

ENERGY FOR BRIGHTER TOMORROWS

CLP.CONNECT

#001



Wind of Change

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Our innovation journey 中電的創新里程



Wind of Change

Our innovation journey

First of all, my best wishes to you all for a happy, healthy and prosperous 2017. And I believe it is a good way to start the New Year with the launch of CLP's first Group e-Newsletter, with the objective of keeping you informed of our company's direction and what's happening around various subsidiaries. I hope this becomes required reading for all our staff.



Let's start with a background check: since we launched the "Focus · Delivery · Growth" investment strategy, I am pleased to see that we have made very good progress in the past two years and the financial health of the company is very sound. Our performance is well recognised by investors, regulators and the communities where we operate. This can only be achieved because of our great team effort so my thanks to all of you.

In the past year, we undertook an exercise to review our brand identity to better align with our Group's aspirations. At the same time, we intensified our stakeholders' communications to explain the company's development.

As to the future? To paraphrase Charles Dickens, the Millennium era "is the best of times, it is the worst of times" for utilities around the world. It is also one of the most exciting times as we tackle two enormous challenges facing our industry: the digital revolution and the transition we need to make to decarbonise electricity.

The digital revolution and the rise of “smart” technologies are changing the face of our industry and giving customers unprecedented choice and control over their electricity usage. In parallel, addressing concerns over climate change means that we must progressively change the way we produce electricity from conventional fossil-fuel power generation to zero-carbon nuclear and renewable energy.

As the world looks towards a smarter and greener future, we need to get our minds around what this means for us as an industry. And we must do it with a sense of urgency. We need to roll up our sleeves and get on with maximising the benefits of dramatic change because we are in the best position to make this transition. We need to innovate and be innovative so that these changes become opportunities for us.

We have been a pioneer in embracing new technologies and changes – not despite, but thanks to our 115 years of experience in all stages of the electricity supply chain. Since the mid-1990s, we took the lead in Hong Kong to diversify our fuel mix for reliability and environmental considerations, resulting with a balanced fuel mix with gas, nuclear and coal in Hong Kong’s electricity generation. During that time, CLP commissioned a microgrid fully powered by renewables and storage devices in the first commercial, standalone power supply system fuelled by solar, wind and battery resources on Town Island. We are now leading the charge again as green motoring begins to take off in the city with the launch of Smart Charge, which uses the latest technology to offer drivers of electric vehicles an unparalleled one-stop charging solution.

The force is with us

One only needs to look at how mobile phones have changed the way we live to recognise that the force of digital revolution is already with us. Getting around anywhere on the planet, no matter how unfamiliar it is, by the fastest and cheapest means has become so effortless with a few swipes of a finger on a GPS App. Our access to information and a radical connectivity to the rest of the world are available through a device so small that we can carry in a pocket or a handbag. The stunning capability of mobile phones is now enhanced by sensors that can be placed anywhere and everywhere, including our electricity grids, our wind farms, our power plants, and the homes of our customers. Collectively, they will gather a wealth of new information and enable us to do the next great thing.



Our innovation mind map starts with first optimising the performance of our existing businesses and boosting our technical capability by introducing digital solutions and tools that give us greater insights as to how we are performing and how we can become more efficient and cost effective in doing so. Innovation can raise our efficiency, lower our costs and strengthen our environmental



performance. Innovative solutions can also help reduce the risk of failures, provide customers with higher quality products and services, and deliver more reliable electricity services.

Most exciting of all, we will identify new innovative projects and strategic partnerships to grow our product offering. These might be advanced management tools to support our traditional business, or new ventures outside our mainstream business that are valuable to the ongoing industry transition into the digital business era.

Coming of the smart age


We are already taking steps to move from ideas to actions. For example, we are looking across all our assets and examining if and how we could co-develop a big data digital capability that can help optimise the performance of our generation fleet.

Additionally, with sensors, smart meters and other interactive devices, we can know much more about our customer's consumption patterns and behaviors. Through digitalisation, we will be able to create value for our customers by understanding their consumption pattern, location and expectations. Our role as an energy service provider is to empower customers with more choices in exchange for increasing customer loyalty.


Equally exciting is the development of smart cities around the world and the opportunities that come along. As a responsible energy provider, there are several ways CLP can contribute.

Firstly, we have been decarbonising our generation portfolio while upholding the same high level of reliability and maintaining an affordable price for the public and we are confident in reaching the 20% target set in our Climate Vision 2050.

We have also been promoting transport electrification by building more charging stations for electric vehicles and strengthening our network to handle the mobile electrical load. Our Smart Charge initiative is a prime example of this.



“Creating an organisational culture that promotes innovation — and getting closer to customers to find out what they really want — is more important than ever.”



Deploying smart meters to support renewables and customer engagements is another area. In our Hong Kong business, we are working closely with the Government for a wider adoption of smart meters in the city. Smart street lighting, smart parking, and traffic pattern management through sensor awareness are just a few of the other interesting and valuable areas where we may be able to contribute to Hong Kong's growth and development.

Within the next 10 years, our industry as we know it today will not be recognisable thanks to innovation and digital technology. These are exciting times but none of these developments will take place if we take a business-as-usual attitude. As a first step, we are actively embedding an innovative culture across our organisation so that we can successfully deliver our strategy at all levels.

Innovation is not a functional responsibility at CLP and it does not belong to one team only or a taskforce. It is our business: each and every one of us.

Embracing customer-centricity

Having an innovation strategy does not mean CLP will change for change's sake. In the face of the twin forces of climate change and digital revolution, customers rightly expect more from their electricity supply. Customers are at the heart of any business, and, increasingly, they also want more environmentally friendly products and individualised solutions.

Creating an organisational culture that promotes innovation – and getting closer to customers to find out what they really want – is more important than ever as we put digitalisation to work for energy.

We can build on our long tradition in Hong Kong where we earn trust from the community through our professionalism and commitment to do our best. We can in fact draw upon our strong foundation to build an innovative future energy business which can become synonymous with customer led innovation. Our brand reflects these attributes both today and tomorrow.

We must also continue to excel in what we are good at: providing a reliable and safe electricity supply in an environmentally responsible way and at a reasonable cost to our customers. This is our bottom line.

So finally, thanks for all of your commitment and passion for our company. Remember, our future begins with each and every one of you in CLP.



Richard Lancaster
Chief Executive Officer



Austin Bryan experienced his first technology disruption in the early 90s when he was working in the German banking industry: a bulky IBM computer that stood several feet tall on the work desk.

Instead of boarding the train to pick up a metal box every day from the bank's headquarters and rummaging through piles of paper, Austin and his colleagues only had to punch a few keys on the new machine and ta-dah, data from all branches just came streaming in.

That is how technology rocked the banking industry and how Austin began to recognise the benefits and capability of technology in streamlining operations, eradicating unnecessary steps, reducing risks and ultimately transforming the way that customers experience your business. A prime example was the implementation of automated teller machines for financial services.

"I am not a geek, I am not an engineer, and I am not a software programme writer. I like technology for what it brings to people's lives, not because it is interesting. If technology doesn't have a useful purpose, it would be interesting but irrelevant," said Austin, who joined CLP eight months ago as Senior Director – Innovation.

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Chasing disruptions

This instinctive appreciation of technology motivated Austin to take up innovation roles across the financial services, telecommunications and digital media industries, moving from South Korea and Hong Kong to Germany and Australia over the past 30 years. He was always there to catch the wave of technological disruption as it hit an industry.

Take telecommunications as an example. At the turn of the century, Austin joined Hutchison Whampoa 3G Australia – a start-up for the launch of the first 3G mobile network in Australia. Austin was responsible for leading and managing a 600-strong workforce in the design, build and creation of the company's 3G products and services, including peer-to-peer video calls and mobile content that people could watch on a 3G network, which were all novelties at the time. It was an exciting juncture in a sense that the product did not yet exist, the technology had not been implemented and the business model was not clear. Yet Austin was tasked to figure it out within 24 months.

That excitement around mobile technology and digitalisation has not only lingered but expanded with the arrival of social media and cloud data in the years that followed. Today customers engage with their mobile devices because the content services give them a better quality of life, enabling them to connect with other people in a human way, and to engage in environments where they gain social affirmation. "All of these things just scream value and now that challenge is upon the energy sector," mused Austin as he identified the next wave he was out to catch.

Why energy, why CLP, why Hong Kong

"The most privileged moment in one's professional career is when you get a chance to do something that could change how the world lives, works and plays," Austin said of his latest career move. "I had one privilege before with the launch of 3G mobile services around the globe. I strongly believe the energy sector is at that same inflection point now where all the services available in the digital economy will change the way people consume energy."

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In fact, tech-enabled connectivity is already upon the energy sector. For instance, the power grid, which used to be unilateral, is becoming bi-directional with the emergence of smart meters that enable two-way communications between customers and utilities. There is an urgent need for power companies to think about how to deliver services that could grow value for businesses and consumers as part of a connected society and shared economy.

Watching with interest as the disruption hit the energy industry, Austin narrowed down to companies with the most outstanding leaders and values, and the ability to have an impact regionally. CLP fits the bill with great values, outstanding senior leadership, a fantastic regional footprint and an unmatched home base called Hong Kong.

Three horizons of innovation

Today in his new role at CLP, Austin said one of his priorities is to build awareness of the urgent need to change and to foster a culture that supports the change.

Nonetheless, he was quick to point out that CLP has a pedigree of 115 years of robust and resilient reliability. We are a trusted and embedded partner in the society, relied upon in a way that very few organisations are. That heritage should not be disrupted, but instead reconciled with the need to be innovative so that we are in sync with how the rest of the world is operating.

“Being innovative doesn’t mean higher risk,” said Austin as he addressed one of the most common questions that came up in his conversations around the organisation. “What it means is the acceptance of two things – a greater degree of ambiguity about where we are headed and a faster pace. Nimble and agile organisations are more comfortable with these two things.”

More precisely, he envisaged the company pursuing innovation along three horizons. Horizon 1 covers products or services that are logical extensions of our core business, e.g. demand response management. In Horizon 2, we go after adjacencies of our business, e.g. smart building, smart lighting. Lastly, Horizon 3 would be new markets and new areas which we have yet to tap into.



The approach across the three horizons is consistent though, according to Austin, “Picking a winning technology is highly risky. What we should focus on instead is optionality, meaning technologies that are globally acceptable, open and connectable, so that they can be scaled up for maximum cost efficiency.”

Home sweet home

Excited about the pursuit of opportunities ahead at CLP and his new venture in Hong Kong, a city that he loves for its vibrant “can do” business culture, Austin said Australia is still his home.

“Australia is my home even though my accent says I am not. I have lived in Australia for the last 20 years and my family is in Sydney. I love the sunny weather there and getting on my bike and riding out to the National Park,” he said.

As a substitute, Austin has begun exploring Hong Kong’s countryside for cycling and hiking. “Hong Kong is beautiful and I am not sure people who don’t live here know how beautiful Hong Kong is just outside the city,” he added. Being nimble and agile is surely a lifelong learning.

Brief Biography

Austin Bryan joined CLP Holdings in May 2016 as Senior Director – Innovation. He has been a pioneer of new services and value creation in the digital media sector for the past 10 years and is a globally recognised leader in transforming business activities in the financial and telecommunications sectors. His experience spans the creation of the first direct banking activities in Germany in the early 1990s, the introduction of virtual customer service platforms for American Express and creation of the first 3G multi-media mobile network in Australia with “3 Mobile”. Most recently, he was Vice President of Strategic Innovation at Singtel Optus, in which he led the acquisition of major digital media projects and created a US\$1 billion digital media business developing and implementing new digital products and services.



The Perfect Match

An innovative one-stop solution to electric vehicle charging



Electric vehicles are becoming more and more popular in Hong Kong. As of the end of October 2016, there were 6,860 electric vehicles in Hong Kong, up from less than 100 in 2010. Yet, the number of electric vehicle chargers in the city remains awfully insufficient. Rising to the challenge is Smart Charge – an equal joint venture between CLP Holdings and Hong Kong Telecom (HKT) dedicated to providing electric vehicle owners with one-stop charging solutions.

Smart living, green motoring

Ringo Ng Wing Ho, Managing Director of Smart Charge, said the two partners see an opportunity to meet unsatisfied market demand for electric vehicle charging services in Hong Kong as green motoring begins to take off. More importantly, both HKT and CLP see the new venture as a strategic move contributing to Hong Kong's aspiration to build a smart city.



Ringo, who is also Managing Director of HKT's Consumer Group, said the telecom company launched Smart Living in 2012 to provide customers with a range of innovative connectivity products and services to make their daily lives more convenient. "Green motoring is part of smart living and the trend of the future," said Ringo as he explained how the venture begins.

"We see great potential in developing electricity charging services to meet a real need given the increasing popularity of electric vehicles, and we believe a robust and efficient charging network will make a significant contribution towards making Hong Kong a greener and smarter city," he said.



As of October 2016, there were 6,860 electric vehicles in Hong Kong, up from less than 100 six years ago. However, there were only over 1,400 electric vehicle chargers for public use in the city, including about 300 medium chargers.

Source: Environmental Protection Department

The best of two worlds

According to Ringo, the idea was to build on the best of the two companies to offer electric vehicle owners "the highest possible standard charging solution in all aspects – safety, design, technology and after-sales services".

"Electricity engineering work is a must-have process when providing electric vehicle charging solution," Ringo said. "We believe CLP has the best engineering force in town."

"So we leverage both HKT's excellent customer service with its well-built relationship with property developers and consumers, and CLP's strong expertise in electricity infrastructure deployment and its commitment to sustainable environment, to offer electric vehicle owners unparalleled one-stop charging solutions," he added.

Smart Charge offers the following:

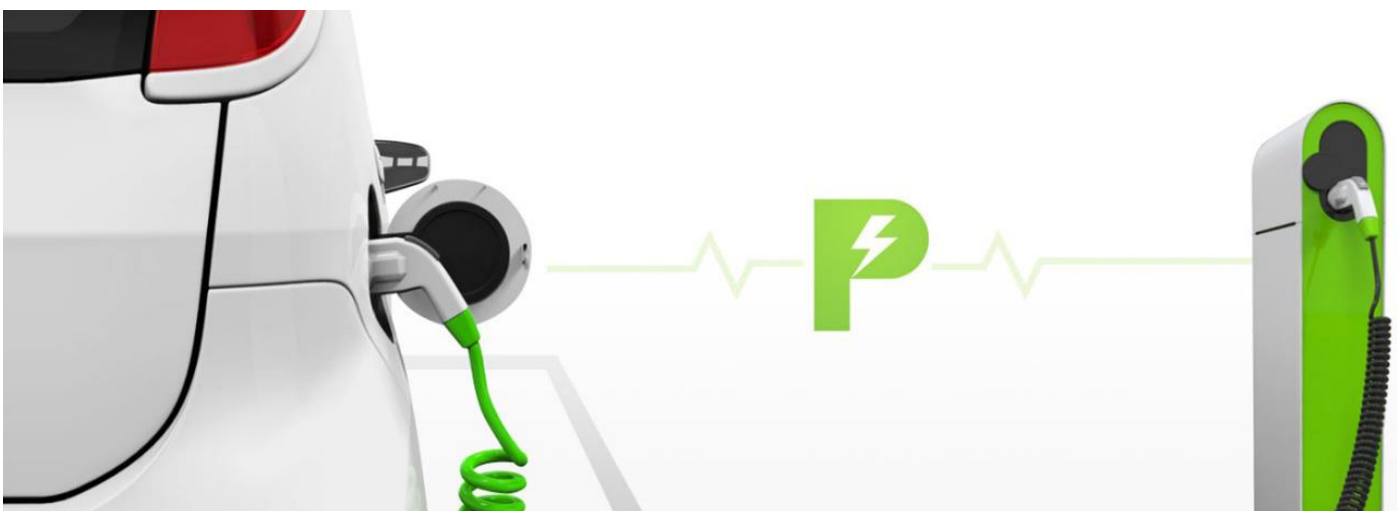
- “Peace of mind” installation services of electric vehicle chargers for customers
- Over 30 HKT Shops and Service Centers to provide support to customers
- Regular maintenance check-ups for customers on service plans to ensure their electric vehicle chargers work properly and meet the highest safety standards
- 7 x 24 customer service hotline

Standard easy charging

Specifically, Smart Charge will offer customers two types of services. The first is private charging in residential and office car parks. Smart Charge will engage with the Building Management Offices and Incorporated Owner’s Committees of such car parks to pre-install the necessary electrical infrastructure. In addition

to supplying electricity, the infrastructure will come with advanced supervisory, control and automation technologies and an intelligent network management solution to achieve safe and reliable operation. An electric vehicle charger will be installed at the car park space of customers who have signed up for a monthly plan. Similar to a broadband service subscription, customers can choose their service plans according to their vehicle use pattern.

Smart Charge will also develop a comprehensive network coverage in public areas aiming at offering convenient charging services for electric vehicle users. A simple pricing structure based on the duration of charging will be put in place. Users can simply plug and charge their electric vehicles at the charging stations, and settle payments with HKT’s “Tap & Go” mobile wallet or other forms of payment.

**Jumping hurdles, leaping fences**

Ringo acknowledged that there are challenges ahead, especially as many Building Management Offices and Incorporated Owners’ Committees are reluctant to install the electrical infrastructure for electric vehicles over concerns such as safety and supply stability.

“There are many hurdles for electric vehicle drivers to own a personal charger at home as it is a long and complicated process to get through, and there are many obstacles from Building Management Offices and Incorporated Owners’ Committees,” Ringo explained.

“Although we have already established good relationships with property developers, Building Management Offices and Incorporated Owners’ Committees, it’s still a challenge, which requires extra efforts and good planning to educate these stakeholders about the importance of overall charging infrastructure planning and its benefits to the estates, especially where electric vehicle drivers already have private chargers installed,” Ringo said.

Although Smart Charge was only established in August 2016, Ringo said the response has been overwhelming in the past few months. Enquiries were flying in not just from existing electric vehicle owners but also from potential buyers, Building Management Offices and Incorporated Owners’ Committee. As a result, Smart Charge has expanded its resources and manpower to cater to the rapidly growing demand. “We have to expand our resources very quickly and prioritise jobs in order to articulate our response to enquiries and approach respective customers to evaluate the feasibility of electric vehicle charging services,” he said.



Taking Battery Storage to the Next Level

Solar power has grown rapidly in Australia. Today, the country is a leader in household solar penetration with one in five homes equipped with solar panels. But solar power is intermittent by nature and intelligent battery storage and energy management systems are essential to making the sun's rays a reliable source of energy for consumers.

That's why late last year EnergyAustralia, CLP Group's Australian business, announced a partnership with solar inverter system developer Redback Technologies. It was the first major investment by EnergyAustralia's NextGen business unit, established in 2015 to lead the development of new products and technologies.

The idea behind Redback's Smart Hybrid Solar Inverter System is give consumers greater choice and convenience, allowing them to save energy and to run their homes smarter.

Consumers first

Andrew Perry, EnergyAustralia Executive – NextGen, said the business unit was created to anticipate changes in the market, and offer customers more of the services they need – and value – but take up less of their time. Already, in less than 18 months, NextGen has launched an embedded networks business, boosted digital sales and driven an increase in customers managing their accounts online.

Andrew said the Redback partnership was the latest example of how EnergyAustralia is investing in technologies that put customers in control of their own energy consumption.

“This type of technology is a real look into the future of energy technology. With a Redback system customers can manage their energy consumption so they not only save money, but also reduce their carbon emissions,” Perry said.

“We’re proud to be partnering with a company that’s driving Australian innovation in a way that’s good for customers and good for the environment.”

Under the partnership, EnergyAustralia will promote the Smart Hybrid Solar Inverter System to its 1.7 million customers in Victoria, New South Wales, Queensland, the Australian Capital Territory and South Australia.

According to Philip Livingston, Founder and Managing Director of Redback Technologies, Redback is “a company that creates enabling technology to allow the grid of the future to take form”.

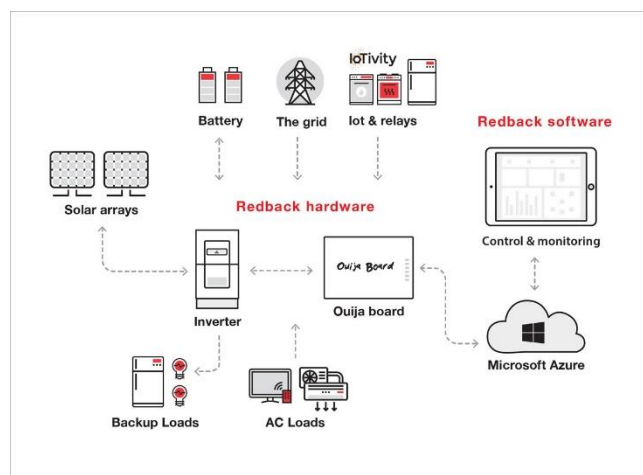
“Our technology is about putting the consumer first; allowing the consumer to make choices about where he or she wishes to buy their energy from. We’re putting the power back in consumer’s hands – we’re democratising energy for consumers.”

“We’re proud to be partnering with a company that’s driving Australian innovation in a way that’s good for customers and good for the environment.”

Andrew Perry, EnergyAustralia Executive – NextGen

Greener and smarter

The Smart Hybrid Solar Inverter System combines a smart solar inverter, battery enclosure and “intelligent” energy management software into a seamless package. The technology allows customers to decide how they use, save and even sell energy captured from their roof-top solar panels. And they can do it all from a smartphone.



How the Redback system works (Courtesy: Redback Technologies)

For example, a customer can schedule major appliances including electric hot-water systems, air-conditioners, underfloor heating or even pool pumps to run when there is excess solar power available. It means households do not have to draw more expensive energy from the grid during peak times.

Livingston said the Generation 2 system will also learn from user preferences as well as draw data from external factors including the weather. “We’re trying to create a system that is not only reliant on batteries but also machine learning and other functions to match supply and demand. By doing that, we can enable the transition from a grid predominantly powered by fossil generation to one powered by renewables,” he said.

Win-win outcome

Paul Liddell, Chief Information Officer at Redback Technologies, said the partnership is a win-win outcome for the two companies.

“The partnership with EnergyAustralia will allow Redback greater access to customers across Australia. EnergyAustralia has a huge customer base and many of those customers are looking for the capability to use renewable energy. That’s how the two companies will come together – we’re providing the technology and EnergyAustralia is providing the customer base and the scenarios that our technology can meet,” Liddell said.

Meanwhile, Perry provided EnergyAustralia's perspective, "Our investment in Redback is a signal to the market: if you're running a company with great ideas for new energy-efficient technology, then get in touch with EnergyAustralia's NextGen team."



A Novel Way to Energise the Community

As they burst out from the horizon at dawn, the first rays of the sun fire up the rows of photovoltaic panels on the hills at Xicun, which, from a distance, resemble a shimmering crown. What used to be a barren hill is now a demonstration project in Yunnan Province in Mainland China that combines agriculture and photovoltaic power generation. It represents an innovative step by CLP in its pursuit of new energy development, and at the same time focusing on delivering economic values to the local community.

The location is Paiying Xicun, a village in Dali Prefecture's Binchuan County. According to local resident Yang Jinfeng, the hill used to be badly affected by severe water shortage, resulting in infertile soil. Life was hard for the villagers, whose average annual income was only a few thousands yuan.

Construction of Xicun Solar Power Station began in early 2014, and villagers received

Xicun Solar Power Station

Location:	Dali Prefecture, Yunnan Province
Generation capacity (Phase I and II):	100MW
Commission date:	December 2014 (Phase I) November 2015 (Phase II)
Annual carbon emissions reduction:	110,000 tonnes of carbon dioxide (estimate)

additional incomes from leasing their lands, and working at the station. This has resulted in a better quality of life for the residents and economic growth for the village. The project, which has taken a novel development approach, has brought significant benefits to the local community.

Integrated model

The biggest difference between the Xicun project and traditional solar electricity projects is its novel development model that integrates agriculture and solar power generation. In the initial planning stage, the project team worked with Kunming University's School of Agriculture to study an innovative operational model that could "generate electricity on the panels and grow crops below".



This refers to Xicun Solar Power Station developing agricultural projects suited to local conditions on what used to be barren land. After conducting thorough feasibility studies, it was decided to plant the cool-hardy honeysuckle below the photovoltaic panels by making use of the condensate collected. Honeysuckle is a crop commonly used in Chinese medicine for curing cold and inflammation.

The planting of honeysuckles, which only require moderate watering to grow, also helps address the persuasive problem of soil erosion in the area. Phase I of the project developed 900 mu (60 hectares) of land, while plans are underway to grow cash crops such as honeysuckles, edible roses, Chinese herbs, and forage grass in Phase II of the project to amplify the synergy between agriculture and solar power.

Solar cum agriculture

Photovoltaic panels can reduce ultraviolet damage to crops and mitigate the night time drop in temperature, keeping the crops warm at night. They provide excellent conditions for crops such as honeysuckles. Since the conditions of the solar panels are directly tied with the quality of the harvests, it helps strengthen the relationship between the villagers and the power station.

Yang Jinfeng said the good thing about this project was that villagers no longer had to leave the village to find jobs but to plant crops near home. This is especially important to villagers whose

families have been farmers for generations. “Working at the plant means that we can take care of our families,” he said. Although the villagers who leased their lands no longer work on the fields, the innovative model of Xicun Solar Power Station allows them to reap economic benefits from their lands.

Currently, the power plant provides over 60 permanent employment positions and 11,000 temporary ones, which can help alleviate over 30 households out of poverty. The project therefore creates real economic and social benefits. “We work at the power plant now,” said Yang Zhizhong, a local resident. “The quality of our lives has improved and things are getting better every day.”

The success of Xicun Solar Power Station has been acknowledged and it was recognised as a demonstration project for photovoltaic power generation in Dali Prefecture. It was given an industry and enterprise award by Yunnan provincial government last year in recognition of its special achievements.

“We work at the power plant now. The quality of our lives has improved and things are getting better every day.”

Solar and fishery

Taking a leaf from the success of the synergy between agriculture and solar power at Xicun, CLP initiated another integrated solar project with fishery at Jiangsu’s Sihong Solar Power Station in March last year. In contrast to Yunnan’s Xicun, Sihong has abundant water supply, which, in addition to power generation, enables the development of a fish farm. The latter cultivates mostly crabs, as well as crayfish and mandarin fish, and initial results are positive.



Sihong Solar Power Station

Location:	Sihong County, Jiangsu Province
Generation capacity :	109MW
Commission date:	February 2015
Annual carbon emissions reduction:	104,000 tonnes of carbon dioxide (estimate)

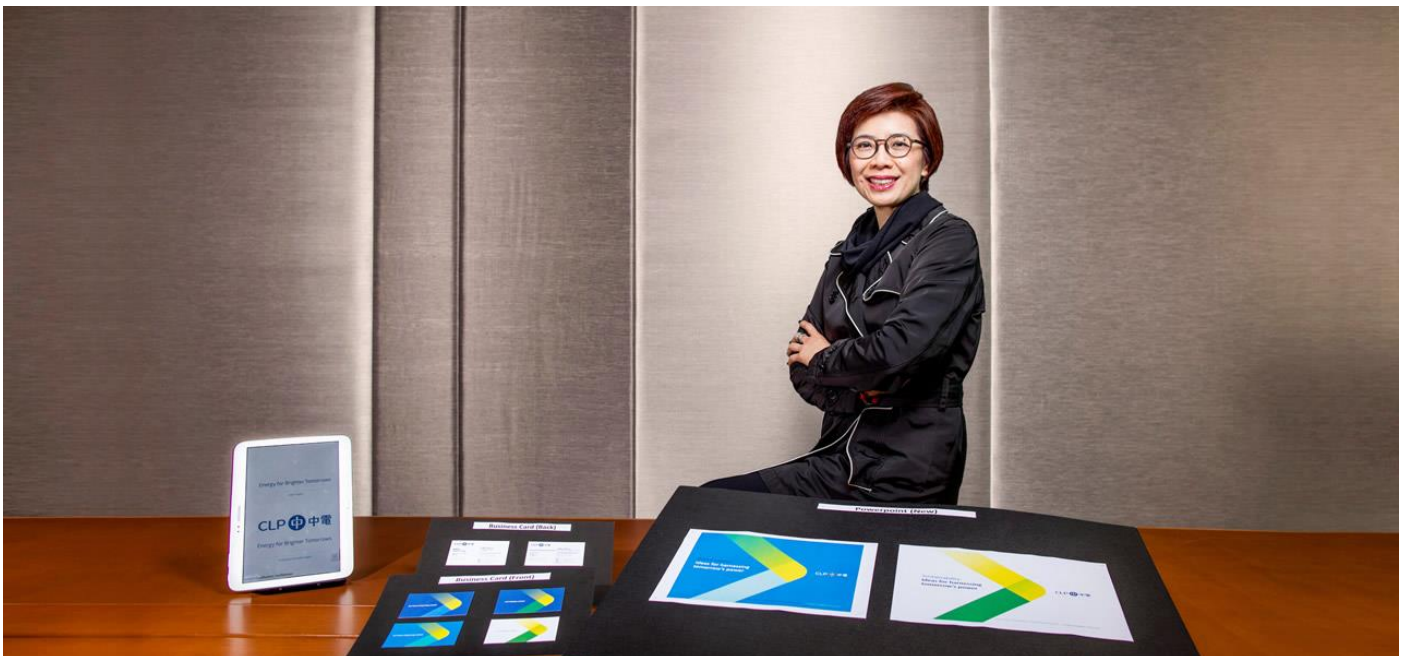
Chan Siu Hung, Managing Director, China, said that the two projects in Sihong and Xicun were innovations made by CLP in the area of solar power generation. They represent the concrete actions taken by CLP in response to the Chinese government's goals in tackling climate change and reducing carbon emissions. At the same time, they also demonstrate the Group's response to the challenge of meeting the

energy needs of the Asia-Pacific region in a sustainable way.

"I am very happy that the Xicun project was given the industry and enterprise award by Yunnan provincial government. This is recognition of our hard work in creating an innovative and efficient solar power generation project," Chan said. "Looking forward, CLP will promote the rewarding experience of Xicun and Sihong, and develop more creative new energy projects."



Energy for Brighter Tomorrows



About a year ago, CLP embarked on an exercise to look at the CLP brand position to best reflect its business development and aspirations. It has been almost a decade since the current brand was developed and with the rapid change in the global environment, it is important that we refresh and renew our brand to live up to our goal of becoming an innovative energy service provider. The exercise is now completed and the refreshed brand will be rolled out over the next few months. We interviewed Quince Chong, Chief Corporate Development Officer, the master mind of the brand refresh exercise – on the objectives, visual elements and messages of the project, alignment among different business groups and what will follow.

CLP.CONNECT: Can you share with us the objectives of the refresh exercise?

Chong: CLP is very much an iconic institution in Hong Kong. For decades, we have served our customers with highly reliable electricity services and we are considered a trustworthy brand in markets where we operate for our governance and operational excellence. We are in exciting times today. Innovative technologies are upending every sector of civil society and the transition to a low carbon world brings enormous challenges but also opportunities to energy companies. As we move forward, we recognise that our brand should reflect not only our heritage, regional presence and power expertise, but respond to changing landscapes and support the Group's vision.

We have spent months to research and listen to internal and external stakeholders about what they see in the CLP brand. The findings signal the desire for change towards a more innovative, modern, agile and dynamic identity. We strive to be a trusted partner and connect people through innovative energy solutions.

I must stress that while we uplift our brand image, our values remain unchanged. Our values will continue to guide us in fulfilling our mission and turning our vision into reality. The refreshed brand provides us the opportunity to focus more than ever on how CLP can positively change the lives of our customers and their communities.

CLP.CONNECT: Can you walk us through some of the refreshed visual system?

Chong: The refreshed CLP brand is a people-centric brand. Central to the refreshed brand visual system is an arrow- or arch-shaped connecting icon. While the existing CLP logo remains as the master logo, the connecting



icon, together with the use of impactful photographs, highlight our relationship with our stakeholders. You will notice that the icon is designed in such a way that it always points upward or to the right. The idea is to emphasise our constant aspirations for higher achievements, and we are a forward-looking company. We also adopt brighter and more vibrant colour palette to highlight the younger and dynamic CLP.

At CLP, we recognise the fundamental role we play in people's day to day lives. Our brand idea is focused on "connections through energy". Not only does it reflect what we are here to provide, energy itself, but also highlights the bonds we form, across the grid, through strong relationships with our partners, and the togetherness we facilitate in the communities we serve.

Our new tagline – Energy for Brighter Tomorrows – gives us a strong sense of positivity and clarity of purpose. It speaks to our positive impact to the community as an energy service provider, and our determination and commitment of achieving continual innovation and continuous improvement.

CLP.CONNECT: We have different business groups. How are we going to bring alignment among the business groups?



Chong: CLP is a big family with businesses operating in vastly different markets. We recognise this fact. So the idea is that CLP Holdings, and our Hong Kong and China businesses will adopt the refreshed brand identity while EnergyAustralia and CLP India will keep their independent brands to meet their market needs. In order to build that togetherness

within the Group, CLP India will carry the endorsement line, “A member of the CLP Group”, while EnergyAustralia will use the endorsement selectively.

“I’d be proud to hand people that new card – brighter, positive, more dynamic, a great conversation starter.”

– interviewee from focus group

Our Hong Kong business will also make use of this opportunity to refresh its brand identity. Apart from adopting the more vibrant colour palette and the connecting icon, the refreshed brand positioning and brand personalities will also be applied both offline and online – in our websites, promotional materials, our customer services centers, and our uniforms, etc.

CLP.CONNECT: What’s next? When are we going to roll out these changes?

Chong: We roll out the new brand in January. In the coming months, you will notice these new brand elements appearing in our offices, websites and other company collaterals. But I want to

stress that we need your support to make this work. We need to walk the talk if we are to become an innovative energy service provider who put customers at the heart of its business. As I have said earlier, we live in exciting times now. We are going to move with the times and to lead through innovation, with a clear focus on a greener and smarter future, and a commitment to serve as we build a brighter tomorrow together. The brand refresh exercise is a part of this agenda and we still have a long journey to go.



Young Female Wrestlers Challenge Stereotypes

Women in rural India are often portrayed as timid, docile and veiled. Concepts such as gender equality, female independence and freedom of expression, have yet to take hold in remote parts of the country. Yet, despite the pressures of a strongly patriarchal society, a new generation of young Indian women are not afraid to challenge established traditions, in the process becoming role models for all girls aspiring to make their voices heard.

Defying convention

Meet Neelam Sanden. She is the youngest of three sisters who are training to become professional wrestlers at a CLP-sponsored wrestling academy in Khanpur Khurd district of the state of Haryana, located just three kilometres away from our Jhajjar Power Plant.



At the age of 16, Neelam has already won a silver medal at the state-level sub-junior championship. With resolute determination and certainty, she declared, “One day I will be like Sakshi Malik, who has made our country proud by winning a bronze medal at the 2016 Summer Olympics, and becoming the first Indian female wrestler to win a medal at the Olympics. I want to uphold the name of my country like she has.” Sakshi’s recent feat at the 2016 Olympics in Rio has rekindled the passion and zest among many young girls in Haryana to pursue the sport.

Even though the academy is 20 kilometers away from Neelam’s village, she has never skipped a day of training since she joined its ranks. She is defiant, self-confident and knows that girls like

her need to fight battles every day to inch closer to their dreams in a state where most women are kept within the threshold of domestic responsibilities. Her elder sister Chandrapadi said, “As girls of the house, we have many responsibilities. When we are home, we must help our mother with the domestic chores like cleaning the house, cooking food, milking the cow, etc. We are dead tired by the end of the day, but every morning we wake up with renewed enthusiasm to come to the academy for training.”



Haryana is notable for having the most imbalanced sex ratio of all states in India with just 879 females per 1,000 males. This fact led Prime Minister Narendra Modi in early 2016 to choose Haryana to launch the nationwide “Beti Bachao-Beti Padhao” campaign to encourage a change in mindsets towards girls and against female foeticides.

Neelam and her sisters’ story is not unique: they follow in the footsteps of three other sisters from the same state – Geeta, Babita and Vinesh – who became the flag bearers not just of Indian wrestling but also of the nationwide effort to break patriarchal barriers. When their father, Mahavir Singh Phogat, a former state-level wrestler, introduced them to the sport, it caused an uproar within the community. Phogat remained undeterred and paved the way for his daughters to represent India. Their efforts started bearing fruits and the sisters soon began winning medals at prestigious international tournaments. Slowly, mindsets began to change.

An unconventional coach

In February 2015, CLP India appointed coach Sajjan Singh, who trained Geeta and Babita, to teach at the academy. Haryana is well-known in India for producing wrestling champions and CLP was thrilled to extend its support as part of its corporate social responsibility efforts. In a short span, the academy started producing medal winners - boys and girls in all categories at the state and national levels. Currently, there are a total of 60 students learning at the academy, including eight

girls. The youngest of the girls are just nine years old who look at their seniors with awe and admiration. “Avenues for training and professional coaches were far and few,” recalled Chandrapadi. “When we learned that CLP India has appointed coach Sajan Singh, we jumped at the opportunity.”

Sajan Singh, who is aware that for women the fight is not restricted to the wrestling ring, explained his approach, “There is no difference in the way I train girls and boys. I pit the girls against the boys so that they can develop strength and stamina. There is so much talent in all of them and our aim is to channel their passion for sports towards their emancipation and empowerment. I am getting them ready for the 2020 Olympics and hoping that they will get a chance to continue the momentum that is already underway.”

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Neelam acknowledges that she and her sisters are among the few girls who are fortunate to have the backing of their family. “Wrestling is part of our family lineage. My grandfather and father were wrestlers. We want to walk down the same road and our father is very supportive. When we go back home, he tests us and teaches us tricks and ways to improve our techniques,” she said.



The three sisters are as determined to succeed in life as they are to win within the ring. They attend school regularly and are focused on completing their education. There is no doubt they will go far beyond what previous generations of women in Haryana have ever dreamed to achieve, and inspire many others to follow their example.



Company News

Fangchenggang Phase II Commissioned

The Fangchenggang Power Station in Guangxi Zhuang Autonomous Region in Mainland China completed its Phase II expansion, adding a total of 1,320MW of generating capacity.

Phase II of the plant uses the most efficient coal-fired power generation technology and state-of-the-art emission control technique to generate affordable and clean electricity for the Guangxi region. Its two generating units are now commissioned.



CLP Acquires 17% Stake in Yangjiang Nuclear

CLP announced on 30 November 2016 to acquire a 17% shareholding in Yangjiang Nuclear Power Co., Ltd as a strategic move to invest in cost-efficient and non-carbon emitting generation, enhance our presence in Guangdong Province, and accelerate the progress towards Climate Vision 2050.

Yangjiang Nuclear owns and operates Yangjiang Nuclear Power Station, which is located in Yangjiang of Guangdong Province. The station comprises six nuclear power generating units,

including three in commercial operation and three under construction. Upon full commissioning of all units by 2019, Yangjiang Nuclear is expected to add over 1,100MW of non-carbon emitting generation capacity to CLP's portfolio.

Power Your Love Sets New Records

More than 300,000 CLP residential customers took part in the Power Your Love programme in 2016, benefitting 20,000 underprivileged households in Hong Kong. The number of participants was 50% more compared with the previous year when the programme was first launched. CLP customers who participated saved electricity between July and August and the electricity saved was "transferred" to pay for the electricity bills of the needy households by making use of a HK\$6 million fund made available by CLP shareholders. An award ceremony was held in November to thank our customers who achieved the biggest saving of electricity and supporting organisations.



CEO Discusses Global Power Sector's Challenges and Opportunities

CLP Holdings CEO, Richard Lancaster, visited India and Turkey in October and attended the World Business Council for Sustainable Development (WBCSD) meeting in Chennai and the triennial World Energy Congress in Istanbul. Speaking at a roundtable of the congress,

Lancaster discussed the needs for new business models to address specific issues in different markets and the huge potential of smart home solutions. The congress is a major event of the

World Energy Council and Lancaster is the Chairman of the Council's Hong Kong Member Committee.

CLP and CSG Sign MoU on India

Managing Director of CLP India, Rajiv Mishra (left in front row), and President of China Southern Power Grid International, Yang Hua (right in front row), signed a Memorandum of Understanding on 20 October 2016 on future cooperation in India between the two companies. Also present at the signing

ceremony were Group Director & Vice-chairman of CLP Power, Betty Yuen, Executive Director & Chief Financial Officer of CLP Holdings, Geert Peeters, and other senior executives from CLP and CSG.



Accolades for CLP Annual Report and Sustainability Report

2016 was a bumper year for CLP Annual Report and Sustainability Report, which together received over 50 international and local awards. Major prizes include the ARC Awards, Australasian Reporting Award, Hong Kong Management Association's Best Annual Reports

Award, and the Hong Kong Institute of Certified Public Accountants (HKICPA)'s 2016 Best Corporate Governance Awards.



The Shared Point

CLP is a big family and we operate in countries across Asia-Pacific. Our employees come from different cultural and ethnic background. To be able to listen to what you think, and your dreams and aspirations is vitally important to cultivate the bond amongst us. You may also choose to share which are interesting or that touch your heart. We sincerely invite you to share them with us in this platform. We have the following two contributions for our first issue.

➤ [1. Welcome to Green Haven](#)

➤ [2. Setting out on Our Dreams](#)

Welcome to Green Haven

By Santanu Satapathy, Manager – Environment, Jhajjar Power Plant Limited

I was transferred from Paguthan Combined Cycle Power Plant, one of the lush green sites amongst CLP's assets, to Jhajjar Power Plant (JPL) more than a year ago. In the last few months, I learned about the plant's stupendous journey, from environmental clearance to plant construction to its operational challenges till date. What caught my eye and impressed me the most was its development and management of a green belt. It was amazing to see how the barren land around the power station was transformed into an oasis with various species of trees including medicinal, herbal and fruit bearing trees. The green cover and the water body within the large reservoir make a safe home for various types of birds and animals. Birds including parrots, peacocks, pigeons, sparrows, bulbuls, toucans and animals such as monkeys, wild cats, rabbits, deers, and

porcupines have been spotted in and around the plant premises. The presence of all this flora and fauna enriches the biodiversity of the region, hand in hand with industrial progress.



This drove me to do a bit of research and I found that, according to the India State Forest Report 2015, the green belt in India covers 21.3% while the state of Haryana only accounts for 3.6%. What the team at JPL did well was to start tree plantation in and around the power plant during the initial phase of its operation.

Secondly, CLP India colleagues began sowing seeds during the monsoon season to ensure that the saplings get the best conditions to survive and grow. I am also impressed that the green belt management is done by around 50-60 contract employees, who are from the local communities. The community, whose core occupation is farming, provides the necessary talents required for the task at hand while this has also created an additional source of income for them.

At present, 174 hectares of land have been developed in the green belt zone covering about 35% of the plant area, which is beyond the legal compliance requirement of 33%. In the short span of just four years, over 330,000 native saplings have been planted.

I did a little calculation. Within a year, a tree can absorb as much as approximately 21.8 kilograms of carbon dioxide (CO₂), the main greenhouse gas responsible for global warming, and can transform one ton of CO₂ by the time it reaches 40 years old. This means that trees living at JPL can absorb around 330,000 tons of CO₂ during their lifetime.

There are many other green initiatives being undertaken by the team at JPL including recycling of food waste, reuse of waste water, responsible disposal of waste, among others. An interesting

way to create awareness and attune mind-sets towards caring about the environment is the celebration of “Green Birthdays”.

This is celebrated on the last Friday of every month. In this event, all employees walk from the township gate to the plant, and on the way, saplings are planted at identified locations by JPL employees who celebrate their birthdays in that particular month. This is an initiative that apart from planting trees, employees can enjoy comradery and experience the beauty of nature while walking together. From time to time, employees, their spouses, parents, and very importantly, children are engaged in the tree plantation activities to spread the culture of care for environment beyond the plant boundary. Additionally, JPL’s corporate social responsibility team supports plantation of trees in nearby villages in collaboration with local village representatives.



I deeply feel that JPL is a unique combination of Man, Machine and Nature. Here, one can hear the buzzing of turbines along with the humming of various types of colourful birds within the dense plantation. It is my pleasure to be a part of the JPL team and to be involved in taking care of our environment. I am proud to see that the

collaborative efforts are benefiting the organisation as well the community in the lap of Mother Nature.

Setting out on Our Dreams

Trainee Engineers from China Receive Training at Hong Kong Headquarters and Power Plants

By Huang Yinghong, Trainee Engineer

It was with great hope for the future that we began our six-month training in Hong Kong.

We were not very used to Hong Kong upon our arrival, but our superiors and colleagues were very kind, and their meticulous arrangements quickly made us feel at home. People welcomed us with open arms and shared their life experience with us generously. It was a wonderful experience, which also paved the way for our training.

We received training at the Operations, Maintenance, Occupational Safety and Environmental Quality Section and the Business Strategy Section of the Generation Business Group. We learned about power generation using different fuel types, and the different management methods and concepts of power generation operations in a systematic manner. Later, we were trained at the System Control Centre and regional offices of the Power Systems Business Group. The arrangement enabled us to easily integrate what we learned in different departments and develop a fuller picture and deeper understanding of CLP's business.



We also took part in CLP's on-campus recruitment activities in Mainland China. In our presentation, we shared our experiences and what we have learned at CLP. I and my friend, An Guangyin, also joined a gathering where CLP female engineers from Australia, India, Hong Kong, and Mainland China shared their experiences.

During our training, we basked in CLP's culture of care-for-people and equal opportunity for growth for everyone. Although we come from different countries and our life stories are different, we are grateful for what we have learned at CLP.



In Pixels

Share your photos with us, and we will share them with the CLP family! We are interested in old and new photos of your precious moments of memory, tears and cheers and pride and honour. You will receive a small souvenir from us if your photo is published.



It was great fun to participate in this local carnival in Sichuan Province to celebrate International Women's Day in March 2016. Local engagement is a key focus of CLP China's community initiatives.



The smiles of these children are our biggest rewards in contributing to the "Support-a-Student" programme in Mainland China. The programme has helped 2,800 students to continue their education in seven years.



It is encouraging to watch these Indian women who have joined our sewing workshops to learn more about sewing so that they can live a better life tomorrow.



We did it! Altogether 13 teams comprising over 50 of us participated in the Poverty Walk of the 2016 Oxfam Trailwalker. It was highly rewarding that we were able to help others and have fun at the same time.



Ho Ho Ho! We had a wonderful party at the head office to celebrate Christmas. Chairman Sir Michael Kadoorie also joined us and we all had a great time.



We joined the BEAM medical mission to Sichuan Province in September 2016 to support doctors who performed free surgeries for underprivileged children with cleft lips and cleft palates. It was a great learning experience to be able to contribute.



Last July, EnergyAustralia joined the ranks of more than 650 organisations across Australia in launching the Reconciliation Action Plan. The plan aims to cultivate stronger bonding with Aboriginal and Torres Strait Islander peoples, and deepen understanding towards their culture and communities.



Ben Hawkins, a fourth-year electrical apprentice at Mt Piper Power Station in New South Wales, helps high school students to build a robot that can play soccer.