CLP 中電

120 years 同行望遠 of shared vision

2021
Sustainability Report

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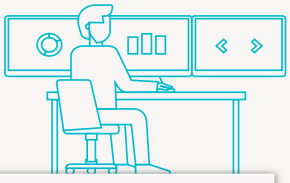
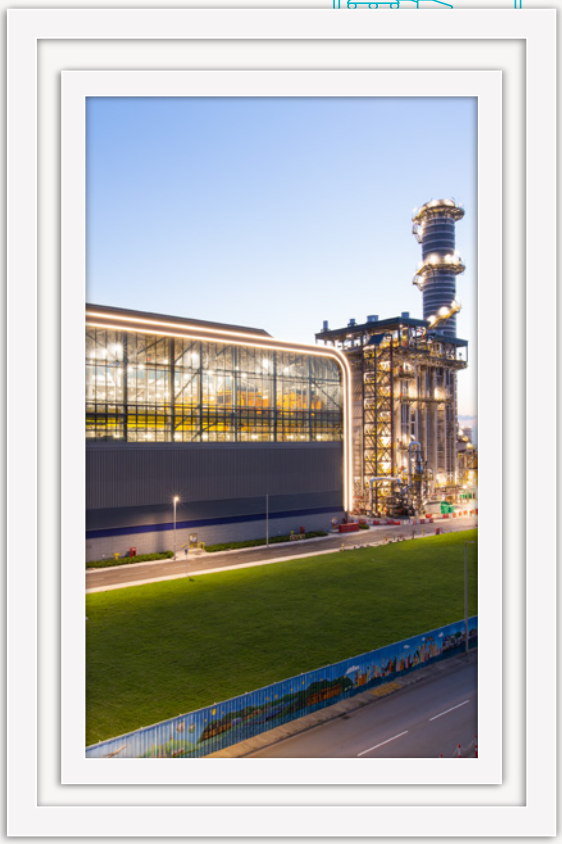
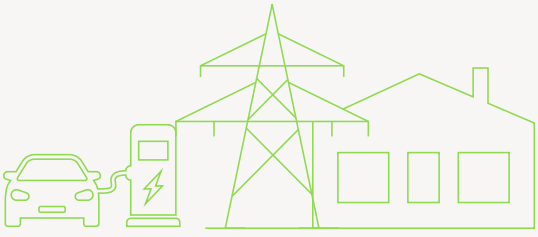




120 years of shared vision



Customers

Overview

As a purpose-led business, CLP recognises its obligation to meet the evolving expectations around the positive role businesses can play in society.

Customer expectations were once much simpler – they wanted access to a reliable power supply at an affordable price. While this still holds true, customer expectations have evolved and become manifold.

As general awareness of environmental impacts and climate change increases, many customers prefer their energy supply to have a lower environmental footprint, particularly in carbon intensity. Technology has empowered customers to exercise choice on where they source their electricity and how to seek ways to improve energy efficiency. In response, CLP has rolled out a range of customer-facing energy solutions, including those related to choice and efficiency.

Evolving smart energy systems, equipped with sensors, robots and sophisticated information and communication technology, create a new range of services that address customers' needs beyond simply energy supply.

The flip side of a smarter, more-connected, data-rich energy system is concern over data privacy. A breach of CLP's information technology could lead to public exposure of confidential customer details. Further, as CLP provides critical infrastructure, a breach of CLP's operational technology could significantly impact a region's economy and customer health and well-being through the temporary disruption of essential energy services.

The importance of cyber security and data privacy to protect customers' personal data and operation integrity cannot be underrated. It is vital that CLP continues to review its cyber resilience so customers can proceed with their day-to-day activities without fear of data leaks or supply disruption through cyberattack.

Key stakeholders

- Customers, Government and regulators, Communities, the Environment, Suppliers

Related material topics

- Shaping and executing the transition to net-zero
  - Managing the social impact of decarbonisation
- Aligning business activities with community, employee and customer expectations
  - Deploying customer-facing energy solutions
  - Acting as a trusted partner in the clean energy transition
- Reinforcing resilience in a changing operating environment
  - Reinforcing cyber resilience and data protection

Customer portfolio

Year in review

CLP operates retail businesses in Hong Kong and Australia, where the local market structures, regulatory requirements, electricity demand, customer preferences and cultural norms differ significantly. Overall, the number of customer accounts in both countries remained stable in 2021, with continued gradual growth reported in Hong Kong from the residential sector.

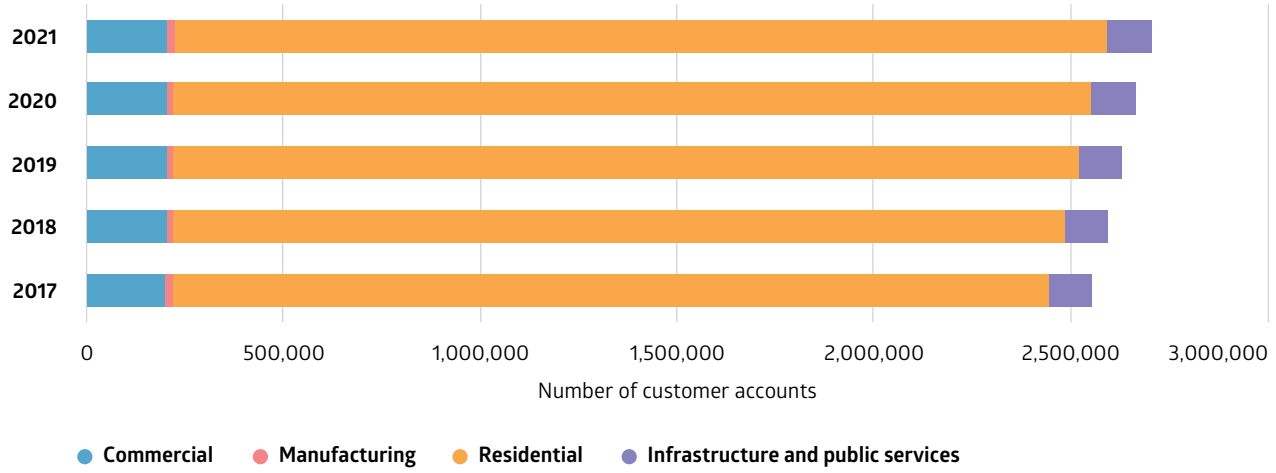
SASB reference: IF-EU-000.A; GRI reference: EU3

CLP Power Hong Kong is the sole electricity provider for Kowloon, the New Territories and most of the outlying islands of Hong Kong. It serves close to 2.7 million retail customers and about 80% of Hong Kong's population. Total electricity sales for 2021 were 35,355 GWh, with all sales coming from Hong Kong customers.

While Hong Kong is perceived by some as a mature market, there is still a growing demand for electricity. This is largely driven by a number of territory-wide development and infrastructure projects, as well as new local railway infrastructure projects that will improve mobility in Hong Kong. In addition, as Hong Kong is targeted as a prime location for data centres, there is a need to ensure highly reliable power supplies to support and facilitate the development of the energy-intensive data centre industry.

Hong Kong customer breakdown

The number of customer accounts continued to grow gradually over the last five years, mainly from the residential sector.

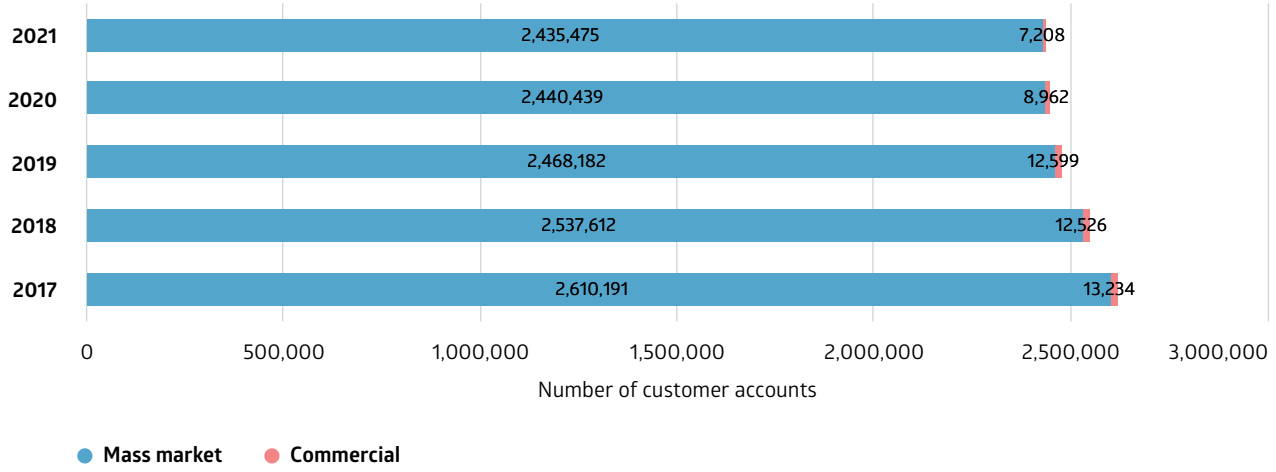


Hong Kong customer breakdown (number of customer accounts)	2021	2020	2019	2018	2017
Commercial	210,821	208,150	206,792	206,073	203,891
Manufacturing	17,427	17,540	17,575	17,966	18,650
Residential	2,369,217	2,333,901	2,301,200	2,265,151	2,228,438
Infrastructure and public services	113,956	112,245	110,841	107,893	104,543

EnergyAustralia sells electricity and gas to retail customers in New South Wales, Victoria, South Australia, the Australian Capital Territory and Queensland (electricity only). It is among the 30 or so retailers active in the key markets of New South Wales and Victoria. In 2021, EnergyAustralia's number of retail customer accounts remained broadly stable after three consecutive years of slight decline.

Australian customer breakdown

EnergyAustralia's number of customer accounts remained broadly stable in 2021 compared to 2020.



CASE STUDY

CLP India rebranded to Apraava Energy

After nearly 20 years of serving energy needs in India, starting from October 2021, CLP India continues its journey to power sustainable growth under its new corporate identity, Apraava Energy.

The name Apraava is inspired by the combination of four Sanskrit words: Agni (fire), Prithvi (earth), Ambu (water) and Vayu (wind), reflecting its ambition to harness the power of nature to pursue sustainable growth.

With over 1,100 MW of wind and solar projects, Apraava Energy is currently one of the largest investors in India's renewable power sector. Apraava Energy is fully committed to supporting India's commitment towards renewable energy and CLP Group targets, and has set a target to double its existing energy portfolio over the next four years.

APRAAVA ENERGY

Apraava Energy's new logo, inspired by the elements of fire, earth, water and wind.

Visit Apraava Energy's website

Access to electricity

Management approach

Access, in the context of electricity supply, is the ability to use an affordable and reliable electricity supply. CLP understands that electricity services are essential and strives to make them available to all.

Across the Group, services are in place that ensure most challenges, including language, culture, literacy, financial situation or disability, do not prevent people from accessing and using the Company's products and services.

Special arrangements are in place for customers facing financial difficulties to avoid having to disconnect their electricity supply. In Hong Kong, CLP Power offers a Braille bill to assist those who are visually impaired. In Australia, EnergyAustralia provides interpreter services for those with a first language other than English, and also offers hearing-impaired and vision-impaired billing services.

Year in review

Various subsidy schemes and hardship programmes in Hong Kong and Australia continued to relieve the hardship suffered by those in need and safeguard their access to electricity.

SASB reference: IF-EU-240a.3; GRI reference: EU27

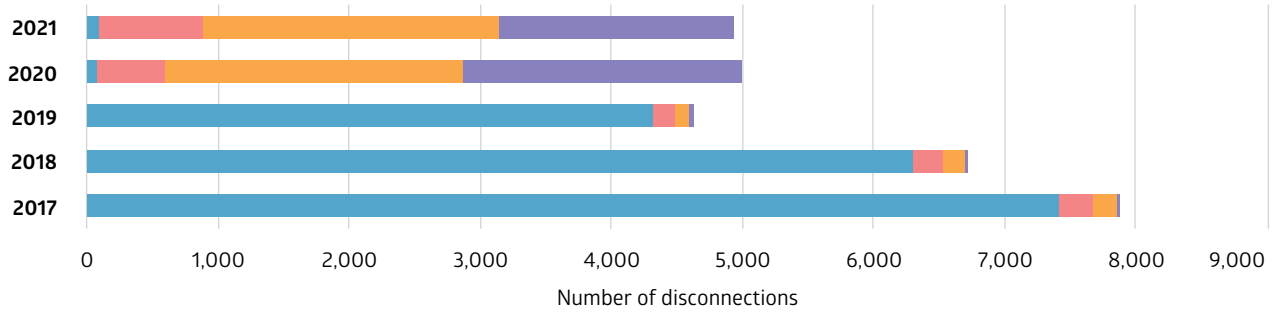
Hong Kong

CLP understands that although the tariff level in Hong Kong is reasonable and competitive, when compared to other major metropolitan cities around the world, it could potentially be a financial burden to vulnerable groups.

During 2021, in supporting residential customers, CLP Power offered a total of HK$26 million in electricity subsidies to around 50,000 households in need through the ongoing CLP Power Connect Programme. It pledged a further HK$50 million for 2022. Under the programme, CLP Power also provided subsidies for the landlords of subdivided units to carry out rewiring works, and install individual electricity meters for tenants of subdivided units, to improve the safety of the units and electricity usage tracking. The programme was launched in January 2019, and at the end of 2021, 34 subdivided units were rewired with 116 individual electricity meters installed.

Disconnections for CLP Power Hong Kong

The total number of disconnections for Hong Kong retail businesses was 4,943 cases in 2021, a similar level to 2020 with 4,999 cases.



Disconnections for CLP Power Hong Kong (number)	2021	2020	2019	2018	2017
0 - 2 days	105	98	4,333	6,319	7,426
3 - 7 days	796	506	170	225	255
8 - 31 days	2,251	2,274	101	168	192
≥ 32 days	1,791	2,121	39	10	15

Australia

EnergyAustralia recognises that all customers need to be able to access its products and services fairly and equally. Through its Energy Charter, EnergyAustralia commits to working together to improve affordability and to support customers experiencing vulnerable circumstances.

Download EnergyAustralia's Energy Charter 2021 disclosure

2021 was another challenging year for Australian customers due to the COVID-19 pandemic lockdowns and floods on the east coast in March 2021. This saw a significant increase in both residential and business customers experiencing financial difficulties and seeking support, many for the first time in New South Wales. Victorian customers required ongoing support due to being in lockdown for 267 days between March 2020 and October 2021.

In response to the pandemic, from March to December 2021, EnergyAustralia helped residential customers experiencing difficult financial situations by putting in place over 254,000 payment plans and granting more than 237,000 payment extensions.

For customers impacted by long-term financial hardship, assistance is available under the EnergyAssist hardship programme. The programme helps customers by offering tailored payment plans, payment matching and debt waivers, as well as energy efficiency education to ensure that customers are well-informed for making decisions. EnergyAustralia monitors the number of customers on the programme, their debt levels and the number of successful completions. In 2021, 38,827 account holders entered the programme and 9,755 account holders left the programme after successfully completing their payment commitments. This represents a graduation rate of 27%, slightly lower than 33% in 2021.

EnergyAustralia's business customers were some of the first to access tailored support. In consultation with customers, specialist EnergyAustralia business advisers devised payment schedules, offered free standard disconnections and reconnections, advised on lowering energy consumption and provided guidance on government energy relief subsidies.

Rapid Business Assist, a programme launched in 2020 to support SMEs facing financial uncertainty, continued in 2021. In consultation with customers, specialist EnergyAustralia business advisers customise payment schedules, offer free standard disconnections and reconnections, advise on lowering energy consumption, and provide guidance on government energy relief subsidies.

In 2021, the programme provided more than 16,000 payment extensions and over 2,600 payment plans for business customers. Small business suppliers were moved to 14-day payment terms to support their cash flow.

Read more on EnergyAustralia's Hardship Policy

Find out about the assistance provided by EnergyAustralia during COVID-19

Availability and reliability

Management approach

Availability and reliability of electricity supply are two key performance metrics that track CLP's ability to meet its commitments to customers.

GRI reference: EU10

Goals and targets

For generation assets, CLP monitors the availability factor in terms of the amount of time that an asset is able to produce full load equivalent electricity over a certain period, divided by the amount of time in that period. Typical values range from 70% to 90%, and CLP aims to maintain an availability range of 90% and above for newer assets.

Targets for each asset are set annually and included in the business plan. Performance is reported on a weekly basis to senior management. Any significant performance variance is analysed and corrective action is taken where appropriate.

Strategies and procedures

While CLP has generation businesses across the Asia-Pacific region, Hong Kong is the only location where the business is vertically integrated. In other words, it provides generation, transmission and distribution of power, as well as retail services. CLP Power Hong Kong is regulated by the Hong Kong Government under a Scheme of Control (SoC) Agreement framework that requires the Company to forecast electricity demand and plan for investment to provide a safe and reliable electricity supply to customers. In Hong Kong, CLP uses various measures to maintain high supply availability and reliability. These measures include:

- Upgrading generation and network facilities to meet new electricity demand;
- Maintaining sufficient generating capacity to meet forecast demand as well as planned and unforeseen outages;
- Presenting an additional and economically viable gas supply option that can offer energy security through access to competitive gas supplies from global markets using Floating Storage and Regasification Unit (FSRU) technology;
- Adopting advanced technology, such as smart grid, and implementing demand-side management measures to reduce demand growth and improve utilisation of existing assets;
- Improving the quality of the power supply to minimise voltage dips; and
- Enhancing power systems to minimise the impact of adverse weather.

Across the Group, CLP promotes organisational learning and the building of technological capacities to ensure availability and reliability. Insights learned from regional experiences are shared amongst functions to plan for a consistent management framework. This practice facilitates better portfolio management and reduces risks to the Group's operations as a whole.

Transmission network

To cope with the territorial development of Hong Kong, CLP reviews future transmission network developments annually in accordance with: the latest system maximum demand forecast; area load growth; infrastructure development; and generation development.

Annual maintenance and improvement programmes have been developed for major transmission assets based on the analysis of current conditions and performance of the assets, levels of investment and risk.

The power supply network is most exposed to damage from extreme climate events, potentially leading to service disruptions. In response, CLP continues to improve the reliability of its power supply network through a range of measures.

Find out more in the 2021 Climate-related Disclosures Report

In India, Apraava Energy has adopted the philosophy of predictive and corrective maintenance of its transmission assets. This includes pre-emptive check-ups and assessments on operational clearances, ensuring assets are well structured and maintained with proper setup, hardware and security. Frequent patrolling is carried out for conducting assessments on landscape and assets. The results are used to identify defects and plan for shutdowns if needed.

Apraava Energy has started using a mobile application for the real-time tracking of site patrols to shorten the response time for rectifications, if required. Thermo vision cameras aid the team in reaching the site with defects through heat mapping. The use of drones for site patrolling is under planning, while a ground team will be retained at strategic locations to allow them to attend to damages when required.

With the operations and maintenance strategy in place, Apraava Energy has achieved 100% availability of electricity to customers since its acquisition in November 2019.

Year in review

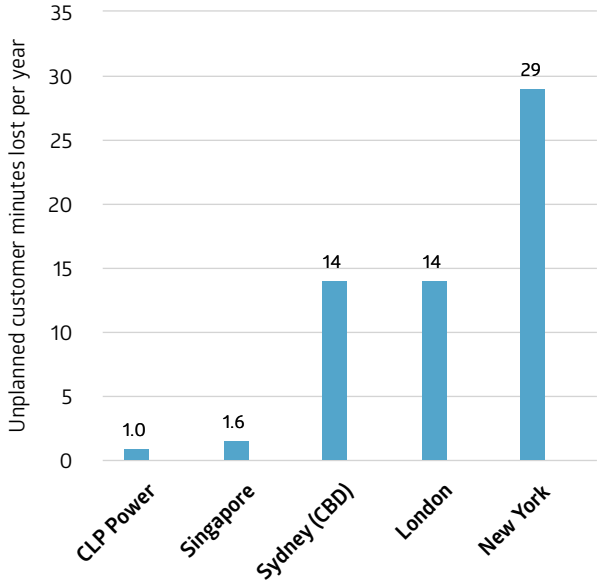
In Hong Kong, CLP maintained its world-class supply reliability of over 99.999%. This is a higher rating than that experienced by other major international cities such as London, New York and Sydney.

SASB reference: IF-EU-550a.2; GRI reference: EU4, EU12, EU26, EU28, EU29, EU30

CLP's transmission and distribution network in Hong Kong serves about 80% of the population of the city and close to 100% of the population in the Company's service area. At the end of 2021, CLP Power had approximately 1,140km of overhead and 15,257km of underground circuits at medium or higher voltage. In addition, there were 237 primary and 15,204 secondary substations operating in Hong Kong. As of 2021, the average network loss for the past five years was 3.61%, slightly lower than the five-year average of 3.69% reported in 2020.

To arrive at these percentages, a set of universally recognised supply reliability performance indicators is used from the Institute of Electrical and Electronics Engineers standard (IEEE 1366-2012) to monitor system performance. CLP's performance against these indicators is reported annually to the Hong Kong Government.

Comparison of reliability levels between cities



1 2019-2021 average for CLP Power.
2 2018-2020 average for all cities.
3 There are no overhead lines in Singapore

Supply reliability performance indicators and results for CLP Power Hong Kong

Indicator	Result
System Average Interruption Frequency Index (SAIFI) The average number of supply interruptions for each customer served. Both planned and unplanned interruptions are included.	· The three-year average SAIFI (2019-2021) was 0.21, meaning customers experienced a power interruption approximately once in five years during this period. This was slightly higher than last year's three-year rolling average.
System Average Interruption Duration Index (SAIDI) The average duration of interruptions each customer may encounter in a given year.	· The three-year average SAIDI (2019-2021) was 0.23 hours, including both planned and unplanned interruptions. This was lower than last year's three-year rolling average.
Unplanned Customer Minutes Lost (Unplanned CML) The average duration of unplanned power interruptions per customer in a given year. These outages occur without prior notice, and happen as a result of various factors such as weather events, third-party damage to the network and equipment faults.	· The three-year rolling average (2019-2021) of unplanned CML was about 0.99 minutes, which was lower than the 9.77 minutes recorded in 2020. About 8.85 minutes of unplanned CML was due to the severe impact of Super Typhoon Mangkhut in September 2018, without which the 2020 performance would have been about 0.92 minutes. CLP Power maintains a world-class supply reliability of over 99.999% in Hong Kong, which is higher than other major international cities as shown in the diagram above.

Customer satisfaction

Management approach

CLP is committed to providing quality service and value to customers. This includes meeting regulatory requirements and delivering on customer service pledges.

GRI reference: 417-1

Strategy and procedures

CLP customers can access information on products and services in a timely and efficient manner through a number of communication channels, such as a welcome pack for all new customers, information on the CLP Power Hong Kong websites and CLP Mobile App, as well as the EnergyAustralia websites and Mobile Apps.

CLP also strives to effectively respond to customer needs and preferences. All escalated cases are studied thoroughly to appropriately resolve the issues customers have raised.

EnergyAustralia has over two million conversations with customers every year, either over the phone or via digital service channels. It also engages with more than 100,000 individuals, businesses and stakeholders annually through formal research to help shape business decisions, products and services.

Monitoring and follow-up

To gauge customer feedback about retail services and performance, customer satisfaction surveys are conducted regularly.

In Hong Kong, an external market research consultant conducts an annual telephone survey. The customer satisfaction score considers overall satisfaction towards CLP and a relative rating against an ideal utility in Hong Kong. The score is benchmarked against the public utilities in the energy sector and other public service organisations.

In addition to the number of calls and complaints received, EnergyAustralia also measures customer satisfaction through its Strategic Net Promoter Score (NPS). Customer satisfaction is measured monthly via an online NPS survey sent to a representative group of customers. The Transactional Net Promoter Score is also used to track customer satisfaction in relation to specific customer interactions, providing more direct feedback to frontline staff.

Year in review

CLP has continued to maintain a high level of customer satisfaction during the COVID-19 pandemic. The frontline teams have continued to maintain essential support and ensure the reliability of power supply and customer service.

GRI reference: 417-3

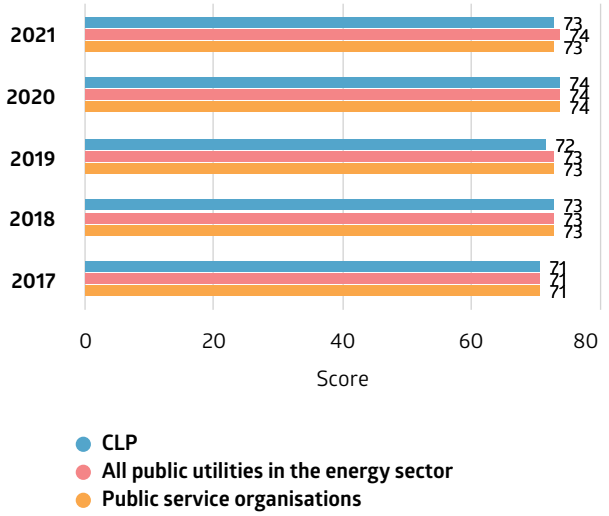
Hong Kong

In 2021, CLP Power's customer satisfaction score dropped slightly, though remained on par with other public service organisations.

During the pandemic, CLP Power has successfully communicated the benefits of smart meters to customers. By the end of 2021, CLP Power was on schedule to have rolled out over 1.2 million smart meters. The insights gained through customer use of smart meters allows the Company to create more focused products and services that better match customer needs.

CLP Power Hong Kong customer satisfaction score

CLP Power's customer satisfaction score dropped slightly in 2021, though remained on par with other public service organisations.



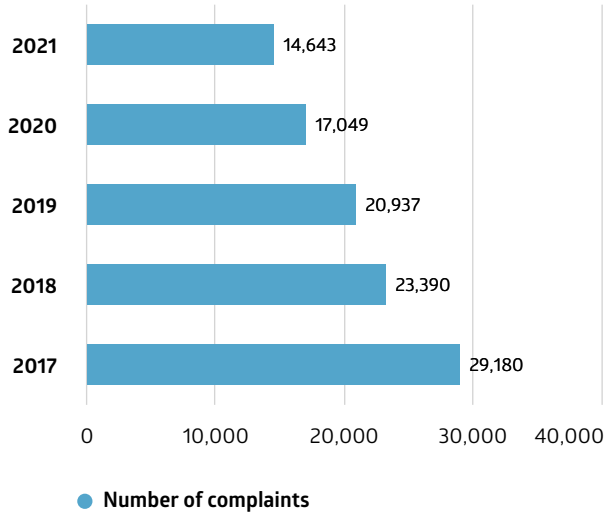
Australia

While customers have continued to experience the impact of COVID-19 on their day-to-day lives, EnergyAustralia has demonstrated its continued commitment to its customers by focusing on the quality of service they receive. Enhancements to the EnergyAustralia app have seen more than 110,000 downloads in 2021 providing a new channel for customers to interact aligned to their preferences, which has helped drive a 10% reduction in call volumes.

Complaint volumes continued to decline, with total complaints received declining by 14% from the 2020 figure. This result was brought about by continued improvements in internal and external dispute resolution practices, and operational interventions to address key billing complaint drivers.

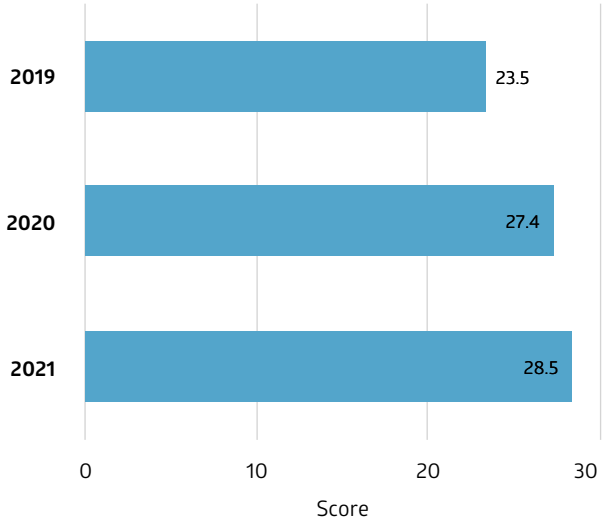
Complaints received by EnergyAustralia

The focus on billing complaint drivers and improving dispute resolution is reflected in the decrease in number of complaints received.



EnergyAustralia has been measuring its Strategic Net Promoter Score (SNPS) to assess customer engagement since 2012. This is measured monthly via an online survey, which is sent to a representative group of customers. The Transactional Net Promoter Score (TNPS) is also used to track customer satisfaction in relation to specific customer interactions, providing more direct feedback for frontline staff. EnergyAustralia's TNPS has increased steadily in the past three years. This reflects better quality interactions and customers valuing the extra support EnergyAustralia offered.

EnergyAustralia's Transactional Net Promoter Score



Customer privacy

Management approach

Under the CLP Code of Conduct, every employee must safeguard the Company's assets and the resources entrusted to the Company's care, including customer information, against loss, theft or misuse.

GRI reference: 418-1

In Hong Kong, the Personal Data (Privacy) Ordinance (PDPO) governs the protection of personal data of individuals. The Data Protection Principles in the PDPO frame CLP Power's obligations (as a data user) relating to the collection, accuracy, retention, use and security of personal data, and a customer's right to access their personal data.

EnergyAustralia has obligations under the Privacy Act 1988 to ensure that personal information is appropriately used, handled and managed. Under the Privacy Act, there are mandatory data breach reporting obligations. EnergyAustralia is required to report notifiable data breaches that are likely to result in serious harm to individuals to the Office of the Australian Information Commissioner (OAIC) and to the affected customers.

Throughout 2021, the Australian Competition and Consumer Commission (ACCC) continued consulting with the energy sector on the Consumer Data Right (CDR). The CDR will give customers the right to share their transaction, usage and product data with service competitors and comparison services, if they choose to do so. Under the customer's direction, EnergyAustralia will be obligated to provide data to accredited third parties. Comparable obligations have already commenced in the Australian banking sector. This reform is anticipated to be in force within the energy sector by mid to late 2022.

Strategy and procedures

The CLP Privacy Principles set out the Company's commitment and approach to protecting personal data.

All employees must follow CLP procedures, practices and local regulations in relation to personal data privacy. The Group preserves the confidentiality of the personal data provided to it in accordance with the CLP Privacy Policy Statement, which was updated with effect from 1 November 2018. The CLP Privacy Policy Statement demonstrates the Company's approach to protecting personal data and is applicable to everyone across its entire operations who handles personal data.

In addition, business units with operations in Hong Kong must implement and abide by the CLP Personal Data Protection Compliance Manual (2021 version) which sets out CLP's data protection compliance framework, including its governance structure and the corporate data protection officer's roles and responsibilities. This manual also provides guidance on the protection and use of personal data. Adherence to policies and procedures regarding privacy and data protection are further embedded in CLP's Code of Conduct and the compliance management procedures of the Code.

Monitoring and follow-up

Across the Group, CLP monitors and documents any complaints related to breaches of customer privacy and the loss of customer data. In addition to the CLP Personal Data Protection Compliance Manual, the Customer & Business Development Unit has a written guideline for handling customer data incidents. The guideline includes the classification and assessment of the scope and severity of a data incident, reporting roles and responsibilities, and the incident response strategy and checklist. The Corporate Data Protection Officer also retains a record of data incidents and follow-up actions.

Learn how CLP responds to cyber security incidents →

EnergyAustralia has developed and maintains a Data Breach Response Plan which is implemented by a Data Breach Response Team. The plan outlines the strategy for assessing, managing, containing and reporting data breaches within required timeframes and outlines roles and responsibilities. It is enacted each time a potential data breach is identified.

Training and awareness

In further reinforcing CLP rules to protect customer information, a key focus has been the prevention of unauthorised disclosures to malicious attackers or impersonators. Specific awareness activities, including communications, quality assurance assessment, coaching and additional training for frontline staff, were carried out during the year. Company-wide communications, employee training and briefing sessions with leadership were also conducted to ensure all staff understand current privacy and data management obligations. A Data Breach Response Plan is in place. It establishes a Data Breach Response Team to ensure the business has the capability and procedures in place to respond swiftly to such incidents.

Customer privacy may be compromised as a result of a cyber security incident, or by the mishandling of customer information by employees. Following the compulsory e-learning programme on data protection for all employees in 2020, the e-training was mandated in 2021 for all new joiners, Legal Review Committee meetings, as well as all data protection officers and record managers. Within individual business units, CLP runs data protection awareness programmes through briefings, posters, case studies, quiz games and refreshers. Industry threats are continuously reviewed with a view to strengthening controls on managing and monitoring networks, systems and mobile devices, data loss and suspicious cyber activities. CLP also regularly reinforces the need for timely reporting of potential privacy incidents.

At EnergyAustralia, customer privacy remains the focus of briefing sessions with leadership, enterprise-wide communications and employee training to ensure all staff are up-to-date with current privacy and data management. Specific awareness activities (including communications, further training, quality assurance assessments and coaching) for frontline staff took place in 2020. This has further reinforced rules to protect customer information.

Year in review

In 2021, both CLP Power in Hong Kong and EnergyAustralia reported no cases of customer data loss.

GRI reference: 418-1

CLP Power had no customer data loss cases reported in 2021. It had two privacy data incidents related to employee matters. One of these incidents was reported to the Privacy Commissioner for Personal Data who is pursuing this matter with the employee and the employee's previous company directly with no further action required by CLP Power.

In 2021, CLP Power was awarded the Gold Certificate in the Privacy-Friendly Awards from the Office of the Privacy Commissioner for Personal Data (PCPD), Hong Kong, in recognition of its performance in the protection of personal data. PCPD carried out an inspection on CLP Power in 2021, and positively recognised seven aspects of CLP's practices considered to be exemplary for the public utility industry.

In 2021, a notifiable data breach associated with an email containing private information sent incorrectly to an EnergyAustralia customer's old email account was reported to the Office of the Australian Information Commissioner. The breach did not result in any penalty or sanction and EnergyAustralia has been working with the customer on a solution to the matter.

The Personal Information Protection Law (PIPL) became effective in China in November 2021. It is Mainland China's first comprehensive legislation regulating the protection of personal information. While CLP China is not involved in the consumer market, it has considered the PIPL and related implementation regulations, and is in the process of developing compliance actions including changes to human resources policies and the transmission of human resources-related data to Hong Kong.

Energy services and solutions

Management approach

Through close customer engagement, the application of new technology and increased customer awareness of energy consumption, CLP is now offering a suite of sustainability products to meet different customer needs.

Strategy and procedures

Drawing on CLP's long expertise in the power industry, residential and business customers and the community at large are being encouraged to use energy more efficiently and change their behaviour so that they can save more energy and help protect the environment.

CLP aims to change people's habits and encourage them to conserve energy through:

- Equipping customers with tools and technical support;
- Supporting enablers to make greater energy efficiency possible;
- Providing customers with information and energy-saving tips; and
- Educating the public.

Goals and targets

The CLP Power Customer Service Quality Policy includes a commitment to support customers in using CLP products and services more efficiently and effectively.

In Hong Kong, CLP Power is regulated by the Scheme of Control (SoC) Agreement, in which the current SoC (2018-2033) refines the list of energy saving and demand side management goals and targets covered in the previous SoC (2008-2018). The SoC (2018-2033) includes:

1. Performance targets for the energy audit and energy saved from the energy audits. Under the current SoC, targets are set at about four times the rate of previous targets. This will see 600 energy audits available to business customers a year with total electricity saved expected to reach 48GWh each year.
2. Demand response programmes offered to commercial and industrial customers to lower the overall system demand, resulting in a lower requirement for investment in new generation units in the long-term. The target for this initiative is to achieve a reduction of up to 60MW from the demand peak.
3. A new five-year energy saving target. CLP must achieve at least 4% of energy savings on the basis of the average annual sales within a five-year period in order to earn incentives issued under the SoC. More incentives will be given if the energy saving reaches 5%.

Read more on CLP Power's SoC performance

Year in review

In addition to its obligations under the SoC, throughout the year CLP continued to offer a range of customer-facing solutions and energy services to meet customers' evolving expectations.

GRI reference: 2-6, 302-5

CLP's investment and venture portfolio continued to support the Company in developing its energy businesses, generating opportunities in growth markets and delivering strategic value. CLP exercises a prudent portfolio management approach through in-depth analysis and proactive management. In 2021, the Group invested HK$91 million, compared with HK$78 million in 2020[2], in creating a portfolio that consists of venture capital funds based in key innovation hubs, joint ventures with Other Sources Energy Group, which has a proven investment track record in clean energy technologies in Israel, as well as direct equity investments in various companies.

Other channels that CLP has adopted to enhance its service offerings included technology licensing, supporting accelerator programmes such as FreeElectrons, and partnering and co-creating customer-facing solutions with suppliers, customers or other partners. These efforts have helped CLP develop a suite of end-to-end products and services along the electric utilities value chain. They are summarised in the tables below.

[2] 2020 figure was restated.

Enabling low-carbon electricity supply	Updates in 2021
Decentralised renewable energy / rooftop solar To support the decentralisation of energy and growth of renewables, CLP offers private renewable energy solutions via feed-in tariffs and rooftop solar. · The Feed-in Tariffs (FiT) Scheme in Hong Kong allows customers to install a solar and/or wind power renewable energy system on their premises and connect the system to the CLP grid to earn FiT payments. · The Solar Plus Plan and Solar Home Bundle are solar feed-in-tariff schemes for Australian customers based in New South Wales. Under the Solar Plus Plan customers had premium solar panels, an inverter and Tesla Powerwall installed for $0 upfront on a seven-year plan. Customers pay a low flat rate for the electricity used throughout the period, and will own the system outright at the end of the seven-year period.	· Since the FiT Scheme's commencement in mid-2018, and as at the end of 2021, CLP Power has received over 18,600 applications. Around 90% of the applications, representing a total capacity of around 265MW, have been approved. More than 12,100 applications have been completed and connected to the grid. · The FiT Scheme has attracted customers from a variety of sectors including business and industry, schools, and both urban households and village houses. · The Solar Plus Plan pilot was open for New South Wales customer applications between June and October 2020, and EnergyAustralia has now installed all of the systems for eligible customers.
Corporate Power Purchasing Agreements (PPAs) Businesses wishing to increase their direct renewable energy availability may elect to enter Power Purchasing Agreements with CLP. The PPAs provide customers with the most credible and efficient provision of available clean energy.	· With increasing market demand, CLP proactively engages with customers in the large property sector to support their renewable energy conversion journey.

Using electricity more widely for transport and industry	Updates in 2021
Electric vehicle infrastructure · To further support green motoring and electrification in Hong Kong – a long-term government policy objective set out in the *Hong Kong Roadmap on Popularisation of Electric Vehicles* – CLP Power extended its free charging service for its electric vehicle (EV) charging stations until the end of 2022. · CLP Power's Eco Charge 2.0 EV Power Supply Support service supports applicants who are interested and qualified in applying for funding for EV charging-enabled infrastructure in the car parks of private residential blocks under the government's EV-charging at Home Subsidy Scheme. · In 2016, CLP Power formed Smart Charge (HK) Limited, a joint venture with HKT to provide a one-stop service for electric vehicle charging.	· CLP continued to provide free EV charging services at more than 50 locations to encourage the expansion of green motoring in Hong Kong. · Since the Eco Charge 2.0 service was launched in November 2020, CLP Power has completed preliminary assessments for around 94% of the 451 applications received by the end of 2021 from owners of private buildings and estate managers, covering around 119,000 parking bays. Professional advice were provided to support applicants. · To date, Smart Charge has designed, installed, and currently manages EV charging infrastructure in residential car parks in Hong Kong that covers a combined total of almost 10,000 car spaces. · There are over 360 charging stations at the Company's premises in Hong Kong to support greater EV adoption across CLP operations. EnergyAustralia's EV charging facilities have also expanded to include the Newport Power Station in addition to head office and the Yallourn and Mount Piper power stations.

Improving energy efficiency	Updates in 2021
Energy audits CLP provides a free energy audit and various consulting services to commercial and industrial (C&I) customers to help them understand their energy needs and identify potential avenues to reduce their energy use and operating costs.	· CLP Power conducted more than 600 energy audits and offered energy saving advice to C&I customers in 2021. · In 2021, C&I customers saved around 50GWh of electricity from energy audits. · CLP Power quadrupled the number of energy audits from 150 to 600 a year under the current SoC, and in 2021 exceeded the annual total electricity saved target of 48GWh.
Energy efficiency improvement Buildings continue to contribute significantly to Hong Kong's energy demand, becoming major pain points for customers. CLP offers various subsidies to support customers' energy-saving retrofitting works. · The CLP Eco Building Fund provides subsidies for energy efficiency improvement works for residential, commercial and industrial buildings. · The CLP Electrical Equipment Upgrade Scheme for business customers provides subsidies to customers, especially SMEs, to replace or upgrade their lighting and air-conditioners to more energy-efficient models.	· Eco Building Fund funding was increased to HK$100 million a year with an annual target to provide subsidies to 400 residential blocks and C&I buildings to carry out improvement works to enhance the energy efficiency of communal areas of buildings. The initiative aims to save 48GWh of energy per year. · Since the Electrical Equipment Upgrade Scheme launched in 2019, and as at the end of 2021, over HK$53 million has been offered to subsidise C&I customers for replacing or upgrading more energy efficient electrical equipment.
Cooling-as-a-service Building cooling systems are usually the largest power consumer in a building. CLP provides targeted solutions, via chiller retrofitting and replacement services, cooling-as-a-service and district cooling solutions, to further increase the energy efficiency of buildings.	· In August 2021, CLP China obtained its first centralised cooling system business customer in the Greater Bay Area. CLP China will provide upgrading works for the centralised cooling system of the Guangzhou Po Park Shopping Plaza. Alongside the modification of the cooling system, equipment and design, CLP will operate and maintain the cooling system for approximately 14.5 years (from 1 November 2021). Commissioning of the project is planned for completion in January 2022. · After its success in 2020, more customers have adopted the *SEC Chiller Optimisation Solution*. Using data collected from environmental sensors and with reference to equipment conditions, chiller settings are continuously adjusted to ensure environmental conditions are optimised. The solution has been adopted in several projects in Hong Kong and Mainland China. As part of the cooling-as-a-service project in the GBA, the solution was also deployed at a large retail complex in Chengdu, where 16% of energy use was saved.
Peak demand management To facilitate long-term reliability of electricity supply, CLP works with customers to manage electricity demand and incentivise reduced consumption during peak demand events. · Demand Response programmes are offered to commercial, industrial and selected residential customers in Hong Kong in order to lower the overall system demand, resulting in a lower requirement for investments in new generation units in the long-term. · EnergyAustralia's PowerResponse comprises a residential demand response programme and a contracted demand response programme for commercial customers. PowerResponse secures energy capacity which can be called upon within short timeframes for situations when availability in the national electricity market falls to critical levels.	· In Hong Kong, peak power demand was reduced by over 70MW thanks to the activation of CLP Power's demand response programme on 27 July, when electricity demand reached a new peak of 7,477MW. More than 30,000 of CLP Power's commercial, industrial and residential customers were incentivised as part of the programme. · By the end of December 2021, EnergyAustralia's demand response contracted capacity was over 186MW. · More than 346,000 residential customers are part of the PowerResponse programme. · Free Saturdays was launched in November 2020 for eligible New South Wales customers to sign up to online. The trial was promoted during the whole of 2021.

Improving energy efficiency	Updates in 2021
· EnergyAustralia's Free Saturdays is a new residential electricity trial plan available to New South Wales smart meter customers. The plan provides eligible customers with free energy on Saturdays for a year in lieu of traditional discounts.	
Energy management technology Innovations in technology will continue to play a large role in improving energy management and efficiency. CLP links customers to a host of solutions and products to monitor, optimise, and automate their energy usage and consumption patterns. · Launched in 2019, CLP's Smart Energy Connect (SEC) is a platform designed to accelerate the adoption of energy management solutions and digital energy innovations. SEC launched different Energy Connect (EC) Solutions including EC Building, EC Campus and EC Workspace to cater to different customers' needs: 1. The *EC Building* solution is a set of energy management solutions for building level systems, helping building owners and facility management teams enhance building management by conducting asset health monitoring, optimising energy usage and automating system operations. 2. *The EC Campus* solution focuses on addressing both the energy saving and educational needs of schools where a range of IoT sensors may be deployed on premises, while the solutions and data can be used to support STEM education needs. 3. The *EC Workspace* solution helps users save energy in large office environments by automating the usage of electrical equipment based on environmental data provided by various sensors. · A mass rollout of smart meters to all CLP Power Hong Kong customers, from 2018 to 2025, supports Hong Kong's transformation into a Smart City. · Echo Group supports the Company's large commercial, industrial and business customers achieve their saving targets and environmental benefits through specialist solar and LED products. · ResponsePro provides commercial and industrial customers with advance notice and flexibility on whether they participate in demand response events. Participating customers are rewarded with a fixed rate per kWh.	· Sales of smart energy technologies increased by 92% year-on-year on the SEC platform, which continues to expand its energy management solutions portfolio. · In 2021, SEC launched *Building Portfolio*, which enables the user to manage energy and water consumption of multi-buildings in a single, customisable platform. Its AI and analytics platform is deployed across multiple buildings to help identify equipment faults, energy saving potential, and to streamline the work of facility managers. It is also an effective tool for measuring and verifying the quantitative benefits of energy conservation measures. *Building Portfolio* was adopted by one of Hong Kong's key developers in 2021. · More than 10 schools adopted the *EC Campus Solution* in 2021. The data collected also provides users with actionable insight on energy use patterns. For example, indoor environment data helps to identify inefficient air-conditioners and signal the need to replace them. · CLP Power's customers' conventional meters are being upgraded to smart meters in phases from November 2018 to 2025. Despite a shortfall in the supply of new meters resulting from the global supply chain disruption, over 1.2 million smart meters were connected by the end of 2021. This represents over 40% of customer accounts in Hong Kong. CLP Power's goal of replacing all customers' conventional electricity meters by 2025 remains unchanged. In Australia, over 900,000 EnergyAustralia customers now have smart meters installed.
Energy data and analytics CLP provides a variety of energy consumption analysis tools and complementary products to help customers make smarter energy management decisions and realise energy savings across the board. · At EnergyAustralia, PurchasePro is a self-service web portal that gives large business customers greater control over their energy. Customers can purchase an agreed load progressively by quarter rather than commit to a price at a single point in time.	· Approximately a third of EnergyAustralia's C&I customer load is now transacted on PurchasePro. · As at the end of 2021, 55% of EnergyAustralia's business and residential customers have registered for My Account. In 2021, over 322,000 unique users accessed the EnergyAustralia App. · Over 2,400 C&I customers in Hong Kong use Smart Energy Online to manage their energy consumption and improve their energy efficiency.

Improving energy efficiency	Updates in 2021
Mobile apps and online platforms are user-friendly ways for customers to track their electricity consumption. · The CLP Power Mobile App in Hong Kong, and *My Account* and the *EnergyAustralia App* in Australia, are improving CLP's engagement with its customers. The apps provide an easy-to use interface for customers to understand their energy usage and estimate upcoming bill payments. · *Smart Energy Online* is an online assessment and/or management tool for C&I customers in Hong Kong. Similarly, the real-time web-based energy tool, *InsightsPro,* is available for C&I customers of EnergyAustralia to access contract information, consumption and cost data in real-time to optimise their business' energy spend and use.	· Over 1,100 EnergyAustralia customers now have access to InsightsPro.

Offsetting emissions that can't be otherwise avoided	Updates in 2021
Renewable Energy Certificates (RECs) In Hong Kong, RECs offer an alternative way for customers to support local clean energy generation. The RECs represent the environmental attributes of electricity produced by local renewable energy sources, generated or purchased by CLP.	· Since the launch of the RECs in January 2019, over 24GWh of RECs have been sold to businesses such as data centres, banks, hotels and restaurants, as well as residential customers. In 2021, close to 15.4GWh units of REC were sold, a significant increase from 5.4GWh units from the prior year. · A commitment to purchase over 150GWh over a period of 10 years was made by Hang Seng Bank in early 2022, the largest and longest commitment since the launch of the REC programme.
CLP Carbon Credits Carbon credits represent carbon emissions avoided as a result of emissions reduction projects. CLP encourages its customers and businesses to use carbon credits to offset their unavoidable emissions. It also collaborates with numerous industries to deliver carbon offset initiatives, including carbon neutral office renovation and operation, and a carbon neutral voyage program.	· Carbon credits sales achieved a record high in 2021. The number of CLP Carbon Credits from CLP's wind and solar projects in India sold in 2021 was equivalent to the offset of 1.4 million kt CO_2e.
Energy Attribute Certificates (EACs) In Australia, EACs provide customers with certified renewable energy. They support a customer's renewables development and serve as an option to reduce their Scope 2 emissions when decentralised renewables are not a viable option. · PureEnergy from EnergyAustralia helps customers purchase accredited green energy which feeds into the grid on their behalf. · The Go Neutral Programme allows residential customers to opt in to fully offset the carbon emissions associated with their home electricity usage, at no added cost to them. · Business Carbon Neutral helps business customers offset their electricity emissions for a flat fee.	· Around 2,000 EnergyAustralia customers have chosen a GreenPower government accredited PureEnergy option for their electricity supply. · As at the end of 2021, EnergyAustralia has over 338,000 customers choosing to have their energy use offset, and over 2.8 million tonnes of carbon dioxide have been offset to date. · EnergyAustralia now has the largest Climate Active certified offset offering in the Australian energy sector, and the second largest in the country.

Customers data

SASB reference: IF-EU-000.A, IF-EU-000.B; GRI reference: EU3

Customer portfolio

CLP Power Hong Kong	2021	2020	2019	2018	2017
Total Hong Kong customers (number)	**2,711,421**	2,671,836	2,636,408	2,597,083	2,555,522
Commercial	**210,821**	208,150	206,792	206,073	203,891
Manufacturing	**17,427**	17,540	17,575	17,966	18,650
Residential	**2,369,217**	2,333,901	2,301,200	2,265,151	2,228,438
Infrastructure and public services	**113,956**	112,245	110,841	107,893	104,543

EnergyAustralia	2021	2020	2019	2018	2017
Total Australian customers (number)	**2,442,683**	2,449,401	2,480,781	2,550,138	2,623,425
Commercial and industrial	**7,208**	8,962	12,599	12,526	13,234
Mass market	**2,435,475**	2,440,439	2,468,182	2,537,612	2,610,191

Availability and reliability

CLP Power Hong Kong	2021	2020	2019	2018	2017
System Average Interruption Frequency Index [SAIFI][1]	**0.21**	0.19	0.17	0.19	0.18
System Average Interruption Duration Index [SAIDI] (hours)[1]	**0.23**	0.39	0.42	0.46	0.34
Unplanned Customer Minutes Lost [CML] (minutes)[1]	**0.99**	9.77[2]	10.13[3]	10.29[4]	1.57

1 The numbers are derived by calculating the average of data from the most recent three years. For example, the figures under year 2021 are the 3-year averages of data from 2019 to 2021.
2 The 2018-2020 average would have been about 0.9 minutes without the severe impact of Mangkhut in September 2018.
3 The 2017-2019 average would have been about 1.3 minutes without the severe impact of Mangkhut in September 2018.
4 The 2016-2018 average would have been about 1.44 minutes without the severe impact of Mangkhut in September 2018.

Access to electricity

CLP Power Hong Kong	2021	2020	2019	2018	2017
Total disconnections for Hong Kong retail business (number)	**4,943**	4,999	4,643	6,722	7,888
0 - 2 days	**105**	98	4,333	6,319	7,426
3 - 7 days	**796**	506	170	225	255
8 - 31 days	**2,251**	2,274	101	168	192
≥ 32 days	**1,791**	2,121	39	10	15

Customer satisfaction

CLP Power Hong Kong	2021	2020	2019	2018	2017
Customer satisfaction score					
CLP	**73**	74	72	73	71
All public utilities in the energy sector	**74**	74	73	73	71
Public service organisations	**73**	74	73	73	71

EnergyAustralia	2021	2020	2019	2018	2017
Customer service					
Calls handled by EnergyAustralia (number)	**1,440,277**	1,696,233	1,856,845	2,364,731	2,421,816
Complaints received by EnergyAustralia (number)	**14,643**	17,049	20,937	23,390	29,180

Key performance metrics

CLP continually improves by managing, monitoring and reporting its ESG performance. These tables present a quantitative overview of the Group's 2021 financial and non-financial performance. The disclosures are selected from the GRI Standards, The Hong Kong Stock Exchange's ESG Reporting Guide, SASB Standards for Electric Utilities and ISSB's Climate-related Disclosures Prototype, as well as other key performance data.

Detailed discussion of these metrics can be found in the corresponding Standard ESG Disclosures sections.

The 2021 data shaded in orange has been independently verified by PricewaterhouseCoopers. The assurance scope of past years' data can be found in previous Sustainability Reports.

Read the reporting scope →

Download the independent assurance statement

Governance	2021	2020	2019	2018	2017	GRI/HKEx/ SASB/ISSB
Convicted cases of corruption reported to the Audit & Risk Committee (cases)	**0**	0	0	0	0	GRI 205-3 / HKEx B7.1
Breaches of Code of Conduct reported to the Audit & Risk Committee (cases)	**18**	25	31	20	28	

Financial information	2021	2020	2019	2018	2017	GRI/HKEx/ SASB/ISSB
Total capital investment incurred by asset type (HK$M(%))[1,2,3]	**15,411 (100%)**	13,022 (100%)	12,028 (100%)	12,851 (100%)	N/A	ISSB 13-e
Transmission, distribution and retail	**5,957 (39%)**	4,810 (37%)	5,229 (43%)	4,953 (39%)	N/A	
Coal	**2,628 (17%)**	3,638 (28%)	2,473 (21%)	3,040 (24%)	N/A	
Gas	**5,639 (37%)**	3,445 (26%)	3,146 (26%)	4,098 (32%)	N/A	
Nuclear	**0 (0%)**	0 (0%)	352 (3%)	0 (0%)	N/A	
Renewables[4]	**860 (6%)**	462 (4%)	580 (5%)	714 (5%)	N/A	
Others	**327 (2%)**	667 (5%)	248 (2%)	46 (0%)	N/A	
Total operating earnings by asset type (HK$M(%))[5]	**10,638 (100%)**	12,374 (100%)	12,138 (100%)	15,145 (100%)	14,189 (100%)	
Transmission, distribution and retail	**5,612 (53%)**	5,751 (46%)	5,131 (42%)	7,427 (49%)	8,392 (59%)	
Coal[6]	**1,020 (10%)**	2,871 (23%)	2,503 (21%)	3,370 (22%)	3,994 (28%)	
Gas[6]	**1,326 (12%)**	1,510 (12%)	1,735 (14%)	1,533 (10%)		
Nuclear	**1,908 (18%)**	1,594 (13%)	1,688 (14%)	1,720 (11%)	913 (7%)	
Renewables[7]	**519 (5%)**	575 (5%)	1,016 (8%)	924 (7%)	629 (4%)	
Others	**253 (2%)**	73 (1%)	65 (1%)	171 (1%)	261 (2%)	