20th anniversary 2020
GREEN COUNCIL
環保促進會

Webinar:
Development and Evolution of a Sustainable City and Community

Power for a Sustainable Future

Mr. Bill Ho
General Manager (Corporate Development),
HK Electric

Remarks: This material/event is funded by the Professional Services Advancement Support Scheme of the Government of the Hong Kong Special Administrative Region. Any opinions, findings, conclusions or recommendations expressed in this material/any event organised under this project do not reflect the views of the Government of the Hong Kong Special Administrative Region or the Vetting Committee of the Professional Services Advancement Support Scheme.

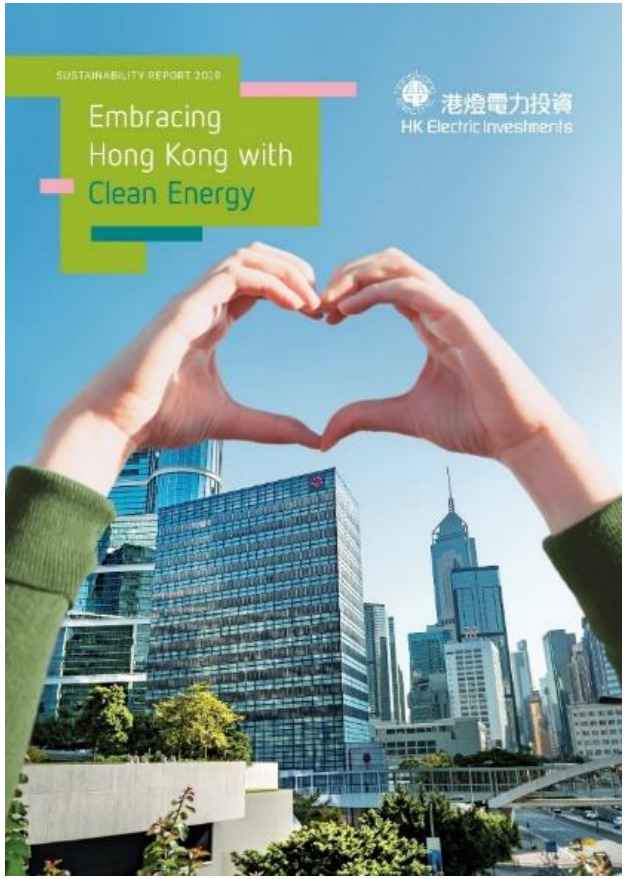
19 November 2020

Power for a Sustainable Future

Bill HO
General Manager (Corporate Development)
The Hongkong Electric Co., Ltd.

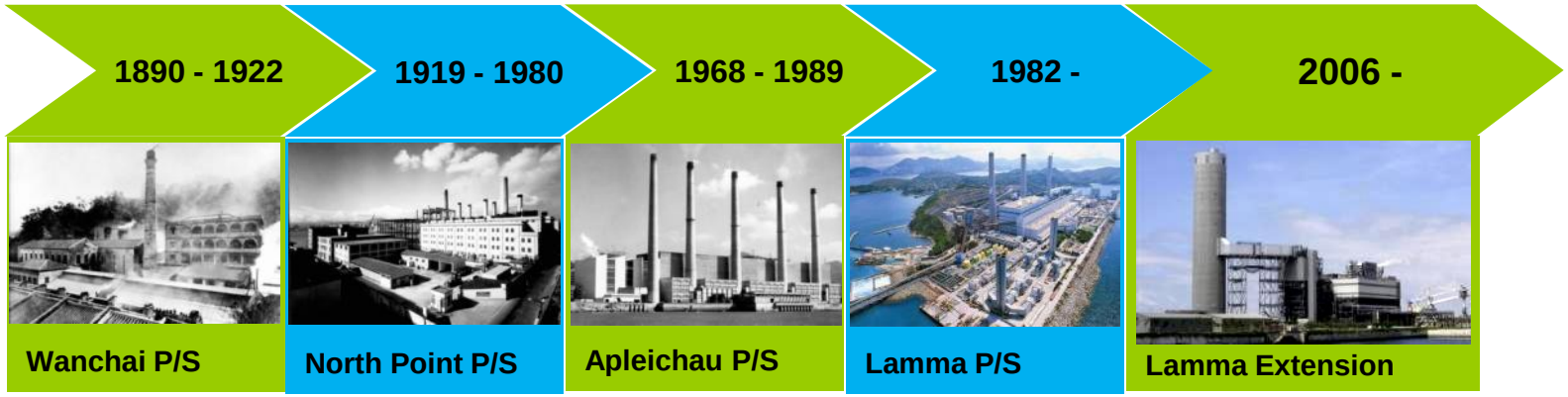
Contents

- Management Commitments
- UN Sustainable Development Goals
- Pathways to Net Zero Carbon Emissions by 2050
- Conclusion



Company Overview

- Incorporated in January 1889 – one of the world's longest-established utility companies
- Maintained a supply reliability rating of over 99.999% since 1997 – one of the best records in the world
- Regulated by a series of Scheme of Control Agreements (SCAs) entered into with the Government



Management Commitments

To excel in the power business in Hong Kong

To deliver excellent customer services and supply reliability

To drive for efficiency in our operations

To enhance shareholder value

Aligning SDGs with business strategies and priorities

- Our SD strategies focused on decarbonising our business while maintaining service excellence
- We support the United Nations' 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs)
- Targets set corresponding to 3 SDGs that are closely aligned with our business strategies and priorities

Climate Action

Business Dimensions

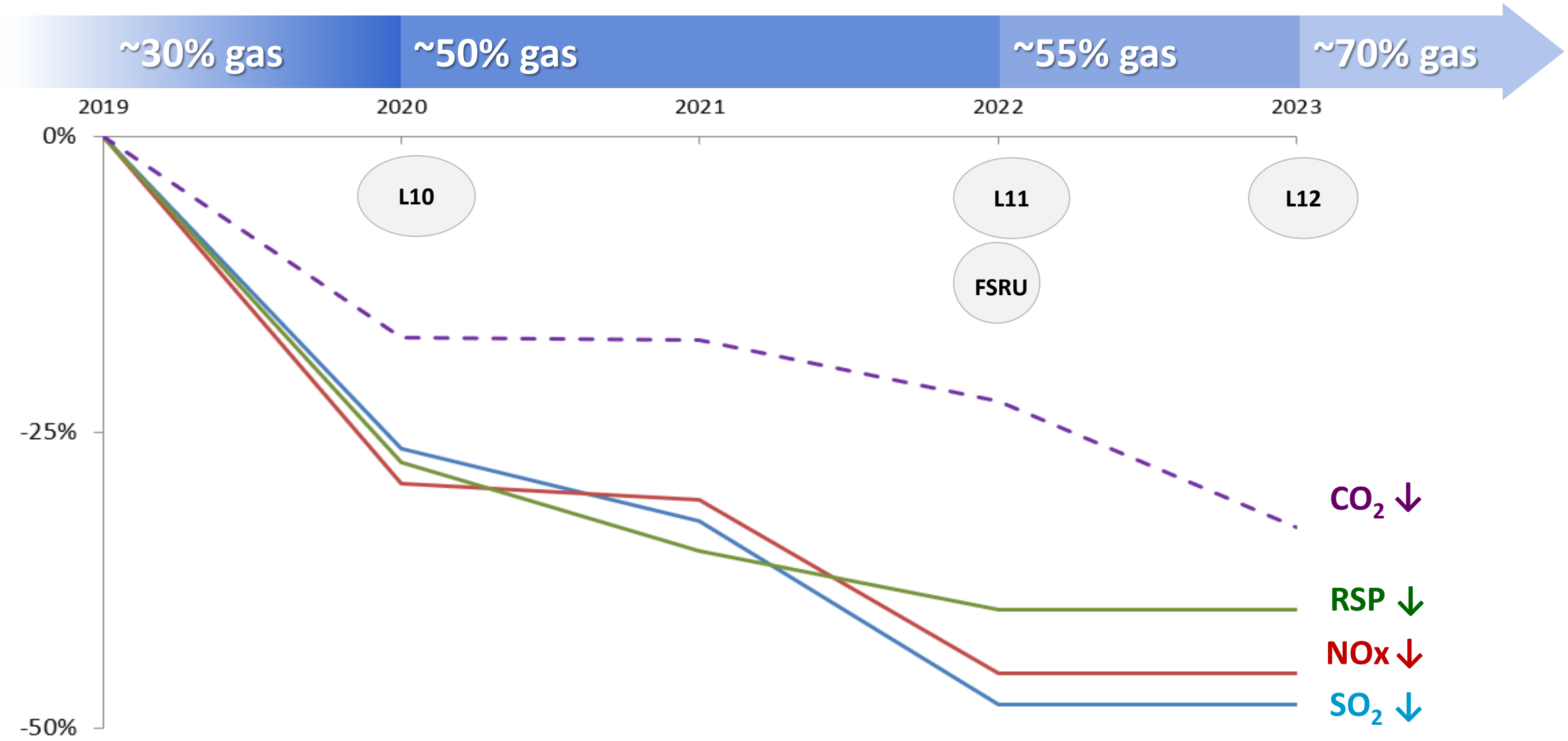
- Combat climate change through coal-to-gas transition in our fuel mix
- Promote EE&C and low-carbon lifestyle through public education

Coal-to-Gas Transition: Progress

New Gas-fired Generating Units

- L10 commissioned in February 2020, would increase gas-fired generation from ~30% to ~50% in 2020
- Manufacturing and site works for L11 & L12 in progress

Coal-to-Gas Transition: Benefits



Promote EE&C and low-carbon lifestyle through public education

To organise 1,000 education and promotion activities by 2023

- Happy Green Campaign - To promote EE&C and low-carbon lifestyle
- Eco-heritage tours and conservation activities - To foster public appreciation of Hong Kong's eco-heritage resources, join hands with Conservancy Association

To update our "Code of Practice for Suppliers" to address climate change concerns in 2020

Affordable and Clean Energy

Business Dimensions

- Provide affordable and reliable electricity supply
- Facilitate wider RE deployment in HK Electric's power grid
- Engage with customers to enhance efficiency and conservation (EE&C)

Provide affordable and reliable electricity supply

Targets

- To maintain better than 99.999% reliability rating
- To commission the offshore LNG terminal in 2022

(Illustration photo of a Floating Storage and Regasification Unit (FSRU))

Major Benefits

- **Diversify gas source – additional sources of LNG**
- **Improve gas supply security – additional supply route to Lamma Power Station**
- **Cost-competitive gas supply – alleviate considerable pressure on tariffs due to increased gas consumption**

Facilitate wider RE deployment in HK Electric's power grid

Targets

- To increase the aggregate electricity generated from RE sources of HK Electric and its customers to over 3 GWh/year by 2023

智惜用電 smart power
上網電價 FEED-IN TARIFF

智惜用電 smart power
可再生能源證書 RENEWABLE ENERGY CERTIFICATE

Engage with customers to enhance EE&C

Targets

- To provide subsidies to 4,000 underprivileged households for adopting energy-efficient electrical appliances by 2023
- To provide 1,000 free energy audits and subsidise 500 buildings for implementing energy efficiency enhancement by 2023

Industry, Innovation and Infrastructure

Business Dimensions

- Develop and maintain quality, reliable, sustainable and resilient electricity infrastructure
- Facilitate demand-side energy management and improve customer services by upgrading our infrastructure with smart-metering technology

Industry, Innovation and Infrastructure

Targets

- To complete anti-flooding enhancement for low-lying substations within 100 m of northern coastal line by 2021
- To complete full-scale deployment of smart meters by 2025

Industry, Innovation and Infrastructure

Virtual Assistant for Customers

- We launched HK Electric Virtual Assistant, Elsie, on our website to answer general enquiries from our customers 24 hours a day, 7 days a week

Unmanned Counter at our Warehouse

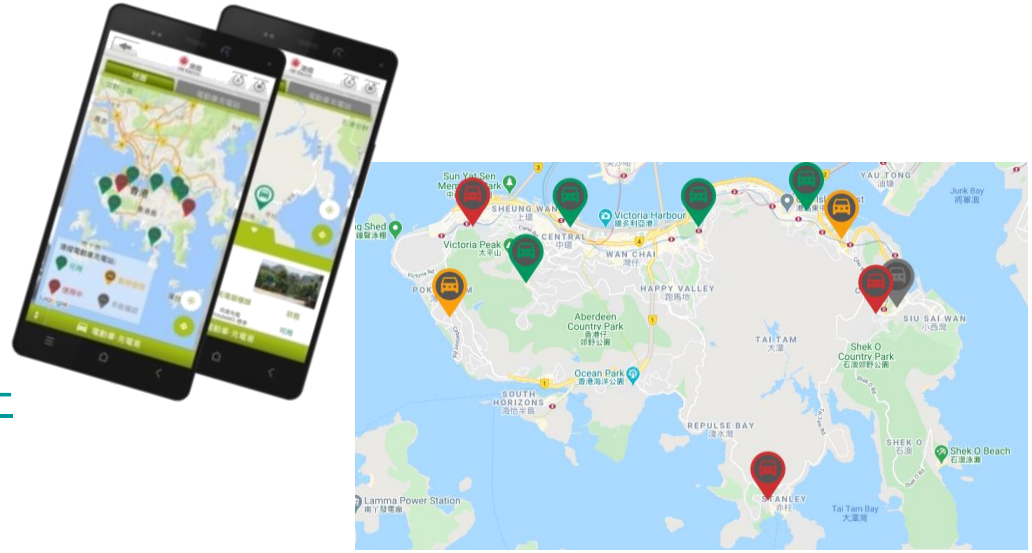
- We introduced smart locker technology that allows engineers and tradesmen to collect materials and packages from a designated secure cabinet using a one-time generated password
- Position-tracking technology have also been introduced to improve security and monitor cabinet movement

Support EV Development

- Support for EV charger installation
  - HK Electric has launched a new one-stop "Smart Power EV Charging Solution" service for free in support of the HKSAR Government's $2 billion EV-charging at Home Subsidy Scheme

- HK Electric maintains a network of electric vehicle (EV) charging facilities for public use
  - Quick Chargers: 11
  - Medium Chargers: 6
  - Real-time occupancy status of HK Electric EV charging stations
  - GPS navigation to chargers available

- Saloon cars in our operational fleet will be 100% electric by end 2020



Real-time Occupancy Status of EV Charging Facilities

Recognitions – HKMA Sustainability Award

The Hong Kong Management Association's Hong Kong Sustainability Award with Special Recognition for Innovation - 2019

Our innovative strategies and efforts in tackling sustainability challenges are recognised by The Hong Kong Management Association

Video

Recognitions – Hanson Grand Retro-commissioning Award

Energy Saving Championship Scheme
Hanson Grand Retro-commissioning (Implementation) Award

- HK Electric received the "Hanson Grand Retro-commissioning (Implementation) Award" for our excellent performance in 2019 for energy conservation at Electric Tower at Apleichau
- Installing AI-based system for the CRAC units in the Data Centre to save energy significantly
- Upgrading MVAC equipment of the whole building from air-cooled to water-cooled chilled water plant

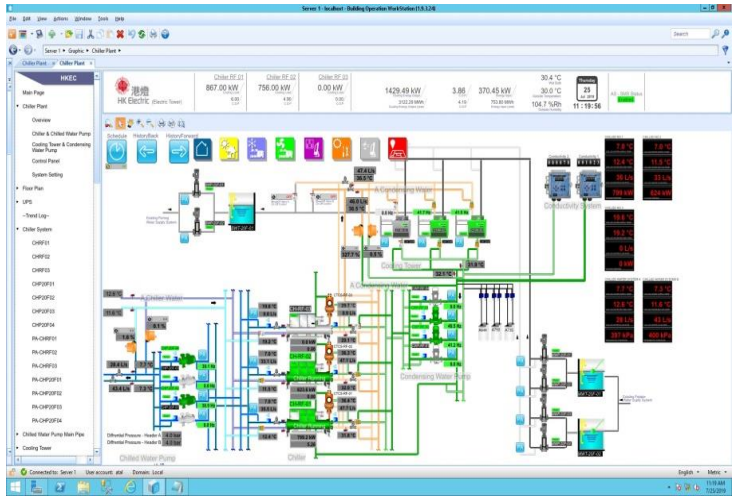
Recognitions – Hanson Grand Retro-commissioning Award

Energy Saving Championship Scheme
Hanson Grand Retro-commissioning (Implementation) Award

- Installing "Overtime buttons" at individual zones of Electric Tower for air-conditioning supply after office hours to further optimise energy usage

- Provision of free cooling through PAUs when the ambient temperature < 16^{o}C

- Coupled with a number of other enhancement projects on improving the energy efficiency of lighting appliances, a significant reduction in electricity consumption has been achieved

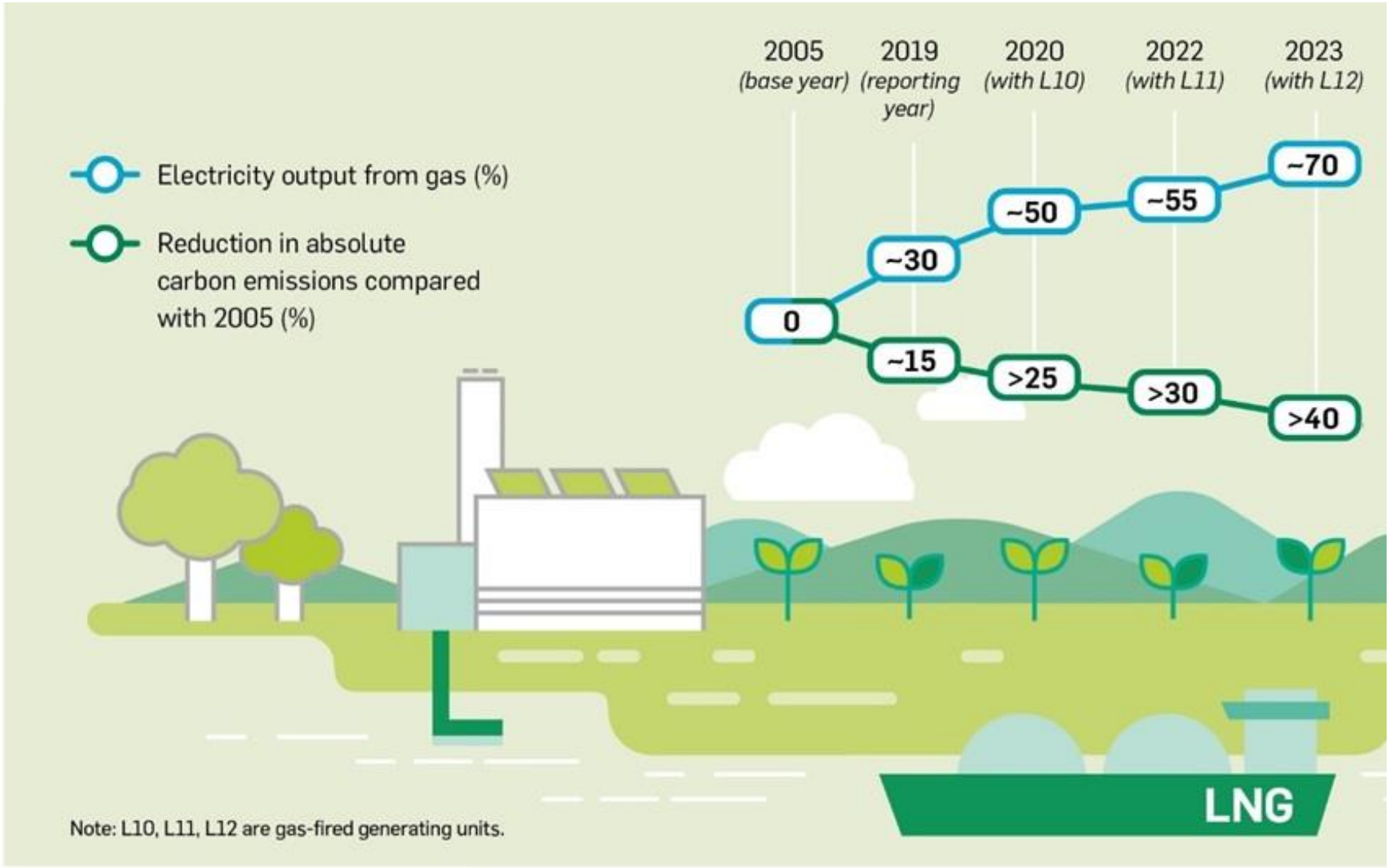


Pathways to Net Zero Carbon Emissions by 2050

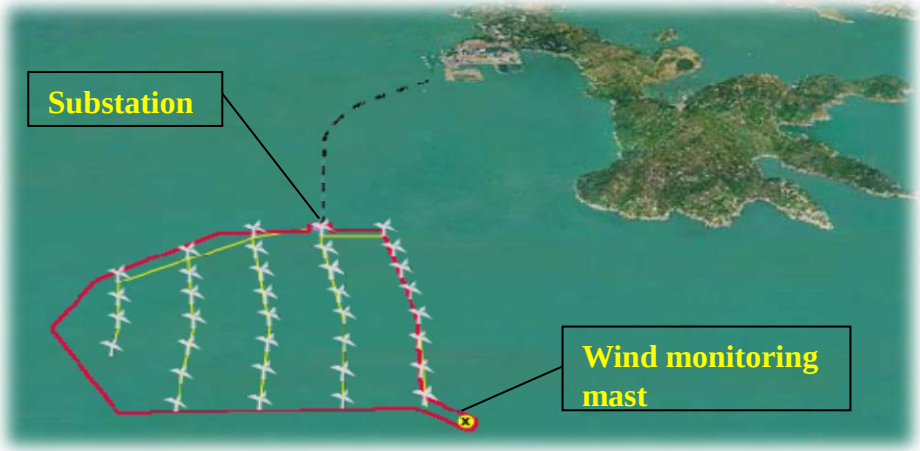
HK Electric's Views to SDC for achieving 2050 decarbonisation target

- Approaches:
  - Near term: Coal-to-gas energy transition and exploiting local renewable energy
  - Long term: Pursuing regional cooperation to introduce more zero-carbon power for achieving 2050 decarbonisation target
- Technology advancements to play a key role
- Social consensus and policy clarity essential to going forward

Near Term Energy Transition (Coal-to-Gas)



Near Term Energy Transition (Exploiting Local RE)



Location of proposed wind farm

- First utility grade wind turbine since 2006
- 1-MW solar installed at Lamma Power Station
- Smaller systems at roof-top of our substations

- 100-MW at southwest of Lamma Island
- ~ 2% of total electricity generation
- 150,000 tonnes CO2 emission per annum
- annual energy sufficient for 50,000 local families
- Technical feasibility ascertained

Long Term Energy Transformation (Regional Cooperation)

- Local initiatives may be easily exhausted and not sufficient for meeting the zero-carbon target.
- Regional cooperation for introducing more zero-carbon energy can be a reasonable pursuit but long-term study and planning are necessary
- Regional cooperation is more complicated, requiring
  - Clear community consensus
  - Suitable supply sources are available
  - Dedicated transmission link to ensure reliability
  - Necessary policy confirmation and social supports are available
- Timely supports are required in all cross-boundary planning, investment decision making, statutory permission, and related engineering design and construction

Conclusion

- HK Electric has powered Hong Kong for over a century with highly reliable electricity supply and is committed to the city's sustainable future
- We are pursuing carbon reduction actions that contribute to limiting global temperature rise in accordance with Paris Agreement
- HK Electric believes that, with collaboration and innovation, the common goal to net zero carbon emissions by 2050 is achievable

Thank You