



EUROPEAN CHAMBER
OF COMMERCE
IN HONG KONG
香港歐洲商務協會



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**Renewable Energy Development of Europe & Asia
Perspectives for HK**

**Tom Uiterwaal - Chairman
Environment & Energy Business Council (EEBC)**

REDUCING CARBON EMISSIONS

***67% of all Carbon Emissions in Hong Kong is
from Electricity Generation.***

BLUE PRINT.....SMART ENVIRONMENT



Strategy and Initiatives

Climate Action Plan 2030+

- Reduce our carbon intensity by between 65% and 70% by 2030 compared with the 2005 level
- Phase down coal-fired electricity generation gradually and replace with natural gas and non-fossil fuel sources. Coal as a proportion of the fuel mix will be reduced from 47% as of 2016 down to about 25% in 2020
- Apply renewable energy on a wider and larger scale based on mature and commercially available technologies with the public sector taking the lead
- Further promote energy efficiency and conservation in the community with particular focus on buildings
- Implement other measures to achieve carbon emission reduction by phases



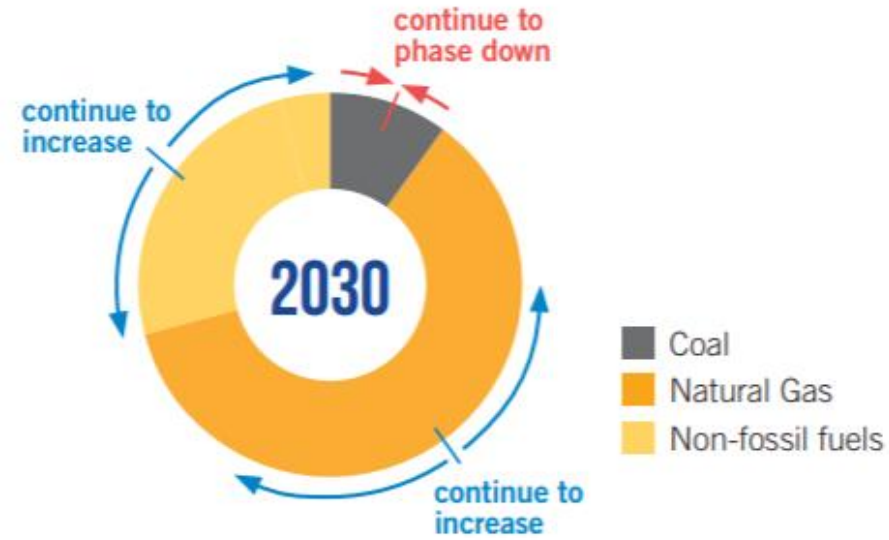
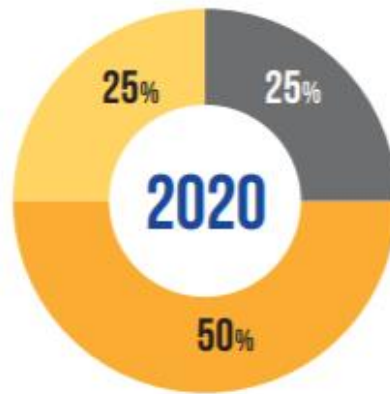
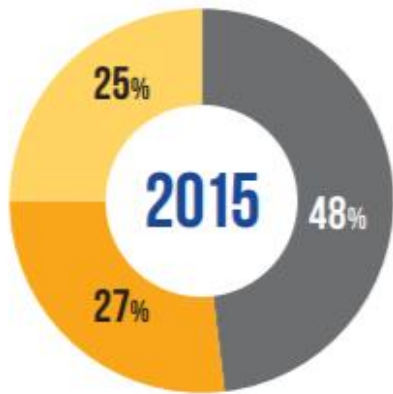
Green and Intelligent Buildings, and Energy Efficiency

- Promote retro-commissioning and building-based smart/IT technologies
- Install LED lamps in public lighting systems progressively under the LED Public Lighting Replacement Programme of the Highways Department starting from 2017-18 and encourage retrofitting LED lighting for existing government buildings
- Continue to include requirements, such as green building design, provision of smart water meter system, electric vehicle charging facility and real-time parking vacancy information for new land sale sites in Kowloon East, with a view to developing a green and smart community



REDUCING CARBON EMISSIONS

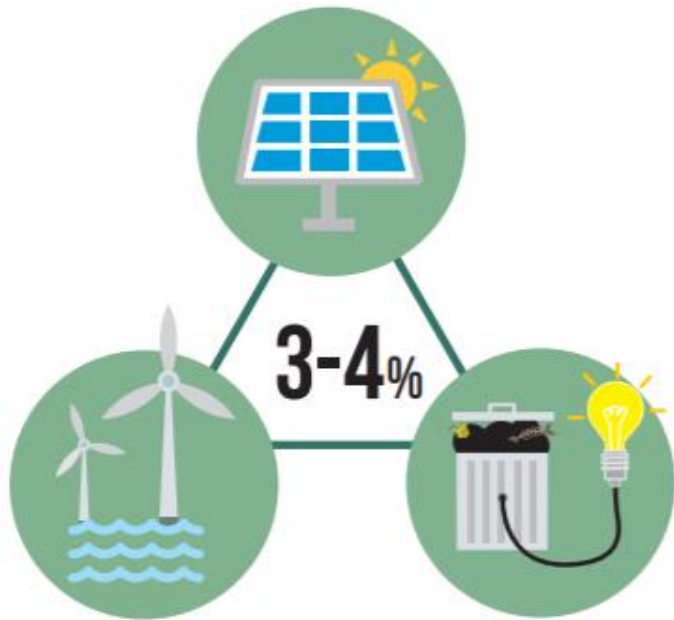
Hong Kong's Climate Action Plan 2030+



- *Up to 2020 main focus on replacing Coal by Natural Gas.*
- *Second focus on growing Nuclear Electricity Generation.*
- *No clear targets for 2030 and beyond.*

REDUCING CARBON EMISSIONS

“Hong Kong’s Realisable RE Potential up to 2030”



- *Current Renewable Energy portion < 1%.*
- *Focus on Sun, Wind and Waste-to-Energy.*
- *No clear targets for 2030+*
- *Defining what’s maximum possible (3–4%)*
- *Support via Feed-In Tariffs and Certificates*

REDUCING CARBON EMISSIONS

HK government's feed-in tariff plan for renewable energy:

- ***Goal: 660 Megawatt by 2030
(1-1.5% of total power consumption)***
 - ***Status May 2019:***
 - ***2800 projects approved***
 - ***Current production: 4 Megawatt***
- ***HKD 3 – HKD 5 per Kilowatt hour (kWh) vs. regular rates of HKD 1.12 – 1.15.***
- ***Only for Sun and Wind – what happened to the Waste-to-Energy?***

REDUCING CARBON EMISSIONS

HK government's feed-in tariff plan for renewable energy:

If the electricity of the RES-E plant (of a capacity also higher than 100 kWp) is sold under the feed-in tariff as an exceptional case, the tariff has to be reduced by 20% (§ 53 EEG 2017).

Wind energy	<ul style="list-style-type: none"> ■ Onshore: €ct 4.66 – 8.38 per kWh (according to duration of payment) (§ 46 EEG 2017) minus €ct 0.4 per kWh (§ 53 no. 2 EEG 2017); ■ Offshore until 2020: €ct 3.9 – 1.4 per kWh (according to duration of payment and scheme chosen by plant operator) (§ 47EEG 2017) minus €ct 0.4 per kWh (§53 no. 2 EEG 2017).
Solar energy	<p>The amount of tariff depends on the site of production and the installed capacity.</p> <ul style="list-style-type: none"> ■ specific building-mounted systems (e.g. roofs, facades, noise barriers, other building) €ct 8.91 – 12.70 per kWh (§ 48 par. 1 and 2 EEG 2017) minus €ct 0.4 per kWh (§ 53 no. 2 EEG 2017);
Geothermal energy	€ct 25.2 per kWh (§ 45 EEG 2014) minus €ct 0.2 per kWh (§ 53 no. 1 EEG 2017)
Biogas	<ul style="list-style-type: none"> ■ Biogas from bio-waste: €ct 13.05 – 14.88 per kWh (according to plant size) (§§ 436 EEG 2017) minus €ct 0.2 per kWh (§ 53 no. 1 EEG 2017); ■ Biogas from manure: €ct 23.14 kWh minus €ct 0.2 per kWh (§ 53 no. 1 EEG 2017) for plants smaller than 75 kW (§ 44 EEG 2017). ■ Landfill gas: €ct 5.66 – 8.17 per kWh (§ 41 par 1 EEG 2017) minus €ct 0.2 per kWh (§ 53 no. 1 EEG 2017); ■ Sewage gas: €ct 5.66 – 6.49 per kWh (§ 41 par 2 EEG 2017) minus €ct 0.2 per kWh (§ 53 no. 1 EEG 2017).
Hydro-power	€ct 3.47 – 12.40 per kWh (depending on plant size and date of commissioning) (§ 40 par. 1-4 EEG 2015) minus €ct 0.2 per kWh (§ 53 no. 1 EEG 2017).
Biomass	€ct 5.71 – 13.32 per kWh (according to plant size) (§§ 42EEG 2017) minus €ct 0.2 per kWh (§ 53no. 1 EEG 2017).

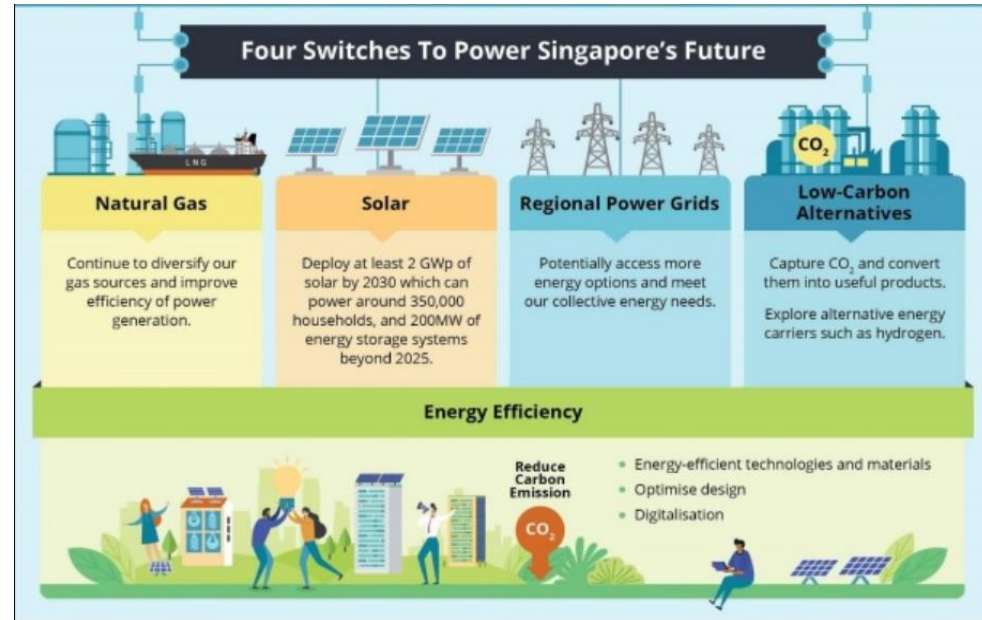
Coal: Import
Gas: Import
Nuclear: Import
Renewable: Local?

Scope of the Feed-In Tariff proposal narrower than usual internationally.



SINGAPORE

- **Currently 95% Gas and 5% Oil/Coal**
- **By 2030 4% should be solar energy**
- **the current 260 megawatt-peak (MWp) of installed solar capacity to 2 gigawatt-peak (GWp).**
- **Malaysia goal 20% RE by 2025 (currently 2%)**
- **Strong focus on R&D and energy efficiency**

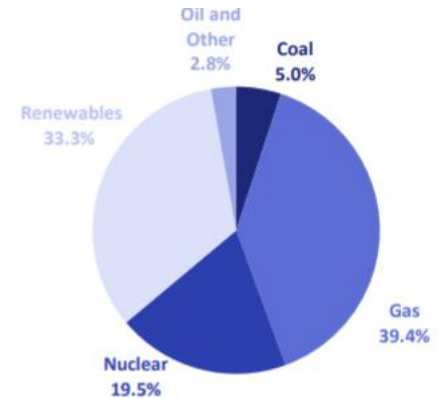
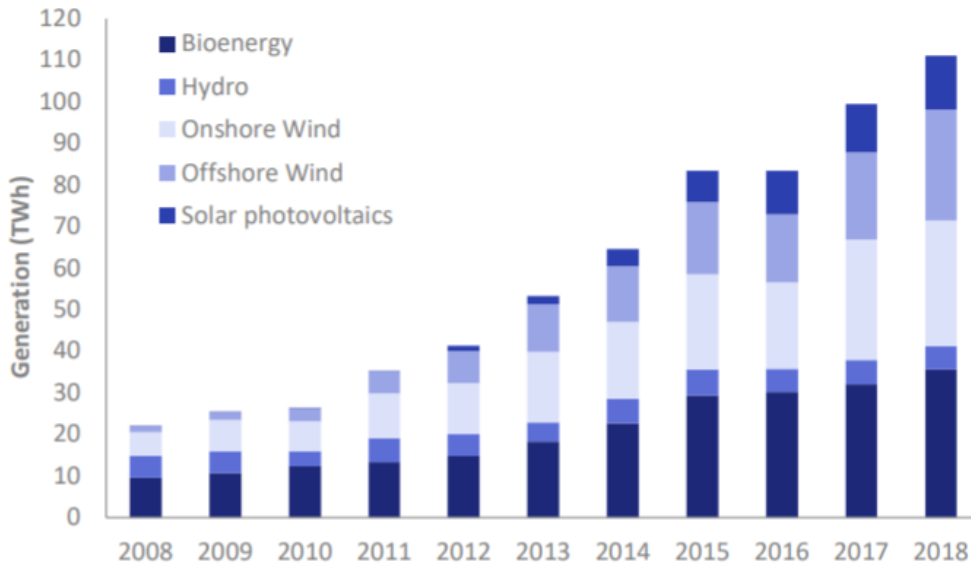


- **Regarding Gas and RE ahead of Hong Kong**
- **RE Targets are higher for 2030**
- **Imports to increase RE's**

RENEWABLE ELECTRICITY UK



RENEWABLES: 2018
Renewable electricity generation



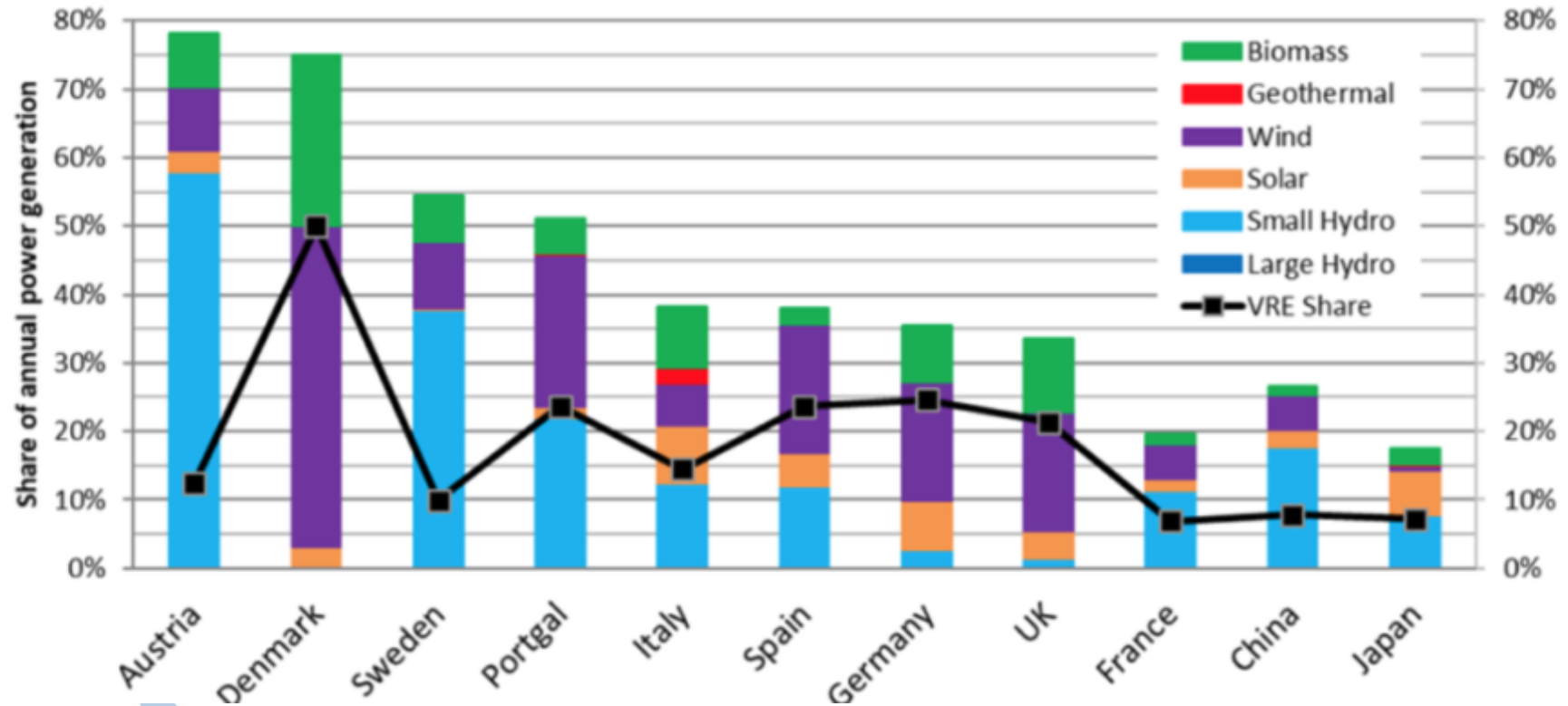
The renewables' share of electricity generation in the U.K. was 33.3 percent in 2018, second only to gas.

	2018 TWh	Percentage change on a year earlier
Renewable electricity generation		
Onshore wind	30.4	+4.6
Offshore wind	26.7	+27.6
Hydro	5.5	-7.8
Solar PV	12.9	+12.1
Bioenergy	35.6	+11.6
All renewables	111.1	+11.8

Import driven

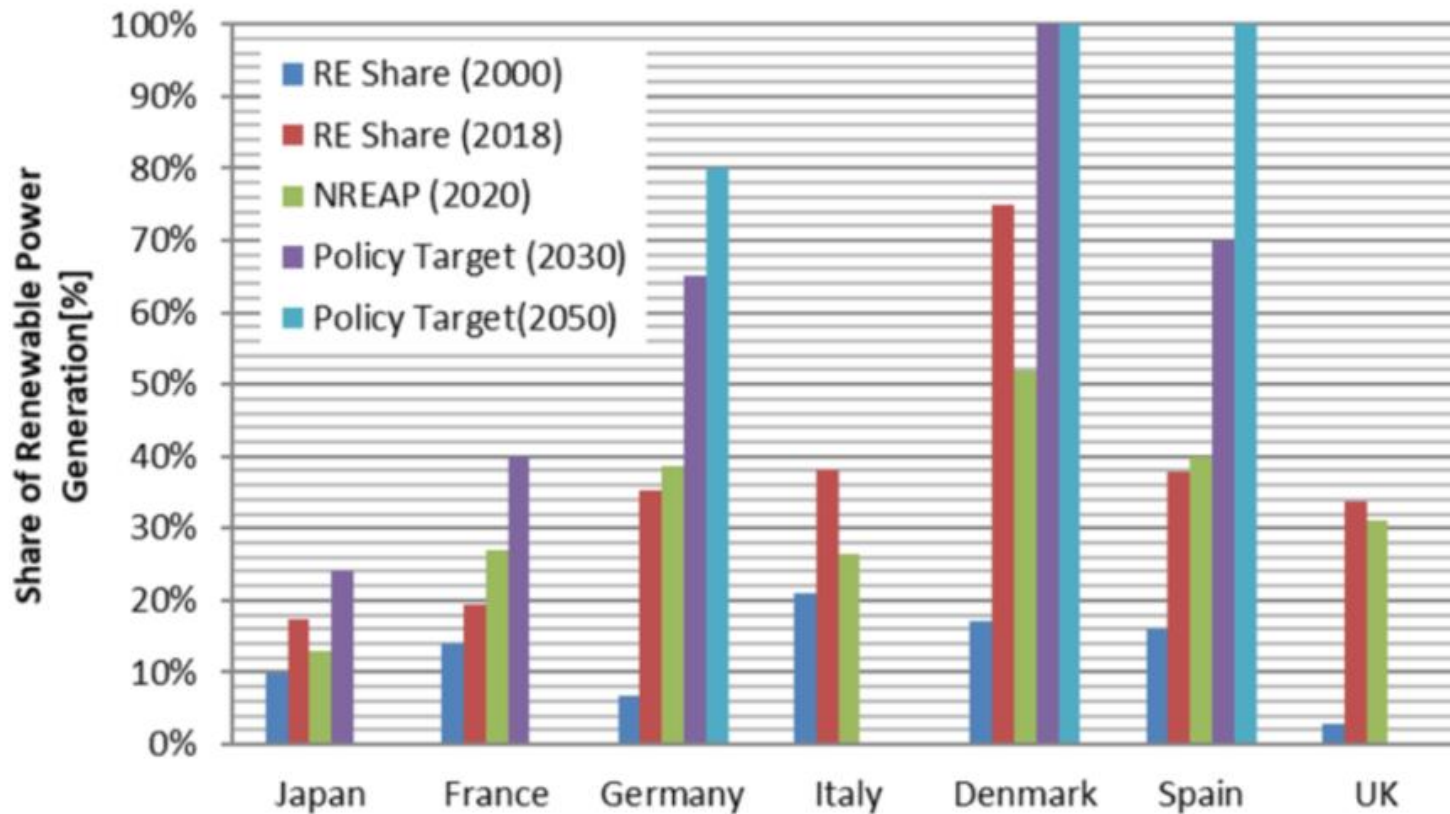


Europe



Comparison of the share of renewable energy to the power generation of European countries and China with Japan (2018)

EUROPE



European countries and Japan's introduction of renewable power and its target

RECOMMENDATIONS



EEBC recommends the Hong Kong Government to support Renewable Electricity Generation by:

- The EEBC fully supports the introduction of a Feed-In Tariff system, however, for a wider range of Renewable Energy Sources.
- Define Mandatory Renewable Electricity Targets (and separate from Nuclear).
- Include both local and international sources of Renewables
 - Imports of Renewable Feedstocks
 - Imports of Renewable Electricity



THANK YOU