

Southeast Asia and Taiwan

In this section we describe, for each of our five major business streams, how, through the values which guide our actions, the capabilities that create value, the implementation of our strategy and the management of our assets and investments, CLP has performed in 2010 and our outlook for future years.

Hong Kong



Business Engironment

The environment for our Hong Kong electricity business is strongly influenced by current and developing policies of the HKSAR Government on integration with the Mainland's energy sector, fuel mix, environmental performance and the capital investment and regulatory structure necessary to bring about the required policy outcomes.

In August 2008, the Central People's Government and the HKSAR Government signed an MOU on energy cooperation. This provided for the delivery of gas for electricity generation in Hong Kong from three sources made available by Mainland suppliers, each of which would be essential to the continued adequacy and reliability of Hong Kong's electricity supply. These were:

- new gas fields planned to be developed in the South China Sea;
- the second West-to-East gas pipeline, bringing gas from Turkmenistan; and
- a Liquefied Natural Gas (LNG) terminal to be located in Shenzhen that would supply Hong Kong.

The MOU also contemplated the ongoing supply of nuclear electricity to Hong Kong through an extension of the supply contract with the Guangdong Daya Bay Nuclear Power Station. Under the MOU, CLP is expected to cooperate with Mainland counterparts on the necessary commercial arrangements to implement these policy directives on the supply of gas and nuclear energy.

As part of the measures intended to improve local air quality in Hong Kong, the HKSAR Government has been steadily tightening the emissions levels allowed from power stations in Hong Kong. From 2005 to 2010 permitted emissions of SO_2 , NO_x and Respirable Suspended Particulates (RSP) for our power stations in Hong Kong have been steadily reduced to comply with progressively lower emissions caps. With the enforcement of the Second Technical Memorandum for Allocation of Emission Allowances under the Air Pollution Control Ordinance, these permitted emission allowances are required to be reduced further by 64%, 34% and 33% respectively by 2015 as compared to the levels of 2010. With Government proposals to shift towards increased nuclear power and natural gas in the fuel mix by 2020, these emissions will be reduced even further.

In addition to these specific emissions requirements, the Government has also launched a public consultation on Hong Kong's Climate Change Strategy and Action Agenda. The consultation document, issued in September 2010, deals with a wide range of climate change proposals and mitigation measures. For the power sector it proposes a fuel mix targeted at 50% nuclear, 40% gas, 3 to 4% renewable energy and not more than 10% coal by 2020. By comparison, CLP's fuel mix today is around 30% nuclear, 30% gas and 40% coal.

The continued tightening of environmental regulations, including the HKSAR Government's proposed climate change strategy, will have a significant impact on the operation of the existing generation facilities, as well as CLP's investment strategy on generation and transmission facilities. The power business is long-term and capital-intensive in nature. To achieve the proposed fuel mix for electricity supply, more clean fuel sources and new infrastructure investments will be needed. A stable and transparent regulatory framework enabling us to plan and make long-term energy infrastructure investments is essential for delivering on government's policy objectives. The present SoC provides such a framework until at least 2018. However, arrangements for nuclear energy supplies and for natural gas with a duration of 20 years or more and involving commitments of many billions of dollars need to be backed by a regulatory framework which gives investors and suppliers the confidence to enter into those contracts and the ability to meet those obligations for the decades ahead.

The following chart shows the tremendous efforts made by CLP to reduce emissions since 1990 - well before air quality had become a matter of political, media and public focus. Total emissions of NO_x, SO₂ and RSP have fallen by 85%, 85% and 82% respectively over that period, despite total electricity demand rising almost 80%.



Performance Meeting the demand for electricity

Satisfying our customers' expectation that adequate and reliable power supply is available at all times, demands high standards in the operation of our generating plant. These standards were achieved in 2010.

Station	Rating (MW)	Generation* (GWh)		Availa (۹	ability 6)	Operating Hours	
		2010	2009	2010	2009	2010	2009
Black Point Power Station	2,500	10,851	9,142	90.8	90.5	35,775	30,572
Castle Peak Power Station	4,108	15,167	17,268	72.0	78.4	38,602	45,943
Penny's Bay Power Station (peaking capacity / black start capability)	300	0.7	0.2	98.6	99.6	14.3	10.5

* Purchase of nuclear electricity from Daya Bay is not reflected in these figures.



🛹 Briefing to our Vice Chairman, Mr. William Mocatta and fellow Director, Mr. R. J. McAulay at Castle Peak Power Station

Hong Kong

The most important aspect of our performance is our ability to meet the demand for electricity in Hong Kong, every day of every year. We achieved this in 2010. On 8 September 2010 local maximum demand reached a new historical peak of 6,766MW. This represented an increase of 17MW (0.3%) over the previous historical peak recorded in 2008. Overall, local sales in 2010 grew by 1.2%, compared to growth of 1.7% the previous year. This growth, particularly in the residential sector and commercial sector was primarily due to the economic recovery, positive consumer sentiment and high humidity. There was slight sales growth for both the infrastructure and public services sector and the manufacturing sector. There was a reduction in electricity sales to Guangdong. The result was that total unit sales for 2010, which includes sales to Guangdong, decreased by 2.2% from 2009.

	201	0	Sales increase/	Average annual	
Sector	Number of customers ('000)	Electricity sales (GWh)	(decrease) over 2009 (%)	sales change over 2006-2010 (%)	Notes on 2010 performance
Residential	2,039	8,457	1.5	2.4	Economic rebound, positive consumer sentiment and high humidity
Commercial	187	12,642	1.2	2.0	Economic rebound and positive consumer sentiment
Infrastructure and public services	96	7,878	0.8	0.5	Commissioning of public facilities
Manufacturing	25	1,952	0.7	(6.5)	Stable growth in local demand, despite continued sales reduction in textile industry
Total local sales	2,347	30,929	1.2	1.0	
Export sales	-	2,609	(30.1)	(10.3)	Lower contracted volume constrained by more stringent emission caps
Total sales	2,347	33,538	(2.2)	(0.2)	

Capital Investment

The largest single capital investment made recently in the Hong Kong electricity business has been the emissions control project at Castle Peak "B" Power Station. This HK\$9 billion project will enable over 90% of SO_2 emissions and over 50% of NO_X emissions from Castle Peak "B" to be removed and will further reduce emissions of RSP from the existing low levels. The project, which involved installation of flue gas desulphurisation equipment, nitrogen oxide reduction plant and other facilities on all four units at the station, was completed in December 2010.

During 2010 CLP invested approximately HK\$7.7 billion in generation facilities, the transmission and distribution network, customer services and other supporting facilities. This investment enhanced supply quality, reliability and customer service levels, as well as meeting the demand created by ongoing infrastructure projects and residential developments in Kowloon and the New Territories.

Gas supply

Work on securing gas from the three sources contemplated under the MOU continued throughout 2010. These are major and complex infrastructure projects requiring coordinated efforts from gas suppliers and regulatory authorities in the Mainland and Hong Kong. As our existing gas supply from the Yacheng gas field in the South China Sea is entering the late stages of its life when gas production is likely to be less stable, the work on securing replacement gas becomes critically important and careful management of the remaining gas supply is necessary.

Since the announcement of the MOU we have been working diligently with the Mainland suppliers to develop the necessary infrastructure and agree commercial terms that will ensure adequate and reliable supply to our gas-fired power generation

facilities. CLP is only one of the participants in this development of cross-boundary gas supply infrastructure. Successful and timely delivery of the energy supply arrangements contemplated in the MOU requires a positive contribution from Mainland business counterparties and the active support of the involved governments and authorities in many areas for each of these gas sources – from site selection and regulatory approval through to construction of the required infrastructure which extends over long distances and across provincial and national boundaries. Given the scale and complexity of these projects, these represent significant challenges to the delivery of gas within a tight timetable.

As at the end of 2010 progress has been made on all fronts towards implementation of the MOU.

- New gas fields in the South China Sea preliminary agreement was reached with CNOOC to provide short-term gas supply from a small gas field to supplement the current gas supply source, the Yacheng field. Discussions are ongoing with CNOOC on long-term replacement gas supply from its gas portfolio including the development of new gas pipeline infrastructure that will be needed.
- Second West-to-East Pipeline discussions with PetroChina on commercial terms for long-term gas supply progressed. Initially, supplies will be from the Second West-to-East Pipeline which is partially completed and will transport gas from Turkmenistan across China to Shenzhen. We have also worked closely with PetroChina in developing a new pipeline to transport gas from the end point of the Second West-to-East Pipeline in Shenzhen to Black Point Power Station, with construction expected to start in 2011.
- Shenzhen LNG terminal a project team, led by PetroChina with partners CLP and Shenzhen Gas, is working with an expert panel assigned by the China National Energy Administration to conduct an in-depth review and study of potential terminal sites in Shenzhen.

We have developed cooperative relationships with all involved parties and look to accelerate the pace of work in 2011.

Innovation

We have been operating our Hong Kong electricity business for over a century. During that time the needs and expectations of our Hong Kong customers and the technologies available to serve them have never ceased to evolve. Today, and as our Chairman remarked earlier in this Report, the pace of change in our business is faster than it has ever been. Three different examples illustrate the ways in which CLP is promoting innovation in our business, in ways that we could not have imagined only a few years ago.

Following the issue of an environmental permit, we have started the feasibility study for an offshore wind farm of up to 200MW near Sai Kung. It is envisaged that we will commence fabrication of an offshore wind data collection mast in 2011 for site



* Emissions reduction at Castle Peak Power Station – new Absorber Tower which removes sulphur dioxide from flue gases

Hong Kong

environmental data collection. Although offshore wind farms are increasingly being developed elsewhere, the particular seabed conditions at the site, categorised by thick layers of sediment, require an innovative and environmental solution for the wind turbine foundations. We have already tested a suction caisson foundation which will permit wind turbine installation with minimum disturbance to the seabed. On future decommissioning the whole foundation can be completely removed by simply reversing the installation process.

The coming years will see a global trend of power grid modernisation by integrating the electricity transmission, distribution and metering infrastructures with advanced digital and communication technologies. The smart grid, incorporating the concept of enhanced intelligence and automation, will support renewable generation, strengthen power grid resilience and engage customers more actively in energy saving and demand management. CLP has established a Smart Grid Development Roadmap. Initially, we will focus on strategic areas such as integration with intermittent renewable energy sources, transmission and distribution network management, customer interaction, last-mile communication networks and information technologies. We already have 15 demonstration projects in progress, varying from self-healing systems for critical equipment through to advanced metering infrastructure and communication technologies. Our smart grid experience centre for experimenting and demonstrating the evolving smart grid technologies will open in the first quarter of 2011.

We are playing a major role in facilitating the introduction of electric vehicles (EVs) to Hong Kong. We have worked closely with Government and the automobile industry to develop the standards and specification required for the long-term sustainable deployment of EV charging infrastructure in the SAR. EV charging stations have now been installed and made available to the public in 26 carparks. We waived the fees for the charging stations in 2010 and will extend this waiver through 2011. CLP is setting an example itself in the use of EVs. In 2010 we had 21 EVs within CLP's fleet, ranging from a 10-ton truck and an electric shuttle bus through to plug-in hybrid saloon cars. We organised the Hong Kong Parade and Exhibition for the 25th International Electric Vehicles Symposium. The EV parade, involving more than 30 different EVs from across the world, was the largest of its kind yet seen in Hong Kong. Over 60,000 members of the public visited the EV exhibition. More than 6,000 guests participated in the EV Ride and Drive, giving them their first experience with electric cars.



What is your view on the development of the electric vehicle industry in Hong Kong? Do you think that it will be able to take off at a massive scale in the near future?

Head of China/HK Research, CIB Research – Equity, Deutsche Bank

Whether EVs will take off at a massive scale depends on:

- (1) Policy The HKSAR Government has introduced "first EV registration tax exemptions" for EV purchasers as well as allowing power utility companies to include within their asset portfolio any investments in EV infrastructure. Such ongoing and increasing support from the HKSAR Government is testament to its efforts to promote the mass adoption of EVs in Hong Kong.
- (2) Availability of Charging Infrastructure With both power companies leading the way in building EV charging infrastructure as well as consistent and effective education and media campaigns to educate the public on EVs, this encourages the adoption of EVs in the near future.
- (3) Availability of price competitive Right-hand-drive EVs the price of these EVs is still high compared to gasoline vehicles. However, more manufacturers are producing EVs leading to lower production costs and better vehicles.

With the support from Government policies, increased commitment by vehicle manufacturers and positive support from CLP, I believe the future is extremely promising for EVs in Hong Kong.





Our job is to provide adequate, reliable, cost effective and environmentally responsible electricity supply to Hong Kong. In the coming year, this mission will be discharged with a particular emphasis on supporting Government's policy objectives regarding fuel mix and emissions levels. This emphasis is reflected in a number of the specific plans and activities we envisage for 2011. These include:

- commissioning the final unit of the emissions control project at Castle Peak "B" Power Station;
- closely monitoring possible fluctuations in gas availability from the existing Yacheng gas field and prudently managing gas usage before arrival of replacement gas;
- taking forward the implementation of the inter-Government MOU on energy supply. This will require continuing close
 cooperation and information sharing with the HKSAR and Central People's Governments, as well as collaboration with
 multiple stakeholders in order to ensure a smooth transition from the existing Yacheng gas resources and on-time delivery
 from the replacement gas resources. This will include progressing contracts for gas supply as well as the commercial
 arrangements and technical development of related pipeline infrastructure;
- active engagement with the HKSAR Government on practical investment plans to meet its climate change goals and air quality objectives. This will also involve starting to plan the major infrastructure developments in our business which will be needed if these policies are to be successfully implemented;
- evaluating the options for the additional import of nuclear energy to Hong Kong, both to meet increasing electricity demand and to ensure that this is done in line with any decision by HKSAR Government substantially to increase the role of nuclear energy within Hong Kong's overall electricity generation needs;
- enhancing stakeholder engagement activities and communication plans in relation to nuclear safety issues to reinforce public confidence in nuclear power and its ability to meet Hong Kong's energy needs safely. These activities will need to be coordinated with other major stakeholders, notably the HKSAR Government and CGNPC, the majority shareholder in Daya Bay; and
- taking forward innovative initiatives such as EV market development, pilot smart grid projects and the development of local renewable energy projects.

In the remainder of this decade we foresee that our Hong Kong electricity business will be categorised by:

- strengthened infrastructure integration with Guangdong, notably through the import of gas and nuclear power;
- a cleaner fuel mix. This will involve using more gas, importing more nuclear energy and reducing our reliance on coal, as well as promoting the use of local renewable energy sources to the extent that this is practical;
- the continued implementation of the inter-government MOU so that new, long-term gas supplies are brought to Hong Kong;
- the timely development of pipeline infrastructure and necessary arrangements to bring new long-term gas supplies to Hong Kong;
- the promotion of energy efficiency we will continue to help our customers to boost energy conservation through energy efficiency related services and public education, as well as offering advice on energy efficient products, better building design and optimal equipment selection for businesses;
- management of the ongoing capital expenditure which our business will require, both to timetable and within budget; and
- excellence in operations at all times, including the effective management of critical business issues such as tariff levels, environmental and safety performance.

Australia



Business Engironment

In December 2010, the NSW Government announced the results of the privatisation of the state-owned retail gas and electricity businesses and the awarding of long-term contracts (known as "GenTraders") for the output from state-owned power stations. These transactions are to be completed on 1 March 2011. The effect of this is that, in Queensland, NSW, Victoria and SA, all of the electricity retailers (with the exception of one in rural Queensland) will be owned by the private sector. In generation, most of the capacity in Victoria and SA and nearly half the capacity in Queensland is privately-owned, while nearly half the generation output in NSW will be managed by the private sector. Where privatisation has already run its full course, as in Victoria and SA, we have seen highly competitive generating and retail energy sectors, accompanied by a trend towards industry consolidation as well as vertical integration, whereby energy retailers move to secure upstream resources of power generation and fuel. Although the Federal and State Governments have steadily withdrawn from direct participation in the power industry in recent years, Government policy still has a major impact on the business environment in three major respects.

The first is with regard to potential Federal legislation to reduce greenhouse gas emissions in Australia as part of the nation's response to the threat of climate change. Given that the electricity generation sector accounts for approximately 35% of total Australian emissions, any Federal legislation will inevitably have a significant impact on the industry. The Labor Government has established a Multi-party Climate Change Committee and two roundtables to seek input from business and non-government organisations on climate change policy. TRUenergy has not been invited to participate in these roundtables. Nonetheless, we have a regular dialogue with key departments in the Federal Government and will be an active, constructive and fair-minded participant in the ongoing debate on Australia's future carbon management, as the Government moves to finalise its carbon policy mechanism by the end of 2011.

The second respect in which the Federal and State authorities play an active role in energy policy relates to renewable energy. In September 2009, the Australian Government announced the expansion of Australia's Mandatory Renewable Energy Target Scheme (MRET). This committed the Federal Government to achieving a 20% share of renewable energy in Australia's electricity mix by 2020. Further changes to the MRET legislation were announced in February 2010. As from January 2011, the renamed Renewable Energy Target (RET) Scheme has been separated into two parts, the Small-scale Renewable Energy Scheme (SRES) and the Large-scale Renewable Energy Target (LRET). The SRES provides support to small-scale technologies, such as solar panels and solar hot water systems, whereas the LRET now provides an annual target for renewable energy generation. This increases incrementally to 41,000GWh in 2020, to achieve the 20% renewable target. After that, the LRET is intended to remain constant until 2030. The implication for TRUenergy is that we need to commit to contracts with renewable energy projects, so that we can procure the renewable certificates which, as an electricity retailer, we are obliged to acquire under the RET Scheme. In addition to the Federal RET Scheme, the Victorian, NSW and SA Governments have all introduced energy efficiency schemes. Whilst each scheme has its own legislation and rules, in essence, each requires retailers, such as TRUenergy, to obtain and surrender energy efficiency certificates equal to their share of the State's targeted emissions reductions. These state-level targets are set based on each retailer's energy sales per year in that particular State. Each certificate represents one tonne of carbon emissions avoided through energy efficiency and / or fuel switching. Retailers can either buy these certificates on a trading market or create them by providing energy efficiency measures to consumers.

The third area where governments continue to impact energy businesses is retail pricing. Electricity prices remain politically sensitive. Apart from Victoria which has fully deregulated retail prices, all jurisdictions continue to set benchmark prices.

All of these measures sound, and often are, quite complicated and involve some overlap. The overall picture is one where governments have moved away from ownership of electricity infrastructure, have gradually eased back from control and

regulation of retail energy prices, but remained highly engaged in the related fields of greenhouse gas emissions, promotion of renewable energy and energy efficiency.

Performance

On 14 December 2010, TRUenergy agreed with the NSW Government to acquire EnergyAustralia Retail (which sells gas and electricity and is the State's largest electricity retailer), the Delta Western GenTrader contract for the Mount Piper (1,400MW) and Wallerawang (1,000MW) coal-fired power stations and three power station development sites for a total of A\$2.035 billion, subject to completion adjustments. The EnergyAustralia Retail, Delta Western GenTrader and the development sites are all high quality assets which will give TRUenergy competitive scale in NSW, Australia's largest energy market. The acquisitions solidify TRUenergy's position as one of the top three national retailers and generators, doubling its energy retail business to approximately 2.75 million customer accounts in NSW, the Australian Capital Territory, Victoria, Queensland and SA. The Delta Western GenTrader, including NSW's most efficient coal-fired power station at Mount Piper, increases TRUenergy's balanced portfolio of self-owned generation capacity and capacity purchases, which includes gas, coal and wind, to a total of 5,469MW.

The three power station development sites involved in the agreement are at Marulan (two sites) and at Mount Piper adjacent to the existing power station. The Marulan sites have concept approvals for the development of gas-fired power stations of up to 450MW and 350MW capacity respectively. These add to TRUenergy's existing potential for additional generating capacity at Tallawarra, where the NSW Government has granted final permitting for the development of a second gas-fired power station with a capacity of approximately 450MW. There is also scope for new gas-fired generating capacity at our existing Yallourn site. This is subject to permitting and a sensible and balanced carbon emissions reduction policy which supports the transition over time from brown coal-fired generation at Yallourn towards gas-fired generation.

Asset Management

TRUenergy's strong financial results in 2010 reflect the effective management of its assets during the year.

At Yallourn, a major outage on Unit 3 was successfully completed. This was a greater achievement than might first appear – the 54-day outage involved the installation of a new turbine as well as major boiler works, requiring 196,000 man hours of work and investment of over A\$75 million. The upgrade also led to a 3% improvement in unit efficiency – in effect generating more electricity for the same amount of fuel. Despite the major outage, Yallourn also reported record generation output during 2010. Gross generation of 11,644GWh was 3GWh more than 2009, while the net and sent out generation was significantly higher



What is the latest update on the CPRS scheme in Australia? Will TRUenergy consider voluntarily shutting down its Yallourn plant? And what would be a reasonable compensation level?

Head of China / HK Research, CIB Research – Equity, Deutsche Bank

Following national elections in Australia in August 2010, the new minority Federal Labor Government established a Climate Change Committee comprising different parties supporting the minority Government to consider options for the introduction of a carbon price. In December 2010, that Committee considered a range of designs and carbon pricing mechanisms and released 11 principles which it considered should guide the shape of future policy and regulation. These principles include a recommendation that carbon pricing should be budget neutral, take account of impacts on the competitiveness of all Australian industries, maintain energy security and provide investment certainty. The Government has recently indicated a policy approach, but essential details remain outstanding.

In November last year a new Coalition State Government was elected in Victoria. This has maintained the previous Government's emission reduction target for the state as an "aspirational" goal, but has dropped the former Labor Government's plan for direct action on the staged closure of the Hazelwood Power Station, Victoria's oldest and most emissions intensive generator.

TRUenergy will continue to operate the Yallourn Power Station in line with energy demand and existing policy settings. We will also continue with permitting for a gas-fired power station alongside the existing power station. This will allow us to make appropriate investment and transitional arrangements based on policy signals.



(23GWh and 39GWh respectively). Major contracts were awarded for the new Maryvale coal conveyor infrastructure. This will enable the existing Yallourn mine operations to transition across to the new Maryvale field. Preparations for these new coal operations included the disassembly of an overburden stacker which was then moved 9 km under its own power.

Tallawarra's generation performance was above budget. The station also met its heat rate target, as well as the air emissions targets for NO_x and CO_2 intensity. However, Tallawarra's availability stood at 90.08%, against a targeted 93%, due to a number of forced and planned maintenance outages to carry out additional plant inspections and warranty work.

The expansion project at the Hallett Power Station, which provides electricity at peak demand periods, has been fully constructed and commissioning is nearing completion. The work has included the installation of an additional gas turbine with a capacity of 23MW. Once fully commissioned it will take Hallett's total peaking capacity to 203MW.

The Iona Gas plant expansion project was completed in June 2010. This increased the daily gas processing capacity of Iona from 320 terajoules to 500 terajoules. The operational performance of Iona during the commissioning of the expansion project has been excellent. During 2010, the plant availability was 92.9% with commercial availability at 98.8%, against a target of 98.0%. The Iona project, as with the Unit 3 upgrade at Yallourn, achieved excellent health, safety and environmental performance.

Asset/Station	Rating (MW)		Generation (GWh)		Utilisation* (%)		Availability* (%)		Operating Hours		
	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	
Yallourn Power Station	1,480	1,480	11,644	11,641	89.8	89.8	89.5	90.0	8,002	8,070	
Hallett Power Station	203**	180	28	33	1.8	2.1	96.0	97.8	2,463	2,938	
Tallawarra Power Station	420	420	2,550	1,853	69.3	53.6	90.1	88.4	7,892	6,146	
(since 23 January 2009)											
	Capacity (Terajoule / Day)		Throu (Petaj	Throughput (Petajoule)		Utilisation (%)		Availability (%)		Compressor Hours	
	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	
lona Gas Storage Facility	500	320	46.4	44.3	25.4***	38	92.9	93.5	23,362	24,680	

* In this table and elsewhere, "availability" is the extent to which a generating unit is made available by its operator for generation to the grid system, whereas "utilisation" is the extent to which the unit actually generates as compared to its rated capacity applied over the period in question.

** A new 23MW unit was yet to be commissioned as at 31 December 2010. Percentages in the table relate to the plant operating with 180MW.

*** Plant capacity of 500 terajoules is used throughout the year.

Retail

Despite an increase in competitive activity in many of TRUenergy's key mass retail markets, the retail business performed well. Victoria continued to have amongst the highest levels of churn (customer turnover rates) in the world. This underlines the highly competitive nature of the fully deregulated market and the continued challenge to maintain customer numbers and profitability. While TRUenergy attracted 290,000 new gas and electricity accounts during the year, an increase of almost 11% (or 28,000) in accounts won compared to 2009, there was a net decrease of 32,000 in gas and electricity customer accounts during 2010. In response to these churn rates, TRUenergy increased its sales and marketing activities in the second half of 2010, including:

- The introduction of a telemarketing trial and the use of additional external sales providers, which led to a 27% increase in new sales in the final quarter of 2010.
- A campaign to attract new customers amongst people moving home. This was supported by a media campaign which involved radio, television and press coverage and has achieved good early results.
- A campaign to increase organic growth in the Queensland market. This achieved good results in the small business segment. However, the residential segment proved to be much tougher, with aggressive defence of their markets by the two incumbent retailers.

Overall, the annualised churn rate for TRUenergy's retail electricity business was 21.3%, compared to a market rate of 26.7%.

More than 13% of Victorian customer sites have now been fitted with new smart meters under the State Government and network industries' Advanced Metering Infrastructure (AMI) programme. On completion, the AMI programme is expected to provide energy users with better information on their energy use, make it easier for renewable energy such as solar power to feedback into the grid and receive feed-in tariffs, improve billing services and provide a platform for new products and services, including energy management programmes and remote service provision. TRUenergy is well advanced in its preparations to manage the massive additional data which the AMI programme will generate.

The implementation of TRUenergy's new retail customer service and billing platform (called "Project Odyssey") has been and still is a challenging exercise. It remains one of our priority issues. To ensure the required implementation quality from a customer and operational perspective, TRUenergy and its key suppliers, IBM and Oracle, have assigned significant additional resources to the project. This reflects the continuing strong commitment by senior executives from IBM and Oracle to deliver a sound, competitive solution for TRUenergy. A major review with IBM and Oracle in mid-2009 reset the delivery timing for the system by the end of 2011. This extended timeline allows for the quality implementation required, as well as meeting the changes needed to support the AMI programme deployment in Victoria. Project Odyssey has now completed its build phase and the system has been going through extensive end-to-end testing in the second half of 2010. Rigorous testing will continue until at least mid-2011 prior to planned system implementation in the latter part of the year.

Renewable Energy

Federal and State policies promoting renewable energy are aligned with the CLP Group's Climate Vision 2050, our own target of making massive reductions in the carbon emissions intensity of our generating portfolio.

CLP's wind energy portfolio in Australia is held through a 50:50 joint venture with Hydro Tasmania, known as Roaring 40s. The 111MW Waterloo wind farm in SA commenced operations in August 2010. This is Roaring 40s' fourth project in Australia to enter service. The wind farm was completed on time and within budget. As the following chart explains, Roaring 40s' three other wind farms achieved high levels of availability in 2010, although electricity generation has been lower than originally forecast as the wind resources at sites have fallen short of initial projections.

Wind Farm	Installed Capacity	Number x Wind Turbine Size	Generation at Farm Gate		Ava	ilability	Wind Speed	
	(MW)		(GWh)			(%)	(m / s)	
			2010	2009	2010	2009	2010	2009
Bluff Point	65	37 x 1.75MW	221.0	231.6	96.8	93.8	8.9	9.2
Studland Bay	75	25 x 3MW	232.4	244.9	97.6	95.0	8.5	8.7
Cathedral Rocks	66	33 x 2MW	174.4	184.9	95.8	93.0	7.8	8.3

In addition to its operating projects, Roaring 40s owns three development sites in SA. These sites are subject to various uncertainties, such as land ownership complications, grid constraints, community challenges and the grant of development approvals. Moreover, projects at these sites would require off-take prices which are above current market prices in order to provide economic returns – even though the underlying wind resources may be good. It was against this background that goodwill of A\$32.6 million (HK\$258 million) has been written off against CLP's investment in Roaring 40s.

The Paralana geothermal project completed test drilling to a depth of 3,725 metres in 2009. During the past year, the joint venture has carried out testing and simulation of temperatures and potential water flows in the zones below 3,400 metres. This testing will continue into 2011, including the injection of a larger volume of water at higher rates. Any decision about the future of this project will be driven by the results of this testing and an assessment of the overall commercial and technical viability of the project.

TRUenergy aims to increase its renewable energy portfolio with the development of solar energy. In September 2010, the Victorian State Government announced the commitment of A\$100 million to support our proposal to build a solar plant of up to 180MW in Victoria using commercially-proven thin-film photovoltaic modules developed by First Solar in the U.S. This Victorian support is subject to the project, which is known as the Mallee Solar Park, receiving funding under the Australian Government's Solar Flagships Program. The project was shortlisted under that Federal programme in May and final submissions were made to the Federal Government in December. The announcement of final selected projects by the Government is expected in the first half of 2011.

Australia

Outlook P

The outlook for TRUenergy in 2011 will be dominated by the challenge of successfully integrating TRUenergy's acquisitions in NSW into our existing business platform. TRUenergy is designing its strategic objectives for 2011 around three key themes.

Running our business well:

- profitably managing our customer base;
- effectively and efficiently managing our operations;
- successfully implementing projects to enhance our operations, assets and organisational capabilities (the delivery of Project Odyssey is a major example of this); and
- attracting, engaging, developing and retaining our people within a growing and evolving business.

Integrating the EnergyAustralia electricity and gas retail business and the Delta Western GenTrader into TRUenergy:

- achieving a smooth ownership transition (with a focus on the first 100 days after completion of the acquisitions);
- confirming and realising the value and opportunities of a larger combined TRUenergy business;
- integrating physical assets, customers, people, processes and systems into TRUenergy's existing business;
- vigorous and effective management of the competitive retail landscape in NSW and the effective implementation of the transitional services agreement whereby EnergyAustralia's retail systems are available to serve TRUenergy for up to three years after completion of the acquisition; and
- establishing and deploying a programme to align values and operating disciplines within the new NSW retail business with those required of TRUenergy's existing retail activities.

Preparing for the future through and beyond 2011. This includes:

- ongoing safe, effective and cost efficient operations and maintenance of all TRUenergy's power plants;
- maintaining current credit ratings, while refinancing existing debt facilities when due and obtaining loans for new projects. This will include investigation of options to source new capital to fund the long-term growth of our Australian business; and
- implementing our climate change strategy and addressing the impact of climate change policy on our operations.

Recent years have seen substantial and measurable improvement in the financial and operating performance of TRUenergy. The acquisition of the EnergyAustralia electricity and gas retail business and the Delta Western GenTrader provide a tremendous opportunity to build on that strengthened performance from TRUenergy's existing business and to ensure that TRUenergy becomes a long-term, substantial and valuable participant in Australia's energy sector.



Tallawarra Power Station



Business Environment

The power industry in the Chinese mainland continued to grow in 2010, with total installed capacity reaching 962GW at the end of the year, an increase of 88GW over 2009. Electricity demand grew at 14.6% during the year (6% in 2009). The average utilisation rate of power plant in the Mainland also increased in 2010, reflecting the overall economic recovery.

Compared to 2009, the average market price of coal remained at a high level from the start of 2010. This was mainly due to low hydro-electric generation and a reduced coal supply caused by strengthened regulatory control over small coal mines. However, with the end of the rainy season and the increase in coal-fired power generation from the start of winter, the coal price started to rise again and reached its peak for the year in December. Although there have been improvements in the supply of coal within the Mainland and measures have been taken by the Mainland authorities to maintain coal prices at 2010 levels for 2011, we expect the market price of coal to become more unstable and uncertain from 2011 onwards. Coal prices heavily affect the profitability of CLP's investments in coal-fired generation in the Mainland for two reasons. The first is the high proportion which coal costs represent of overall operating costs. The second is that, in the interest of holding down electricity prices to end-users, the Chinese authorities tend to restrict the extent to which increases in coal prices can be included in higher electricity tariffs. In September, the National Development and Reform Commission (NDRC) proposed an average 6.2% tariff increase for coal-fired plant in seven provinces. This proposal is still being reviewed by the State Council. Final approval is awaited. If implemented, this proposal would have a positive impact on CLP's investments in power stations in Shandong, Hebei and Shaanxi Provinces (which represent a combined 1,222 equity MW out of our overall coal-fired generation portfolio in the Mainland of 3,223 equity MW).

The most recent 11th Five-Year Plan (covering the period to 2010) included a commitment by the PRC Government to reduce the amount of energy produced for each unit of GDP. This target established energy efficiency as a top priority and directed the economy towards a more sustainable energy path. Compared to earlier years when the central thrust of China's energy policy was on meeting the rapidly rising demand for power as quickly and cheaply as possible in order to support economic development, we are now seeing the active promotion of energy efficiency, renewable energy and the accelerated development and deployment of new energy technology. As part of this there is a move away from smaller, less efficient diesel and coal-fired generation, including the smaller subcritical coal-fired units which had been at the forefront of the expansion of generating capacity from the 1980s onwards.

Performance

In April 2010 CLP sold to China Guodian Corporation our entire interest in CLP Power China (Anshun) Limited, which effectively owned a 70% interest in the 600MW Anshun II Power Station in Guizhou Province. Anshun II was CLP's first power project in the Chinese mainland with a majority shareholding. However, the station had a complicated, suboptimal ownership and operating structure which we were unable to remedy. This involved shared common facilities and despatch arrangements with the adjoining Anshun I Power Station (which was majority-owned by China Guodian Corporation). The divestment streamlines the operational efficiency of the two power stations and rationalises CLP's asset ownership in coal-fired projects portfolio in the Mainland. It also aligned with the Group's strategy, expressed in our Climate Vision 2050, of reducing the carbon emissions intensity of our generating portfolio.

Chinese Mainland

Coal-fired generation

CLP's investment in coal-fired generation in the Mainland comprises our interests in Shandong Zhonghua Power Company, Limited (SZPC) and CSEC Guohua International Power Company Limited (CSEC Guohua), where we hold minority shareholdings and do not exercise operating control, and our 1,260MW power station at Fangchenggang where, in addition to our majority shareholding, the operating and maintenance of the plant is carried out by CLP.

SZPC's generation portfolio performed well during the year, with output marginally above that achieved in 2009. Coal costs continued to be the major factor in the profitability of coal-fired power projects in China. The issue will become more pressing for inland provinces where the use of imported coal from overseas countries is not feasible. In Shandong, coal prices increased by about 20% in 2010. This caused the majority of coal-fired power stations in Shandong, including those owned by the five largest state-owned generating companies, to make losses over the year. CLP has worked closely with our joint venture partners to streamline coal supply and reduce coal costs so as to maintain the profit margins of our coal-fired assets in Shandong. In addition, if the coal price-linked tariff adjustment proposed by the NDRC in September 2010 is implemented, this will offset partially the increase in coal costs.

Cooperation with the Shenhua Group, through CSEC Guohua, progressed satisfactorily. Construction of the two 1,000MW units of Suizhong II in Liaoning Province was completed, with both units being successfully commissioned by May 2010. In addition, the retrofitting of the Zhungeer Power Station in Inner Mongolia was completed in October 2010, enhancing its capability to supply heat in addition to electricity. Coal supply from Shenhua Group remained stable throughout the year with prices lower than the domestic spot market.

Fangchenggang remained one of the major profit contributors to CLP's Mainland business, mainly due to the strong economic rebound and the extended dry season in Guangxi in the first half of 2010 which depressed the supply of hydro electric power. Unlike competing plants in the region, Fangchenggang's coastal site facilitated the use of imported coal, an advantage which was enhanced in 2010 by the signing of a long-term coal supply agreement. The excellent operating performance in Fangchenggang, coupled with its ability to source competitively priced international coal, has encouraged CLP to move forward with the development of Fangchenggang II, an additional 1,320MW of generating capacity. The Guangxi Government has submitted the project proposal for Fangchenggang II to the NDRC and further approvals are awaited.



How do you intend to rationalise your legacy coal-fired power plants in China? What sort of generation mix do you see from China in the next five years?

Vice President, Equity Research, Credit Suisse (Hong Kong) Limited

As you may see from the Chairman's Statement and CEO's Review, further consolidation and rationalisation of our coal-fired projects and continuous expansion in our renewable energy portfolio is the main strategy for our China business. We will largely exit conventional coal-fired generation projects by 2020, in particular, those subcritical plants with lower efficiency and which are less environmentally friendly. On the other hand, given abundant coal resources, coal-fired generation will remain the main source of generation in the Mainland to meet increasing electricity demand for the foreseeable future.

Although we will focus on nuclear and renewable projects, in particular wind, whenever good opportunities arise in our existing projects we will also consider investing in coal-fired plants that adopt the latest clean coal technologies like supercritical or ultra-supercritical technologies. These technologies offer higher efficiency and much improved environmental performance. CLP is one of the largest investor-owned power businesses in Asia. Our move towards cleaner energy sources in the coming 5 to 10 years in China will help the Group to reduce the carbon intensity of our generation portfolio and to contribute to the sustainable development in the region.



The following tables summarises the good operating performance, measured by utilisation and availability, of all the nuclear, coal-fired and hydro generating plants within CLP's portfolio in the Mainland.

Station	Rating (MW)	Generation (GWh)		Utilisation (%)		Availability (%)		Operating Hours	
		2010	2009	2010	2009	2010	2009	2010	2009
Daya Bay	1,968	15,015	15,662	91	95	91	96	8,036	8,428
Guangzhou Pumped Storage (Phase I)	1,200	1,399	1,331	13*	13*	94	92	3,061*	2,931*
Shiheng I and II	1,260	6,632	6,641	63	63	91	88	5,526	5,534
Heze II	600	3,357	3,326	64	63	93	90	5,595	5,544
Liaocheng I	1,200	6,665	6,667	63	63	91	91	5,554	5,556
Yire	400	2,417	2,326	69	67	96	96	6,043	5,816
Sanhe I and II	1,300	7,489	6,920	66	61	93	93	5,761	5,323
Panshan	1,030	6,214	6,054	69	69	94	84	6,033	6,054
Suizhong I and II [#]	3,600	15,092	9,408	55	67	79	83	4,858	5,880
Zhungeer II and III	1,320	7,175	5,919	62	51	91	93	5,436	4,484
Shenmu	220	1,371	1,425	71	76	95	92	6,233	6,627
Huaiji	125	443	284	40	26	92	87	3,541	2,267
Fangchenggang	1,260	7,055	5,227	64	47	91	91	5,599	4,149
Dali Yang_er	50	176	71	40	46	75	98	3,542	1,421

* Generating and pumping modes

Units 3 and 4 of Suizhong II Power Station (2 x 1,000MW) entered commercial operation in February and May 2010 respectively



Our wind farm at Qian'an in winter

Chinese Mainland

Nuclear Energy

CLP, through its wholly-owned subsidiary Hong Kong Nuclear Investment Co. Ltd. (HKNIC) holds a 25% shareholding in the 1,968MW nuclear power station at Daya Bay. 70% of the output of Daya Bay is supplied to meet the needs of our Hong Kong electricity business under a nuclear electricity contract which runs until 2034. Daya Bay and three other neighbouring nuclear generating facilities are operated by the Daya Bay Nuclear Power Operations and Management Co., Ltd. (DNMC) in which CLP owns a 12.5% shareholding.

Daya Bay continued to perform well with utilisation exceeding 90% in 2010. On 23 May 2010 there was a small increase in the radioactivity of the reactor cooling water at Unit 2 of Daya Bay, well within the prescribed technical limits for the plant. The extent of the increase implied the imperfect sealing of one fuel rod (out of over 40,000) in the reactor core. This was a minor operational incident with no safety, health and environmental consequences which did not require reporting under the zero-to-seven level scale promulgated by the International Atomic Energy Agency of the United Nations for evaluating and reporting on nuclear incidents. Unfortunately, the matter was inaccurately reported by a number of media sources and, as discussed in the Chairman's Statement in this Report, caused concern in Hong Kong. A Level 1 Event on the scale, which also has no safety, health and environmental consequences 2010 during a planned plant outage inspection of Unit 1. This revealed a flaw in a section of pipework in the auxiliary cooling system which is used to take away residual heat from the reactor during its shutdown – in other words, pipework which is only used when the reactor is not working. Such Level 1 Events are by no means unusual – and the identification of such incidents is in line with the strict international disciplines applied to the treatment of incidents at nuclear power stations. There have, for example, been 12 Level 1 Events at Daya Bay since 2001. As with the occurrence of 23 May, some of the media portrayed this in inaccurate terms. On both occasions, CLP, its partner CGNPC at Daya Bay, the operator of the power station and the Ministry of Environmental Protection of China all confirmed that these cases had no impact on public safety, public health or the environment.

The manner in which these matters were reported created public concern about nuclear safety and the operation of Daya Bay. To address this concern, even though it was not well-founded and the existing working mechanism was well-designed and in line with international practice, CLP, through HKNIC, worked closely with the HKSAR Government and CGNPC to develop an enhanced notification mechanism. This cooperation led to an announcement in January 2011 whereby information on "non-emergency licensing operational events" will be published on HKNIC's website (https://www.hknuclear.com) within two working



In September 2010, the HKSAR Government issued the Hong Kong's Climate Change Strategy and Action Agenda Consultation Document, in which it proposes a major change in generation mix towards nuclear and gas. If the Government proceeds with these proposals, will CLP be able to source more gas supply to increase gas-fired generation and to participate in more nuclear power projects in Chinese mainland?

Head of China / HK Research, CIB Research – Equity, Deutsche Bank

Since the inter-Government MOU was signed in 2008, we have been working hard with relevant PRC authorities and enterprises to bring new sources of piped and LNG for power generation in Hong Kong. These sources will bring gas from a combination of new gas fields to be developed in the South China Sea, from Central Asia through Phase II of the West-to-East gas pipeline, and from a new LNG terminal to be jointly developed in Shenzhen. These are major and complex infrastructure projects that require cooperative efforts from the commercial sector and Government bodies in Hong Kong and the Mainland. While the gas supply will be tight over the next few years as this infrastructure is being put in place, we believe that by the second half of this decade Hong Kong will be well placed to import more gas from the Mainland to meet a target generation mix of 40% gas.

Considering the successful track record of the Daya Bay Nuclear Power Station in supplying Hong Kong with reliable, clean and affordable electricity, the HKSAR Government's proposal to increase nuclear import to 50% of total energy supply is a feasible approach to reducing carbon emissions. However, a long lead time of 8 to 10 years will be needed to develop the necessary infrastructure. In view of the tight timetable, we have commenced preliminary talks with our Mainland partner to explore opportunities to participate in more nuclear power projects in Guangdong based on the successful joint venture experience we have had in Daya Bay.



days after DNMC has identified such an event at the power station. These events carry no nuclear safety consequences and have no impact on the external environment or public safety. The reporting of such events goes beyond international practice in this regard. For those events classified as Level 2 or above and requiring emergency response, actions will be taken by the Guangdong and HKSAR Governments and their related departments according to the established response mechanism based on a cooperative agreement on emergency response for Daya Bay.

In July, CLP entered into an agreement of cooperation intent with CGNPC to take up to a 17% shareholding in a 6,000MW nuclear power project in Yangjiang. Located on the Guangdong coast, approximately 220 km west of Hong Kong, this station will supply electricity to meet local demand in Guangdong. Construction commenced in 2008 and the project is expected to be commissioned in phases between 2013 and 2017. The project is progressing on schedule. Project evaluation and due diligence work for the prospective investment is underway and expected to be completed in the first half of 2011.

Renewable Energy

CLP's renewable energy portfolio in the Chinese mainland comprises 1,584 equity MW of hydro, wind and biomass generation.

Our largest investment in hydro electricity in the Chinese mainland is our 330MW project at Jiangbian in Sichuan Province. During 2010 we completed evacuation of the main tunnel from the upstream down to the power house. The tunnel alone is a major undertaking. It is 8 km long and took 33 months to complete, significantly longer than planned, due to the rock quality being much more difficult than expected. We have, however, been able to reprogramme other construction work to avoid delay to the completion date for the project. The upstream dam is completed and we are now in the final stage of installing equipment in the power house. Safety has been a challenge throughout this project, with difficult working conditions and a prevailing local safety culture which falls below CLP's requirements. Due to the extreme drought in Yunnan in the first half of 2010, the generation at our Dali Yang_er hydro project was lower than expected this year. Annual overhaul and retrofit works were performed in late 2010. We expect the performance of this hydropower station will be improved in 2011.

Our wind energy business is pursued through three channels: minority interests in individual wind farm projects, a 32% shareholding in CGN Wind Power Co. Ltd. (CGN Wind) and wholly-owned wind farms. Progress was made through all three channels in 2010.

Our minority-owned projects grew mainly through expansion from existing wind farms in Shandong, namely, Zhanhua II, Lijin II, Rongcheng II and Rongcheng III (each 50MW). The Mazongshan 50MW project in Liaoning, in which CLP holds a 24.5% stake, was commissioned in January 2010 and the 15MW Nanao III project in Guangdong was commissioned later in the year, with



Underground power house construction at our Jiangbian hydro project

Chinese Mainland

CLP holding a 25% stake. Our participation in CGN Wind continued. The total installed capacity of the joint venture exceeded 1,342MW at the end of 2010. CLP will maintain its existing equity investment of HK\$1.19 billion. Our shareholding will be diluted down from the existing 32% level as and when CGN Group injects more equity into the joint venture during 2011 in order to finish the construction of the existing pipeline of projects. Thereafter, the joint venture will focus on managing the existing operating portfolio and the total installed capacity of the joint venture will likely be maintained at the existing level.

The successful development and commissioning of CLP's first wholly-owned wind project in the Chinese mainland, the 50MW Qian'an I project, has demonstrated our capability to develop our own wind projects. Our second wholly-owned project, the 48MW Penglai I project in Shandong Province is now under construction. Phase II at Qian'an is under development. Major construction and erection works are to commence in early 2011 with expected completion in August this year. We will continue to secure majority-owned wind projects in targeted provinces. We expect that this will become our primary channel for future investment in wind energy in the Mainland.

In March 2010, we completed modifications to the Shandong Boxing Biomass plant, including the installation of an additional 15MW condensing turbine. This allows us to generate electricity independently of steam sales and thereby improve the operating flexibility and efficiency of the plant. On top of that, we have refined our fuel procurement strategy so that an improved supply of different biomass fuels can be maintained at reasonable prices. Nonetheless, the procurement of fuel in adequate quantities, of the required quality and at reasonable prices remains a daily challenge.

In 2010, we continued growing our energy services business in Southern China including more energy audits and implementation projects for industrial and commercial customers there. We have entered a joint venture agreement with CGNPC in November 2010 with the aim of jointly developing an energy services business in Southern China. The venture, which has been in operation since January 2011, will provide a one-stop shop for energy services (consultancy, system implementation, performance contracting and investment) targeting both commercial and industrial customers.



While developing the electricity generation market in China, does CLP have any strategy or suggestion in place to tackle the major problem of peak regulation caused by the excessive expansion of wind power installed capacity in some of the provinces?

General Manager, Jilin Electric Power Company Limited

In the pursuit of development of wind power projects in the Chinese mainland, CLP undertakes a rigorous process in selecting prospective investments. Whilst many of our competitors expand their project portfolio aggressively throughout the country, CLP only focuses on high quality projects that we believe could deliver a reasonable return on our investment. We currently have over 20 PRC wind projects, some of which are in provinces that encounter generation restriction caused by peak regulation. For our development of wind projects in these provinces, which are often provinces with good wind resources, we will work closely with the local power companies and industrial experts to improve on our forecast of electricity generation and operating characteristics of our wind farms and to ensure that these can meet the peak regulation and power despatch requirements of the local power companies. Through this close collaboration with the power companies, we can reduce the generation restriction to a minimum.

Furthermore, we believe that generation restriction is a short to medium-term issue and that it will be resolved in the future through a combination of increase in demand and better coordinated transmission and generation development to cater for the Central People's Government's enhanced target for wind generation capacity in the next 10 years. In the meantime, CLP will keep growing our wind portfolio while limiting the number of projects with grid restriction to a small portion amongst the whole portfolio.





The PRC Government will continue to support the development of clean electricity generation during future planning cycles, whether this is in the form of renewable energy, nuclear power or more efficient coal-fired plant. CLP has already adjusted its China strategy to position itself in line with this move towards cleaner electricity generation, as part of the Group-wide policy of reducing the carbon intensity of our generation portfolio. Over the coming three to five years CLP aims to re-balance its portfolio from one centred on coal-fired generation to one which prioritises low carbon emissions. To do this, CLP intends to consolidate and rationalise its asset ownership and structures for coal-fired projects, and to pursue clean and renewable energy sources in the Mainland, including wind energy, hydro power and nuclear. The divestment of Anshun II and the growth of our wind portfolio in 2010 are examples of our actions in this regard and illustrate the strategic direction we are taking.

In reviewing the growth opportunities of our wind energy business we are alert to the implications of the projected increase in wind energy in the Mainland. There are two aspects of this massive build-up in wind resources to which we must pay particular regard. First, the uneven spread of wind resources means that in certain areas with substantial wind energy capacity, such as Inner Mongolia, the grid does not have the capability to manage and transmit wind generated power to the load centres. Secondly, the sites with better wind resources will have been taken first, meaning that those sites still available for development may have wind quality which is inferior and less economically viable.

In line with the Hong Kong Government's proposed policy of enlarging the proportion of Hong Kong's electricity generated from nuclear sources, we have commenced a dialogue with our existing Mainland partners and the relevant authorities on how CLP may participate in the delivery of additional nuclear energy to Hong Kong. In doing so we intend to build on the experience, relationships and reputation we have established through our existing participation in the Daya Bay Nuclear Power Station.

Against this background, our plans for the year ahead and beyond include:

- pursuing efficiency improvements at those power stations in which we hold an interest through joint ventures;
- reducing coal costs by pursuing long-term coal supply contracts and sourcing alternative coal supplies;
- maintaining high despatch at Fangchenggang and continuing to control cost (which itself promotes higher despatch levels), as well as taking forward the proposed development of Fangchenggang II;
- implementing the enhanced notification mechanism for non-emergency events at Daya Bay and contributing to increased public understanding on nuclear energy;
- completing due diligence evaluation of the Yangjiang Nuclear Power Station in Guangdong and finalising the investment arrangement with our partner CGNPC;
- developing our plans for further investment in nuclear power stations in Guangdong to support the increasing supply of nuclear energy into Hong Kong;
- completing the construction of the Jiangbian hydro project with high safety standards;
- further improving the operating and financial performance of Boxing Biomass;
- identifying and continuing the development of hydro projects, so that the expertise that we have gained at Huaiji, Yang_er and Jiangbian can be more widely applied;
- continuing the three-channel strategy for wind projects, under which CLP will
 - i) build out existing minority-owned projects which have expansion potential;
 - ii) maintain our investment in CGN Wind, with the likelihood of dilution from a 32% to an approximately 15.7% shareholding during the course of 2011; and
 - iii) complete construction of the 48MW Penglai I wind project, commence construction of 50MW Phase II of Qian'an wind project, and pursue other wholly-owned wind projects which are currently under identification and evaluation; and
- growing our energy services business in Southern China through the joint venture with CGNPC.





Business Environment

India has an installed generation capacity of approximately 160GW compared to China's installed capacity of 962GW. Electricity consumption per capita in India is about a quarter of that of the Chinese mainland. In addition, the gap between supply and demand at peak levels remains above 10% nationwide.

In order to meet the demand for power and to sustain the economic growth and social improvement which India has achieved in recent years, the Union Government aims to add an additional 230GW of generating capacity over the next 12 years, with per capita consumption intended to double. Almost 165GW of this additional capacity is planned to be added from fossil fuel sources. A further 65GW is projected to come from nuclear energy and hydro electric sources, which may prove ambitious.

Although domestic coal is available in large quantities, there are severe constraints on bringing this to the power stations, in the form of mining difficulties, environmental and land use regulations and transportation problems. It seems that domestic coal can only support a maximum of 80 to 100GW of additional generating capacity. This means that imported coal is likely to play a vital role in the foreseeable future and will prove an attractive option for power stations located at the coast. However, the economics of generation on imported coal, whilst competitive at current coal prices, may be threatened if international coal prices continue to rise.

Greenfield coal-fired power station projects with long-term PPAs and which benefit from the formal allocation of domestic coal resources can offer opportunities for stable returns over time. However, coal-fired generation in many cases is being developed through "merchant plants" which do not benefit from domestic coal allocation and where the developers sometimes take fuel price risk. In recent years, these merchant plants have generated attractive returns. However, their vulnerability to increases in coal prices mean that developers are seeking to manage this risk through locking in coal resources outside India, such as in Indonesia, Australia and, recently, in African countries.

The Union Government is continuing with its ultra mega power project (UMPP) programme whereby large-scale projects, of up to 4,000MW over several phases, are awarded on a tender basis. Two of the four such UMPPs which have already been bid for have received domestic fuel allocations in the form of captive mines for the project life, together with long-term PPAs with power off-take and payment security; the other two UMPPs that have been bid for are imported coal-based. Two more domestic coal-based UMPPs are currently being developed. The pre-bidding qualification process for these is likely to happen during the first half of 2011, while the bidding itself is likely to happen six to nine months later.

Hydro electricity remains the largest source of renewable energy in India. However, wind energy has been growing rapidly. In 2001, India's total installed wind energy capacity was only 1,347MW. It now stands at approximately 13,000MW with further growth being promoted by continuing Union and State Government support. Wind resources are not evenly spread throughout the country, meaning that wind farms are mostly concentrated in Tamil Nadu, Maharashtra, Gujarat, Karnataka and Rajasthan.

In January 2010, the Union Government launched the Jawaharlal Nehru National Solar Mission which aims to install 20GW of solar power by 2022. The Solar Mission targets both large and small-scale generation, including for rural electrification (about 400 million people in India still lack access to electricity). A three-phase roadmap has been laid out with interim targets for the development of solar power.

Renewable energy, whether in the form of wind or solar, is supported by renewable energy quotas and preferential tariffs which are now implemented in 18 of 29 Indian States.

Performance

Our activities in India remain focused on three areas, the successful management of our existing power station at GPEC, progress on our greenfield coal-fired power station project at Jhajjar and growth of our renewable energy investments. We are also continuing to pursue opportunities in transmission projects in order to participate in the large-scale expansion of India's electricity grid infrastructure which will be necessary to support the growth in generating capacity and to bring electricity to end-users.

GPEC

GPEC has performed well and still represents the primary source of earnings for CLP India's activities. All key performance targets were met, although availability was slightly down compared to 2009, due to a scheduled major overhaul on one unit. This was the first of the three units to undergo a major overhaul after 100,000 hours of operation. The overhaul involved an upgrade of the gas turbine technology to enhance its operational performance to near-new levels. The other two units will be similarly overhauled in 2011 and 2012. Although the plant is in excellent condition, it is important that the maintenance costs of ageing plant are carefully controlled. To this end, we intend to enter into a long-term maintenance and support contract with the equipment suppliers, Siemens.

Station	Rating Generation (MW) (GWh)		ration Vh)	Utilisation (%)		Availability (%)		Operating Hours	
		2010	2009	2010	2009	2010	2009	2010	2009
GPEC	655	4,079	4,602	71.1	80.2	90.1	92.9	7,968	8,269

Jhajjar

The Jhajjar project has been underway since January 2008 and is now around 70% complete. Almost the entirety of the project costs are now committed through various contracts. The engineering and equipment procurement has progressed well with our PRC suppliers. CLP has maintained close contact with the factories in China to ensure that components arrive on site when they are needed. The major challenge has been to obtain adequate labour resources. There was particular difficulty in this regard during mid-2010 when available labour resources were drawn towards Delhi to work on the completion of the facilities for the Commonwealth Games and related transport and civil infrastructure. The combination of a largely unskilled and inexperienced labour force and a generally poor local safety culture has demanded great efforts from CLP to ensure that proper safety



Given the fuel security issues, difficulties with land acquisitions, and competitive landscape in India, what is CLP's investment strategy beyond its investments in GPEC, Jhajjar and wind? Would CLP consider local funding options in India?

Vice President, Equity Research, Credit Suisse (Hong Kong) Limited

The observations on issues relating to fuel security, land acquisition and the competitive landscape in India are pertinent – these concerns largely get addressed in Case 2 bids for coal-fired power station projects, such as CLP's Jhajjar project. In Case 2 bids the distribution utility does most of the preparatory work on pre-project issues such as land acquisition, obtaining environmental clearance and arranging fuel. In Case 1 bids the power procurer enters into a long-term PPA with the supplier without involving itself in setting up the power project. The developer is free to supply power from any generating station with no restriction on the location, type or fuel source of the plant. CLP proposes to pursue more Case 2 opportunities including the UMPPs. We are also looking to invest in projects which are under development and have substantially progressed work on land acquisition and fuel arrangements.

The local market has enough depth to fund power projects. The tenor of the loans ranges from 1 year to 15 years. Banks and financial institutions are quite keen to lend to companies like CLP which have strong balance sheets. The Jhajjar financing shows our ability to raise local debt in local markets in adverse times.



India

standards are put in place and respected. We do not adjust our safety standards downwards to reflect the inherent difficulties of particular projects at particular sites – safety is not something on which we are prepared to compromise. Whilst we believe that the safety performance during the construction works at Jhajjar has been measurably higher than on other similar projects in India, there remains room for improvement. We make strenuous efforts on this everyday.

Although Jhajjar benefits from allocated coal supplies from Coal India, sourced from nominated resources in Jharkhand, it is not yet certain that Coal India will be in a position to deliver the full amounts of contracted coal by the time that Jhajjar commissions. We have been working hard with Coal India to secure supplies of the requisite amounts of coal, as well as looking at alternate supplies of coal, including imported coal, to ensure that the plant capacity can be fully utilised from commissioning.

Renewable Energy

We started work on our first wind energy project in India, 50.4MW at Samana I in Gujarat, in 2006. Since then, our portfolio of wind projects in development, under construction or in operation has grown to 486MW. This has made CLP the largest wind farm developer in India, whether domestic or foreign. The past year has seen further growth in our wind energy portfolio with partial completion of Samana II and Saundatti and full completion of Theni, totalling 209MW capacity. Our projects at Andhra Lake, Harapanahalli and the balance of Samana II and Saundatti amounting to a further 172MW of capacity are all scheduled for commissioning in 2011. Although we have been largely successful in developing our projects within budget, the delays in commissioning have ranged between 4 and 12 months. Problems in land acquisition at the wind farm sites have been the largest contributor to these project delays. Alongside increasing efforts to shorten the land acquisition timetable, we have taken into account our past experience and now allow for a longer period for land acquisition to be built into our pre-investment financial analysis. We also ensure that our commitments to pay the wind turbine suppliers are delayed as far as possible, so that they are made in line with actual progress on land acquisition.

We are exploring the opportunity to participate in the deployment of solar energy in India. Our view is that over the next two to three years, the solar energy industry in India will have stabilised for us to contemplate project structures other than those which involve long-term off-take by state-owned utilities at high fixed tariff. This is especially important given the current high cost of electricity generated by solar, as compared to other conventional and non-conventional forms of generation. Gujarat and Rajasthan have the best solar resource in India, as well as supportive state-level policies. We will be able to draw on the experience and expertise gained by the CLP Group on the 55MW Lopburi solar project in Thailand in any further solar projects.



The Indian power sector is growing at a fast pace, however the capacity addition is primarily taking place through coal-fired projects. The mining industry is still under Government control and related mining utilities are not growing at the same pace. What are CLP's future plans for fuel security in India?

Deputy Manager, Planning & Control, Jhajjar Power Limited

Coal-fired projects based on domestic coal continue to be built. A large part (approximately 70% – 80%) of the coal required for these continues to be supplied by Coal India Ltd. through its subsidiaries. The Government of India has ambitious plans for capacity addition on coal. This will mean a combination of Case 2 projects based on domestic coal including the UMPPs and Case 1 projects based on coal supplies arranged by the project developer itself, such as linkages to domestic coal production, captive mines near the power station or imported coal, are likely to come to the market.

The Union Government recognises the importance of opening up the coal sector – recent legislation has opened doors for competitive bidding of coal blocks for projects with specific end-use. The guidelines for bidding for these are likely to be finalised during the course of the year – this is likely to mitigate the shortfall in production by the state-owned coal companies. CLP India is positioning to bid for the forthcoming UMPPs as well as other Case 2 opportunities. CLP India will also evaluate opportunities to bid for domestic coal blocks as well as those elsewhere in the region.



Transmission

In 2009, CLP India bid for two transmission line projects in joint venture with Gammon, a leading Indian civil engineering contractor. We were unsuccessful in those bids, being placed the sixth lowest out of ten bidders. We believe that our bids were sensibly priced. We had no regrets about not securing those projects at the price for which they were awarded. In the course of those bids, we developed a better understanding of the characteristics, economics, risks and rewards represented by transmission projects, as well as establishing a constructive working relationship with Gammon.

In December 2010 and January 2011, we bid for two transmission projects. This was again done through a joint venture involving a 76% majority shareholding by CLP, with Gammon undertaking the engineering, procurement and construction works. We maintained discipline in our bids – aiming to win, but only on a basis which will create value. We were unsuccessful in both these bids. Given that our bids have been unsuccessful and that our prices were substantially higher than the winning bids, we will critically review our valuations and assumptions for such projects. If, having done so, we cannot see a route to be competitive in such bids without accepting an unsatisfactory risk / reward profile, we may then slow down the pursuit of transmission projects until a more rational and sustainable competitive landscape emerges.

Outlook P

For our existing activities, our main priorities will be to:

- complete the Jhajjar Project on time and within budget for full commissioning in the first half of 2012;
- secure long-term (5 to 10 years) gas supply contracts for GPEC; and
- complete our wind projects currently under development in the states of Gujarat, Maharashtra and Karnataka and manage effectively our operating projects.

The growth of electricity demand in India and the accompanying need for large-scale investment in generation and transmission infrastructure, combined with CLP's experience in all aspects of the power industry and our growing reputation in India, means that a wide range of investment opportunities are available to expand our business, notably:

- possible participation in the greenfield development or bidding for another large coal-fired power project, including an UMPP;
- expansion of generating capacity at GPEC, once additional gas supplies can be secured;
- continued investment in wind projects, so as to retain CLP's position as the largest wind energy company in India;
- bids for transmission and hydro-power projects to diversify our asset portfolio; and
- exploring early opportunities for participation in the development of solar energy in India.



GPEC Power Station



Business Environment

Southeast Asia and Taiwan are the markets where CLP first started its regional business outside Hong Kong and the Chinese mainland in the 1990s. Since then, our business has grown through a combination of greenfield power generation projects, as well as mergers and acquisitions.

On 23 February 2011 we sold our interest in EGCO. Currently, most of our investments and development projects in Southeast Asia and Taiwan are held in conjunction with Mitsubishi. Restructuring of our joint venture with Mitsubishi since 2009 has enabled our partnership to continue on a basis which allows each of us to contribute complementary expertise, resources and relationships, but without the costs and constraints of complicated and burdensome joint venture overheads and corporate infrastructure.

Earlier in this Annual Report we identified the building and operating of power assets as one of the key value drivers of the CLP Group. Our experience in Southeast Asia and Taiwan bears this out. Compared to mergers and acquisitions, we have been most able to enhance the value of our investments when we have applied our engineering and operating expertise to the development of greenfield projects where CLP has been a founding member with significant control. A past example of this has been the coal-fired power station project at Ho-Ping in Taiwan. Our interest in Ho-Ping is now held in partnership with Mitsubishi Corporation.

The Ho-Ping project, which was a greenfield project we developed with our Taiwan partner, has been in service for some years. It provides a steady flow of cash from its continuing operations and a basis for any new opportunities that may emerge in Taiwan. The two Vietnam projects that we are currently progressing would be similar in concept if we are able to bring them to financial close and into construction. Vietnam is an emerging market and we feel that now may be the right time to move forward there, given the clear need for new generating capacity to support its economic growth.

Presently, we are applying our development expertise to the 55MW Lopburi solar project in Thailand, where CLP holds a 33.33% equity stake and is responsible for project management.



Lopburi in Thailand – from tapioca field..

Performance

All of the operating plants in which CLP held an interest in 2010 had long-term PPAs with creditworthy off-takers. Each of these plants achieved good operational performance in 2010, allowing them to respect the terms of those agreements and, earn the prescribed revenues.

Ho-Ping performed well in 2010 with a record total generation of 10,008GWh. The possibility of a future expansion of generating capacity at the site remains. However this would depend on the future electricity supply/demand balance in Taiwan, as well as the formulation and application of official policies. In the meantime, we are looking at the possible development of solar and wind energy in Taiwan using the relationships, resources and local expertise that we have built up since we first started work on the Ho-Ping project in the mid 1990s.

The 55MW Lopburi solar project in Central Thailand, developed and managed by CLP, achieved financial close and commenced construction. This project is owned by Natural Energy Development Co., Ltd. ("NED") which in turn is equally owned by CLP, Mitsubishi and EGCO. It is currently the largest solar project of its kind in the world. Commissioning is scheduled to occur in phases between late 2011 and early 2012. A PPA is in place and financing arrangements are in hand for an 8MW expansion, for which construction is expected to start in 2011.

CLP and Mitsubishi have continued development efforts on the two coal-fired greenfield projects in Vietnam. The 1,320MW Vung Ang 2 project, in which CLP and Mitsubishi jointly own a 48.45% stake, is under negotiation with the Vietnamese government on the PPAs and other key project agreements. Tenders for equipment supply and construction are being evaluated and discussions are ongoing with potential financing providers. On the 1,980MW Vinh Tan 3 coal-fired project, 49% owned by CLP and Mitsubishi, we are finalising the documents for the invitation of tenders for equipment supply and construction, and are also in discussion with financial institutions on financing for the project. We aim at finalising negotiations with various Vietnamese Government entities on both projects in 2011 and to achieve financial close for one project in 2011 and the other one in 2012. These are ambitious goals in that they will depend on the time, potentially considerable, which the Vietnamese Government may require to consider and take decisions on key areas such as Government guarantees and fuel cost pass through mechanisms.



.....to solar farm 🥒

Southeast Asia and Taiwan

Outlook 🖗

Going forward, our priority will be on managing our existing asset and construction project in Southeast Asia and Taiwan, namely CLP's interests in Ho-Ping and the Lopburi solar project. We will also be working on the development of the two coalfired projects in Vietnam as well as the small expansion of the existing Lopburi project.

There may be opportunities in developing Southeast Asian countries for further greenfield projects where CLP is able to apply its abilities to engineer, construct and operate. This is a market where we need to be selective in all aspects of risk and return and only move forward on projects that provide security of cash flow from the PPAs, pass through fuel costs and where the cost of electricity is affordable. These are the necessary preconditions for us to develop the two projects in Vietnam, just as much as they would be for any other projects which would come forward in future. We would also be open to opportunities to develop more renewable energy projects, wherever the value of low carbon generation is recognised and stable, supportive government policies are in place.

Our specific plans for 2011 include:

- maintaining the good operational performance of Ho-Ping and procuring coal on the international market at reasonable prices;
- assessing and negotiating terms with the bidders for the engineering, plant procurement and construction contracts for the Vung Ang 2 project in Vietnam, and the associated financing;
- determining the cost and economics of the Vinh Tan 3 project, using Chinese equipment suppliers and financing;
- continuing discussions with the Vietnamese Government, relevant authorities and state-owned entities to confirm whether the Vinh Tan 3 and Vung Ang 2 projects can proceed on a sound, sustainable and economically viable footing; and
- progressing the construction of the Lopburi solar project to schedule and within budget as well as pursuing the addition of a further 8MW to the project.



CLP has set a target to achieve a 30% of generation portfolio from non-carbon emitting source by 2020, of which 20% will be from renewable sources. This is a very challenging target given that competition for renewable projects has intensified. Will the company sacrifice on the investment return hurdle rate to achieve the generation mix target?

Head of China / HK Research, CIB Research – Equity, Deutsche Bank

In 2004, we set a target of having 5% of our generating capacity powered by renewable energy by 2010. This was met by the end of 2007. We now have over 16% in total renewable energy projects, mainly in wind with some hydro, biomass and solar. As we continue along our journey towards a low-carbon future, we have revised our renewable energy target to 20% of generating capacity by 2020. We do see challenges ahead of us: an increasing shortage of good hydro and wind sites, possible reductions in feed-in tariff support for renewable energy, needs for substantial investment in transmission grids to handle rising volumes of electricity generated from renewable energy sources. Even so, we believe our goal is achievable as regulations and business conditions evolve to support the development of a low-carbon future. For instance, domestic policies and regulations in the countries in which we operate, particularly China and India, are expected to support the deployment of renewable generation over the next decade.

Our investment decisions are based on the delivery of appropriate economic value to our capital providers, and social and environmental value to all stakeholders. No decision on investment in power generation can be made solely on the basis of environmental considerations. In its investment decisions, CLP will always seek to strike a balance between the economic, social and environmental aspects of our businesses, and the demands and expectations of our stakeholders.

