



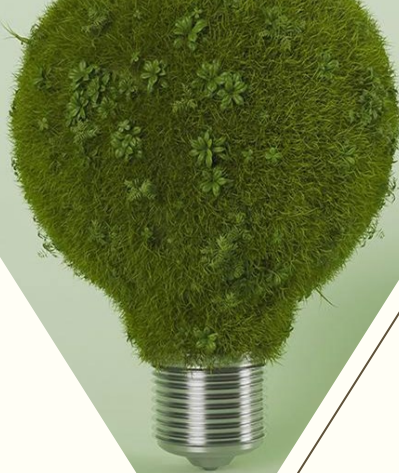
# EGNRET 61

# New and Renewable Energy Development in Chinese Taipei

**Chung-Hsien Chen, Ph.D.**

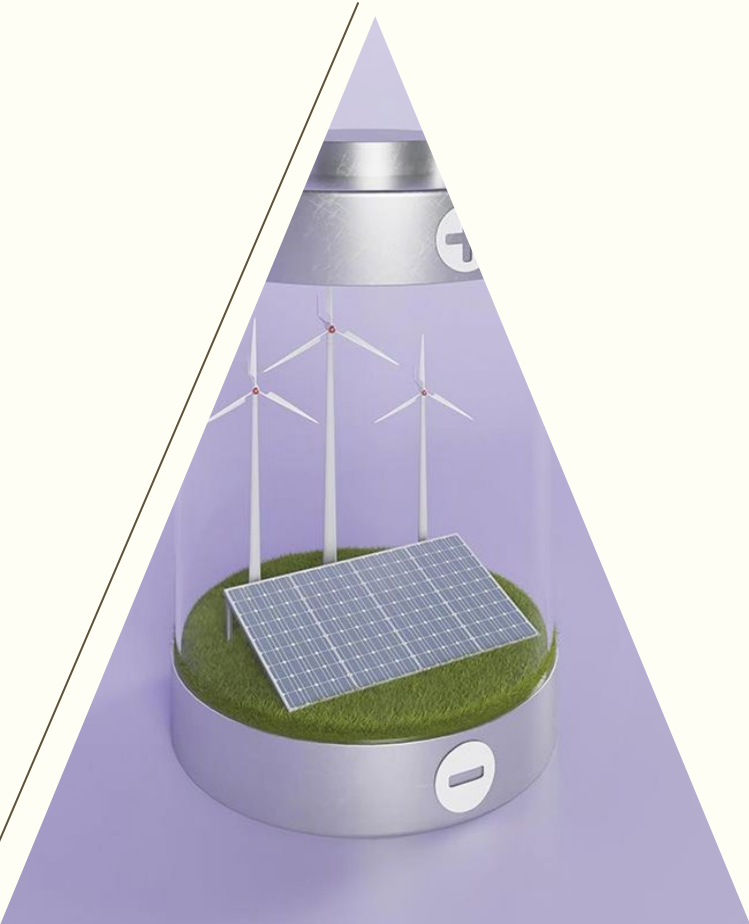
**Director, Energy Administration, MOEA**

**January 2025**



經濟部能源署

Energy Administration,  
Ministry of Economic Affairs



# 01

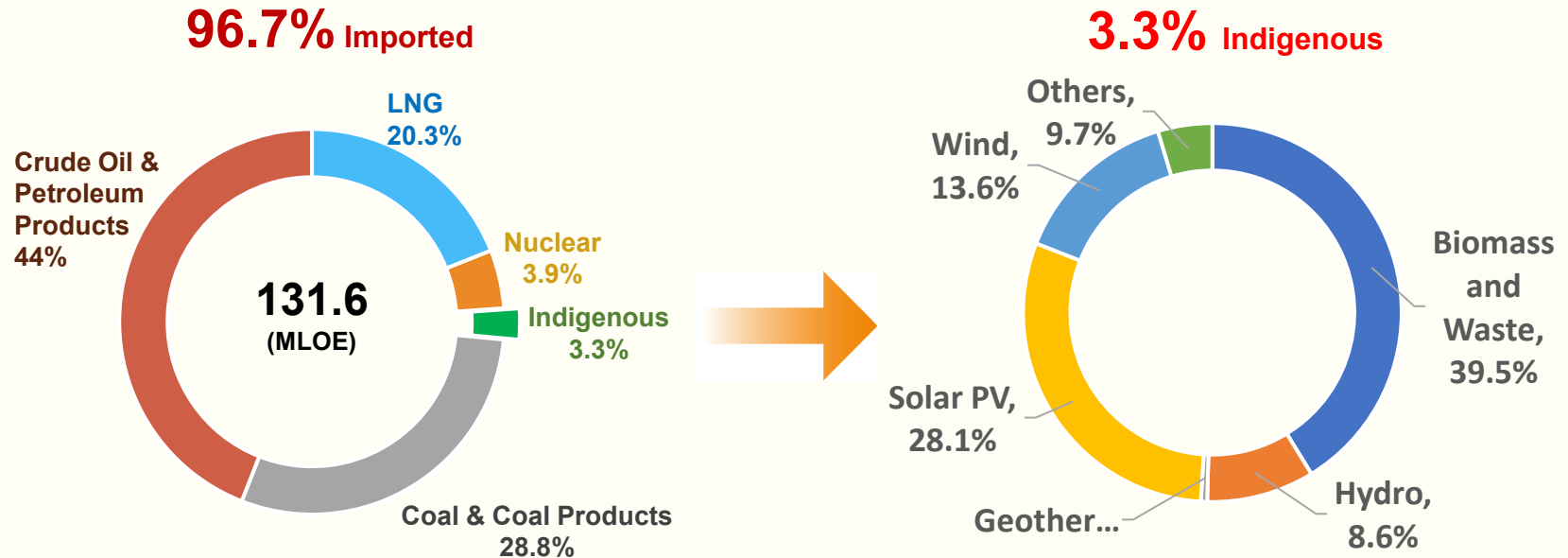
## Current Situation

# Energy Mix in Chinese Taipei



- As for the energy mix in 2023, **imported** energy accounted for **96.7%**, and **indigenous** energy only provide **3.3%**, in which half contributed from **Wind, Solar PV and Hydro**.

## Total Energy Supply (2023)

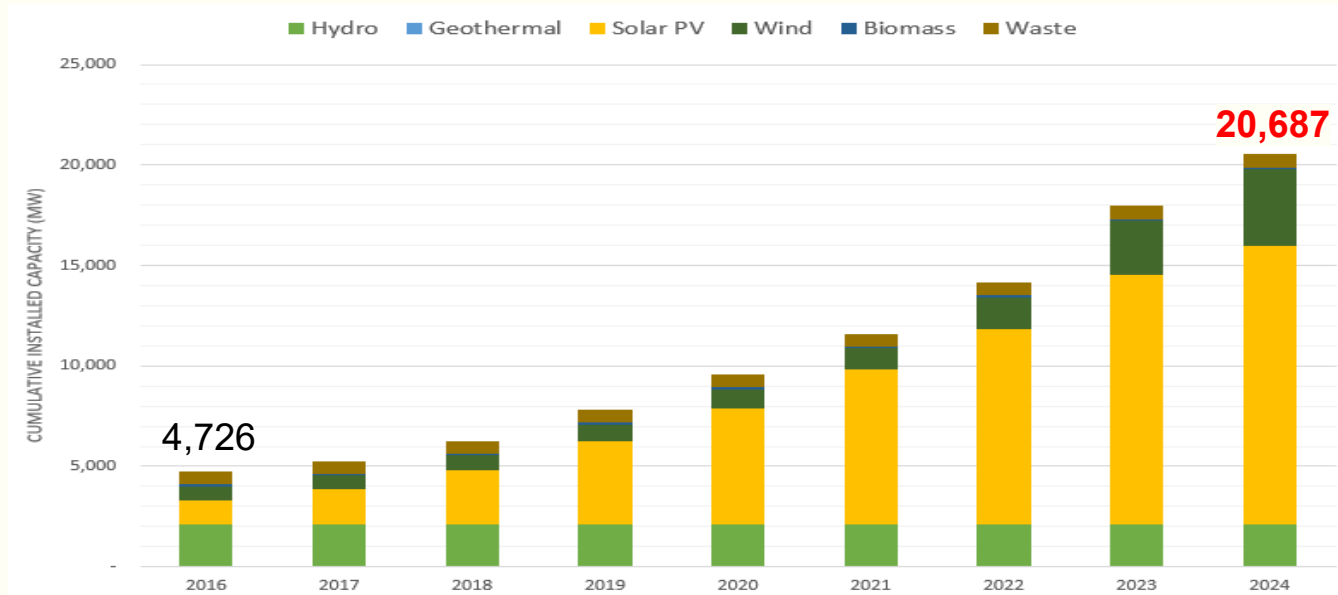


# Renewable Energy Current Situation

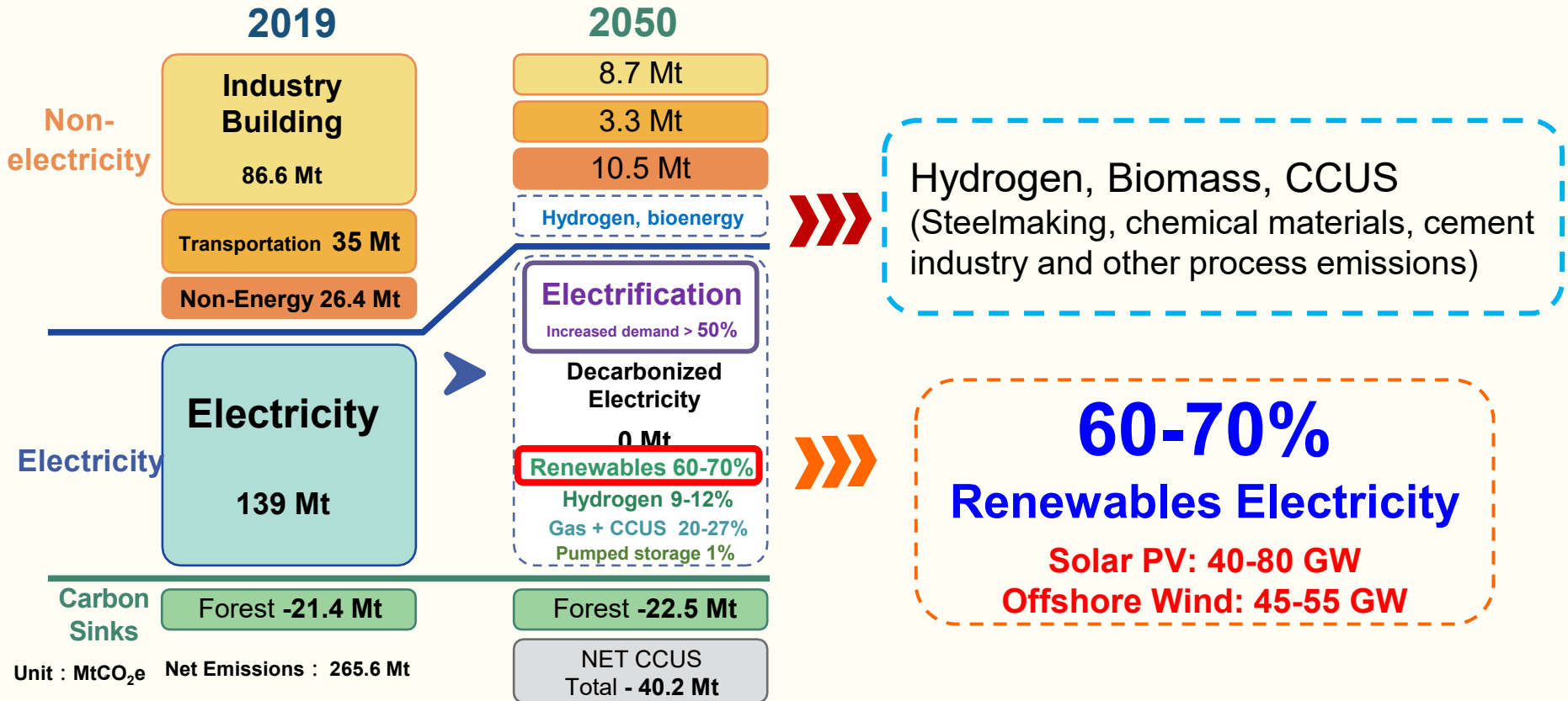


- As of November 2024, the cumulative installed capacity of RE has **increased 15.9 GW** compared to 2016.

## RE Installed Capacity



# 2050 Net-Zero Emissions Policy

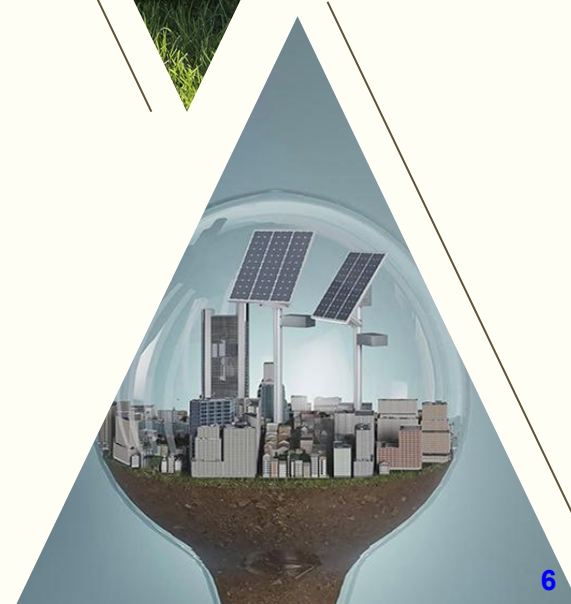


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# 02

## Key Strategies and Target

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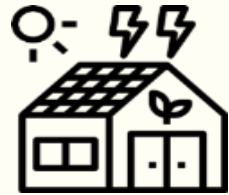
# Renewable Energy Targets



- We are driving the ***Second Energy Transition*** by **diversifying green energy sources**.
- Continue **deploying mature green energy systems, such as wind and solar power**. The Ministry of Economic Affairs (MOEA) has set a target to achieve a specific renewable energy capacity by 2026.
  - **Solar PV: 21 GW**
  - **Offshore Wind: 5.6 GW**
- Additionally, we focus on expanding green energy sources, including geothermal and ocean energy

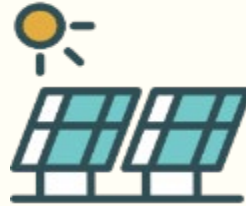


# Targets and Strategies of Solar PV



8 GW  
Rooftop

+



15 GW  
Ground-mounted

21GW

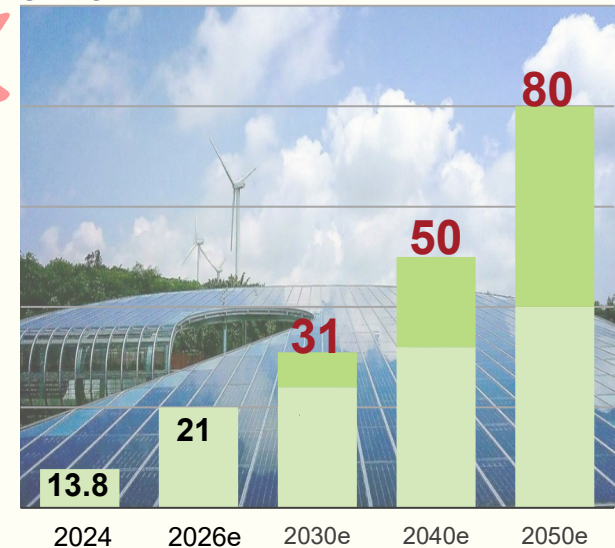
2026

- Factories' roofs
- Government
- Public roofs
- Agricultural facilities
- rooftop of all new buildings.
- The others

- Optimize land use
- Prioritize the promotion of aquavoltaics

## Estimated scale of solar PV deployment by 2050

Unit: GW

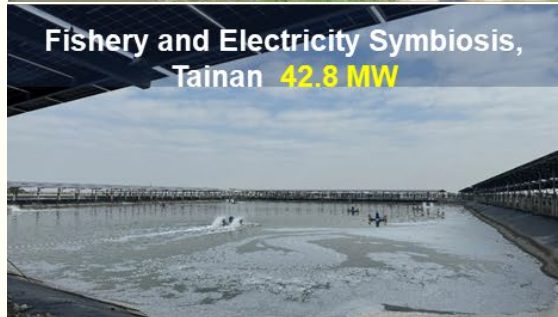




# Promotion of Solar PV



- Current PV Installed Capacity: **13.9** GW by the end of November 2024.
- Establishing an economic model that integrates **green energy** with **multiple purposes**, such as **aquavoltaics** or **agrivoltaics**.



# Strategic Approaches to Offshore Wind



## Goals of Offshore Wind Power

237 MW

2021

5.6 GW

2026

20.6 GW

2035

40~55 GW

2050

PHASE 1

Demonstration  
Incentive Program (DIP)

PHASE 2

Zones of Potential

PHASE 3

Zonal Development

2017: 2 Demo Turbines  
(8 MW) @Miaoli

2021: 2 DIP Wind Farms

(237.2 MW, included 2 Demo WT)

- Formosa 1 @Miaoli (128 MW)
- Taipower 1 @Changhua (109.2 MW)

2018: Completed capacity  
allocation

- By Selection: 3.836 GW
- By Auction: 1.664 GW

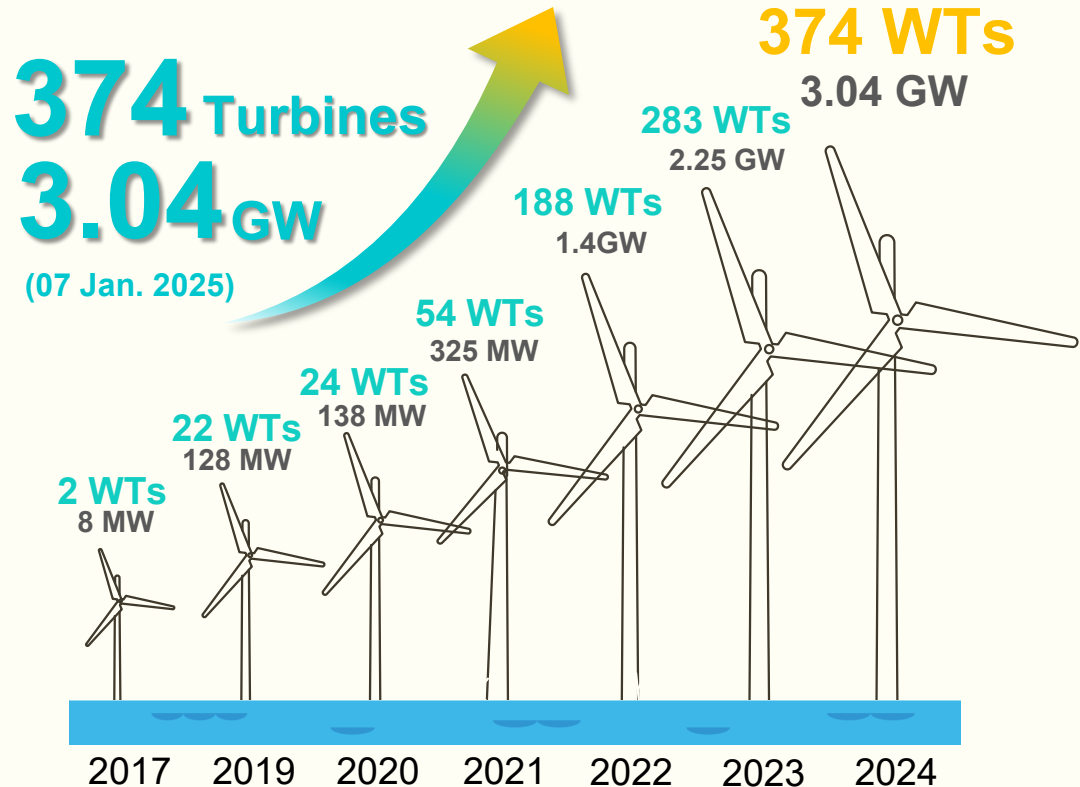
2026 - 2035 : (15 GW to be  
developed within 10 years)

- Round 1: The selection in 2022, 5 wind farms have signed contracts in 2023
- Round 2: 5 wind farms were allocated 2.7 GW in 2024 (selection for 2028-2029), and all wind farms summited the administrative contract on schedule.

# Achievements of Offshore Wind



CT's total offshore wind power installation capacity ranked **7<sup>th</sup>** globally in 2023 (GWEC, 2024) and surpassed **3 GW** in 2024.



# Fully-Commissioned Offshore Wind Farm

 <p>Miaoli</p>	 <p>Changhua</p>	 <p>Miaoli</p>	 <p>Changhua</p>	 <p>Changhua</p>	 <p>Changhua</p>
<p><b>Formosa 1</b></p> <p>2019</p> <p><u>22WTs/ 128MW</u></p> <p>Orsted Jera FSP</p>	<p><b>Taipower 1</b></p> <p>2021</p> <p><u>21WTs/ 109MW</u></p> <p>台湾電力公司 TAIWAN POWER COMPANY</p>	<p><b>Formosa 2</b></p> <p>2023</p> <p><u>47WTs/ 376MW</u></p> <p>Jera SRE Green Investment Group</p>	<p><b>Greater Changhua</b></p> <p>2024</p> <p><u>111WTs/ 900MW</u></p> <p>Orsted CDPQ 國泰私募股權 Cathay Private Equity</p>	<p><b>Changfang &amp; Xidao</b></p> <p>2024</p> <p><u>62WTs/ 595MW</u></p> <p>CIP Copenhagen Infrastructure Partners</p>	<p><b>ZhongNeng</b></p> <p>2024</p> <p><u>31WTs/ 294.5MW</u></p> <p>中鋁集團 CIP Copenhagen Infrastructure Partners</p>



# Targets and Strategies for Geothermal



- Target for geothermal energy is set to reach **20 MW** installed capacity.



2025

20 MW

2050

6 GW

- **From shallow** (hydrothermal) **to deep** (EGS)

## Phase 1

- Establish **dedicated chapters** and related regulations for geothermal energy
- Launch exploration in **10 potential geothermal zones** by GSMMA.

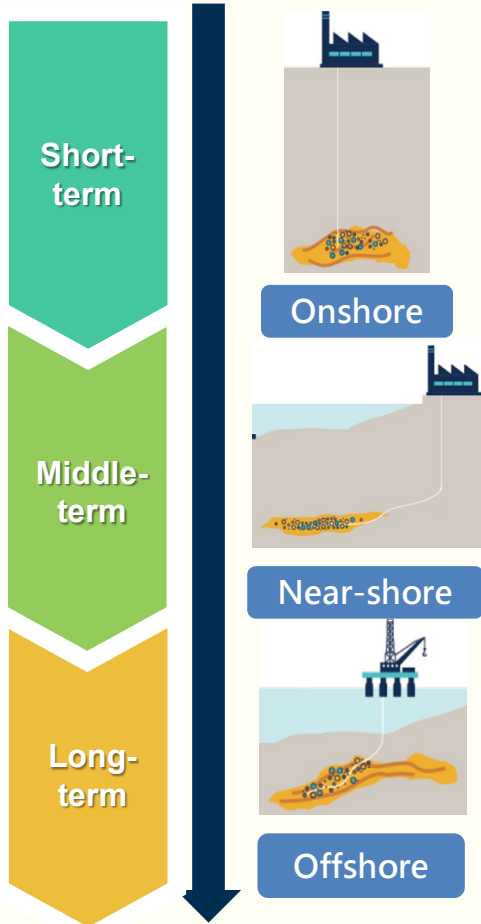
## Phase 2

- **Expand** Geothermal Energy Development
- Amend the **National Park Act**
- Deploy Deep Geothermal Technologies (**EGS and AGS**)

## Phase 3

- Establish deep geothermal **demonstration sites**
- Expand the Development of **Deep Geothermal Energy**

# Carbon Capture and Storage



## 2023-2030 Experiments

- ✓ Construction of CCS experimental sites
- ✓ Experimental injections
- ✓ Formulation of Laws and Regulations
- ✓ Preparation for near-shore demonstration

## 2030-2040 Demonstrations

- ✓ Large-scale integrated CCS demonstrations
- ✓ Implementation of CCS infrastructure
- ✓ Promotion of industrial applications

## 2040-2050 Practical Deployment

- ✓ Deployment for energy and industrial sectors
- ✓ Offshore large-scale operations

### MOEA CCS demo projects



台湾中油股份有限公司  
CPC Corporation, Taiwan

Neighboring power plant



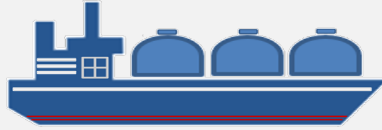
台湾電力公司  
Taiwan Power Company

CO2 capture pilot plant (2,000 ton/yr)

# Hydrogen Energy Development



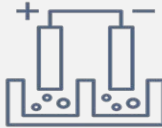
## Resource Side



Blue H<sub>2</sub> / Green H<sub>2</sub> Import



Renewable Energy

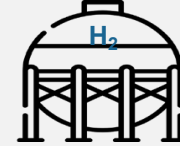


Electrolyzer

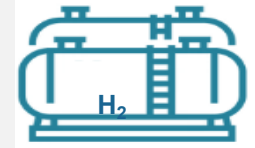
Self-Produced Green H<sub>2</sub> With sufficient renewable energy

## Infrastructure Side

- Infrastructure evaluation
- Demonstration site



Large Scale Storage Infrastructure



Storage Tank



- Infrastructure construction (LH<sub>2</sub> receiving station)



### ■ Demonstration projects



SIEMENS energy

- This project is expected to achieve a 5% demonstration of gas-fired hydrogen blending for power generation by 2025.

### ■ Industrial application



- 1<sup>st</sup> demonstration assembly line will be online by 2025.

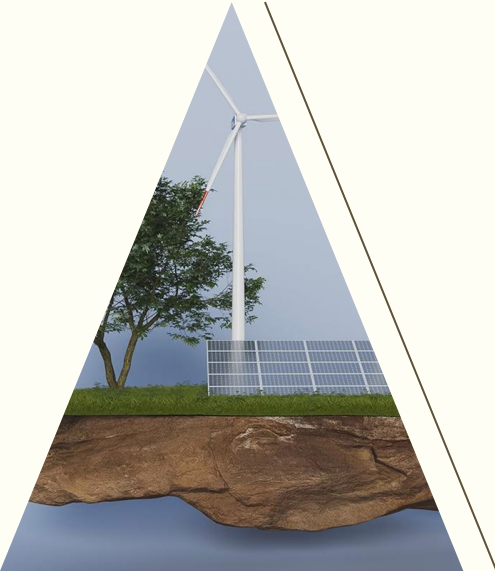


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# 03

# Conclusion

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# Energy Transition for Net-Zero



- CT aim to **diversify green energy sources** to ensure a stable and sustainable power supply. **While continuing to deploy mature technologies** such as wind and solar power, we are **also advancing innovative energy solutions**, including geothermal and ocean energy.
- We welcome international cooperation on renewable energy development.





# Thanks!

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