

## Hong Kong Offshore Liquefied Natural Gas Terminal Fact Sheet

CLP Power Hong Kong Limited (CLP Power) and The Hongkong Electric Co., Ltd (HK Electric) have served Hong Kong for over a century and are committed to providing customers with safe, reliable, and environmentally friendly electricity supplies at a reasonable cost. The two companies have introduced low-carbon fuels and are driving the energy transition to achieve Hong Kong's goal of net zero emissions.

CLP Power and HK Electric have increased the proportion of gas-fired energy generation to around 50% since 2020 in support of the Government's decarbonisation targets. Given the need to increase use of natural gas, the two companies joined hands to develop an offshore liquefied natural gas (LNG) terminal in Hong Kong waters. The project gives Hong Kong access to more diverse sources and competitively priced LNG in the global market, enhancing the territory's gas supply security.

The Hong Kong Offshore LNG Terminal uses Floating Storage and Regasification Unit (FSRU) technology to regasify LNG before the natural gas is delivered to CLP Power's Black Point Power Station and HK Electric's Lamma Power Station via two subsea pipelines. The terminal began operations in July 2023 and had received its first shipment of LNG under a long-term supply agreement.

Located in the southwestern waters of Hong Kong, the terminal is the first of its kind in Hong Kong. The Bauhinia Spirit is the world's largest FSRU vessel with an LNG storage capacity of 263,000 cubic meters and is moored at the terminal to receive, store, and regasify LNG. The project allows for greater use of natural gas – an important bridge transition fuel – for power generation and will play a key role in meeting the Hong Kong SAR Government's long-term decarbonisation targets outlined in its Climate Action Plan 2050.



The Hong Kong Offshore LNG Terminal, jointly developed and constructed by CLP Power and HK Electric, went into service in July 2023. This photo shows an LNG shipment arriving at the terminal. The LNG was unloaded from the vessel on the left to Bauhinia Spirit, the Floating Storage and Regasification Unit (FSRU) vessel on the right for storage and regasification. Natural gas was then transported through two separate subsea pipelines to CLP Power's Black Point Power Station and HK Electric's Lamma Power Station.

## **The Role of Natural Gas in Energy Transition**

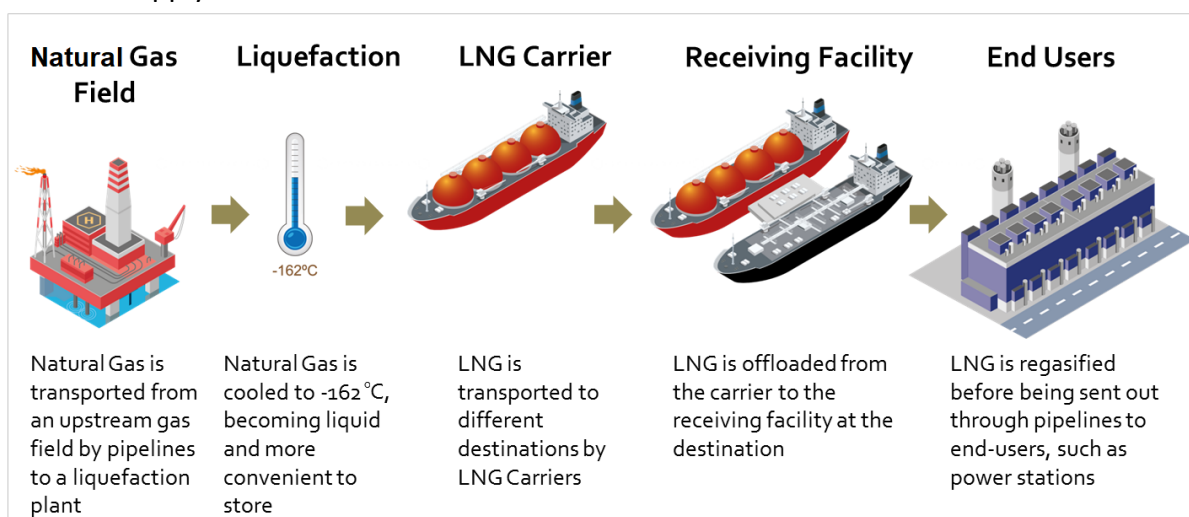
Natural gas is a relatively clean fossil fuel. During power generation, it emits far less sulphur dioxide and nitrogen oxides and fewer respirable suspended particulates than other fossil fuels. The amount of carbon dioxide emitted by natural gas is nearly half of that given off by coal, and the use of natural gas has helped both CLP Power and HK Electric reduce emissions from their operations.

As Hong Kong works towards its carbon neutrality target by 2050, the two power companies are striving to increase their low-carbon electricity supply and help customers reduce their carbon footprint. Raising the ratio of gas-fired generation is an important near-term measure in the companies' energy transition journey.

## **What is LNG?**

LNG production involves the transport of natural gas from an upstream gas field by pipeline to a liquefaction plant where it is processed and cooled to about  $-162^{\circ}\text{C}$ . This process turns the natural gas into a liquid while reducing it to just 1/600th of its original volume. It can then be stored and transported in specially equipped LNG carriers before being converted back into natural gas through a regasification process and sent to end users such as power stations. LNG is colourless, odourless, non-toxic, and non-corrosive. In the event of spillage, LNG would quickly evaporate into the air and would not pollute the ocean or cause any ecological impact.

The LNG supply chain is shown in the illustration below:



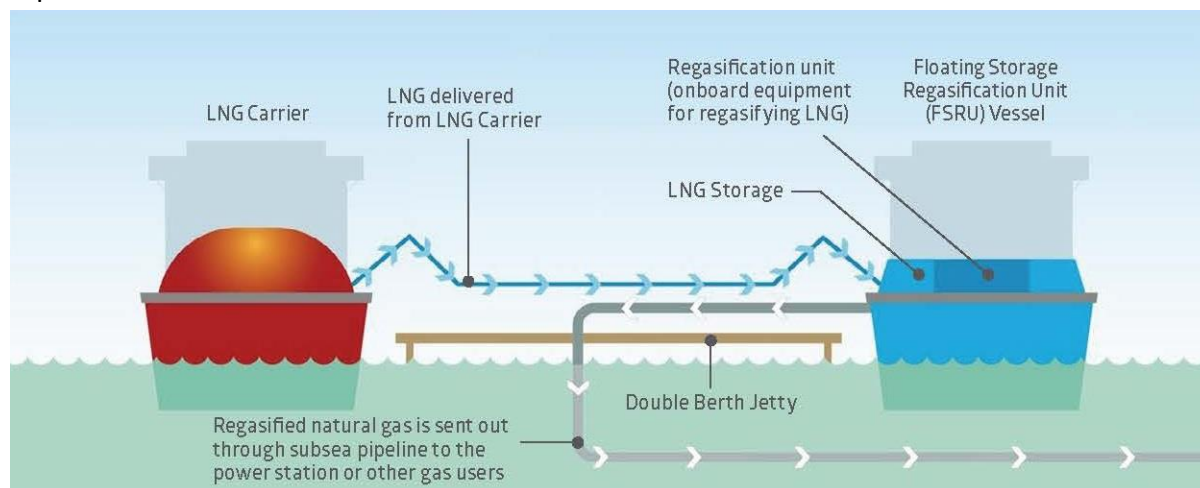
## **Project's Key Infrastructure Facilities**

The Hong Kong Offshore LNG Terminal comprises a double berth jetty with LNG unloading equipment, a FSRU vessel with LNG storage tanks and regasification equipment moored at the jetty, and two subsea gas pipelines connecting the jetty to gas receiving stations at CLP Power's Black Point Power Station and HK Electric's Lamma Power Station.

## **FSRU Technology**

When an LNG carrier arrives at the jetty, LNG is unloaded through a jetty facility and transferred to the moored FSRU vessel for temporary storage. The stored LNG will then be regasified by equipment on the vessel before the natural gas is transmitted to power stations through subsea pipelines for electricity generation.

A process overview of the offshore LNG terminal is shown in the illustration below:



## **Safety Record and Marine Operation**

The LNG industry has very rigorous safety policies and standards. In a history spanning more than 50 years, the industry has maintained an excellent operational safety record. The design and operation of the terminal follow internationally accepted and stringent industry guidelines and requirements such as the International Maritime Organisation (IMO) codes and ship classification society regulations.

A Safety Zone and a Marine Control Zone have been set up around the terminal in line with industry standards and practices. Apart from monitoring conducted by the terminal's operation team, 24-hour security patrols by standby vessels are conducted around the jetty.

## **Stakeholders Liaison Group and Environmental Enhancement Funds**

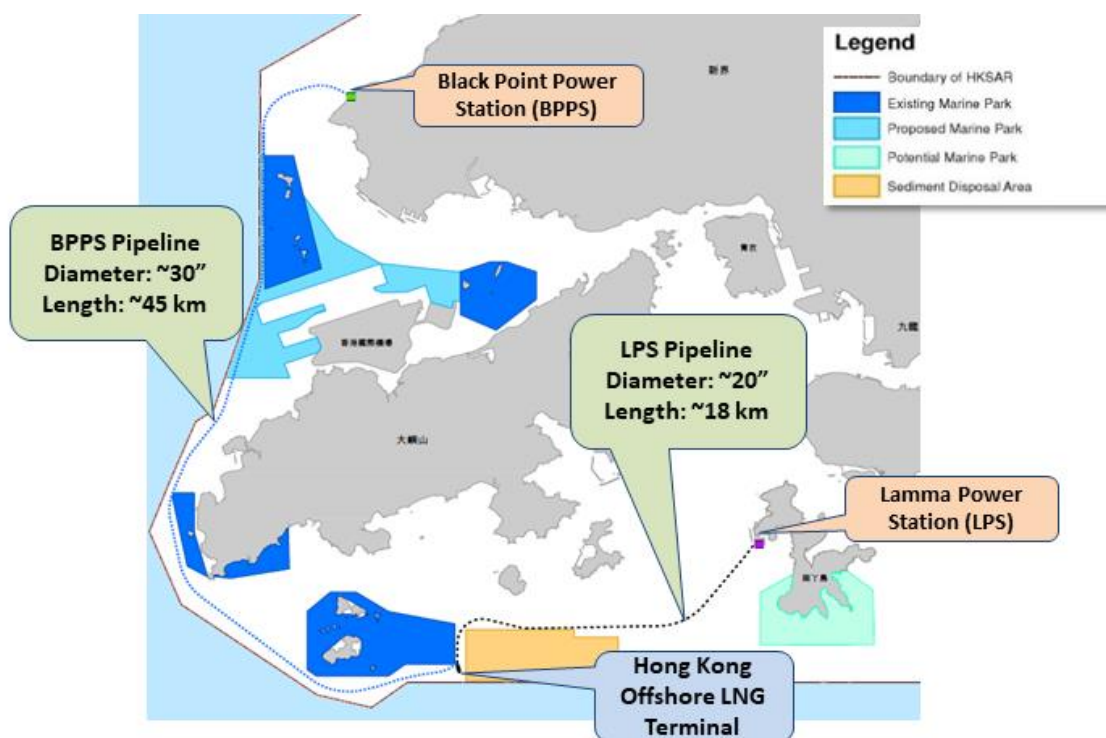
A stakeholders liaison group comprising academics and marine conservation and fisheries experts, as well as representatives of fishermen's associations and the community was set up in September 2020 to discuss any environmental issues arising from the construction of the terminal.

In addition, a Marine Conservation Enhancement Fund and a Fisheries Enhancement Fund were established by two power companies with HK\$100 million available to support community initiatives that contributed to the enhancement of the marine environment and fisheries resources.

## Key Features of the Offshore LNG Terminal

<b>Location</b>	Offshore waters to the east of the Soko Islands, Hong Kong
<b>Major components</b>	<ul style="list-style-type: none"> <li>• A double berth jetty with LNG unloading equipment</li> <li>• A FSRU vessel with LNG storage tanks and regasification equipment</li> <li>• Two subsea gas pipelines connecting the jetty to gas receiving stations at CLP Power’s Black Point Power Station and HK Electric’s Lamma Power Station</li> </ul>
<b>Length of Pipelines</b>	<ul style="list-style-type: none"> <li>• Black Point Power Station - Approx. 45 km</li> <li>• Lamma Power Station - Approx. 18 km</li> </ul>
<b>FSRU Vessel</b>	<ul style="list-style-type: none"> <li>• Length: 345m, Beam: 55m</li> <li>• LNG storage capacity: 263,000m<sup>3</sup></li> </ul>

## Location of the Offshore LNG Terminal



CLP Power Hong Kong Limited and The Hongkong Electric Co., Ltd  
September 2023