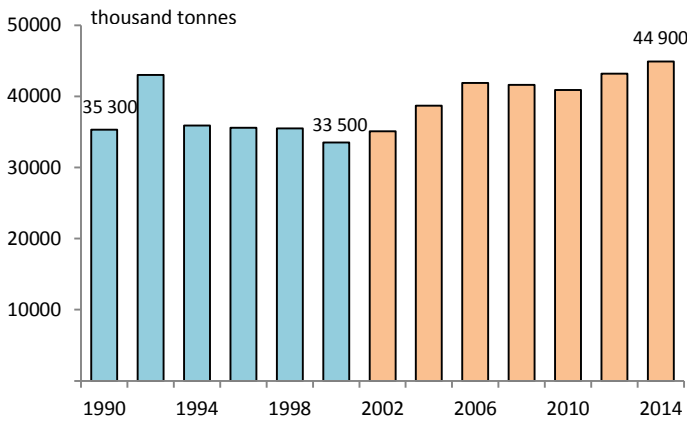## Greenhouse gas emissions of Hong Kong

Figure 1 – GHG emissions trend of Hong Kong

Note: The most significant type of GHG emissions is carbon dioxide which accounts for 76% of the world's GHG emissions. Other types of GHG emissions also include methane, nitrous oxide and fluorinated gases. These gases can be quantified as carbon dioxide-equivalent emission for uniform measurement.
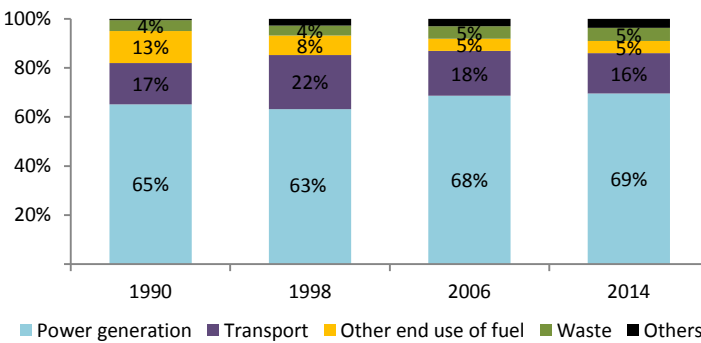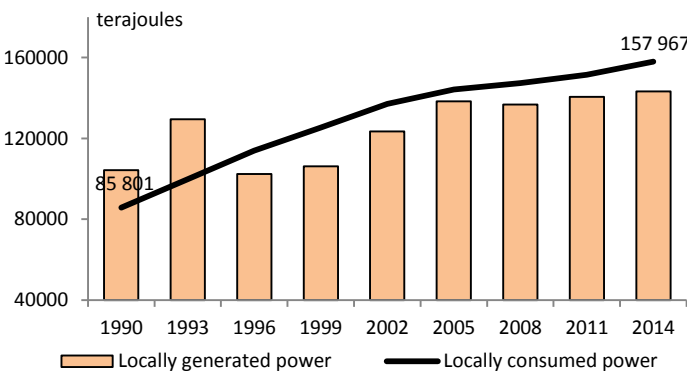
Figure 2 – GHG emissions sources in Hong Kong

Figure 3 – Power consumption and generation of Hong Kong

Highlights

- Excessive greenhouse gas ("GHG") emissions are widely considered to have caused global warming, precipitating years-long concerted global efforts to cut down such emissions to stabilize global climate. In Hong Kong, after a decline in the late 1990s, such emissions have reverted to an uptrend since 2000. They have increased by a total of 35% in 14 years to a record high of 45 million tonnes in 2014 (**Figure 1**).

- Power generation is the largest GHG emitter in Hong Kong, accounting for 60% to 70% of overall GHG emissions throughout each of the past 25 years. It far outweighed the second largest emitting source, i.e. the transport sector with a share of 16% in 2014. As such, power generation holds the key to managing GHG emissions (**Figure 2**).

- GHG emissions from the power sector are largely determined by the level of local power generation to satisfy the steadily growing demand since 1990. Between 1990 and 2014, the power consumed locally has increased by 84%. During the same period, the amount of locally generated power also rose by 37%. The difference between the two is addressed either by power import or export (**Figure 3**).

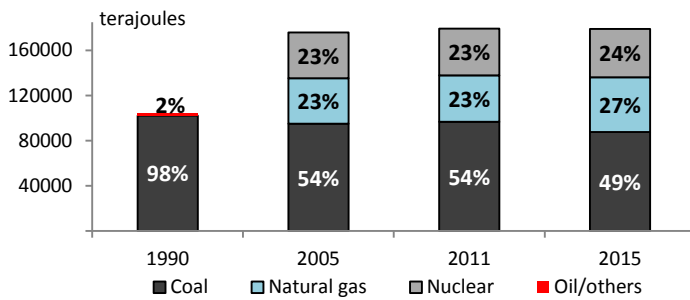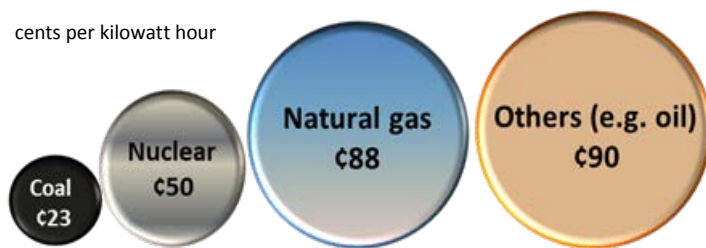**Figure 4 – Fuel mix of power generated and imported**

Figure 5a – Indicative fuel costs for power generation

Note: Only CLP Power made public its energy costs breakdown since late 2013.

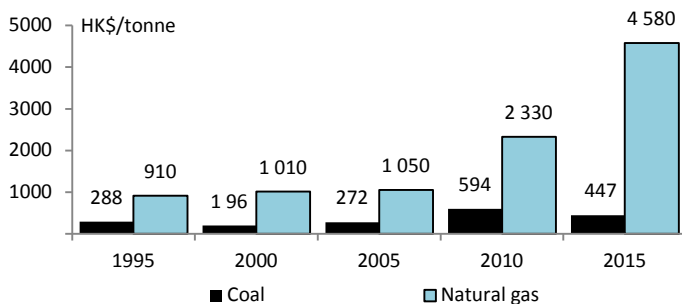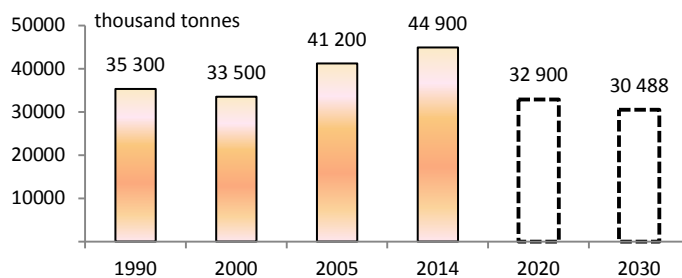**Figure 5b – Average import price of coal and natural gas**

Figure 6 – Voluntary emissions reduction targets

Highlights

- Despite its declining share, coal has remained the most dominant fuel in meeting growing local power demand and has accounted for about half the fuel mix of the power generated and imported since 2005 (**Figure 4**).

- While coal emits twice the emissions than natural gas does generally, it continues to be the most widely used fuel because of its relatively cheaper import cost.   According to the energy costs breakdown of CLP Power for 2015, coal was 74% cheaper than natural gas (**Figure 5a**).   Both the coal and natural gas import price have been on a rising trend, with the latter registering a much steeper increase in recent years (**Figure 5b**).

- To contain the rising emissions, the Government has adopted a multi-pronged approach, with focus on the power sector.   It aims to reduce emissions by 26% below 2005 level by 2030 (**Figure 6**), by cutting coal use while boosting natural gas use; phasing out old coal-fired units; and encouraging energy efficiency.   It will also promote green transport like electric cars and cleaner vehicle fuel.

Data sources: Latest figures from Environmental Protection Department, Census and Statistics Department, CLP Power and Hongkong Electric.