



GREEN COUNCIL
環保促進會

Webinar: Climate Change Mitigation: Decarbonisation Technology and Innovation – What To Know and Do About it

Green Technology and Innovation in Electricity Generation

Mr. Jason Lao

Regional Director and Head of Sales

VPower Group International Holdings Limited



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.



VPower Group International Holdings Limited
偉能集團國際控股有限公司

(Incorporated under the laws of the Cayman Islands with limited liability)
Stock Code: 1608

Green Technology and Innovation in Electricity Generation

22 September 2022



Company Introduction

Headquartered and listed in Hong Kong, VPower Group is an integrated expert in decentralised power generation with a strong commitment to supplying adaptable and agile clean power in different regions with movable solutions.

We specialise in providing world-class gen-sets and power generation systems to our customers globally. We also invest in and operate fast-track decentralised power stations to generate stable and reliable electricity for our customers. Our diversified portfolio includes pipeline and liquefied natural gas, biogas, biodiesel.



1st

Large gen-set system integration provider in Asia



1st

Gas-fired decentralised power station owner and operator in Southeast Asia



20+

Years of experience with significant competitive advantages



~2GW

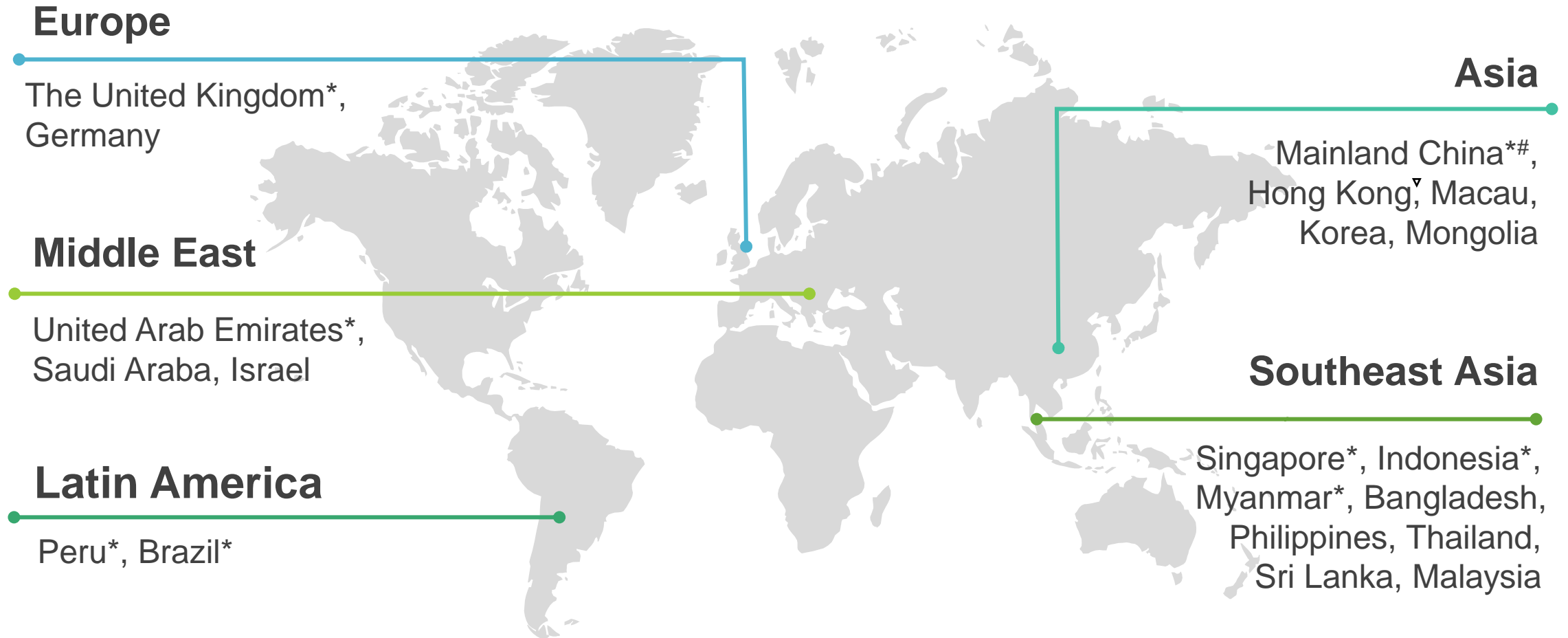
Power generation assets in operation



20+

Countries with business or network

Extensive Global Business Network



▽ Headquarter
Factory
* Subsidiaries

Awards and Recognitions



GREEN COUNCIL
環保促進會
BRONZE MEMBER 22-23
銅會員



Manufacturing Sector 製造業
BRONZE AWARD 銅獎
中銀香港 **BOCHK**
企業環保領先大獎2021
Corporate Environmental Leadership Awards



EcoChallenger 環保優秀企業
中銀香港 **BOCHK**
企業環保領先大獎2021
Corporate Environmental Leadership Awards



5 Years+
環保先驅
EcoPioneer
中銀香港 **BOCHK**
企業環保領先大獎2021
Corporate Environmental Leadership Awards



ESG
Leading Enterprise
Awards **2021**
ESG Leading
Enterprise Awards

ESG
Leading Enterprise
Awards **2020**

hkira
IR Awards



**ASIAN
POWER
AWARDS
2019**



Commitment to Combating Climate Change

Supporting Global Initiatives

WE SUPPORT



SUSTAINABLE
DEVELOPMENT
GOALS



Achieve
Carbon Neutrality
By 2050

Phase Out
Pure Diesel Power Projects
By 2030

Our Roles in Climate Change Mitigation



01

Materialise our responsibility to minimise the operational impact

02

Invest in green technologies and innovations

03

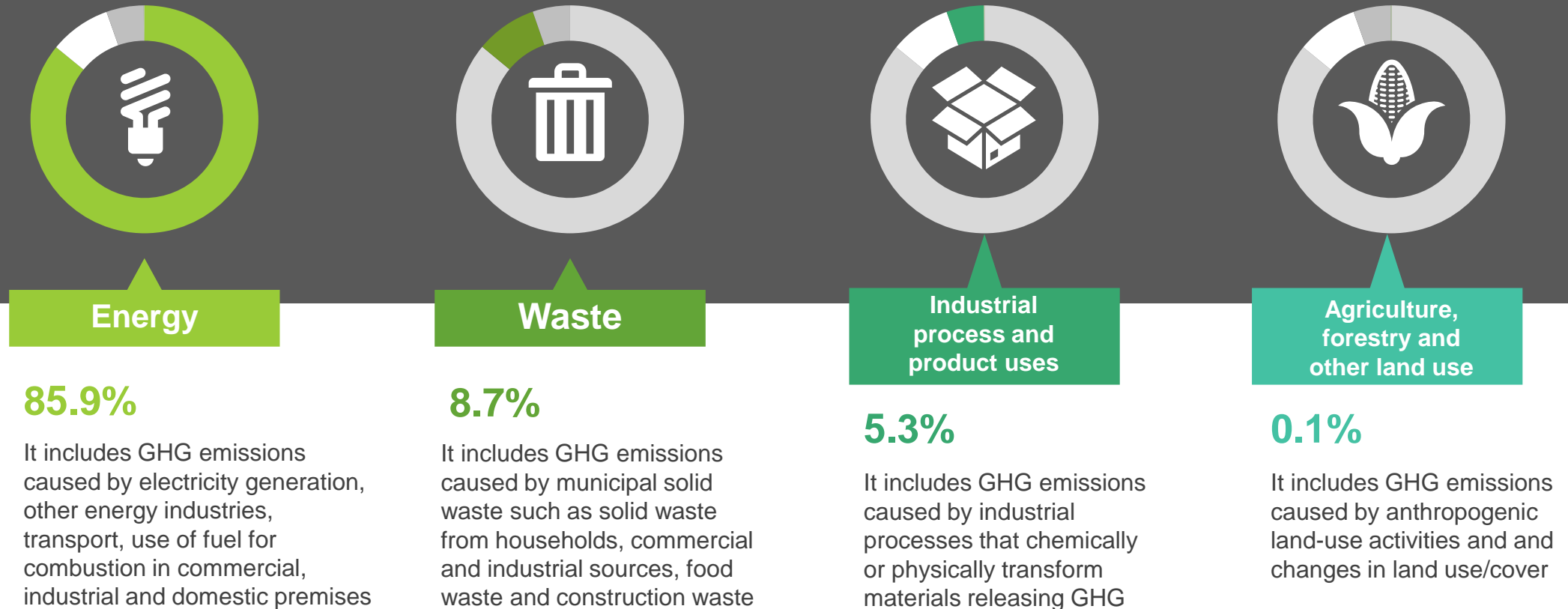
Support our customers' decarbonisation with clean energy solutions

**No country, no city
and no one today is
immune from the
impacts of climate
change**



Emissions of Hong Kong in 2020

Total GHG emissions = 33,800 kilotonnes CO₂ equivalent
Per capita emissions = 4.5 tonnes CO₂ equivalent



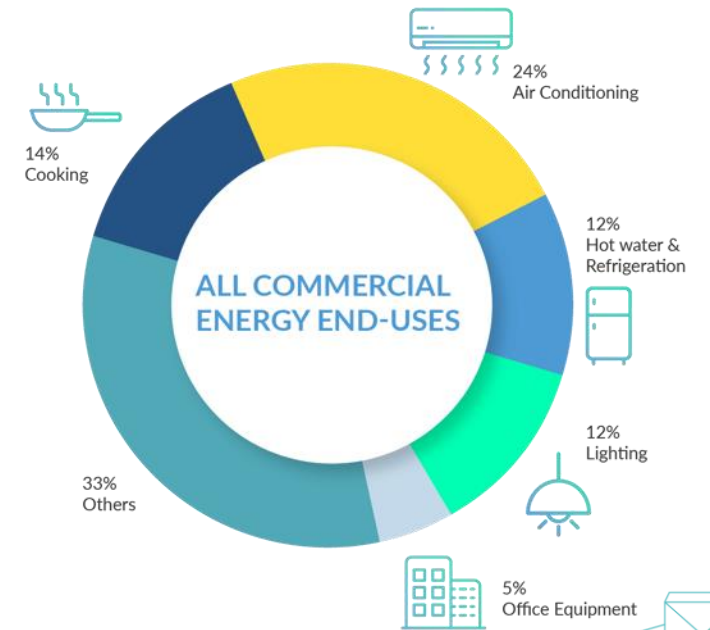
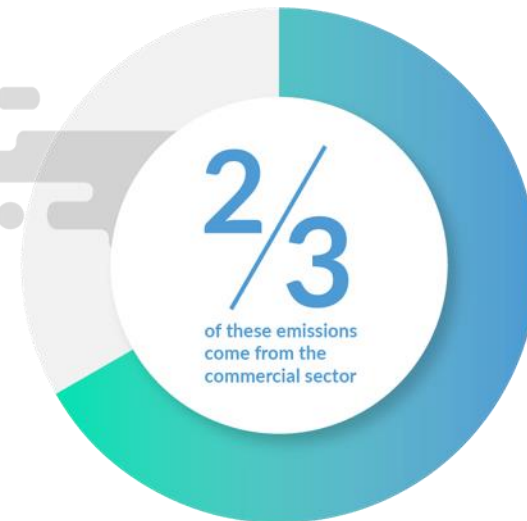
Largest Electricity Consuming Sector

Buildings account for **90%** of electricity used

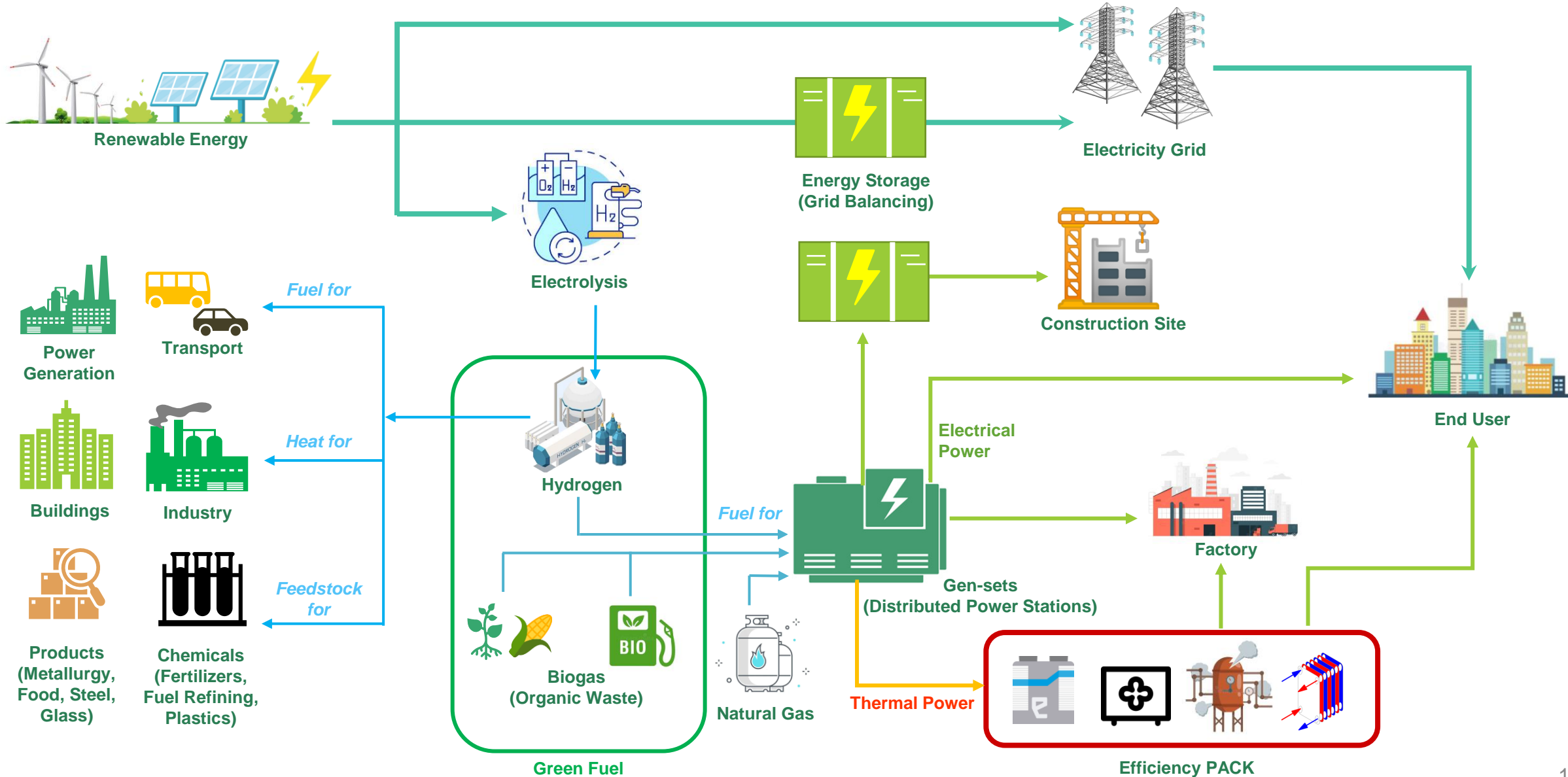
(including residential, commercial and industrial buildings)



60% of carbon emissions



Green Fuels: Technology Pathways



Applications - Efficiency PACK

H₂
Biogas
Biofuel
Natural Gas

100%

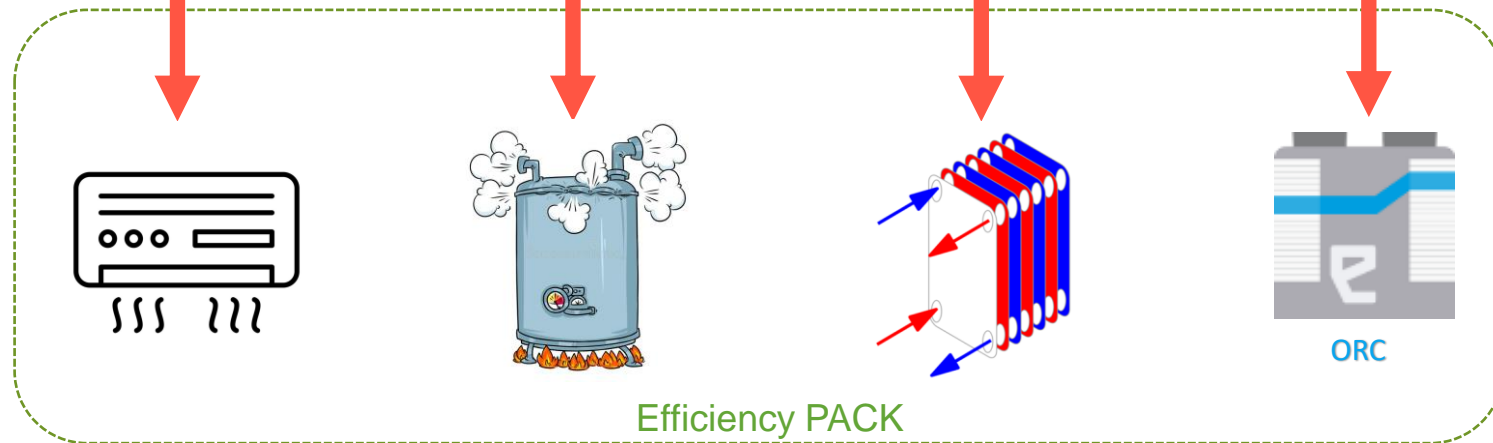


Electrical Power

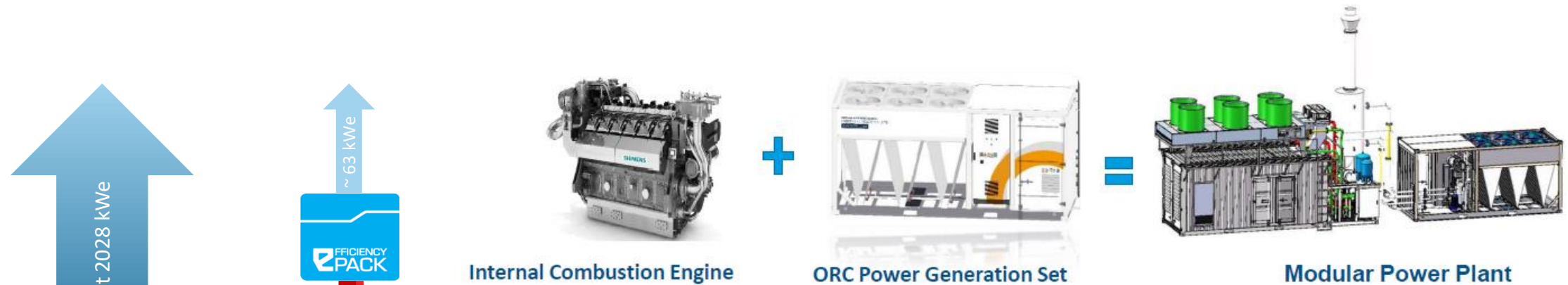
~43 - 45%

Thermal Power

~45 - 48%



Organic Rankine Cycle (ORC) system



Case study

MTU 16V4000L64FERN Plus ePack eP 50.100

Genset output : 2028kWe

ePack eP 50.100 Output : ~63kWe @ Free Green Energy

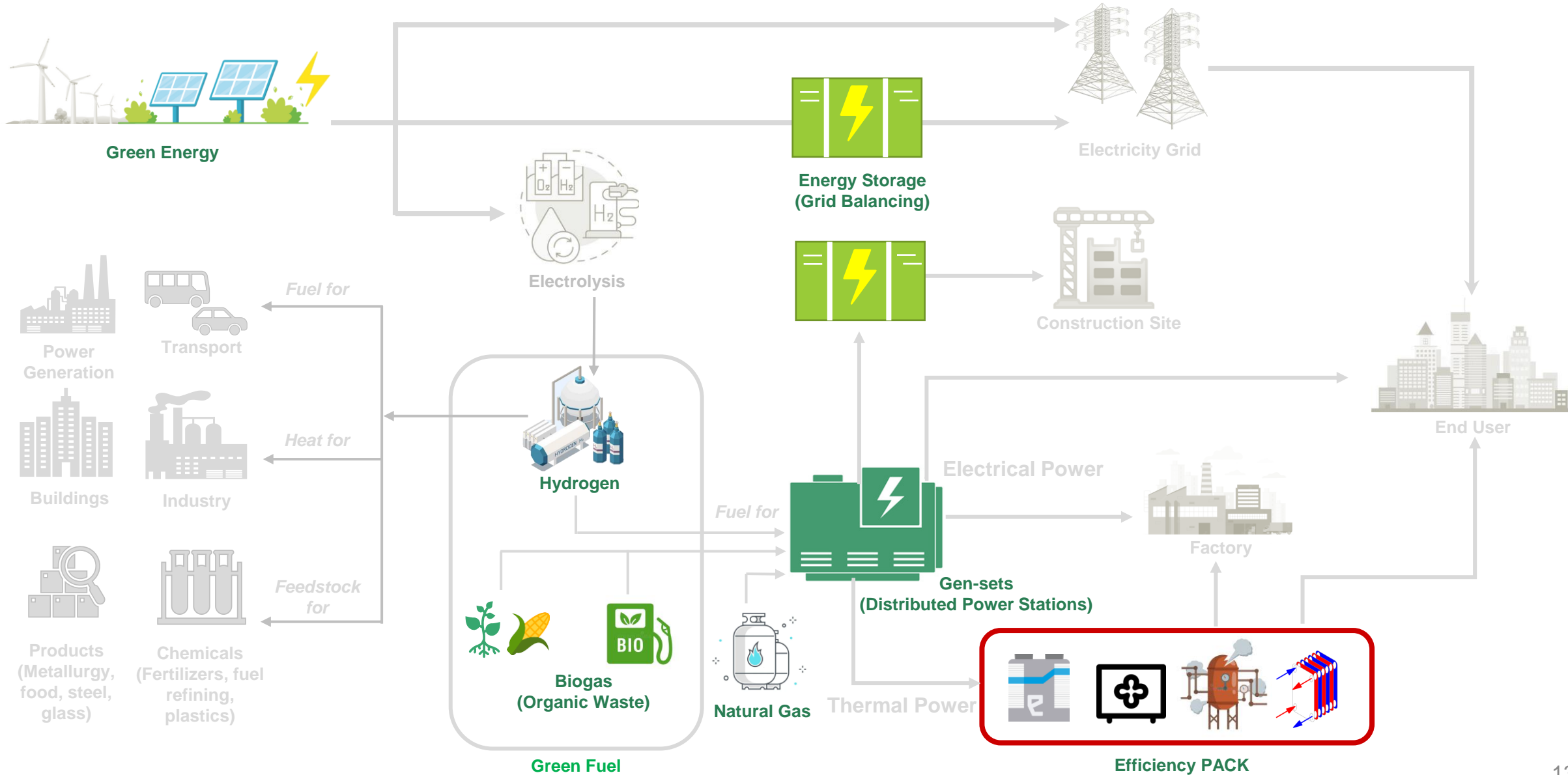
System Output : 2091kWe +3.1%

Conditions :-

- 400V, 50Hz, 30°C Environment temperature
- The output of eP 50.100 will varies according to ambient temperature and operating conditions

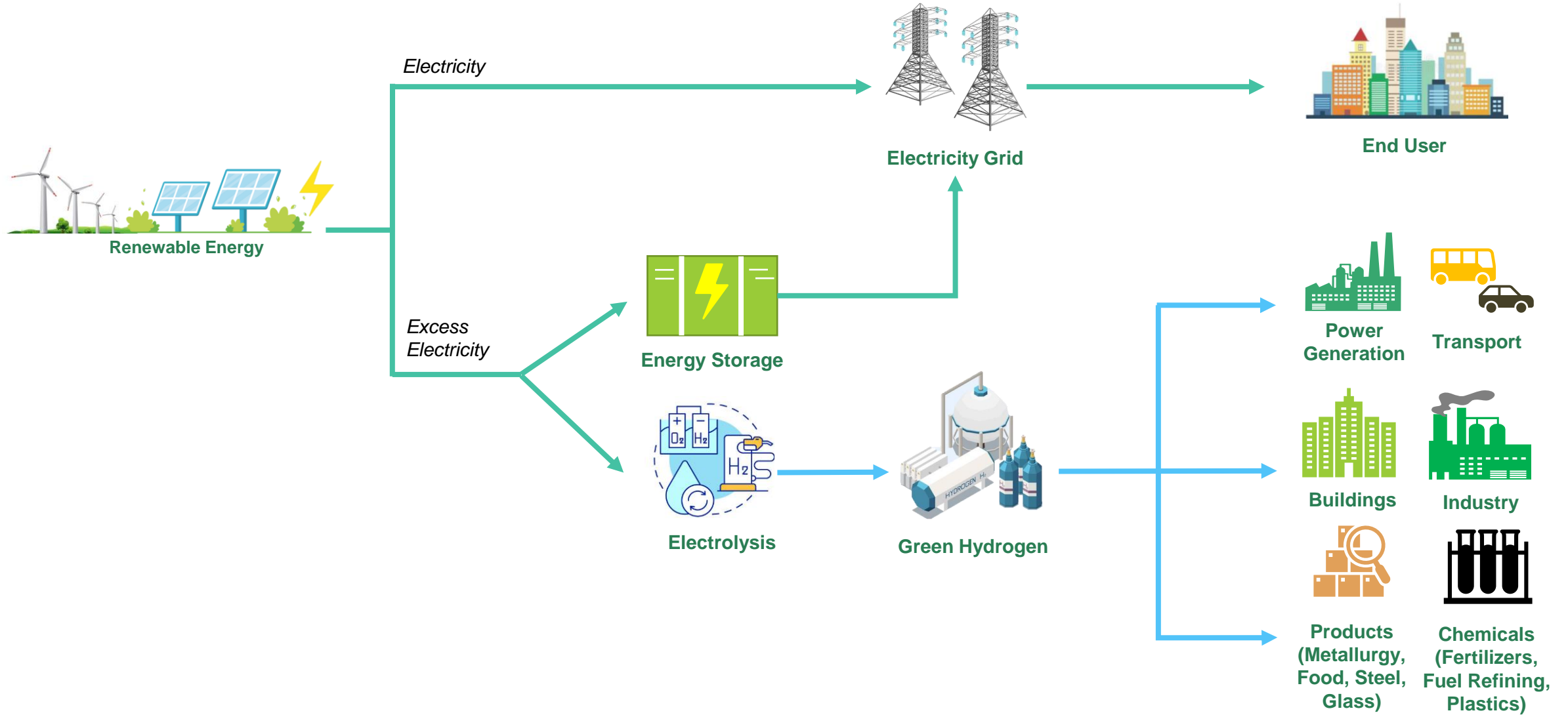


Green Fuels: Technology Pathways

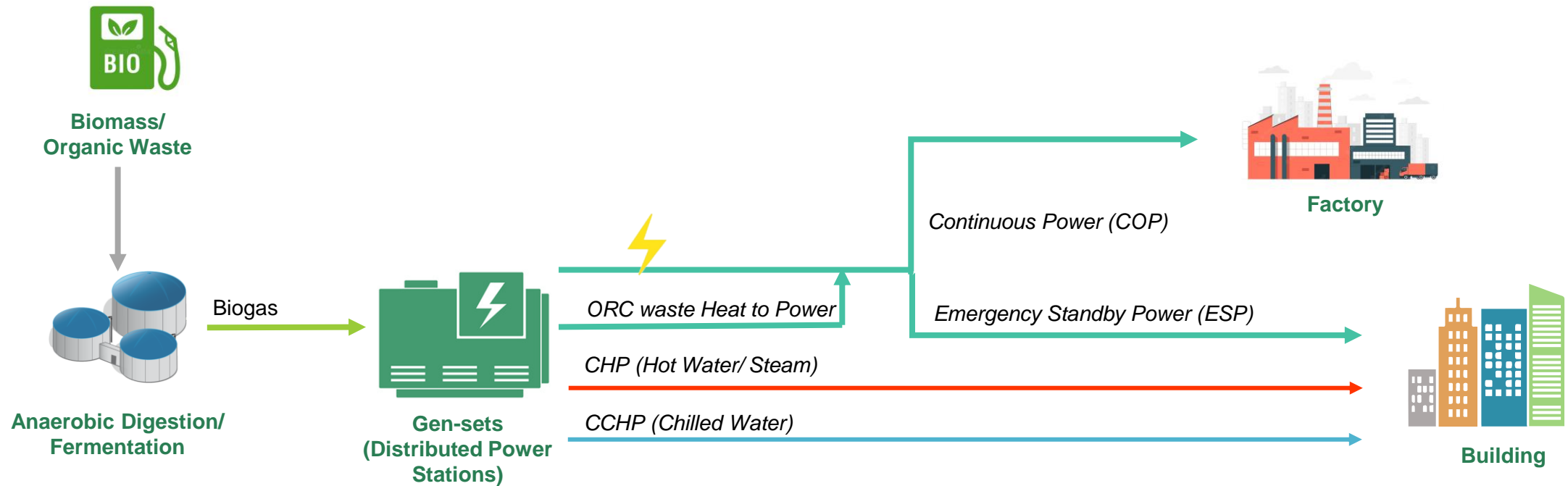


Thank you!

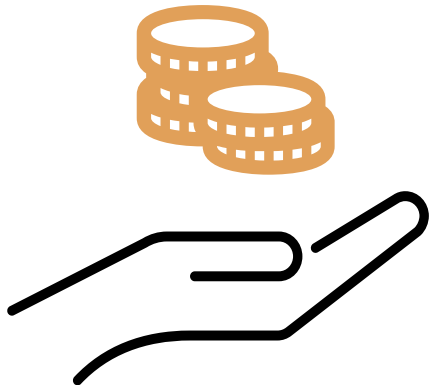
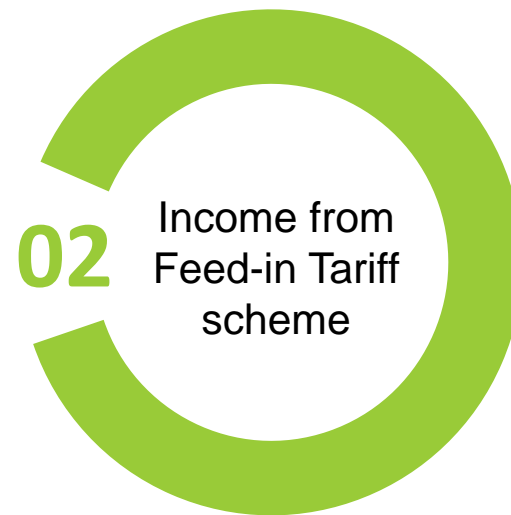
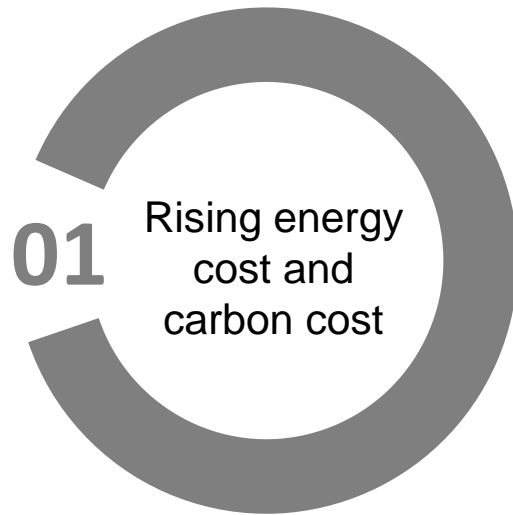
Green Fuels: Technology Pathways



Green Fuels: Technology Pathways



Economic Considerations

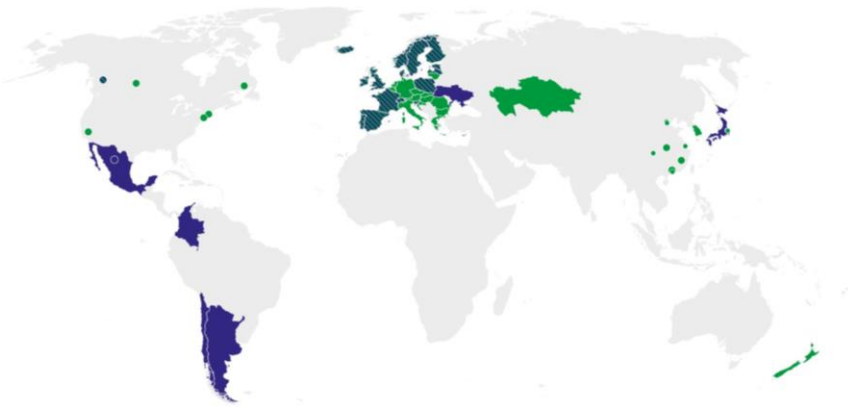
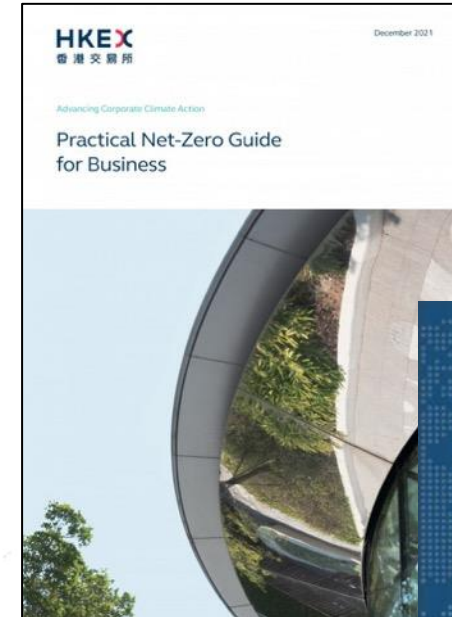


Regulatory Considerations

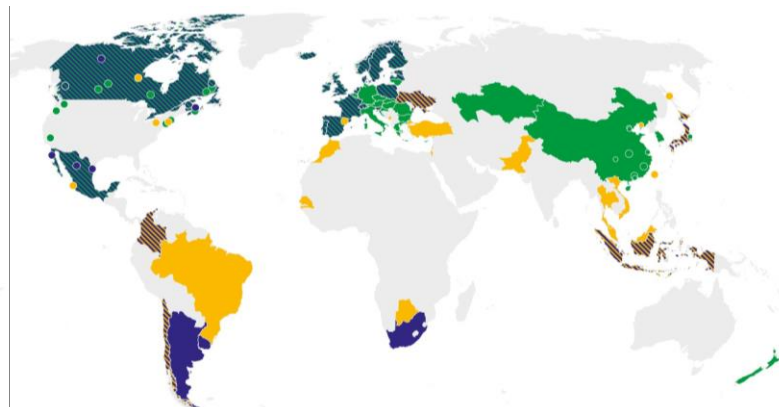
Carbon taxing and emission trading are global trends



More stringent disclosure requirements



2018



2022

Building Energy Efficiency: The Key to a Green City

Centralised Electricity Generation

- Governed by government policies
- Fuel mix for electricity generation in 2020:
 - ❖ 48% natural gas
 - ❖ 24% coal
 - ❖ 28% nuclear and renewables

Electricity Consumption

- Implementation of energy saving systems
 - ❖ Electrical, lighting, air-conditioning, lift and escalator
- Implementation of energy efficiency solutions
- Choice of energy sources

