

## **CLP Holdings**

**Analyst Briefing on the  
conditional agreement to acquire  
a 17% stake in Yangjiang Nuclear**

**30 November 2016**

*This presentation contains some comments that may be construed or interpreted as relating to future events including our expectations about the performance of CLP Group's business. The comments are not audited and are based on a number of factors that we cannot control. We cannot be certain that the comments will be accurate or complete and so they should not be relied on.*

*This presentation is for information purposes only and does not constitute an invitation or offer to acquire, purchase or subscribe for any securities. This presentation does not constitute an offer to sell or the solicitation of an offer to buy any securities in the United States or any other jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. Securities may not be offered or sold in the United States absent registration or an exemption from registration. Any public offering of securities in the United States must be made by means of a prospectus that contains detailed information about the issuer and its management, as well as financial statements*

- ✓ **Key economic and strategic acquisition of 17% interest in 6,516 MW Yangjiang nuclear facility in Guangdong (1,108 equity MW)**
- ✓ **Aligned with our long term “Focus • Delivery • Growth” strategy increasing our footprint in one of our key markets, leveraging our core capabilities and delivering a value creating investment in non-carbon emitting generation**
- ✓ **Close to major load centres in Guangdong, China’s most dynamic province**
- ✓ **Reflects our confidence in the role of nuclear power in de-carbonising China’s electricity industry and continues to build on the long term strategic partnership with CGN**
- ✓ **Safe, reliable and economic second Generation nuclear facility with three out of six units operational**
- ✓ **Earnings accretive from Completion (equity accounting) and financed using existing internal resources and third party debt**

## ■ Purchase Consideration

- RMB5.0 billion (around HK\$5.6 billion) plus audited completion payment

## ■ Total Investment (inclusive of Consideration above)

- Approximately RMB7.0 billion (around HK\$7.8 billion) to full COD of 6 Units by 2019

## ■ Earnings Information

- 2016 August YTD profit after tax (100% Yangjiang Nuclear): RMB 1.654 billion
- 3 of 6 units operational
- Earnings accretive from Completion

## ■ Other Metrics

- The order of US\$2.2 million/MW (Total Cost Basis) <sup>(1)</sup>

## ■ Financing

- Existing internal resources together with RMB 5.4 billion third party debt
- Backed by strong historical cash flow from existing China operations
- Group Net Debt expected to remain within boundaries of existing credit rating

CLP Holdings	Net Debt (HKD, billion)	Net Debt / Total Cap (%)	S&P Rating (outlook)
Dec 2014	63.0	38.0%	A- (negative)
Jun 2016	53.8	32.8%	A- (positive)

(1) Based on the pro forma enterprise value calculation. The total cost includes initial acquisition cost and future equity contributions, plus 17% of non-recourse project debt

# Appendix

**Acquisition of a 17% stake in the 6,516 MW Yangjiang Nuclear Power Project from CGN Power Co., Ltd. (CGN Power) and Guangdong Nuclear Investment Co. (GNIC) in Guangdong province in China**

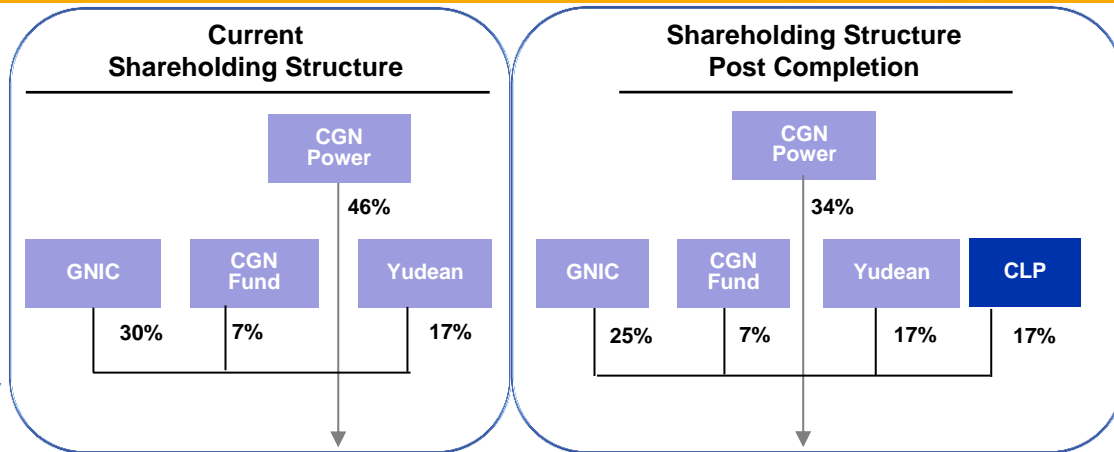
- Net interest of 1,108 MW of zero carbon-emission generation
- 6 x 1,086MW CPR1000-series units
- Located in southwest Guangdong, 220km from HK
- Project approved by State Council in Dec 2008 to supply Guangdong
- Current nuclear tariff at 43 fen/kWh
- Well proven nuclear power technology with progressive safety enhancements
- Asset life of 40-60 years
- VAT tax concessions for nuclear power applicable

**Project Schedule**

- Unit 1, 2 & 3: In operation with Average Load Factor of 99% (2014), 89% (2015), 81% (1H2016) and approximately 75% (for the period YTD September 2016, lower load factor due to major outages for Unit 1 & 2)
- Unit 4: Hot testing completed with commissioning expected in 2017
- Unit 5 & 6: On schedule for commissioning in 2018 and 2019 respectively
- Around 80% complete as at 31 December 2015

**Governance**

- 7 Board Directors, 1 from CLP
- Unanimous approval for certain Board decisions
- 1 Deputy General Manager



# History of CLP nuclear investment

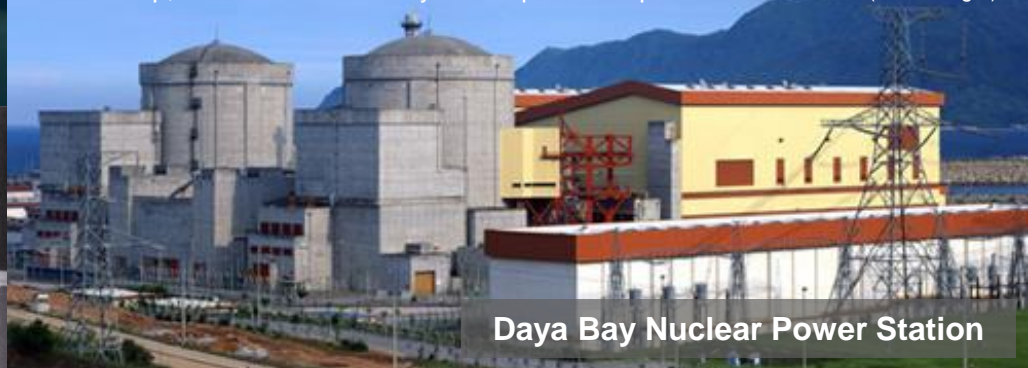


1985: Creation of Daya Bay joint venture with CGN with 25% equity investment in 1,968MW nuclear facility (Top left)

1985: Photo of Lord Lawrence Kadoorie, Former Chairman of CLP Holdings, with Deng Xiaoping, the former Chairman of the Central Military Commission of the People's Republic of China (Middle left)

2009: Extension of the Daya Bay joint venture contract (Bottom left)

2015: Sir Michael Kadoorie, Chairman of CLP Holdings and Mr. He Yu, Chairman of CGN Group, in celebration of 30 years of partnership of CLP and CGN (Bottom right)



Daya Bay Nuclear Power Station

## 大亚湾核电站延长合营期合同签字仪式

主办：国家发改委(国家能源局)

承办：中国广东核电集团有限公司 中电控股有限公司

2009.9.29 人民大会堂



CLP 中電

30 Years of Partnership  
30年合作伙伴

中广核 CGN

30

Happy 30th Birthday

Daya Bay was the first large-scale commercial nuclear power station in Mainland China. Since its commissioning in 1994, Daya Bay has maintained an excellent safety record while supplying clean and reliable electricity to Hong Kong and Guangdong province. CLP and CGN have been in partnership in Daya Bay for over 30 years and have built a strong working relationship through that time.

	Yangjiang	Daya Bay
Location	Yangjiang, Guangdong, 220km from Hong Kong	Shenzhen, Guangdong, 50km from Hong Kong
Capacity	6,516MW (6 x 1,086MW)	1,968MW (2 x 984MW)
Offtake arrangement	100% domestic supply for 40-60 years (Unit 1-4: 40 years, Unit 5-6: 60 years)	CLP in Hong Kong: 70% from 1994-2014, and extended from 2014 to 2034, plus an additional 10% for 2015-2018. Remaining supply to Guangdong market
Electricity sent out	Around 43 billion kWh per year at full operation	Around 14 billion kWh per year
Shareholding	34% CGN Power; 25% GNIC; 17% CLP; 17% Yudean; 7% CGN Fund	75% GNIC; 25% CLP
Accounting treatment	Equity Method	Equity Method
Year of commissioning	Operational: Units 1, 2 and 3 (2014, 2015 and 2016 respectively) Under construction: Units 4, 5 and 6 (2017, 2018 and 2019 respectively)	1994
Technology	Pressurised water reactor with reference to Daya Bay Unit 1-2: CPR1000 Unit 3-4: CPR1000+ Unit 5-6: ACPR1000 } CPR 1000-series	Pressurised water reactor French M310 reactor technology



## Incremental lessons-learnt upgrades of a proven design



Daya Bay  
French M310  
reactor technology

Yangjiang  
Units 5 & 6  
ACPR1000

25 Post-Fukushima modifications further to previous development

- Seismic/Tsunami/flood protection
- Reactor and spent fuel cooling
- Severe accident management
- Emergency response & coordination

18 modifications over CPR1000+  
(raising reliability and safety capability)

- 60 year design life overall
- Seismic protection/I&C reliability enhancement
- Cooling sources & power source beyond design basis enhancement
- Severe accident prevention and mitigation

Yangjiang  
Units 1 & 2  
CPR1000

16 modifications over CPR1000  
(raising reliability and safety capability)

- 60 year design life for Reactor Pressure Vessel & Containment
- Seismic/flood protection
- Reactor cooling/power supply enhancement
- Severe accident detection, prevention and mitigation

Yangjiang  
Units 3 & 4  
CPR1000+

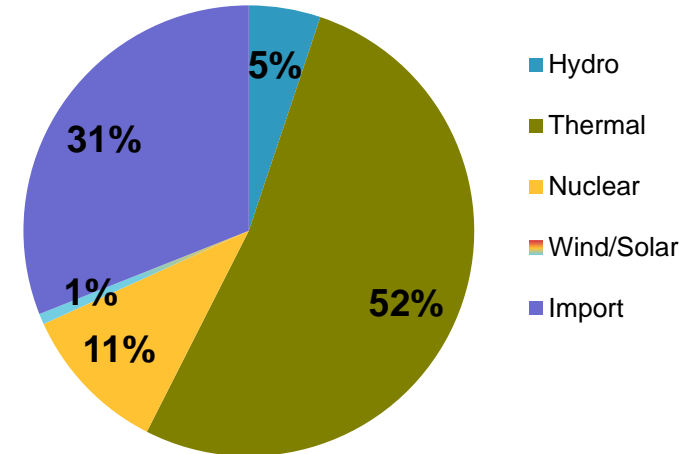
- CGN profile
  - CGN has the largest nuclear fleet in China
  - Operates 19 nuclear power units at 5 sites with 9 being built, supported by comprehensive R&D, design, construction and fuel procurement capability
- Strict regimes on safe operation and construction
  - Regulations by nuclear safety authority based on IAEA guidelines
  - Over 20 years of experience with excellent track record in safety culture and operation practices originated from French utility EDF
  - 71% of fleet performance indices in generation, plant and staff safety at world top quartile in 2015 based on the World Association of Nuclear Operators (WANO)
- Operations at the Daya Bay Nuclear Power Plant
  - Unified operations since 2003 for multiple units (now 6 units)
  - 65% of WANO performance indices at world top decile in 2015 (71% at top quartile)
  - Two firsts out of 6 events on average in the 14 annual EDF Safety Challenge Competitions
- Spent fuel and Nuclear waste
  - On-site storage then removal according to national requirements for spent fuel and waste management

## Supply & Demand in Guangdong

- Electricity consumption: 531 TWh in 2015 (growth in 2015: 1.4%; growth in 2014: 8.4% growth), with over half supplied by thermal units and 31% imported from western provinces
- Installed capacity: 99GW (2014: 92GW)
- Nuclear: 11% of electricity generation, given priority in dispatch according to the “Efficiency-based Dispatch Rule”
- Average utilisation hours and rates

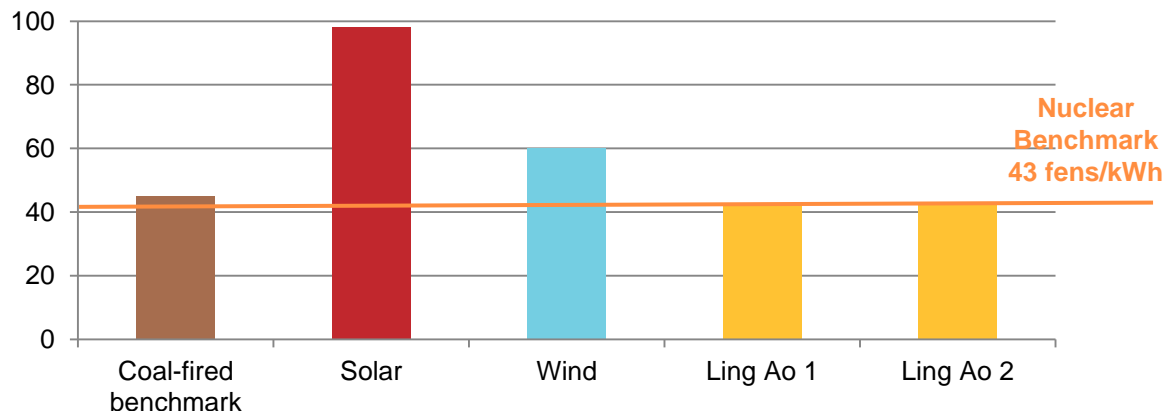
Guangdong	Thermal	Nuclear
2015	4,028 (46%)	7,579 (87%)
2014	4,578 (52%)	7,915 (90%)
2013	4,737 (54%)	7,589 (87%)

## Guangdong Fuel Mix 2015



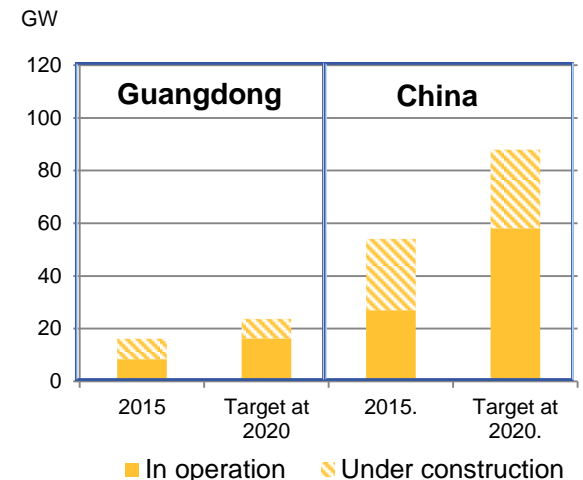
## On grid price in Guangdong (2016) – Nuclear power at competitive price

RMB fens/kWh (incl. VAT)



Source: National Statistics Bureau

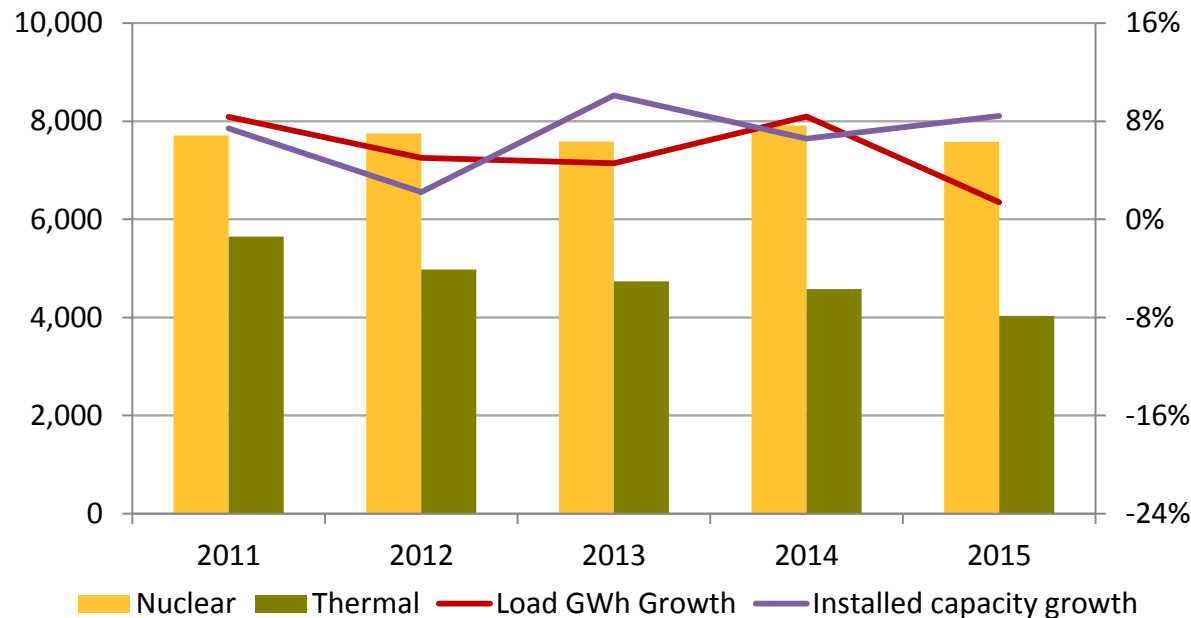
## Nuclear Installed Capacity



- Coal-fired will still be the majority while imported capacity will decrease in Guangdong's fuel mix
- High utilisation hours can be expected for nuclear, especially Gen. II units
  - Nuclear dispatch priority to stay due to national policy/international pledge to lower carbon for the environment
  - Economic and power demand slow down less severe in Guangdong
  - Guangdong's reliance on import energy means nuclear a more attractive option than power from western provinces and coal from northwest or overseas
  - Competitiveness of nuclear tariff

Utilisation hours

Growth rate



Utilisation hours of nuclear has been stable despite fluctuating load growth and changing installed capacity growth in the past

Source: National Statistics Bureau