Companies like CLP that are at the forefront of the energy transition must themselves transition and transform to embrace these challenges and opportunities while keeping the best interest of the customers in mind.

Richard Lancaster
Chief Executive Officer

Global challenges in the energy markets and the ongoing impact of the pandemic, alongside a clear and very welcome intensification of efforts to address climate change, mean that 2021 has further extended this period of fast change for the energy industry and for CLP.

Some of the core capabilities at CLP are adaptability and reliability, ensuring that we keep the lights on and deliver sustainable energy solutions for different customers regardless of the changes in our markets. I am pleased that the business continued to exercise the agility and dedication to maintain a high level of resilience across our operations during the year.

Climate change, with the associated natural disasters becoming more severe and frequent, represents a specific risk to our communities and our operations. CLP's strategy recognises not just our own important journey to net zero, but our ability to play a key role in supporting decarbonisation of the wider society wherever we operate.

The energy crisis in Europe, a power crunch in China and higher fuel prices in many regions have re-emphasised the need for careful planning and coordination to manage the energy transition smoothly. Any significant shocks to reliability, price and employment in the energy sector could easily threaten the necessary collaboration between energy companies, their customers and governments in delivering the energy transition.

It is reassuring that our Climate Vision 2050 is laying out a clear decarbonisation roadmap for the business. In 2021, we conducted a strategic review of Climate Vision 2050, taking into account a comprehensive range of factors including the latest climate science, technology trends, the regulatory environment, the risks and opportunities to the business and the views of key internal and external stakeholders, not least our investors. The updated document includes more ambitious targets and our pledge to accelerate the phase-out of coal. To deliver a safe, reliable and cost-effective energy transition, targeted investments in new low-carbon opportunities and close partnerships on the decarbonisation journey will now constellate.

In 2021, our partnerships with governments in markets where we operate have proved fruitful. Through these collaborations, we were able to contribute the most of our experience and expertise to support the achievement of national climate targets and the coordination of an orderly energy transition that leaves no one behind.

On an industry level, our partnerships with like-minded organisations helped galvanise the efforts required to enable solutions at scale. During COP26, CLP joined 27 other companies in making pledges to drive growth in demand for, and supply of, hydrogen. The pledges we made, through the World Business Council for Sustainable Development and The Sustainable Markets Initiative, sent a clear signal for an increased use of hydrogen as a low-carbon fuel in generation and transportation and a prompt to hydrogen producers to develop additional capacity at scale. As with any new low- and zero-carbon technology, scale will bring commercial viability. This will be key for the gradual introduction of hydrogen into our gas-fired power plants in Australia as well as Hong Kong.

Hong Kong

Hong Kong remains the cornerstone of our business and the city's gradual economic recovery from COVID-19 last year lifted electricity demand across sectors. In 2021, operating earnings from Hong Kong's electricity business increased 4.7% to HK$8,189 million as we continued to make investments to support the city's energy transition.

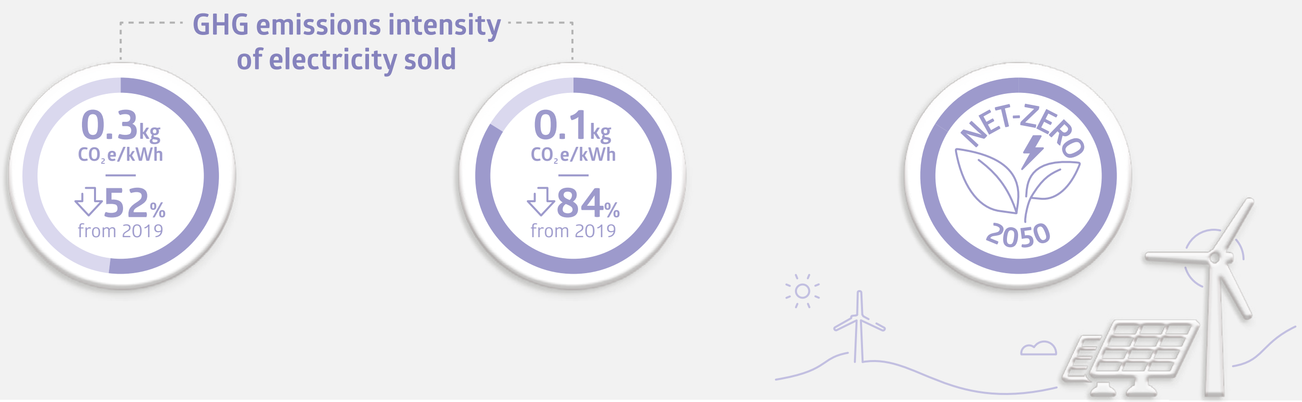
Two of the most important new projects being developed are the second combined-cycle gas turbine unit at Black Point Power Station and the new offshore LNG terminal. Both will facilitate the higher use of natural gas – an important bridging fuel – and play key roles in delivering the Hong Kong Government's long-term decarbonisation strategy outlined in its Climate Action Plan 2050. In spite of the global supply chain disruptions brought by the pandemic, good progress was made with the construction of these projects during the year.

Our focus on promoting local renewable and zero-carbon energy continued, including supporting customers and businesses to improve their energy efficiency even further. We are also pressing ahead with a feasibility study on building an offshore wind farm in Hong Kong's waters. In September, we reached a Memorandum of Understanding with GE to develop a decarbonisation roadmap to use hydrogen in CLP's gas-fired power generation facilities in Hong Kong.

We continued our digitisation journey including the further roll-out of smart meters and enhancing customer experience with greater digital interactions. The growing digitalisation of the overall economy – including, for example, the increased use of data centres – offers a significant opportunity for growth. In response to new electricity requirements from our customers, the Hong Kong Government in November approved an additional capital expenditure of more than HK$3 billion under the Development Plan for 2018-2023 for us to reinforce our network to meet the expected increase in demand.

CLP's Key Climate Targets and Commitments

BY 2030	BY 2040	BY 2050
Meet science-based GHG emissions intensity targets	**Phase out coal-based assets**	**Achieve net-zero GHG emissions across CLP's value chain**



The electrification of transportation is a trend we watch closely. CLP welcomes the Hong Kong Government's announcement in 2021 of a roadmap to promote the adoption of electric vehicles (EVs). We continued to support this policy direction by providing free EV charging facilities and offering support to private residential buildings interested in applying for government funding to install charging infrastructure.

As one of the city's two electricity providers, CLP operates within a regulatory framework which in turn provides stability and visibility to strategically plan investments, which are often made for decades. We will continue to invest for the long term to support the Hong Kong Government's climate targets and the city's digitalisation pathway, and act as an orchestrator to facilitate our customers to decarbonise, electrify or improve their energy efficiency.

Mainland China

We maintained output during the challenging time to support the Chinese economy. While our non-carbon portfolio continued to perform reliably, the coal-based assets were impacted negatively by notably higher fuel prices. Although coal assets are only a small part of our generation portfolio, they saw a loss in 2021 due to high fuel prices and sustained periods of use. This weighed on Mainland China's operating earnings, which decreased 25.7% from a year ago to HK$1,660 million. As coal prices continued to stabilise, we do not expect this particular issue to repeat in 2022.

Besides the higher contributions from our nuclear portfolio, there were steady operations from our wind and solar energy assets, including the new Laiwu III wind farm in Shandong province. We also saw the completion of our first grid-parity wind project which does not rely on government subsidies – Qian'an III in Jilin province – with an accompanying battery storage.

In a good example of innovative business model we expect to see thrive in the Greater Bay Area (GBA), we have signed our first contract to invest in and operate a centralised cooling system at a shopping centre in Guangzhou, a city near Hong Kong. We are exploring other emerging smart energy opportunities including more work with data centres and energy management systems. Retail energy also remains an area of potential interest especially as the industry continues to reform, opening up more opportunities for private investment.

The adoption rate for EVs in China is one of the highest in the world. We will continue to analyse the scale and nature of the opportunity for us to participate in this sector, and invest in the right way at the right time.

2022 will see us maintain our focus on restoring the financial performance of our coal-fired assets and pursuing new grid-parity renewable energy projects, as well as continuing to explore smart energy opportunities and strengthen collaboration across the GBA, aligned with the Government's 14th Five-Year Plan.

Australia

During the year we continued to look after our customers and maintained our focus on the ongoing energy transition commencing major decarbonisation projects.

There was significant progress on EnergyAustralia's future clean energy portfolio with the support of Federal and State Governments, all of which have in place net zero by 2050 as a policy and this is helping to create a clearer energy policy environment, something that is most welcome. In a highlight of EnergyAustralia's own efforts, the company updated its Climate Change Statement with enhanced commitments mirroring those in the Group's Climate Vision 2050.

As part of our commitment to phase out coal, we collaborated with the Victorian Government to advance the retirement of Yallourn Power Station to 2028. We have progressed our investments in the Wooreen battery storage project which is expected to support the Victorian electricity system's reliable supply. EnergyAustralia also secured a market operational agreement related to Kidston pumped hydro energy storage project which will commence once that facility is commissioned in 2024.

We announced an expansion of Tallawarra Power Station located in New South Wales which will be capable of running with 5% hydrogen in its fuel mix from day one. This will be the first net-zero emissions hydrogen and gas capable power plant in Australia, with direct carbon emissions from the project offset over its operational life.

To support Australia's energy transition, significant capital will be needed for major infrastructure projects. We will consider tapping into available funding in the market in order to deliver on lower- and zero-carbon investments.

Financially, 2021 was a challenging year where operating loss was at HK$83 million due to the unfavourable factors of higher gas costs, low wholesale electricity prices, adverse fair value movements as well as accelerated depreciation and lower generation at Yallourn Power Station. Furthermore, total earnings were impacted by the one-off settlement of the Iona gas plant disposal litigation and the expenses related to the extreme rainfall event in June, which damaged the Morwell River Diversion at the Yallourn mine and led to a temporary suspension of mine production, resulting in the aforementioned lower generation.

As the pace of the energy transition in Australia increases, the industry as a whole will face volatile and uncertain operating conditions including an increasingly competitive landscape. Against that backdrop, EnergyAustralia may continue to be affected by challenging market conditions during 2022 including the continuation of low realised wholesale electricity prices, higher gas costs and intense competition in retail energy markets.

India

Our partnership with CDPQ, which has a 40% stake in our business in India, continued to function well and deliver stable business performance during the year. Our focus operationally was on protecting the health of employees amid a severe second wave of COVID-19 in India in the second quarter of the year. We continued to make contributions to relief efforts at both the Group and national levels. The recovery in overall electricity demand in India reflected a gradual easing of the pandemic towards the end of 2021.

We continued to work with the Indian Government to seek clarifications of the new foreign investment laws and were pleased to receive requisite regulatory approvals to acquire a 49% shareholding in Kohima-Mariani Transmission Limited (KMTL), the beneficial owner of an interstate transmission project in northeastern India, as well as a registration which enables Apraava Energy to participate in new greenfield bidding opportunities.

Professor Paul Lam Kwan-sing
President, Hong Kong Metropolitan University

Q&A

Richard Lancaster
Chief Executive Officer

Decarbonisation is going to bring lots of changes to society and CLP. How can CLP remain competitive? And who will benefit from these changes?

Climate change is real and happening. You can look at it and say this is going to impact what I currently do and it's going to take away some value from what I've already invested in, but that's a very negative way of looking at it. If CLP can decarbonise electricity as quickly as possible, more people will want to use electricity, which is actually a positive story for CLP and for the economy.

And for many businesses, if you accept that climate change is happening, if you accept that this is something that you have to prepare yourself for, you owe it to yourself to look for the opportunities offered by the energy transition. These opportunities may come in the form of smart technologies. For example, we have much more sophisticated control systems now and we make much greater use of data analytics. Hydrogen is another example. So there are new technologies that we're adopting here. And if Hong Kong is looking at developing itself as an innovation and technology hub, then there may well be great opportunities for Hong Kong businesses here.

If you look at climate change as a massive transition with new infrastructure, and lots and lots of changes in all of that, there will be opportunities. And for those that are quick to act and quick to deploy their skills or adjust their businesses, they will be the ones that benefit most from this.

In 2021, wind generation increased, helped by higher monsoon wind and there was increased solar generation from the addition of new projects. The Jhajjar coal-fired station continued to demonstrate robust operations despite growing coal costs, although contributions were slightly lower due to a reset in tariff. Overall, Apraava Energy's operating earnings were 26.3% higher at HK$221 million.

The rebranding from CLP India to Apraava Energy – a name inspired by the combination of four Sanskrit words – Agni (Fire), Prithvi (Earth), Ambu (Water) and Vayu (Wind), is symbolically significant as it represents the growth potential that will come from renewable energy. India is on an ambitious drive to be one of the world's leading centres of clean energy and Apraava Energy is well placed to be an important contributor to that new energy future. With a strategic focus on clean energy and customer-focused energy businesses, we aim to see Apraava Energy double the size of its portfolio in the next two to three years.

A New Era of Changes and Opportunities

Although the impacts of climate change have no regard for borders, we do not expect all our markets to be the same on their energy transition. In a world where energy transitions will move at different paces, our strategy will see us flexing what we do in each territory to deliver solutions adapted to each localised context.

Our core markets of Hong Kong and Mainland China will continue to see growth in our asset base. The energy transition continues to present new business opportunities in the GBA, not least as we see more regional integrations across the energy industry. Our Hong Kong business is naturally well placed to extend, given our expertise and capabilities across retail, generation, nuclear and smart energy services.

This new growth cycle is reflective of the whole energy market being in transition. The world's biggest challenge – decarbonising electricity – is also our biggest opportunity. The more successful we are at decarbonising electricity, the stronger our markets and our business will be.

Companies like CLP that are at the forefront of the energy transition must themselves transition and transform to embrace these challenges and opportunities while keeping the best interest of the customers in mind. We will adapt the way we operate and organise ourselves as appropriate to ensure we deliver against our strategy at the right pace. We will also instil new ways of working among our people, emphasising on agility and the capability to leverage cutting edge technologies.

I am delighted by the ongoing partnerships we are seeing in 2021 – from national, local and regional governments to private sector partnerships that will power our transition forward. We look forward to working even more closely with the public and private sectors as well as the broader finance industry on this journey. Our investors are our key partners and we welcome their ongoing, positive engagement with our transition.

CLP brings energy expertise and continual evolution stretching back more than 120 years. In the face of crises like COVID-19 and climate change, our long-term thinking and resilience will become ever more critical. In the coming years, we will strengthen our capability, agility and adaptability to identify and provide the energy solutions suitable for each of our markets and create most value from one generation to the next.

Richard Lancaster
Hong Kong, 28 February 2022