

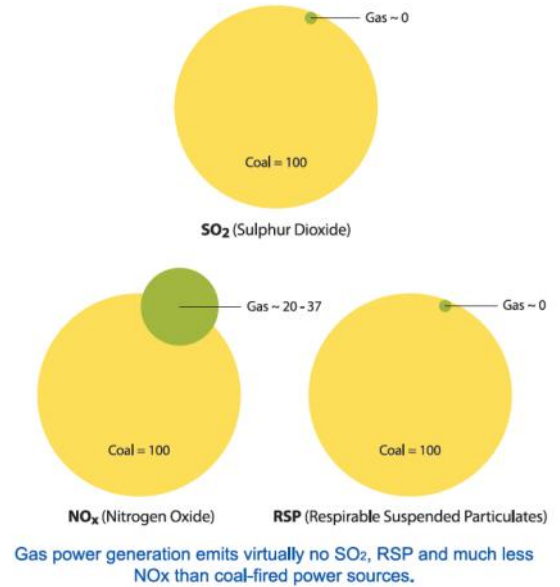


Power to the People

Hong Kong is a city that crackles with energy. Keeping it buzzing requires a stable, reliable electricity supply that can maintain the 24-hour economic and social whirl and the quality of life for its 7.1 million residents. Today, with growing concern over environmental protection, supplying that power means more than just keeping pace with demand: It also means helping improve air quality and mitigating the effects of climate change.

A Natural Solution

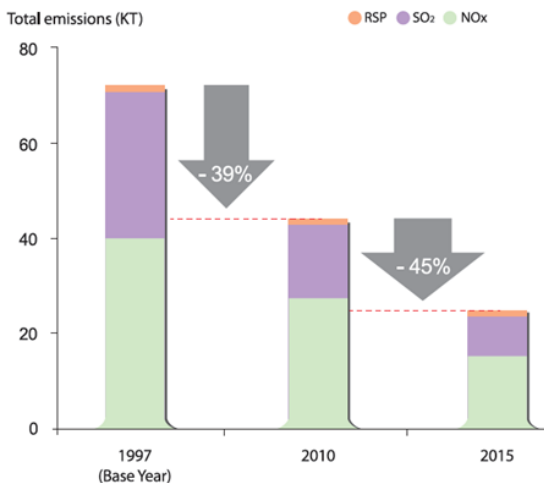
Of all the power options, natural gas has become increasingly popular for its efficiency and environmental benefits. The share of natural gas in global electricity generation has nearly doubled over the past three decades.



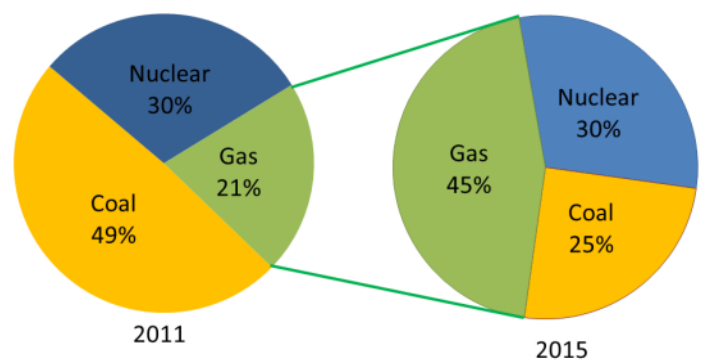
The Quest for a Greener Tomorrow

In the 1990s, with environmental requirements and social expectations rapidly evolving, CLP/CAPCO¹ diversified into new forms of fuels, in particular nuclear power and natural gas. In 1996, CLP started importing gas from Yacheng near Hainan Island at a very attractive price, providing an abundant and reliable power supply to support Hong Kong's economic development. It also allowed for significant environmental improvement through a stable tariff regime. Today, however, the Yacheng gas supply is nearly exhausted. To ensure a continuing, stable gas supply to meet the tightened emission caps required by the Hong Kong SAR Government by 2015, new gas sources are needed to reliably meet demand and to comply with the new emissions requirements.

Increasingly stringent emissions caps for CLP/CAPCO Power Stations



Forecast CLP/CAPCO Fuel Mix Change to meet emissions caps



¹ A joint venture of ExxonMobil Energy Limited and CLP Power Hong Kong Limited

The Second West-East Gas Pipeline (WEPII) – A Solution for Hong Kong’s Long-term Gas Supply

A Memorandum of Understanding (MOU) on energy cooperation was signed between the Hong Kong SAR Government and the Central Government in 2008, paving the way for the use of new fuel sources from the mainland: The Second West-East Gas Pipeline (WEPII), a new Liquefied Natural Gas Terminal in Shenzhen, and new gas supplies from the South China Sea. When it extends to Hong Kong in early 2013, WEPII will be the first of these new fuel sources to go live.

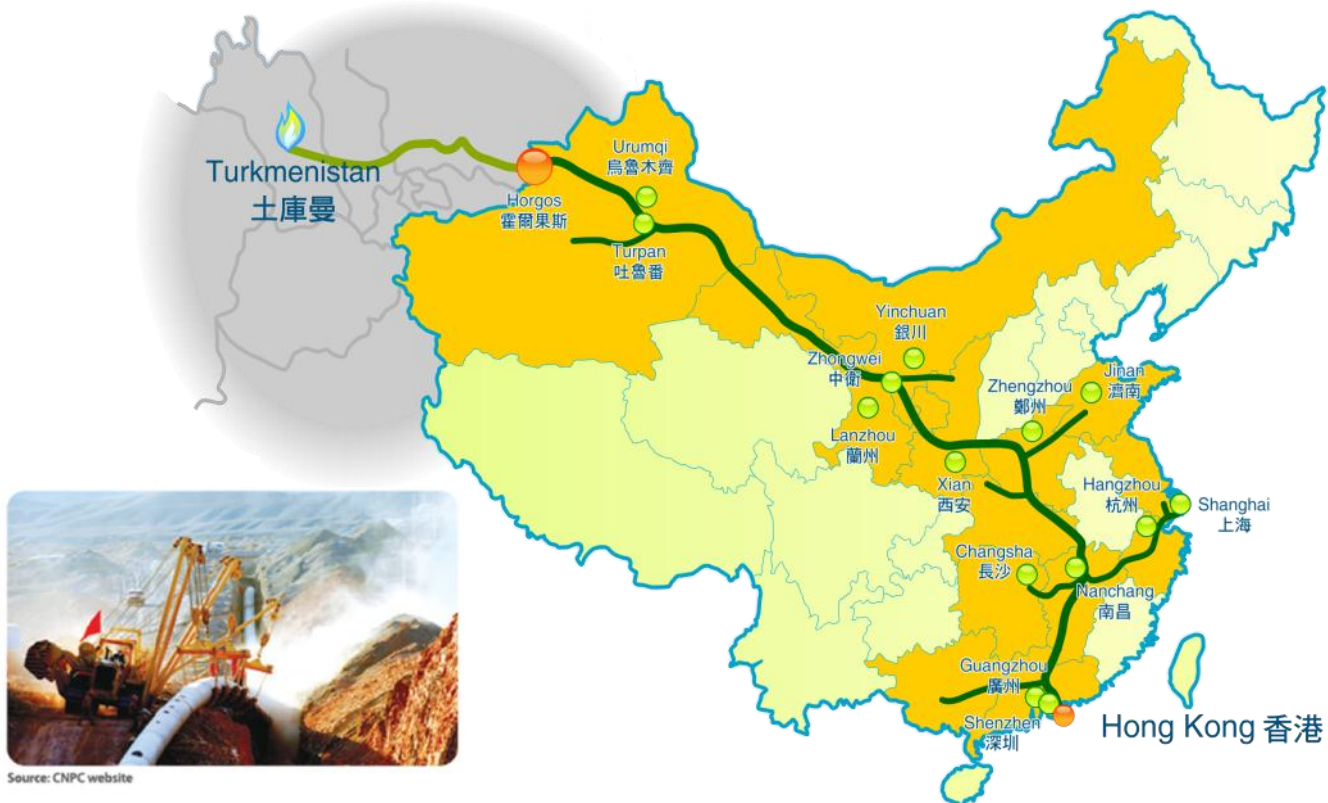


The World’s Longest Natural Gas Pipeline

Operated by China National Petroleum Corporation and its subsidiaries, WEPII is a key national infrastructure project aimed at sustaining the nation’s energy supply and fuelling its social and economic development. WEPII is the first pipeline project to bring gas into China across an international border and is also currently the world’s longest natural gas pipeline.

With a total investment of RMB142 billion, the pipeline consists of one trunk line and eight branches. It is around 9,000 kilometers long and can carry 30 billion cubic metres of gas a year, increasing the proportion of natural gas consumption in China's energy mix by one to two per cent. As a result, 76.8 million tons of coal will be replaced each year, which means an annual reduction of 130 million tons of carbon dioxide emissions (Carbon offset by 5.7 billion trees per year)*, 1.66 million tons of sulphur dioxide emissions, 0.66 million tons of particulates and 0.36 million tons of nitrogen oxide emissions. When it is completed, the pipeline will serve 500 million people across China.

*Calculated based on Environmental Protection Department’s data



The Second West-East Gas Pipeline is the longest gas pipeline in the world and the largest single energy investment project in the history of modern China.

WEPII starts in Horgos, Xinjiang, where it connects to the Central Asia-China Gas Pipeline and crosses 14 provinces, autonomous regions and municipalities, including the Yangtze River Delta and Pearl River Delta region, and finally reaching Hong Kong. Since the signing of the MOU, CLP/CAPCO has been working with everyone involved to put the project into operation and to bring natural gas from the WEPII terminal in Shenzhen to the Black Point Power Station in Hong Kong.

Construction of the pipeline began in February 2008. On June 30, 2011, the main trunk was put into operation, linking other important gas transport trunks and pipeline networks across China. On August 1, 2012, the Guangzhou-Shenzhen branch became operational. Steady progress has since been made in further extending the reach of natural gas from WEPII which is due to arrive in Hong Kong in early 2013.

A Breath of Fresh Air for Hong Kong

Gas from WEPII is critical to ensure the reliability of the electricity supply in Hong Kong and to help CLP/CAPCO to sustain a clean power generation that will improve Hong Kong's air quality.

Delivering this new gas supply to Hong Kong and using it for power generation requires new facilities and involves hi-tech engineering work including:

- A gas launching station at Dachan Island in Shenzhen and a 20 km undersea pipeline connecting Dachan Island and the Black Point Power Station, constructed by PetroChina
- A new gas receiving station at the Black Point Power Station (BPPS) to receive the new gas for distribution to the turbines of power generating units
- Modification of power station plant equipment in order to use the new gas and ensure the long-term operability of the generation units, because of the different properties of the new gas.



A 20km undersea gas pipeline is being built to connect a gas launching station in DaChan Island in Shenzhen and the Black Point Power Station in Hong Kong.



A fuel quality management system is installed

New gas pipes bring WEPII gas to generating units



A new gas receiving station is being built for WEPII gas



New gas nozzles



Central Control Room's computer system is upgraded

Cleaner Future: A Matter of Choice

There is a growing concern worldwide about air quality and climate change. Customers today expect an energy solution which can address environmental issues and at the same time provide a reliable, safe, and low-cost electricity supply to meet the need for sustainable development. While looking for an ideal energy mix, it is important to recognize the different characteristics, strengths and constraints of different fuels.

Coal-fired generation provides a highly reliable electricity supply at a relatively low cost but comes with high carbon emissions; nuclear energy has the advantages of high reliability and zero carbon emissions but its operational safety is a cause for public concern; renewable energy is emissions-free but its reliability and development are constrained by natural resources locally; gas power generation provides clean and reliable electricity and has become increasingly popular, but is more costly.

There is no single perfect fuel in the world to fulfill every need. It comes down to a matter of choice: How do we achieve a balanced energy solution that will give us better air quality, a reliable and affordable power supply, and a sustainable living environment?

CLP is committed to pursuing that mission and to playing our part in the reduction of emissions. We are working closely with everyone involved towards a common goal: Creating a greener tomorrow for Hong Kong.

