by December 2024.

Apraava Energy announced a target of reducing the intensity of its Scope 1 and Scope 2 emissions by 46.3% by 2027 compared with 2022. The target was validated by the Science Based Targets initiative (SBTi), making Apraava Energy only the second Indian power company to receive SBTi validation.



EnergyAustralia's Climate Transition Action Plan



CLP's Past and Projected Absolute Greenhouse Gas Emissions of Electricity Sold and Phase-out Schedule of Fossil Fuel Assets

Note: The figures are on an equity plus long-term capacity and energy purchase basis.

A future without coal

Under Climate Vision 2050, CLP is committed to phasing out coal-fired generation before 2040. The company stepped up efforts to ensure a smooth transition with a reliable and affordable supply of electricity ready for a future without coal.

Units at Castle Peak A Power Station in Hong Kong are gradually being retired and coal is not expected to be used for regular electricity generation in Castle Peak B Station beyond 2035. The completion in 2024 of the new D2 gasfired generator unit at Black Point Power Station, together with the existing D1 unit, will deliver a reliable, lowercarbon power supply as CLP gradually phases out coal-fired generation.

EnergyAustralia is adapting Mount Piper Power Station in New South Wales to more flexible, short-duration operations. Modifications have been made to its generation units to enable safe operations at low loads so that it can reduce or increase generation according to market conditions. The power station is due to be transitioned to play a firming role for renewable energy by the mid-2030s before being retired before 2040.

EnergyAustralia's only other coal-fired power station, Yallourn Power Station in Victoria, will close in 2028. To safeguard the livelihoods and interests of employees and communities, workers at Yallourn are provided with transitional support, including training and guidance on future career development as part of EnergyAustralia's A\$10 million Power Your Future programme.

Investing in zero-carbon energy infrastructure

CLP continued to focus on investments to enable the energy transition. Non-carbon generation assets, and transmission, distribution and retail operations accounted for 49% of the Group's capital investments of HK\$15,674 million, on an accrual basis.

Investments in Hong Kong include the upgrading of the cross-boundary Clean Energy Transmission System (CETS) for the import of more zero-carbon energy from Mainland China, as well as the completion of the smart meter replacement programme, which will help customers better understand and manage their electricity use.

CLP China stepped up the pace of renewable energy investment as the falling costs of wind and solar energy equipment made new projects more viable. At the end of the year, CLP China's renewable energy capacity increased to more than 2GW across the nation and is expected to double in the medium term.

EnergyAustralia set a target of expanding its renewable energy portfolio to 3GW of committed and operational capacity by 2030, up from around 900 megawatts (MW) at present.

In 2023, Apraava Energy secured 550MW of new renewable energy projects in competitive auctions and entered the AMI market to further diversify its non-carbon energy infrastructure business. The company also expanded its portfolio of transmission assets so that renewable energy generated in remote areas can be used in urban centres.

Mr Allan B. Zhang Chief Executive Officer Shui On Xintiandi Limited



According to the World Green Building Council, the construction industry is responsible for around 40% of global carbon emissions. Decarbonising the sector is therefore critical to the battle against climate change. Shui On Xintiandi's prime commercial real estate portfolio spans fast-growing cities across the Mainland and is focused on carbon reduction across the entire life cycle of projects, from construction to estate management. What solutions can CLP China provide to help us become more sustainable and support the nation's dual carbon goals of peaking carbon emissions by 2030 and achieving carbon neutrality by 2060?

The real estate industry has been a role model for other sectors of the economy by actively responding to national policies to reduce carbon emissions. CLP fully supports the industry's leadership position on decarbonisation as the nation pushes ahead with the dual carbon policies for the comprehensive green transformation of economic and social development.

In line with our <u>Climate Vision 2050</u> blueprint, CLP focuses on the development of renewable energy in Mainland China where zero-carbon energy now accounts for almost 70% of our installed capacity. Our Xundian II Wind Farm in Yunnan and Yangzhou Gongdao Solar Power Station in Jiangsu were successfully connected to the grid in 2023, and construction of our Bobai Wind Farm in Guangxi has commenced. We also broke ground on the Sandu II Wind Farm in Guizhou.

We constantly explore new ways to offer renewable energy solutions for our corporate customers such as Shui On Xintiandi, a pioneer in decarbonisation. We understand that starting from 2011, your esteemed company has engaged an independent organisation to conduct annual carbon emission verification, and has since reduced your emissions by over 66%. We are extremely pleased to collaborate with corporates with a similar decarbonisation vision and signed a strategic framework agreement with your company in December 2023. With our shared heritage as Hong Kong enterprises, our partnership will concentrate on the development of zero-carbon energy and green power. One of the initiatives is a power purchase agreement to supply green power to meet all the power needs of the Nanjing International Finance Center. This project epitomises the kind of high-efficiency renewable energy solutions that will accelerate the zero-carbon transformation of the real estate sector.



CLP will continue to deepen our collaboration with businesses on new energy development to deliver mutually beneficial sustainability outcomes, supporting the nation's dual-carbon goals.

Roger Chen Managing Director – China

Energy storage to bolster supply reliability

Energy storage plays a vital role in decarbonisation by making power grids more reliable as more intermittent renewable energy enters the system. CLP Power aims to build a BESS with a capacity of around 100MW at Castle Peak Power Station. CLPe has found a promising avenue of growth in the strong demand for BESS from construction companies in Hong Kong, taking more than 40 orders for BESS on construction sites. CLP China is also investing in BESS to strengthen the operations of new renewable energy projects. Three battery systems are currently in operation, bolstering supply reliability at Qian'an III Wind Farm in Jilin province, Xundian II Wind Farm in Yunnan province and Yangzhou Gongdao Solar Power Station in Jiangsu province.

Under CTAP, EnergyAustralia anticipates its initiatives on energy storage and renewable energy firming would involve more than A\$5 billion of capital to be deployed by EnergyAustralia and its partners. EnergyAustralia has operational control of the new Riverina Stage 2 and Darlington Point BESS projects in New South Wales, which finished construction in September. It is also finalising plans to invest in the 350MW Wooreen battery system in Victoria next to Jeeralang Power Station, and examining battery projects near its Hallett Power Station in South Australia and Mount Piper Power Station in New South Wales.

EnergyAustralia will have operational control of the 250MW Kidston pumped hydro project in Queensland, due to complete construction in 2024. It is the first pumped hydro project in the Australian market in over 40 years, underpinned by an EnergyAustralia's offtake agreement with developer Genex Power. In December, EnergyAustralia released the concept design of the 335MW Lake Lyell pumped hydro energy storage project in New South Wales.

Stable baseload electricity supply at competitive prices

Nuclear energy was acknowledged at the COP28 summit as one of the technologies that need to be accelerated to achieve climate global goals.

CLP has a 25% equity interest in Daya Bay Nuclear Power Station in Guangdong province, which meets around one-third of the electricity demand of CLP Power's customers. Separately, CLP also has a 17% equity interest in Yangjiang Nuclear Power Station in Guangdong and continues to explore further opportunities to invest in the energy sector.

Please see the CEO's Strategic Review on page 16 and Energy Growth Opportunities on page 57 for further information on CLP's investments in decarbonisation.

Strong financial foundations for decarbonisation investments

CLP's ongoing investments in decarbonisation were made possible by the Group's strong financial position. Operating cash flow rose 85% to HK\$23,567 million compared with HK\$12,734 million a year earlier. The Group maintained good access to diversified, sustainable sources of cost-effective funding throughout a year of economic uncertainty and interest rate volatility, completing financing activities in a timely and orderly manner to support the business's continued growth and development.

The strong financial position is reflected in the Group's healthy liquidity levels, with undrawn bank facilities of HK\$30.9 billion and bank balances of HK\$5.2 billion respectively at the end of 2023 compared with HK\$31.6 billion and HK\$4.3 billion a year earlier. Liquidity at CLP Holdings increased to HK\$14.1 billion at the end of the year compared with HK\$13.5 billion a year earlier. The high level of liquidity is expected to be maintained in 2024, supported by dividend payments and inflows from subsidiaries, joint ventures and associates.

Debt Profile as of 31 December 2023	CLP Holdings HK\$M	CLP Power HK\$M	CAPCO HK\$M	Other Subsidiaries HK\$M	CLP Group HK\$M
Availability Facility ¹	11,900	34,432	26,360	15,704	88,396
Bank Loans and Other Borrowings	-	26,746	21,089	9,680	57,515
Undrawn Facility	11,900	7,686	5,271	6,024	30,881

Note:

1 For the Medium Term Note programmes, only the amounts of the bonds issued as at 31 December 2023 were included in the total amount of Available Facility. The Availability Facility in EnergyAustralia excluded a facility set aside for guarantees.



Note:

1 The maturity of revolving loans is in accordance with the maturity dates of the respective facilities rather than the current loan drawdown tenors.

The Group maintained good investment-grade credit ratings, with Standard & Poor's (S&P) affirming CLP Holdings' A rated credit rating in May, while Moody's maintained its A2 rating, reflecting the sizable earnings contributions from CLP Power and the Group's sound liquidity.

At the time of the report's publication, the credit ratings of major companies within the Group were as follows:

	CLP Ho	ldings	CLP P	ower	САР	2CO	EnergyAustralia
	S&P	Moody's	S&P	Moody's	S&P	Moody's	Moody's
Long-term rating	А	A2	A+	A1	AA-	A1	Baa2
Outlook	Stable	Stable	Stable	Stable	Stable	Stable	Stable
Short-term rating	A-1	P-1	A-1	P-1	A-1+	P-1	-

S&P also assigned environment, social and governance (ESG) credit scores of E-3, S-2, G-1 to CLP Holdings, while Moody's assigned its scores of E-3, S-3, G-2. Both agencies recognised CLP's commitment to take action on climate change and the low-carbon transition as well as its strong governance and risk management.



More information on <u>credit ratings</u> can be found on the Group's website.



More information about major financing activities in 2023 and debt profile can be found on pages 35 and 36 of 2023 Annual Results Presentation of CLP Holdings.



Analyses of loan balance by types and bond funding by currencies can be found on "Financial Capital" page in the <u>Investor</u> <u>Presentation Introductory Pack</u> of CLP Holdings.

Pre-emptive financing in volatile monetary environment

The uneven global recovery caused by the lingering effects of the pandemic and escalated geopolitical tensions continued to impact capital markets and generate pressure on inflation. Globally, central banks continued to tighten monetary policies to control inflation, maintaining interest rates at their highest levels since the global financial crisis. The yield of the benchmark 10-year US Treasury Notes surged from 3.74% in early January to 4.99% in October before retreating to 3.8% in December. Three-month Hong Kong Interbank Offered Rates reached a high of 5.73% during 2023, before softening to 5.27% by year end. The Group took a pre-emptive approach and addressed the funding requirements for the year ahead at the end of 2022 and in early 2023. In December 2022, CAPCO arranged HK\$2 billion of one-year and two-year emission reductionlinked bank loan facilities for its funding requirements in 2023. In the first half of 2023, CLP Power arranged HK\$2.3 billion of one-year bank loan facilities and a HK\$1.1 billion two-year emission reduction-linked bank loan facility.

Emission reduction-linked facilities are a type of sustainable financing with performance targets linked to air emissions, as well as other performance measures such as the number of smart meters installed.



Growth in Sustainable Financing for CLP in Hong Kong

More information about <u>CLP</u> Climate Action Finance Framework

can be found on our website.

Sustainable financing instruments

The Climate Action Finance Framework (CAFF) remains CLP's main channel for sustainable financing. The framework stipulates ways in which the Group's businesses can raise financing including bonds and loans to address climate change challenges. In April, CAPCO executed a two-year offshore RMB300 million (HK\$339 million) fixed rate private placement bond under CAFF and swapped the proceeds to Hong Kong dollars to refinance some existing bank loans. The bond was completed with preferential financing terms and was the first offshore RMB bond issuance for a CLP business, enabling further diversification in the Group's financing.

In May and June, CAPCO executed HK\$1.3 billion of one-year and two-year energy transition bank loan facilities in line with CAFF to refinance existing loans.

Both CLP Power and CAPCO have Medium Term Note programmes in place under which bonds in aggregate amounts of up to US\$4.5 billion and US\$2 billion respectively can be issued. As of 31 December, notes with aggregate nominal values of around HK\$24.4 billion and HK\$9.5 billion were issued by CLP Power and CAPCO respectively.

Around 62% of financing arranged by CLP's SoC businesses in 2023 was through sustainable financing compared with 68% the previous year. CLP Power and CAPCO had HK\$32.2 billion of outstanding sustainable financing at the end of the year including HK\$19 billion of CAFF financing, as well as HK\$13.2 billion of emission reduction-linked facilities with 14 banks.

CLP China executed a RMB293 million (HK\$316 million) onshore non-recourse project loan facility for a solar energy project at a competitive interest rate. The business also lowered the interest rates of non-recourse project loans for three renewable energy projects totalling RMB718 million (HK\$774 million).

EnergyAustralia executed a A\$630 million (HK\$3.3 billion) three-year loan facility with nine banks on competitive terms to refinance an existing facility. In addition, the business extended the tenor of a bank guarantee facility of A\$150 million (HK\$798 million) by one year to December 2024.

CLP's fixed-rate debt as a proportion of total debt at the end of December was 57% (2022: 52%), excluding perpetual capital securities or 60% (2022: 55%) including perpetual capital securities.

Navigating geopolitical instability

CLP's prudent financing strategies, underpinned by robust governance and risk management, helped strengthen its capital resources to support the Group's ongoing decarbonisation despite continuing market volatility. This approach was reflected in the pre-emptive action to complete major financing activities with preferential terms at the end of 2022 and early 2023, as well as the Group's efforts to further diversify financing in terms of capital sources, currencies, debt tenor and instruments.

The Group maintained a high level of interest rate and foreign currency hedging at commercially acceptable terms to cover committed and highly probable financial obligations, enabling it to withstand financial market volatility and pursue its business objectives. This included the use of natural hedge and approved financial derivative instruments with straightforward, easy-to-understand features that can qualify for effective accounting hedge with no adverse profitand-loss impact to manage obligations and risks.

For counterparty exposure, CLP transacts only with credible financial institutions and financially sound business counterparts with strong credit ratings. These measures help ensure CLP's businesses do not face undue residual financial or credit risks and give strong grounds for confidence to stakeholders.

Acting as a trusted partner in the energy transition

CLP continued to engage capital providers on the Group's efforts on decarbonisation. The Asia Investor Group on Climate Change's Asian Utilities Engagement Program recognised the Group's decarbonisation efforts including the commitment to exit coal-fired generation before 2040 and the use of battery storage technology.

During COP28, organisations including the Voluntary Carbon Markets Integrity Initiative (VCMI) and the Integrity Council for the Voluntary Carbon Markets (IC-VCM) agreed to increase collaboration on standards for carbon credits and enhance transparency and consistency for the instruments. CLP will consider the use of credible carbon offsets as a last resort to offset emissions in its value chain as the Group remains focused on reducing direct emissions from its operations by transitioning to lower-carbon technologies. CLP supports the efforts of the VCMI and IC-VCM to improve the integrity of voluntary carbon markets. The Group is currently undertaking a review on its carbon market strategy covering a range of factors including market trading opportunities and carbon credit generation from CLP's assets. The review is expected to be completed this year.

EnergyAustralia's Tallawarra B Power Station in New South Wales, which officially opened in February 2024, is Australia's first net-zero emissions gas-fired power station with 100% of direct carbon emissions offset over its operational life. As part of funding arrangements to proceed with the construction of Tallawarra B in 2021, EnergyAustralia will purchase credible carbon offsets for all emissions from the plant.

Energy Growth Opportunities

The global energy crisis has had a profound impact on households and businesses, fueling inflation and hindering economic growth. It has also turbocharged investment in non-carbon energy as governments and corporations seek alternatives to costly fossil fuels, while consumers reduce their consumption and explore lower-carbon energy use as well as energy-saving tools and technologies.

As one of the largest energy companies in the Asia Pacific region, CLP has a responsibility to meet rising demand for low-carbon energy and smart energy solutions. As Hong Kong's biggest utility company, CLP Power also has a duty to work closely with the Government to ensure the energy landscape adapts to changing times and provide consumers not only with reliable supply but also products and solutions they need for decarbonisation.

By responding nimbly and rapidly, CLP can rise to the challenges of uncertain times and generate income by providing innovative products and services including Energy-as-a-Service solutions that enhance energy efficiency. It can also develop smart solutions that have immense potential in Mainland China, Australia and India.

In the longer term, the electrification of transport and the wider economy open the door to a host of new business streams and opportunities both in Hong Kong and CLP's other markets.

HK\$ **52.9** billion CLP Power's projected capital expenditure under 2024 – 2028 Development Plan to support Hong Kong's growth 70%

Year-on-year increase in sales of Renewable Energy Certificates in Hong Kong in 2023

ि

CLP China signed

renewable energy supply contracts with multinational/Hong Kong corporate customers in 2023 to support decarbonisation



Deploying customer-facing energy solutions

CLP Power serves over 80% of the Hong Kong population, and for generations has provided safe and reliable electricity needed by customers at a reasonable price. Public awareness of the impact of climate change has risen steeply in recent years and customers expect that their electricity comes from cleaner sources, with added services that help them become more energy-efficient.

To promote the development of renewable energy, CLP Power buys solar or wind energy generated by residential and business customers on their premises. The renewable energy Feed-in Tariff (FiT) scheme allows customers to sell their energy to CLP Power at a rate higher than the normal electricity tariff rate and recover their investment costs in a shorter period. By the end of 2023, 376MW of renewable energy capacity had been approved or connected to the grid, equivalent to the annual energy consumption of around 89,700 households.

Customers can also buy Renewable Energy Certificates (RECs) to support non-fossil fuel energy generation in Hong Kong and

achieve their sustainability goals. Each unit of REC represents the environmental attributes of electricity produced by local renewable energy sources including solar power, wind power and land fill gas generated or purchased by CLP Power. The REC programme has boomed in popularity since its 2018 launch with sales rising 70% year-on-year to more than 170 gigawatt hours (GWh) in 2023. Some large commercial customers including AirTrunk Hong Kong Holding Limited, Citi Hong Kong and Bupa International Ltd. have signed multi-year REC agreements. The REC and FiT programmes enable CLP Power customers to increase renewable energy adoption as part of concerted efforts across society to drive Hong Kong's decarbonisation.

The popularity of distributed energy resources including rooftop solar systems and EVs is increasing the complexity of electricity supply networks. CLP Power is continuing its smart grid development to support customers' evolving energy needs and improve efficiencies in power network operations, while ensuring the electricity supply remains highly reliable and resilient. Key smart grid initiatives include the continued rollout of the smart meter replacement programme for CLP Power customers and deployment of advanced technology to enhance the end-to-end operations of power supply infrastructure spanning generation, transmission and distribution.

CLP Power continued to focus on supporting customers with a broad range of services to improve their energy efficiency. Under the All-Electric Homes programme, CLP Power is supporting property developers to adopt energy-efficient appliances such as induction cookers and water heaters in new apartments, promoting a lower-carbon lifestyle for homebuyers. CLP Power is also providing support for developers to install solar panels and EV-charging facilities to meet the energy needs of residents.

Business customers are offered advice and subsidies from CLP Power to implement electrification and energy-saving projects to support their decarbonisation targets. The CLP Eco Building Fund provides subsidies for energy efficiency improvement works for residential, commercial and industrial buildings. The Electrical Equipment Upgrade Scheme subsidises business customers, especially SMEs, to upgrade their lighting and air conditioning to more energy-efficient models. The Retro-Commissioning Charter programme offers professional training courses on how to improve the energy efficiency of buildings without the need for expensive equipment replacement.

As well as having a positive environmental impact, these schemes and programmes can potentially help customers qualify for sustainability-linked loans. Through its comprehensive range of energy services, CLP Power continued to deepen its customer relationships, evolving its business from a traditional electricity utility business model.

CLP Power and CLP*e* signed a Memorandum of Understanding with Link Asset Management Limited (Link) on energy efficiency and sustainability solutions. Under the agreement, CLP Power will provide technical support for EV charging systems and explore the feasibility of implementing energy management solutions at Link premises, as well as introducing battery energy storage systems (BESS) on Link construction sites to replace diesel generators. CLP Power will also promote energy saving to Link tenants. CLP*e* will work with Link to explore opportunities for one-stop energy solutions such as cooling, solar power, EV charging and smart energy management at Link properties in the Greater Bay Area (GBA).

Digitalisation is crucial to the low-carbon transition, and CLP Power continued to provide customers with smart tools to enable energy efficiency improvements. More than 2,500 CLP Power business customers are using the Smart Energy Online platform to manage energy consumption. The platform uses electricity consumption data from smart meters to effectively monitor and analyse the consumption patterns of business premises, enabling customers to save energy.

CLP Power continued to encourage residential customers to save energy, sign up for smart energy and energy-saving events and campaigns through the Power Connect programme which rewards them with points on an e-commerce platform called Domeo.



CLP Power Managing Director Joseph Law delivers a keynote address at the 24th Conference on the Electric Power Supply Industry (CEPSI) held in China's Fujian province.

Increasing appetite for clean energy solutions

Outside of Hong Kong, CLP keeps pace with evolving demand by providing smart energy services that cater to customers' increasing appetite for clean energy solutions. In 2023, CLP China signed four contracts with prominent companies in the form of power purchase agreements (PPAs) or Green Electricity Certificates to support the low-carbon transformation of a diverse range of industries including commercial real estate, manufacturing and data centres. One of them was a strategic framework agreement with Shui On Xintiandi (Shui On), which invests and manages premium commercial properties in Mainland China. The first initiative is a 10-year PPA which has seen Shui On's Nanjing International Finance Center powered by the electricity generated by CLP China's Yangzhou Gongdao Solar Power Station since the beginning of 2024. The arrangement will lower the commercial and office complex's annual carbon emissions by an estimated 21,000 tonnes, which is equivalent to the carbon sequestration impact of 140 hectares of forest, as well as securing a steady revenue source for CLP China's Yangzhou Gongdao project.

These partnerships underscore the growing demand for renewable energy from companies in China as the nation's dual carbon goals drive the economy's continuing low-carbon transition. CLP China will continue to expand its investments in renewable energy generation and maintain its strong growth momentum.

EnergyAustralia offered households the chance to reduce emissions with a Solar Home Bundle which provides them with a solar panel and battery system installed and managed with no upfront costs. By the end of 2023, 314 customers had signed up for the service in New South Wales, paying a fixed rate for electricity use and owning their systems outright after seven years. Another programme, PowerResponse, is a voluntary demand response initiative that rewards customers for reducing their electricity use at peak times. Customers who sign up receive notifications to reduce their energy use in return for credits or, if they have a home battery system, to join a PowerResponse Virtual Power Plant.

EnergyAustralia also provided accredited renewable energy to customers under the GreenPower programme supported by the Federal Government which allows commercial and industrial customers to source renewable energy or install solar and battery systems. The InsightsPro data portal gives business customers access to consumption data and carbon emissions tracking. The ResponsePro programme provides financial incentives for businesses to reduce their energy use at peak periods.

Apraava Energy is among the companies taking the lead in India's nascent automated metering infrastructure sector by building smart meter networks that are key to the development of more efficient electricity services for households and businesses. Apraava Energy is supplying more than three million smart meters under two contracts won in the states of Assam and Gujarat in 2023. The meters allow power companies to develop more personalised services for electricity customers and improve energy efficiency.

Developing Energy-as-a-Service business models

Energy-as-a-Service business models have become increasingly popular in recent years amid a rising trend for renewable energy and decentralised power generation. CLP*e* has widened its range of offerings in Hong Kong and Mainland China, generating new revenue streams while providing customers with cost-effective solutions that have no upfront installation costs.

Buildings account for 90% of energy consumption in Hong Kong and offer huge scope for energy saving. CLP*e* is installing Hong Kong's first chiller system to use zero-carbon electricity at Chinachem Group's Nina Tower hotel and office complex – the tallest building in Hong Kong's New Territories – which will be completed in phases between 2024 and 2027. It has also teamed up with Chinachem and Henderson Land in a 15-year agreement to upgrade and operate a shopping mall's cooling system. CLP*e* will provide funding along with design and engineering work for the new air-cooled chiller system which is expected to reduce power consumption 15%, or around 500,000 kWh of electricity a year, equivalent to the annual electricity consumption of around 160 three-member households and a reduction of around 200 tonnes of carbon emissions.

CLP*e* and its partner China Mobile won a tender by MTR Corporation in December to enhance the rail operator's communication systems infrastructure across its network in Hong Kong. CLP*e* is responsible for engineering, procurement and construction for the project, using China Mobile's 5G technology. CLP*e* also signed a cooperation framework agreement with a branch of the Zhongshan Municipal People's Government to develop low-carbon energy infrastructure and integrated energy services including cooling systems, solar systems and EV charging facilities in the city's Cuiheng New District. Separately, a leading industrial customer in Guangzhou appointed CLP*e* to retrofit and operate a chilling system covering an area of 230,000 square metres. In Hong Kong, electrifying transport networks is a vital part of decarbonisation as vehicles are currently responsible for around one-fifth of emissions. CLP Power works closely with the Government and the private sector to expand Hong Kong's EV charging infrastructure. It is also supporting trials of electric buses, public light buses, taxis and ferries as Hong Kong moves towards a future of rising demand for EV charging solutions.



Ms Joanne Hon Managing Director, Equinix Hong Kong

How can CLP help data centre operators like us become more efficient and sustainable energy users? As more and more data centres are set up in Hong Kong, how can CLP ensure we have a reliable power supply to support our 24/7 operations?

Hong Kong is home to many regional offices and headquarters and is ideally positioned to serve as a data centre hub for the region. The city offers excellent network connectivity, a dependable electricity supply with reasonable tariffs, a comprehensive data protection ordinance and proximity to Mainland China.

Data centres are the backbone of today's digital economy, but the industry is also an intensive user of land, water and energy. As Hong Kong's biggest electricity provider, CLP Power is committed to helping data centre operators become more efficient in their energy use while ensuring they have the highly reliable electricity supply they need.

CLP Power works closely with data centre operators and offers a diverse range of services to help reduce their carbon footprint. Through our Community Energy Saving Fund, we provide funding for universities to conduct energy analysis for high energy consumption businesses such as data centres to improve energy efficiency. The air flow optimisation energy analysis at Equinix's data centre facility is a prime example. By monitoring the temperature in data halls and adjusting the air circulation to prevent excessive power use in data centre cooling, it achieved energy savings of around 30%. The collaboration allows us to validate and endorse some energy saving best practices for the data centre industry. Other services include free energy audits which allow data centre operators to conduct a health check of their energy consumption and identify areas where they can optimise energy use. Our customers can also participate in trials of our new energy-saving products and obtain subsidies to install more energy-efficient lighting and air conditioning.

CLP Power is continuing to invest in electricity infrastructure to support Hong Kong's growth and decarbonisation. We are committed to maintaining our world-class power supply reliability and customer service excellence to meet the evolving energy needs of data centres and provide the digital infrastructure that is critical for Hong Kong's transformation into a smart city.

> Joseph Law Managing Director, CLP Power

In 2023, CLP Power joined hands with 14 businesses and organisations including electric commercial vehicle (ECV) manufacturers and operators, charging service providers and a bank offering green finance services to form the eMobility Network which promotes the wider use of ECVs. To support the Hong Kong Government's EV-charging at Home Subsidy Scheme, CLP Power continued to promote its Eco Charge 2.0 service which offers one-stop technical support and customer service to people seeking funding for EV charging infrastructure in the car parks of private residential blocks. By the end of 2023, CLP Power had completed preliminary assessments for around 92% of 577 applications for Government funding, covering around 136,000 car parking bays.

The Regalia in Kowloon was the first CLP Power customer to complete the installation of EV charging infrastructure under the scheme in early 2023 with 300 EV-enabled parking spaces. Since then, several private residential estates have also successfully completed similar installations to meet growing EV charging needs. In addition, CLP Power also continues to provide free EV charging throughout its supply area with around 160 chargers.

Deepening CLP's value proposition with partners

CLP's relationships with governments and regulators are pivotal in an industry that is capital intensive and requires a long investment span. It acts as a trusted partner in every market in which it operates by shaping practices and services that contribute to sound energy policies and laws that balance social, economic and environmental needs.

In Hong Kong, CLP Power's operations are regulated by the Government under the Scheme of Control (SoC) Agreement which since 1964 has provided stability to allow CLP Power to invest and respond to the changing needs of Hong Kong. The Agreement is renewed periodically to ensure it remains suited to an evolving operating environment. In the current SoC Agreement for 2018 to 2033, for instance, a range of initiatives were introduced to promote renewable energy, including the FiT and REC programmes.

CLP Power presents a Development Plan to the Government every five years for the regulator to review CLP Power's investments. The current Development Plan projects capital expenditure of approximately HK\$52.9 billion to 2028 for a range of initiatives to support the Government's policy objectives and the city's accelerating economic development, spurred by infrastructure projects and new industries such as data centres. As a major financial and international trading and logistics hub and home to many regional offices of global corporations, Hong Kong has become an increasingly popular location for data centres, which require a highly reliable electricity supply. Based on CLP Power's projection, it aims to provide the power supplies and connections for up to 18 large-scale data centres in the 2024-2028 period covered by the current Development Plan, compared with four in the previous five-year period.

By working closely with the Government in Hong Kong, CLP can play a major role in shaping the city's low-carbon energy future and drive innovative policies for the electrification, digitalisation and decarbonisation of the economy. Most importantly, having a strong business in its core market gives CLP the experience and resources to explore exciting growth opportunities in markets around the world.

Please see CEO's Strategic Review on page 16 and Business Resilience on page 72 for further discussions on the Scheme of Control Agreement and the 2024 – 2028 Development Plan.

Creating new revenue streams as other sectors electrify

Climate change has made the need to reduce greenhouse gas emissions urgent, and CLP has accelerated its efforts to help businesses reach their decarbonisation targets. Carbonfree electricity has the potential to significantly cut carbon emissions from sectors such as transport and manufacturing.

CLP*e* expanded its presence in Mainland China's EV sector through a joint venture with TELD, the nation's largest operator of EV charging services with operations in more than 300 cities and a subsidiary of smart power equipment manufacturer Qingdao TGOOD Electric Company Limited. The joint venture operates 181 charging stations in the south of the country with more than 5,500 chargers in Dongguan, Shenzhen and Zhuhai.

EnergyAustralia has also been increasing the scope of its services to cater to rising demand for EV charging infrastructure. In December, it joined Australia's national body for the electric vehicle industry, the Electric Vehicle Council, which aims to drive investment and accelerate growth in the sector. It earlier signed an agreement with North Queensland's largest tours and charter bus operator Tropic Wings to provide the electrification infrastructure for its multi-depot electric bus charging network. EnergyAustralia will oversee the project, due to be completed by mid-2024, and provide ongoing maintenance and repair services.

Energy Security and Reliability

Energy companies have a responsibility to not only serve customers well but to advance decarbonisation, and CLP has a duty to provide customers with reliable and reasonably priced electricity while reducing emissions. These twin obligations are especially acute at times of volatile oil prices and geopolitical tension when energy companies must balance growing demand with affordability. An unstable world can make business unusually challenging by triggering trade restrictions and supply chain disruption in the short to medium-term and pushing up costs for energy companies.

CLP has been able to withstand the impact of fluctuating fuel prices to a large extent thanks to its stringent cost control measures. While geopolitical uncertainties remain, the organisational agility of CLP gives it a competitive edge and the ability to manage those risks effectively while taking full advantage of the commercial opportunities presented by a rapidly changing business environment.

CLP Power reduced **7.4%** Average Net Tariff by **7.4%**

from January 2024 and allocated **HK\$200 million** from CLP Community Energy Saving Fund to support underprivileged households

187MW

Reduction in peak demand from CLP Power's customers on 26 July 2023 through demand management initiatives Capacity of EnergyAustralia's new Tallawarra B gas-fired power station which provides flexible and reliable energy to homes and businesses during high demand periods

Providing customers with reliable and reasonably priced energy

The prices of coal, oil and natural gas fell back from their 2022 peaks but remained high in 2023 compared with levels two years earlier, as CLP continued to focus on ways to reduce electricity cost pressures facing its customers in an inflationary environment. Energy is an essential commodity that should be accessible and reasonably priced for everyone, and CLP made it a priority to support its customers.

In Hong Kong, CLP Power is committed to supplying electricity to customers with a service that is efficient, reliable, environmentally sound and provided at reasonable cost under the terms of the SoC Agreement with the Government. The company mitigated the impact of fuel cost volatility and eased the tariff pressure on customers in 2023 through a series of measures, including enhancing the efficiency of generation and making the most of existing gas reserves. The launch of the offshore LNG terminal made available a critical new source of natural gas for CLP and joint developer The Hongkong Electric Co., Ltd, giving Hong Kong access to competitively priced, reliable LNG from diverse sources in the global market and enhancing the territory's gas supply security. Meanwhile, the import of nuclear power – which has remained relatively stable in price – played a major role in smoothing out price fluctuations. The strategy of using a diversified fuel mix and importing energy from highly reliable zero-emission sources contributed to a 7.4% reduction in the Average Net Tariff for 2024. This included a slight 2.9% upward adjustment in the Average Basic Tariff, which had previously been maintained at the same level for three consecutive years. CLP Power continued with stringent cost controls to ensure its tariffs remained competitive – the 6% increase in Average Basic Tariff between 2005 and 2023 was well below the 60% jump in Hong Kong's Consumer Price Index over the same period.

Underprivileged families have been hardest hit by the global cost of living crisis, and CLP Power allocated more than HK\$200 million from its Community Energy Saving Fund for a series of community support programmes to promote renewable energy, boost the Hong Kong economy and encourage customers to save energy.

EnergyAustralia is equally committed to supporting its customers through turbulent times, especially vulnerable households facing cost of living pressures. It offers payment plans and extensions to customers facing short-term financial difficulties and provides information on the Government assistance available to them and how to access it. The EnergyAssist hardship programme for customers facing acute difficulties provides services including tailored payment plans, debt waivers and energy-efficiency education to ensure customers make informed decisions over consumption. Business customers can get support through the Rapid Business Assist programme which helps struggling SMEs with customised payment schedules, advice on lowering energy consumption and guidance on how to access government subsidies.

Please see the CEO's Strategic Review on page 16 for further information on CLP's support for customers and the <u>2023 Sustainability Report</u> for CLP's community initiatives.

> Mr Ricky Yu Founder & CEO, Light Be

In the next few years, the construction of public housing in Hong Kong will continue to be "back-loaded" as it takes time to deliver the supply to meet the society's need. The situation with subdivided units is also unlikely to be resolved in the short term. In this environment, how can CLP help improve the quality of life for grassroots citizens and mitigate the impact of the housing constraints?

CLP has been part of the Hong Kong community for more than 120 years and we care deeply for underprivileged people. While we have great confidence in the future as Hong Kong recovers from the impact of the pandemic, we are acutely aware that many grassroots households face challenges because of the housing shortage and the high cost of living. That is why support for people in need has always been at the heart of our community initiatives. In 2024, we have again set aside HK\$200 million from the CLP Community Energy Saving Fund (CESF) for a range of support programmes.

ñ.

While the Average Net Tariff for 2024 has been reduced by 7.4%, to further ease the burden on underprivileged households, the CESF will provide electricity subsidies of HK\$600 to each of 50,000 elderly people, low-income families and people with disabilities, while 20,000 tenants of subdivided units will each receive subsidies of HK\$1,000. The new Home Electrical Safety Enhancement for the Underprivileged Programme will see us collaborating with community partners to arrange qualified electricians to inspect and repair the electrical installations of around 2,000 underprivileged families for free to improve their home safety. CLP will also continue to carry out rewiring works for the installation of individual electricity meters in subdivided units. A new programme funded by the CESF will meanwhile provide subsidies for equipping energy-efficient electrical appliances and education resources relating to energy saving and conservation for Community Living Rooms – a Government initiative to create additional living space for tenants of subdivided units.

In addition, the CESF will provide HK\$2,000 subsidies to each of 2,000 families living in transitional housing, including projects run by Light Be, for them to buy energy-efficient electrical appliances to improve their energy



efficiency. As well as the CESF, CLP operates a popular Hotmeal Canteen service that serves up nutritious meals to people from low-income households.

Throughout the years, we have worked hand in hand with our partners to create a more compassionate and harmonious society. We look forward to continuing our support for underprivileged people as we fulfil our ambition to Power Brighter.

Quince Chong Chief Corporate Development Officer underprivileged people as we fulfil our ambition to Power Brighter Tomorrows.

Navigating geopolitical instability

Energy markets worldwide have been on a roller coaster ride in recent years with the aftermath of the pandemic and war in Ukraine leading to wildly fluctuating oil, gas and coal prices. The turbulence has reverberated across every continent, and CLP has relied on its diversified procurement strategy to avoid the worst of the impact.

A continuous supply of fuel is critical for CLP to sustain a reliable electricity supply to its customers and off-takers, and fuel is the largest single component of the Group's operating expenditure. Security of supply, competitive pricing and environmental performance are therefore key elements in CLP's fuel procurement strategy. The company maintains supply security by adopting a diversified fuel mix, optimising its procurement contracting processes, balancing the use of term and spot contracts and maintaining multiple fuel sources so as not to be reliant on a single source or supplier.

In Hong Kong, CLP Power has been increasing its use of natural gas in support of the Government's decarbonisation targets as coal-fired generation is phased out, raising the proportion of gas-fired energy generation to around 50% since 2020. A diversity of sources of natural gas ensures security of supply. CLP Power began importing natural gas from the Yacheng gas field off Hainan Island in the South China Sea in 1996, but reserves ran low. In 2013, it started drawing supplies through an undersea pipeline connecting the West-East-Pipeline Phase II (WEPII) at Dachan Island in Shenzhen to Black Point Power Station. It started sourcing natural gas from new gas fields in the South China Sea using the existing Yacheng pipeline in 2018.

The dwindling reserves in the Yacheng gas field and a temporary suspension of supplies from the WEPII in December 2015 highlighted the importance of diverse gas sources for CLP Power and Hong Kong as a whole. It also served to emphasise the need for the new LNG terminal, which has received regular shipments of LNG under a long-term supply contract since it began operations in July 2023.

EnergyAustralia, meanwhile, reduces its exposure to market uncertainties by entering into forward energy contracts for hedging purposes. These contracts fix the wholesale price EnergyAustralia pays for electricity over a period of time regardless of the highs and lows of the spot market, allowing it to have more certainty over wholesale energy costs.

The amount of coal used by CLP is decreasing but it continues to evaluate its procurement strategy and explore new sources to maintain diversity of supply while improving environmental performance. CLP Power, for instance, buys coal from countries around the world including Australia, the US and Indonesia to avoid overreliance on a single supplier or country and continues to identify new sources.



Over 2.23 million smart meters have now been connected for about 80% of CLP Power's customers.

CLP also sources goods and services from a diverse range of industries globally to support its operations and has been affected by supply chain disruption triggered by the pandemic, global financial turmoil and escalating geopolitical conflict. The flow of international goods and services has also been impacted by labour shortages, depleted inventory levels, material sourcing challenges due to tightened trade regulations, shipping delays and rising logistics costs.

CLP Power has overcome these multi-faceted challenges to remain on track to replace traditional meters with smart meters for all customers by 2025. More than 2.23 million smart meters have now been connected for about 80% of customers after the company dealt with logistic challenges posed by the pandemic, including global chip shortages and shipment delays. CLP Power succeeded by taking a three-pronged approach that reflects the Group's vigilance on issues regarding supply chain resilience: Maintaining a sufficient inventory level, having access to multiple supply sources and forging close collaboration with suppliers. Smart meters provide CLP Power customers access to power consumption data, allowing them to easily manage energy use and offering them the opportunity to take part in energy-saving events. In 2023, 950,000 CLP Power customers with smart meters were invited to save energy by participating in demand management programmes. By making minor adjustments to their consumption behaviour, the participating customers saved 410,000 kilowatt hours (kWh) of electricity – equivalent to a reduction of 160 tonnes of carbon emissions. On the evening of 26 July, one of the hottest days of 2023 when CLP Power reported electricity demand of 7,452MW, demand management programmes for residential and business customers helped trim peak demand which would otherwise have been 187MW higher. This helped strengthen power supply reliability by reducing strains on system capacity, lessening the need for additional investments in generation capacity.

Please see the CEO's Strategic Review on page 16 and Business Resilience on page 72 for further information on CLP's efforts to maintain supply reliability.

\bigcirc Case Study

Enabling a secure energy transition

The New South Wales Government has committed to reducing greenhouse gas emissions by 70% by 2035 and reach net zero by 2050. The most highly populated state in Australia is fast-tracking the development of renewable energy, and flexible electricity capacity is key to a secure energy transition.

When EnergyAustralia begins operation of Tallawarra B power station, the new fast-start gas-fired plant will play an important role in providing flexible capacity and support the continued growth of intermittent renewable energy in New South Wales.

Tallawarra B will deliver around 320MW of dispatchable capacity, enough to power around 180,000 homes and small businesses during peak demand periods, supporting a reliable power supply to the market at times when a lack of natural resources curtail wind and solar energy generation.

It will be an Australian first, being a net zero emissions gas-fired power station, with 100% of all direct carbon emissions offset over its operational life.

The use of the latest turbine technology makes Tallawarra B one of Australia's most efficient gas-fired generators, and its climate performance is poised to improve further still. EnergyAustralia aims to install technology to blend gas with up to 5% hydrogen in Tallawarra B's fuel mix by 2025, if hydrogen supplies are adequate.

In late 2023, EnergyAustralia achieved a successful first fire of Tallawarra B, a key milestone before the plant's final commissioning. The project overcame a series of challenges after starting construction during pandemic-enforced lockdowns in 2021, with progress also disrupted by the financial difficulties of principal project contractor Clough Limited, which went into administration in 2022.

A Safe, Future-Ready Workforce

Energy companies need workforces that are diverse, inclusive and skilled for the future to lead the low-carbon transition while meeting rising global demand for electricity. Competition for talented people is intense, and failure to attract and develop people with the skills and capabilities needed in fast-evolving global energy markets, and to provide welcoming, inclusive workforces for them, represent risks to every energy company's long-term prospects. It is also a priority for energy companies to ensure that projects are built and operated safely, that workplace hazards and risks for people are reduced, and that health and wellbeing risks are addressed.

Lack of organisational agility poses risks to competitiveness, as new ways of working embracing collaboration, commerciality and creativity are key to technological and service innovation. Lastly, energy companies must ensure that everyone is supported to succeed and thrive during the many changes brought by energy transition in order to meet workforce and community expectations. Managing these risks is essential to building a future-ready workforce to drive sustainable growth.

Group's total recordable injury rate dropped to

0.18

0F

in 2023 thanks to safety enhancement measures (0.25 in 2022)

Over 40 young engineers joined CLP's flagship Graduate Trainee programme in 2023, the highest ever intake

> More than **2,100** students have benefitted from the CLP Power Academy since 2017

Promoting workplace safety and wellbeing

CLP is committed to the safety of its employees and contractors. The Group further strengthened workplace safety in 2023 based on its multi-year health, safety and environment (HSE) improvement strategy, a comprehensive blueprint that emphasises the importance of a proactive approach to make work processes safer.

Reflecting a contemporary approach to safety management, the HSE improvement strategy promotes organisational learning to enhance safety, based on human and organisational performance principles. A series of workshops and communication programmes were arranged for employees to increase their understanding of the principles, which aim to harness the knowledge and experience of the workforce to develop safer working practices. The CLP approach centres around how work is performed in day-to-day operation, moves beyond simply looking at human error as a cause, enabling a better understanding of the more complex latent conditions in the work environment. Additionally, the use of an internal taxonomy helped CLP organise safety information and knowledge more effectively, providing the Group with greater insight to guide employees to focus their learning on safety.

Together with a continued focus on reducing the risks from working at height and falling objects, and a flexibility to adapt the strategy to the specific risk profiles of CLP's businesses in the region, the safety enhancement measures contributed to a decline in the Group's total recordable injury rate (TRIR) and lost time injury rate (LTIR) for employees and contractors, led by significant improvements in Hong Kong and Australia.

CLP received recognition for its efforts to support employee wellbeing during and post-pandemic. CLP Power won the Gold Award for Best Corporate Wellbeing at the annual Best HR Awards organised by recruitment portal CTgoodjobs, and was a Gold award winner in the Mental Health Friendly Supreme Organisation category in the Occupational Health Award organised by Occupational Safety and Health Council. CLP China was a winner at the Wellness Employer Award organised by the bodies including the China Human Resources Management Research Association.



0.5 04 0.3 TIR 0.21 0.2 0.11 0.10 0.09 0.1 0.06 0.06 0.05 N/A 0 0 00 Hong Kong Mainland China Australia India Overall 2022 2023



Lost Time Injury Rate at 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 According to Global Reporting Initiative (GRI) reporting criteria, work-related ill health and commuting injury are not reported under work-related injury category. Hence, the LTIR and TRIR are for work-related injury only starting from 2022. There were 3 work-related recordable ill health injuries (employee only) and 2 recordable commuting injuries in 2023.
- 3 2023 figures excluded Apraava Energy as CLP ceased to have operational control over the Indian company which became a 50-50 joint venture in 2022.

Sadly, a contractor at Apraava Energy's Sidhpur wind farm in the Indian state of Gujarat was killed in an incident involving on-site industrial machinery during construction work in May. A thorough investigation into the incident was conducted and measures were implemented to improve supervision of contractors and strengthen worksite management through increased site audits and training.

EnergyAustralia was charged by WorkSafe Victoria in November for alleged occupational health and safety offences in relation to a fire at Yallourn Power Station in 2021. The fire at Yallourn Coal Transfer Building was extinguished by the correct operation of the plant's automated sprinkler system. No employees or contractors were harmed or present, and there was no risk to the neighbouring community nor any disruption to power generation. EnergyAustralia fully cooperated with WorkSafe Victoria's investigation and proactively made changes to its systems for fire management following the incident.

Attracting and developing diverse talent and capabilities

The success of CLP depends on the talent and hard work of the Group's employees and contractors as well as other team members serving its businesses and joint ventures. As well as investing in its people to develop and enhance their capabilities, CLP must attract new talent to seize opportunities and overcome challenges as the global energy market pivots to a low-carbon, digitalised future. The Group must also maintain a strong pipeline of engineering talent so that its deep reserves of skill and expertise can be passed on from one generation of employees to the next.

Strengthening skills and expertise

CLP further strengthened the recruitment of people with talent and expertise in engineering, digital technologies and customer service in its two core markets. More than 800 people joined CLP's businesses in Hong Kong and Mainland China, sustaining a rapid pace of recruitment. Recruitment was supported through scaling up internal talent acquisition capabilities as well as digitalisation of the candidate experience and building stronger connections to talent sources in Mainland China.

The highest ever intake of over 40 young engineers joined the company's flagship Graduate Trainee programme in Hong Kong which provides participants with a thorough grounding in core technical, commercial and leadership skills as well as opportunities to work across the Group's business operations in Hong Kong and Mainland China. The programme was bolstered by recruits from Mainland China and overseas universities and is regularly updated to give graduates more exposure to CLP's low-carbon and digitalisation projects. In Hong Kong, CLP also commenced its first Digital Graduate Trainee programme, which focused on digitalisation disciplines.

CLP Power cemented its status as a good employer when it won the coveted Grand Award in the Employer of the Year category of CTgoodjobs' annual Best HR Awards, and was recognised in other awards for its graduate and management programmes.

Growing the talent pool

CLP considers that growing the engineering talent pool in Hong Kong is equally as important as tapping into new sources of talent in Mainland China and overseas. This is good for Hong Kong, CLP and young talent, helping to fulfil the manpower needs of Hong Kong's infrastructure project pipeline. The CLP Power Academy works with education institutions in Hong Kong and overseas to offer a range of electrical and mechanical engineering courses for students from different educational backgrounds who wish to enter the industry or develop their skills while working. More than 2,100 students have benefitted from the academy since it was founded in 2017.

The CLP Power Academy also has a role to play in facilitating electrical engineering talent mobility within the Greater Bay Area. In 2022, the academy launched a training course for Hong Kong engineers to gain high-voltage electrical qualifications in Mainland China in a joint initiative with the Guangzhou Industry and Trade Technician College and the Vocational Training Council. The first cohort graduated in mid-2023, and a new course for low-voltage electrical work was also launched during the year.

CLP supported other initiatives to promote talent development for the energy sector, including scholarships and internship programmes for students in Hong Kong and Mainland China. It also teamed up with the Women's Foundation for the Girls Go Tech programme, which sponsors female students from underprivileged households to study science, technology, engineering and mathematics (STEM) subjects.

Investing in training and development

CLP is committed to the growth and development of its workforce and equips its people with the skills and knowledge they need to succeed in a rapidly evolving energy market covering topics ranging from power engineering and digital technologies to safety and business ethics. Training programmes at CLP focus on technical, business and leadership skills, digitalisation and Design Thinking methodology. Employees are encouraged to explore their personal and career development and receive coaching to help them realise their potential. Employees received an average of 44.1 hours of internal and external training and development in 2023 in line with 2022. This excludes on-the-job coaching and mentoring, departmental team development activities and career advisory sessions.

Employee Training

	Average Training Hours per Employee	% Trained
By Region		
Hong Kong	52.0	97.8%
Mainland China	72.3	99.3%
Australia	16.9	100%
Group Total	44.1	98.5%
By Gender		
Male	51.4	98.7%
Female	24.4	97.9%
By Professional Category		
Managerial	27.2	95.3%
Professional	32.5	98.0%
General and Technical	59.6	99.5%

CLP increased opportunities for employees to deepen their understanding of energy markets in Mainland China and overseas as the importance of synergy between different regions and countries grows. Employees took part in training on national affairs, business leadership and management offered by institutions including the Tsinghua School of Economics and Management and the Canada-based Ivey Business School.

Over 100 Hong Kong-based employees joined tours of CLP China's renewable energy operations in Guangzhou and Yunnan provinces during 2023. The tours gave participants a better understanding of energy policies in Mainland China and included visits to community projects supported by CLP China. Employees also attended webinars organised by CLP to learn about energy market developments in Mainland China.

Young engineers participated in Leaders of the Future development programmes designed to help meet managerial needs. The programmes focus on technical, innovation, project, commercial and change leadership skills at different career stages as well as giving participants experience of the Group's regional operations.

\bigcirc Case Study

Campus recruitment campaign to tap top talent

With its focus on strengthening engineering pipelines and attracting young engineering talent, CLP tapped into global recruitment channels to attract the intakes for the 2024 Graduate Trainee Programme in Hong Kong.

Sessions introducing the programme were organised for more than 500 leading students in universities across Mainland China including Shanghai Jiaotong University, the South China University of Technology and the North China Electric Power University in addition to local universities. CLP also invited applications from students in Canada, Singapore, the US and the UK to join the programme.

The intensive, two-year graduate trainee programme nurtures future leaders and has produced many of the Group's senior leaders. Participants are offered job rotations across business units in Hong Kong and Mainland China and benefit from the guidance of senior CLP managers. The programme also gives graduates the opportunity to gain expertise in state-of-the-art technologies and business models to acquaint them with emerging technology and business models including renewable energy and smart energy solutions.

To date, more than 1,000 students have applied for the Graduate Trainee programme beginning in August 2024, more than twice as many as the previous year.



Over 1,000 students have applied for CLP's Graduate Trainee programme beginning in August 2024 following a successful recruitment campaign targeting students from leading universities in Mainland China and overseas.

Embedding agile and innovative ways of working

Utility companies must rapidly develop more agile and more flexible organisation structures and new ways of working to compete and capture business opportunities at a time when decarbonisation and digitalisation are transforming the energy market.

In Hong Kong and Mainland China, CLP implemented a new operating model to enable its business units to respond more quickly to customers and growth opportunities and simplify their operations by reducing interfaces. The new model ensures that the areas of the business closest to customers will have accountability for end-to-end delivery, operational and financial performance, supported by Group Functions in CLP Holdings.

To set clear expectations of the qualities and skills required for managers at CLP, the Group has a well-established system of leadership competencies. These were updated in 2023 to reflect the capabilities and behaviours required to succeed in the evolving business environment including change management, decision-making under uncertainty and partnering and innovating for value. Updated competencies are being integrated into the Group's employee training and development programmes, as well as performance management.

CLP continued to promote digitalised ways of working to deliver improved experiences and efficiencies for the workforce, and simplify business processes such as finance and human resources management to make them more streamlined and generate greater productivity. CLP is also migrating to new office designs that aim to support improved cooperation and interaction between employees.

CLP continued to invest in training to promote organisational agility. Almost 4,200 Hong Kong employees have been trained in Design Thinking since it was launched in 2019. Design Thinking aims to nurture an innovation culture and helps employees develop problem-solving capabilities and innovative mindsets.

CLP also launched online self-learning courses on robotic process automation (RPA) to show employees how the methodology can improve daily work processes. RPA aims to promote a digital mindset across the organisation, drive productivity gain, enhance customer experience and workforce satisfaction. Over 100 process automation projects are underway to help streamline work processes and minimise repetitive work.



Gender Distribution by Region



Notes:

1 Any minor discrepancy in total is due to rounding of percentages.

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

Voluntary Turnover Rate (%)	
By Gender	
Male	4.9%
Female	3.2%
By Age Group	
Below 30	2.7%
30 - 39	5.7%
40 - 49	3.3%
50 & above	1.9%
By Region	
Hong Kong	5.4%
Mainland China	2.6%
Australia	15.2%
Group Total	8.1%

Key Performance Summary¹

CLP had 8,041 full-time and part-time employees at the end of 2023 serving its businesses in Hong Kong, Mainland China and Australia, compared with 8,318 a year earlier. This included 5,865 employees in CLP's core markets of Hong Kong and Mainland China compared with 5,617 at the end of 2022. Total remuneration for the year ended 31 December 2023 was HK\$6,624 million compared with HK\$6,360 million in 2022, including retirement benefit costs of HK\$655 million compared with HK\$630 million the previous year.

	2023	2022
Total Workforce ²	16,282	18,752
Total Employees ³	8,041	8,318
Workforce fatalities	0	0
Lost Time Injury Rate ⁴ (Workforce)	0.06	0.10
Gender Diversity		
– Group Executive Committee ^{5, 6}	86% / 14%	73% / 27%
– Employees ^{3, 5}	73% / 27%	73% / 27%
 Women in Leadership positions⁷ 	29.1%	29.1%
– Women in Engineering ⁸	13.3%	13.0%
Voluntary Turnover ⁹	8.1%	10.2%
New Hires	1,168	1,415
Percentage of employees on permanent contract ³	85%	86%
Percentage of labour supply ¹⁰ and service contractors ¹¹ in workforce	50%	56%
Percentage of employees who received training ³	98.5%	98.8%
Average training hours per employee ³	44.1	46.2

Notes:

- 1 Apraava Energy ceased to be a subsidiary and is now accounted for as a joint venture. Apraava Energy is excluded in all figures for 2023, but included in figures for 2022.
- 2 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.
- 3 Full-time and part-time employees for Group and its subsidiaries.
- 4 See note 1 under Total Recordable Injury Rate at Group and Regional Level.
- 5 Male/female ratio. The data of other gender identities is tracked but is statistically insignificant and is therefore not separately disclosed.
- 6 Includes Executive Director (Chief Executive Officer).
- 7 Leadership positions are defined as positions at Korn Ferry Reference Level 19 and above.
- 8 Employees with a bachelor's degree or higher qualification in engineering.
- 9 Includes permanent employees only, except for Mainland China where both permanent and fixed-term contract employees are included due to local employment legislation.
- 10 Labour supply refers to workforce supplied by contractor companies under labour supply agreements. Reporting is based on quarterly averages.
- 11 Estimated service contractors FTE are calculated based on the number of man-hours incurred and market-specific average working hours.

Business Resilience

Maintaining resilience is a complex challenge for energy companies globally amid environmental, technological, regulatory and social changes and developments. Each of these changes alone is significant but combined they have led to a sharp rise in sustainability-related risks and opportunities. Climate change, for example, threatens energy infrastructure and operations, while in the short-term, extreme weather impacts renewable energy assets, in particular hydro power plants. Rising global temperatures meanwhile trigger changes in regulations as governments bring in stricter policies to achieve their climate targets, potentially creating medium- to long-term risk for the energy industry. By contrast, the rapid development of digital technologies such as artificial intelligence (AI) and data analytics tools offers new opportunities for utility companies to improve their operations and customer service. At the same time, every business must remain vigilant against the threat of cyberattacks in an increasingly digitalised world. Balancing these conflicting risks and opportunities calls for vision, strategy and commitment from energy companies to ensure effective and sustained business resilience.



99.999%

Reliability rate achieved by CLP Power in Hong Kong in 2023 (99.997% in 2022) CLP Power maintained reliable power supply with minimal service interruptions when Hong Kong was hit by Super Typhoon Saola and record rainfall within 1 week

CLP*e* opened a new office in Shenzhen's Longhua district to meet growing demand for sustainable energy solutions in the Greater Bay Area



Building resilience in the face of climate change and an evolving business environment

CLP invests in energy markets across Asia Pacific with vastly different regulatory requirements, and the Group's overall resilience depends on its ability to anticipate and respond to regional economic and energy policies and market fluctuations. In every market, the Group works closely with policymakers to support their objectives through business activities designed to meet local circumstances. Ongoing engagement with stakeholders is key to building increased understanding of CLP's businesses and the necessary regulatory framework conducive to a healthy energy industry.

In Hong Kong, CLP Power is regulated by the SoC Agreement with the Government. The SoC framework allows it to plan and invest cost-effectively in line with Hong Kong's long-term development needs while meeting the Government's policy objectives. The arrangement has provided an effective mechanism for CLP Power for 60 years to deliver a world-class electricity supply at a reasonable cost that powers Hong Kong's economic growth and minimises environmental impact. The SoC Agreement evolves in line with changing regulatory framework and community aspirations through an interim review conducted every five years. An interim review took place in 2023 for the current 15-year SoC Agreement ending in December 2033. CLP Power has agreed with the Government a new incentive and penalty mechanism for large-scale supply interruptions, special tariff relief in the event of future fuel crises and improvements to information transparency.

Governments worldwide are introducing new regulations and targets to promote the use of non-carbon energy. The Hong Kong Government is committed to achieving carbon neutrality before 2050. To support this, power companies will cease using coal for daily electricity generation by 2035 and increase the ratio of renewable energy in the fuel mix to between 7.5% and 10% by that year, and subsequently to 15%.

Hong Kong is densely populated and has limited potential for local renewable energy development. Regional cooperation is therefore crucial to achieve the Government's climate change targets. CLP is strengthening partnerships with electricity companies around the region while pressing ahead with existing initiatives, including enhancing the CETS to allow for more imports of zero-carbon energy from Mainland China. CLP, China Southern Power Grid, Companhia de Electricidade de Macau, and China General Nuclear Power Group meanwhile pledged to work more closely together on power supply, sustainable energy and energy storage systems in the Greater Bay Area (GBA) in an agreement reached at the 11th Guangdong, Hong Kong and Macau Power Industry Summit in Hong Kong in May. The agreement supports the Chinese Government's dual goals of peaking carbon emissions by 2030 and achieving carbon neutrality by 2060.

In Mainland China, the Government is accelerating reforms of the energy sector aimed at developing a unified national electricity market by harmonising technical standards and trading rules. CLP works closely with local authorities to navigate these dynamic market reforms.

In Australia, climate-related policies are fast changing, driven by policymakers at the federal and state levels as well as a vast array of government agencies. EnergyAustralia engages in regular dialogues with policymakers and regulators to support the development of a smart, clean energy system in the country. In particular, EnergyAustralia is focused on opportunities in flexible capacity as the phasing out of coal-fired power stations continues and more rooftop solar systems are connected. Two new battery energy storage systems in New South Wales went into service in October to provide EnergyAustralia with 90MW/180MWh of firming capacity under an offtake agreement. The new 320MW Tallawarra B power station will help maintain power supply reliability. EnergyAustralia also made progress on other proposed energy storage projects, including the Wooreen battery system in Victoria and a pumped hydro project in Lake Lyell in New South Wales.

Please see Transition to Net Zero on page 49 for further information on CLP's strategies to provide low-carbon energy.

With the development of sustainable energy solutions such as distributed energy systems and BESS, CLP needs to manage increased grid complexities and respond to changing customer needs. To stay on top of evolving market dynamics, CLP is accelerating the development of new energy services and business models to diversify from a traditional energy utility and reposition for success. For example, as customers need new ways to decarbonise their operations and become more sustainable, CLP*e* is providing solar energy and smart energy solutions, including energy-efficient cooling systems powered by AI, to a growing number of businesses and organisations in Hong Kong and other cities of the GBA. Solar energy customers for CLP*e* include the Drainage Services Department (DSD) in Hong Kong. CLP*e* completed the installation of a floating solar photovoltaic system at DSD's flood prevention project in Tin Shui Wai in the New Territories, with grid connection completed in September. Across the border, CLP*e* and the Cuiheng Group agreed to cooperate on the development of cooling systems in a new district in the southern city of Zhongshan. CLP*e* will also work with the Cuiheng Group on distributed solar energy and EV charging infrastructure.

To serve growing customer needs for sustainable energy solutions in the GBA, CLP*e* set up a new office in Shenzhen's Longhua district. This followed a memorandum of understanding (MoU) on energy digitalisation signed with the Longhua Government in 2022. Meanwhile, CLP*e* expanded its collaboration with MTR Shenzhen with the installation of a distributed solar energy system at the rail operator's carriage depot in Longhua, a year after providing a solar system for the company's headquarters in the district.

Please see Energy Growth Opportunities on page 57 for further information on CLP's new energy services and business models.

Mitigating extreme weather risks

CLP is an essential service provider and recognises the importance of making sure its infrastructure and operations are resilient to extreme weather events caused by climate change. Despite the growing occurrence of extreme weather events, CLP Power achieved an overall reliability rate of 99.999% in 2023. The Group continues to strengthen planning and mitigation measures to cope with the heightened risks. New technologies offer ways for CLP to better manage power grids and strengthen the resilience of its infrastructure.

A comprehensive assessment of the threat of extreme weather events to generation, transmission and distribution infrastructure in Hong Kong was conducted using weather data and climate models from the Hong Kong Observatory, the International Panel on Climate Change, World Resources Institute and other international groups. The assessment allowed CLP to determine the measures needed to deal with the impact of super typhoons, storm surges, wildfires and other extreme weather events on key energy infrastructure.

CLP's 2024-2028 Development Plan includes funding for projects to strengthen 400kV transmission lines and other network assets against extreme weather events.

\bigcirc Case Study

Standing strong through superstorms

Hong Kong was hit by Super Typhoon Saola and the heaviest rainstorm on record during a single week in September. CLP Power rose to the challenge and maintained a reliable power supply with minimal service interruptions as advanced monitoring and diagnostic systems and effective preventive measures helped ensure the integrity of its power supply system.

Super Typhoon Saola led to the suspension of most offices and schools across the city. CLP Power's operations remained largely unaffected, though about 18,000 customers suffered service interruptions as strong winds and fallen trees damaged some overhead cables and power supply equipment. Power was swiftly restored for affected customers.

When the rainstorm struck days later, CLP Power's electricity supply remained stable as flash floods and landslides affected many parts of the city. Power was restored within hours to around 1,000 customers who suffered interruptions.

In recent years, CLP Power has reinforced transmission towers and installed anti-flooding equipment at substations. Vegetation near overhead transmission lines is closely monitored and managed and CLP Power uses new technology for the detection and isolation of faulty sections of the network.

CLP Power conducts regular emergency drills and is investing in rapid construction technology to erect temporary masts and shorten the lengths of power interruptions during emergency repairs. The continuing rollout of smart meters for customers, especially in more remote areas, also increases CLP Power's ability to monitor supply interruptions. Flood gates and alarm systems are also being installed at substations to reduce the risk of disruption to the power supply.

Hong Kong is a non-stop city that relies heavily on electricity to keep its economy vibrant, making power supply reliability critically important.



CLP Power's engineering team strive to safeguard reliable power supply during adverse weather events to minimise the impact on customers.

CLP China took steps to reinforce the operational resilience of its renewable energy assets as well as that of new wind and solar farms under development.

The Bobai wind farm in Guangxi, currently under construction, will have a wind turbine tower capable of withstanding once-in-50 year strong wind speeds. Floodresistant solar panels are meanwhile being installed at the new Yangzhou Gongdao Solar Farm. Solar panels at Jinchang Solar Power Station and other sites are being strengthened to protect them against strong winds.

Robust early warning systems were installed at Huaiji Hydro Power Stations in Guangdong province to guard against flooding while ensuring safe operations during extreme weather. The plant was also modified to ensure it operates reliably in the event of a blackout. CLP China liaised with the local Government and neighbouring communities and conducted training and drills to raise awareness about the risks from flooding.

Volatile weather patterns caused by climate change have disrupted energy supplies worldwide in recent years. Drought conditions in Yunnan province in southwest China led to a reduction in output from Dali Yang_er Hydropower Station. Tariffs for electricity dispatched were also below expectations, resulting in a HK\$115 million impairment charge for the plant in 2023.

Reinforcing cyber resilience and data protection

Big data and advances in Al and machine learning technologies have transformed the way the world does business and offers powerful tools for energy companies to improve their operations and customer service. CLP continued to upgrade its data analytics capabilities as part of the Group's ongoing digitalisation efforts.

CLP Power developed a new data analytics tool to enhance the detection of faulty smart meters in customers' homes and businesses, leading to reduced time and manual effort in managing its metering network. The new software can also monitor customers affected by outages during extreme weather events and allow for faster supply restoration. CLP Power is exploring the use of data analytics to optimise management of electricity assets, fuel purchases and short-term load forecasting, and the use of Al-powered chatbots to support customer services and employee training.

CLP China and Apraava Energy in India continued to benefit from the use of the Group's advanced analytics platform to monitor the operations of renewable energy assets. The system incorporates big data and AI technologies to monitor the performance of wind and solar farms in real time.

Keeping cybercrime at bay

Cybersecurity threats have become greater and more complex as energy markets are reshaped by new digital technologies.

CLP set up new governance systems in 2023 to establish the roles and responsibilities for cybersecurity of all business departments across the Group, based on guidelines from the National Institute of Standards and Technology in the US.

A new security operations centre was established in Hong Kong to step up monitoring of cybersecurity risks and strengthen response to incidents. The Group continued to deploy new technologies to counter online threats and provided training to employees to increase their awareness of cybercrime.

Community Stewardship

Businesses only succeed and prosper in the long term if they build strong and sustainable relationships with the communities around them and safeguard the environment in which they operate. Companies that neglect their duties of stewardship and fail to control pollution risk financial penalties and public health concerns.

New 2025 and 2030 targets for reductions in air



for reductions in air emissions, water use and waste generation set for the Group No deterioration in water quality and stable marina mammal population throughout 31 months of construction for offshore LNG terminal in Hong Kong

> **100%** recycling of major operational recyclable waste products

Achieved

Reducing environmental impact

Environmental responsibility is a cornerstone of CLP's work to create a sustainable energy business. In addition to CLP's commitment to net-zero greenhouse gas emissions by 2050, CLP has been strengthening its efforts to cut air pollution and improve water and waste management through a comprehensive environmental strategy that encompasses every aspect of its operations.

The Group set ambitious new targets in 2023 for reductions in air emissions, water use and waste generation. The updated targets for 2025 and 2030 were calibrated to reflect the decline of coal-fired power in CLP's asset portfolio, and affirm the Group's commitment to ongoing improvement in environmental performance.

Air emissions management

CLP uses a combination of a managed fuel mix and advanced technologies to limit air emissions. The Group cut emissions of nitrogen oxides (NO_x) , sulphur dioxide (SO_2) and particulate matter (PM) in 2023 by 26%, 17% and 1% respectively compared with the previous year. The divestment of a majority stake in Fangchenggang Power Station in Mainland China contributed to the reductions, while emissions from India's Jhajjar Power Station were excluded as Apraava Energy is no longer a subsidiary.

Targets for 2025 and 2030 were set to guide further improvements in the Group's performance on reducing air emissions. The table below is a summary of the Group's targets and air emissions performance.

	2023 Perfo Reduction from 2022	rmance Reduction from 2021*	2025 Target*	2030 Target*
NO _x emission	-26%	-29%	-20 to -30%	-50%
SO₂ emission	-17%	-23%	-15 to -20%	-55%
PM emission	-1%	-12%	-10 to -15%	-90%

* Compared with baseline level of 2021

 NO_x emissions will be further reduced at Black Point Power Station in Hong Kong when the new D2 gas-fired generation unit goes into service, thanks to its use of selective catalytic reduction technology. The same system has effectively controlled NO_x emissions at the adjacent D1 unit since its introduction in 2020.

EnergyAustralia will use a plume dispersion device to manage exhaust gases from the new Tallawarra B power station in New South Wales when it enters service. The device helps cool exhaust gases from the gas turbine to slow the column of hot air rising from the power station, eliminating any safety threat to flights in and out of nearby Shellharbour Airport.

Two short-term carbon monoxide (CO) licence limit exceedances were recorded at EnergyAustralia's power plants in Victoria in 2023. The first exceedance occurred during an emissions test at Jeeralang Power Station. The other occurred during a recommissioning run after an outage at Newport Power Station. Both incidents were reported to the local authorities and no further regulatory action was taken.

Yallourn Power Station recorded a minor environmental licence breach related to coal dust control. EnergyAustralia reported the case to the Environment Protection Authority in Victoria and updated its internal risk management and monitoring system. The authority deemed the response from EnergyAustralia appropriate and the case has been closed.

Water management

CLP strives to reduce the amount of freshwater used for its operations, and manage the impact of new energy projects on water systems. Freshwater consumption decreased by 62% compared with the previous year, following the divestment of Fangchenggang Power Station in 2022. Since Apraava Energy has ceased to be a subsidiary of CLP, water consumption of the operator of the coal-fired Jhajjar Power Station was no longer included. In 2023, the Group set targets for reduction in water consumption by 2025 and 2030. The below table is a summary of freshwater consumption performance and targets for 2025 and 2030.

	2023 Perfo Reduction	rmance Reduction	2025 Target*	2030 Target*
Freshwater consumption	-62%	-71%	-45% to -55%	-85%

* Compared with baseline level of 2021

Black Point Power Station in Hong Kong completed a project to expand the capacity of its water treatment plant and increase its water processing efficiency. CLP Power also installed more rainwater harvest systems at its substations to reduce freshwater consumption, including water recycling tanks and automatic drip irrigation systems.

CLP China continued to implement robotic systems in its solar energy plants to reduce freshwater use through the automatic cleaning of photovoltaic panels.

EnergyAustralia conducted an investigation into the underlying geology and possible impact on groundwater from its proposed Lake Lyell pumped hydro project in New South Wales. The investigation results will be included in an environment impact study (EIS) for the project, which would involve a purpose-built upper reservoir to store excess energy.

Most of CLP's thermal power generation plants use seawater for cooling, including Black Point Power Station and Castle Peak Power Station in Hong Kong and Australia's Tallawarra Power Station and Newport Power Station. Where seawater cooling is not feasible, CLP strives to minimise its freshwater use and adopt water recirculation processes. The quantity of water withdrawal and discharge depends on electricity generation volumes, and CLP takes steps to ensure the quality of water discharge meets regulatory standards.

\bigcirc Case Study

Mitigating the environmental impact of energy infrastructure

The Hong Kong Offshore LNG Terminal jointly developed by CLP Power and The Hongkong Electric Company, Limited entered service in the summer of 2023 to open a new chapter in the city's low-carbon energy development. Despite the logistical challenges of the pandemic, the project maintained an exemplary environmental record throughout 31 months of construction.

The project was subjected to extensive environmental assessments and stringent regulatory requirements before construction began in the southwest waters of Hong Kong, which are a habitat for marine species including Chinese white dolphins and finless porpoises.

Mitigation steps included the use of noise reduction systems and the implementation of marine mammal exclusion zone monitoring during piling works for the terminal's marine jetty. Tests during construction and after the start of operations in 2023 found no deterioration in water quality while the marine mammal population has remained stable.

A stakeholders liaison group comprising academics and marine conservation and fisheries experts, along with representatives of fishermen's associations and the community, was set up in September 2020 and meets regularly to discuss environmental issues.

CLP Power and Hongkong Electric also set aside HK\$100 million to establish two funds to support environmental enhancement initiatives for marine ecology and conservation and sustainable development of the fishing industry. The Marine Conservation Enhancement Fund supports initiatives for the conservation and enhancement of the marine habitat, including initiatives on eco-tourism and education. The Fisheries Enhancement Fund meanwhile pays for enhancements to fisheries resources and sustainable fisheries development, as well as fisheries-related education and tourism.

Waste management

Waste products from the Group's operations decreased 68% compared with 2022, as year-earlier data included waste from Fangchenggang Power Station and Jhajjar Power Station, and both plants were no longer accounted for in 2023 due to divestments.

CLP is committed to minimising material use and waste disposal, and stepped up recycling efforts in line with circular economy principles. Across the Group's operations, major operational recyclable waste products including scrap metals, scrap rechargeable batteries, waste electrical and electronic equipment (WEEE) and inert construction waste were fully recycled in 2023.

The Group continued to recycle coal ash and gypsum, the main by-products of coal-fired power operations, for use in other industries including construction.

In 2023, the Group set waste reduction targets for 2025 and 2030. Key waste management performance and targets are summarised in the table below.

	2023 Perfo Reduction from 2022	rmance Reduction from 2021*	2025 Target*	2030 Target*
Waste products#	-68%	-71%	-65%	-70%

[#] Waste products include total waste produced from operation & maintenance activities and by-products produced by the coal-fired power plants

* Compared to baseline level of 2021

Recycling and Plastics Reduction	2023 Performance	Target by end 2025
Recycling of WEEE	100%	100%
Recycling of scrap/spent re-chargeable batteries	100%	100%
Recycling of scrap metal	100%	100%
Recycling of inert construction waste	100%	100%
Removal of single-use plastics in catering facilities	100%	100%

A minor environmental breach was recorded at Mount Piper Power Station in New South Wales in 2023, after brineconditioned coal ash and salts emplaced in the ash depository exceeded the maximum authorised height. EnergyAustralia has developed mitigation measures to relocate the materials and prevent a recurrence. The incident was reported to the New South Wales Environment Protection Authority and no further action is incurred.

Another breach related to unauthorised vegetation clearing activities at Tallawarra Power Station. EnergyAustralia swiftly contacted the Environment Protection Authority to explain the cause of the incident and no action was taken by the authority.

²

For more information on CLP's environment strategies and the Group's strategy on addressing nature-related topics with reference to the Taskforce on Nature-related Financial Disclosures, please see the chapter titled "Respecting Nature" in the 2023 Sustainability Report.

As well as its commitment to protect the environment, CLP is focused on efforts to improve community wellbeing, support education and development and promote arts and culture. For more information, please see the chapter titled "Community" in the <u>2023 Sustainability Report</u>.