EGNRET 60

New and Renewable Energy Development in Chinese Taipei

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PART

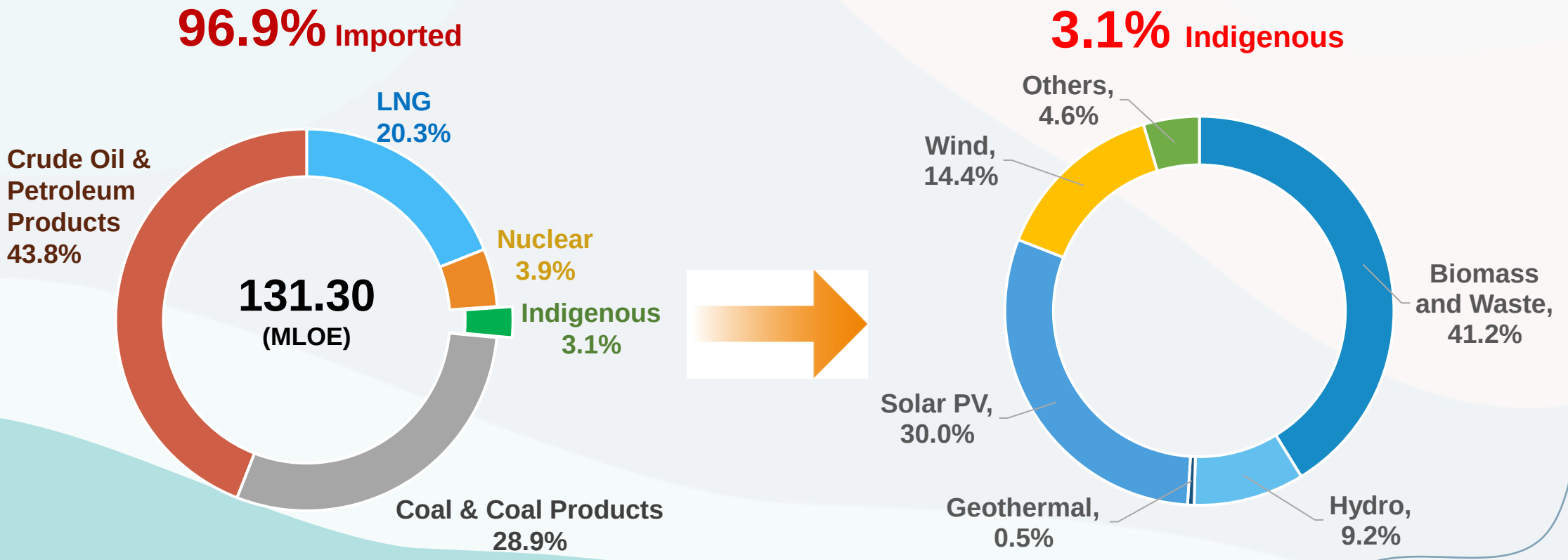
01

Energy Situation

Energy Mix in Chinese Taipei

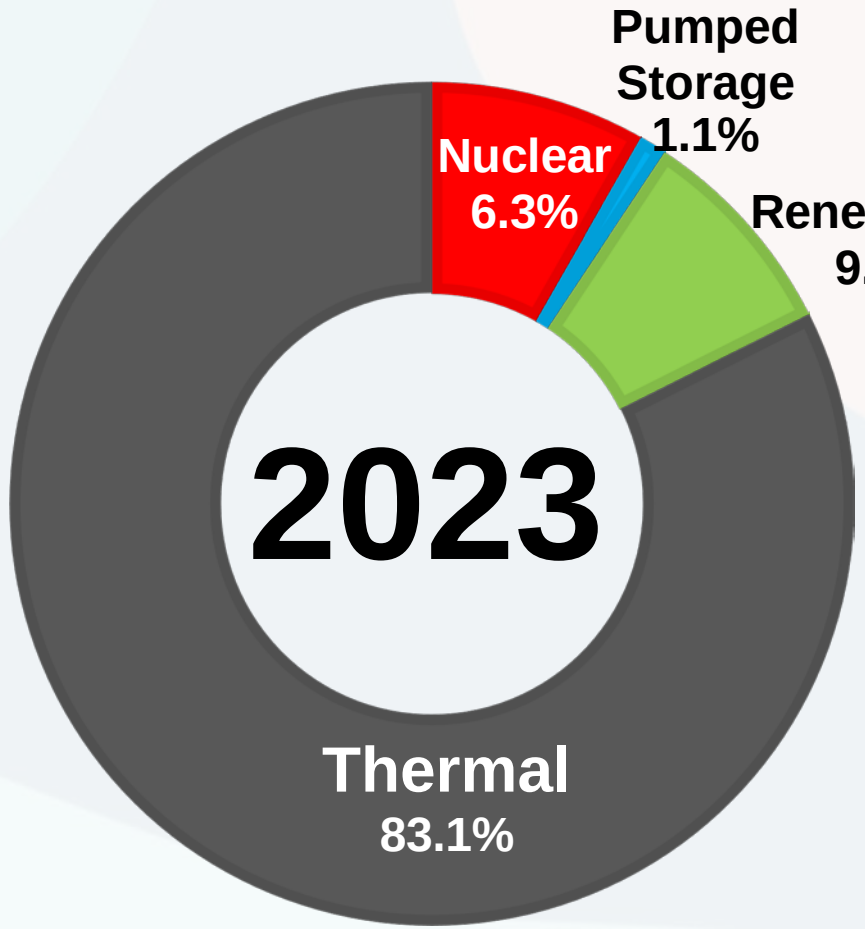
- As for the energy supply structure in 2023, the imported energy accounted for 96.9%, and the indigenous energy only provide 3.1%, in which nearly half contributed from biomass and waste.

Total Energy Supply (2023)



Source: Energy Administration (2024)

Share of energy sources in power production



- Coal-Fired 42.2%
- LNG-Fired 39.6%
- Oil-Fired 1.3%

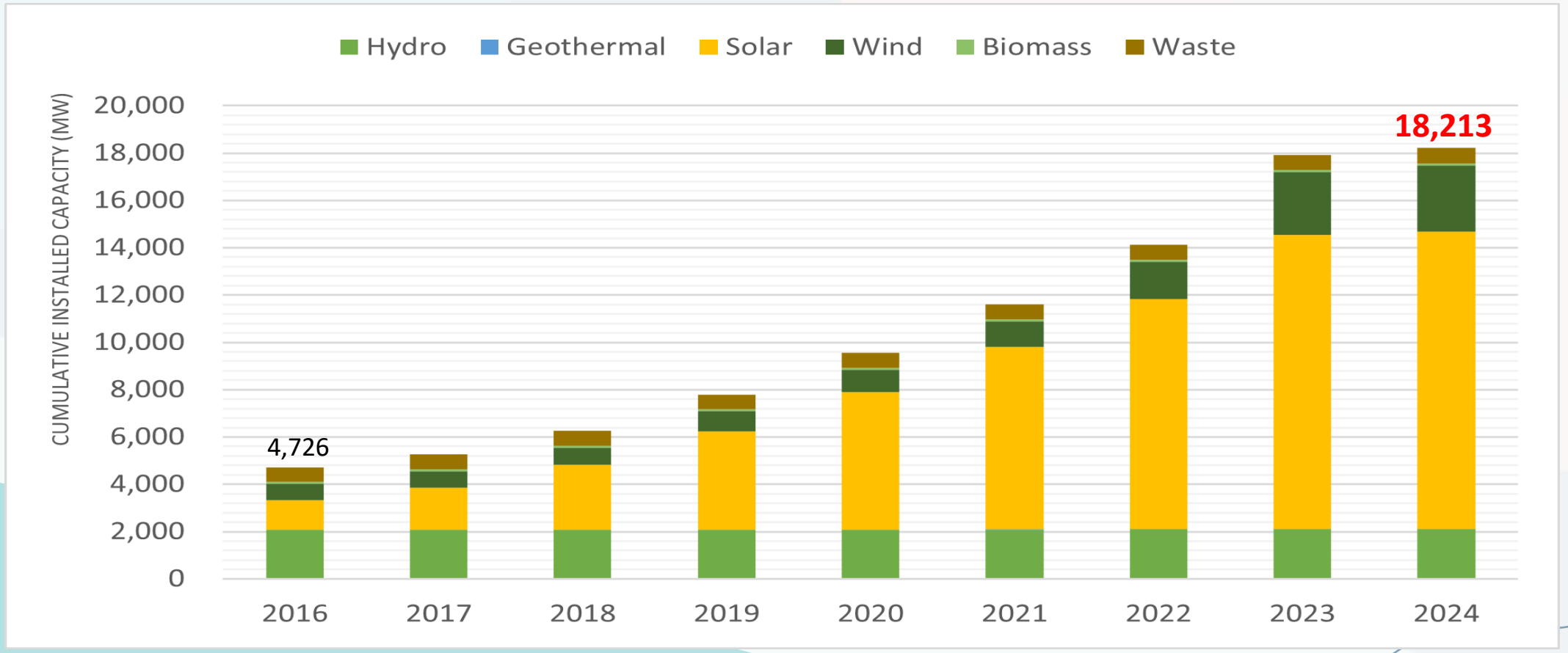
- Hydro 1.4%
- Waste 1.2%
- Wind 2.2%
- Solar PV 4.6%
- Biomass 0.1%
- Geothermal 0.009%

Data: Energy Administration, MOEA

Renewable Energy Situation

- **As of February 2024, the cumulative installed capacity of RE has increased 13.5 GW comparing to 2016.**

RE Installed Capacity

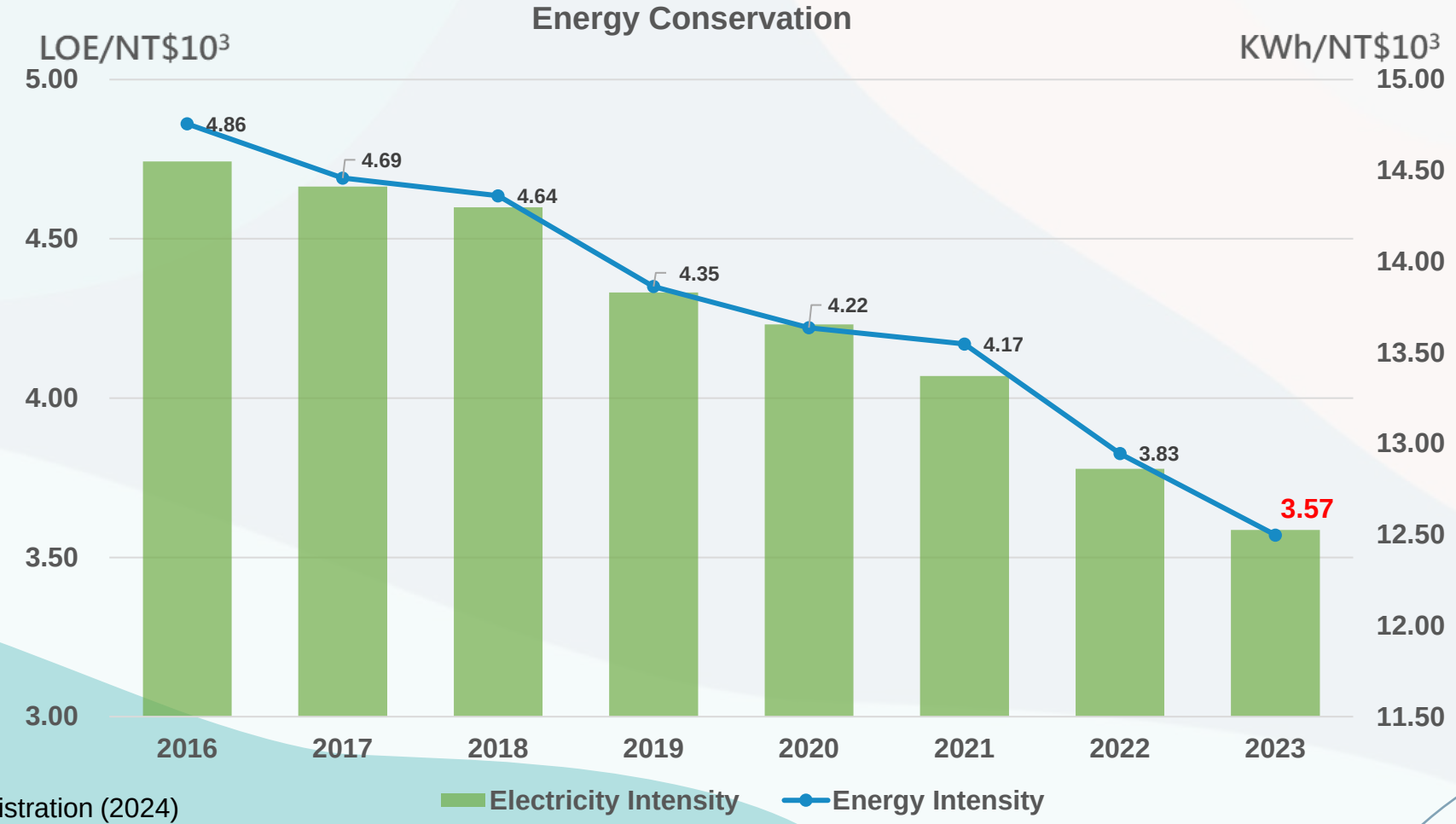


Source: Energy Administration (April. 2024)

Energy Efficiency Development

Policy goals of Average Energy Intensity and Electricity Intensity improvement from 2016 to 2023:

- **Energy Intensity: -4% annually**
- **Electricity Intensity: -1.8% annually**



Source：Energy Administration (2024)

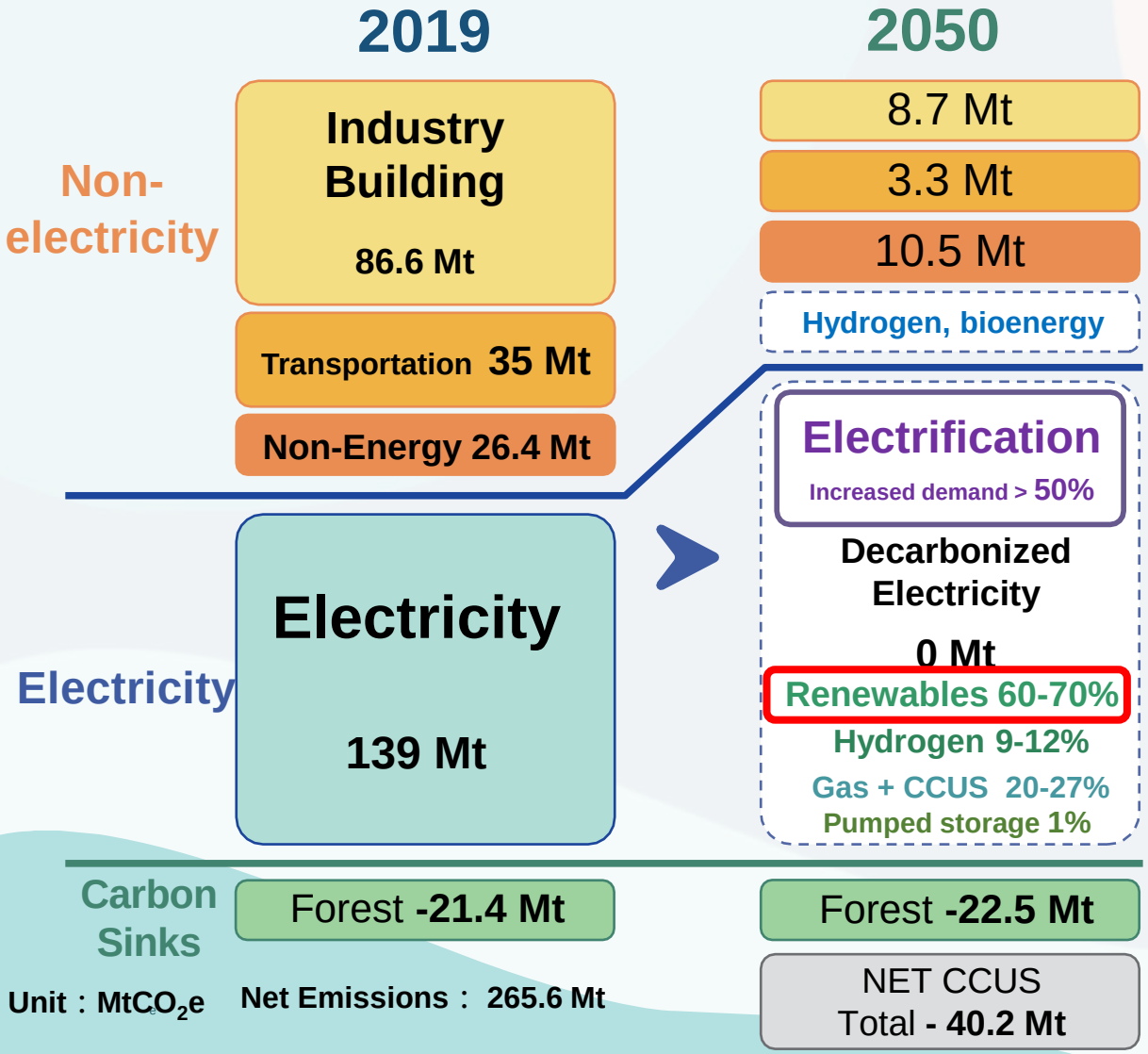
New and Renewable Energy Policy

PART 02

Renewable Energy Targets by 2025

- Ministry of Economic Affairs (MOEA) has set a target of 29.4 GW of installed renewable energy capacity by 2025.
- Mainly focus on Solar and Wind Energy Development.
  - Solar PV: 20 GW
  - Offshore Wind: 5.6 GW

2050 Net-Zero Emissions Plan



Hydrogen, Biomass, CCUS
(Steelmaking, chemical materials, cement industry and other process emissions)

60-70%

Renewables electricity

Solar PV: 40-80 GW

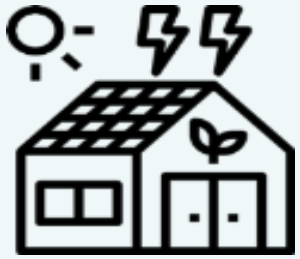
Offshore Wind: 45-55 GW

Key Targets and Strategies

PART

03

Targets and Strategies of Solar PV



8 GW Rooftop + **12 GW Ground-mounted**

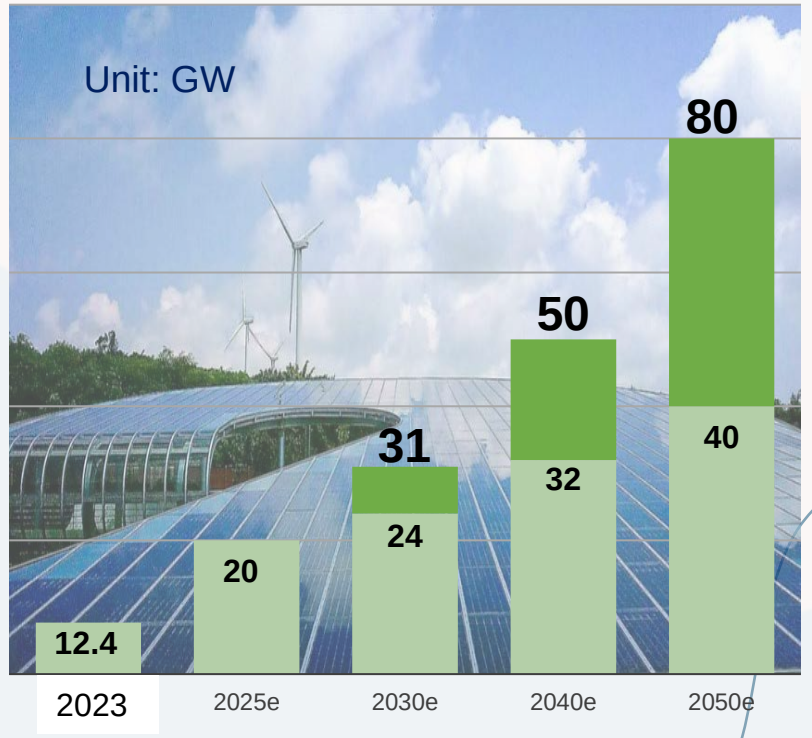
20GW

2025

- Factories' roofs
- Government
- Public roofs
- Agricultural facilities
- The others

- Optimize land use
- Encourage hybrid projects

Estimated scale of solar PV deployment by 2050



Promotion of Solar PV

- Current PV Installed Capacity: **12.4** GW by the end of 2023
- Establishing an economic model that integrates **green energy** with **multiple purposes**, such as **aquaculture** or **agriculture**.

Source: Energy Administration (2023)

Targets and Strategies of Offshore Wind

2021	2025	2035	2050
237.2 MW	5.6 GW	20.6 GW	40~55 GW

Phase 3
Zonal Development

- **2026 - 2035** (15 GW to be developed within 10 years)
  - 2022: Round 1 selection for 2026-2027
  - 2023: 5 wind farms have applied for the contracts
  - 2024: Round 2 selection for 2028-2029

Phase 2
Zones of Potential

- **2018:** Completed capacity allocation
  - By Selection: 3.836GW
  - By Auction: 1.664 GW
- **2025:** 5.5 GW will be in commercial operation.

Phase 1
Demonstration Incentive Program (DIP)

- **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)

Status of Offshore Wind

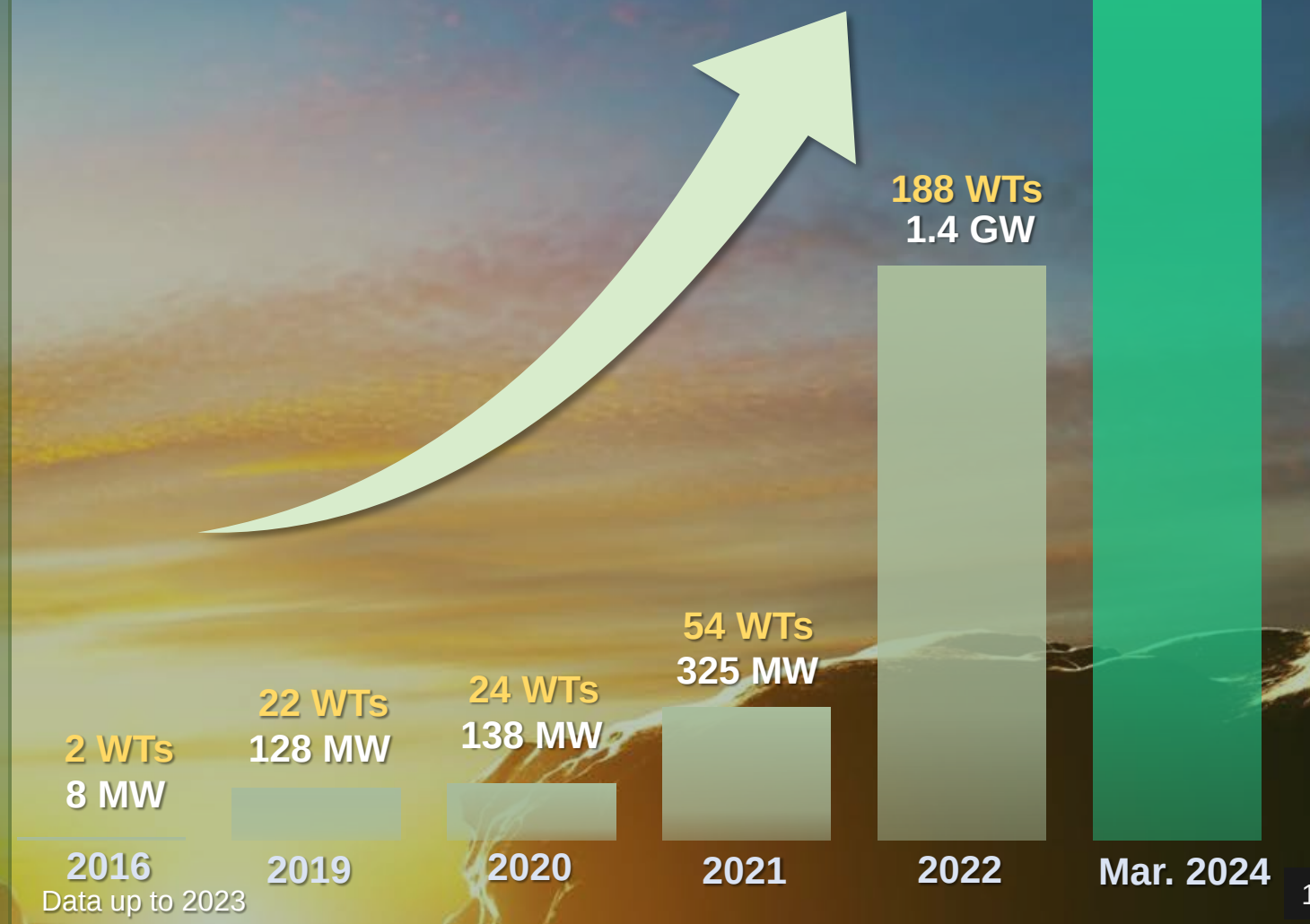
Up to March 2024, 293 wind turbines had been completed with a total of 2.3 GW.

Actively promoting offshore wind power

- War
- Pandemic
- Rising Costs

A total of 293 wind turbines has been completed.

Ranked No.7 Worldwide



Data up to 2023

Prospective Energy Development

PART

04

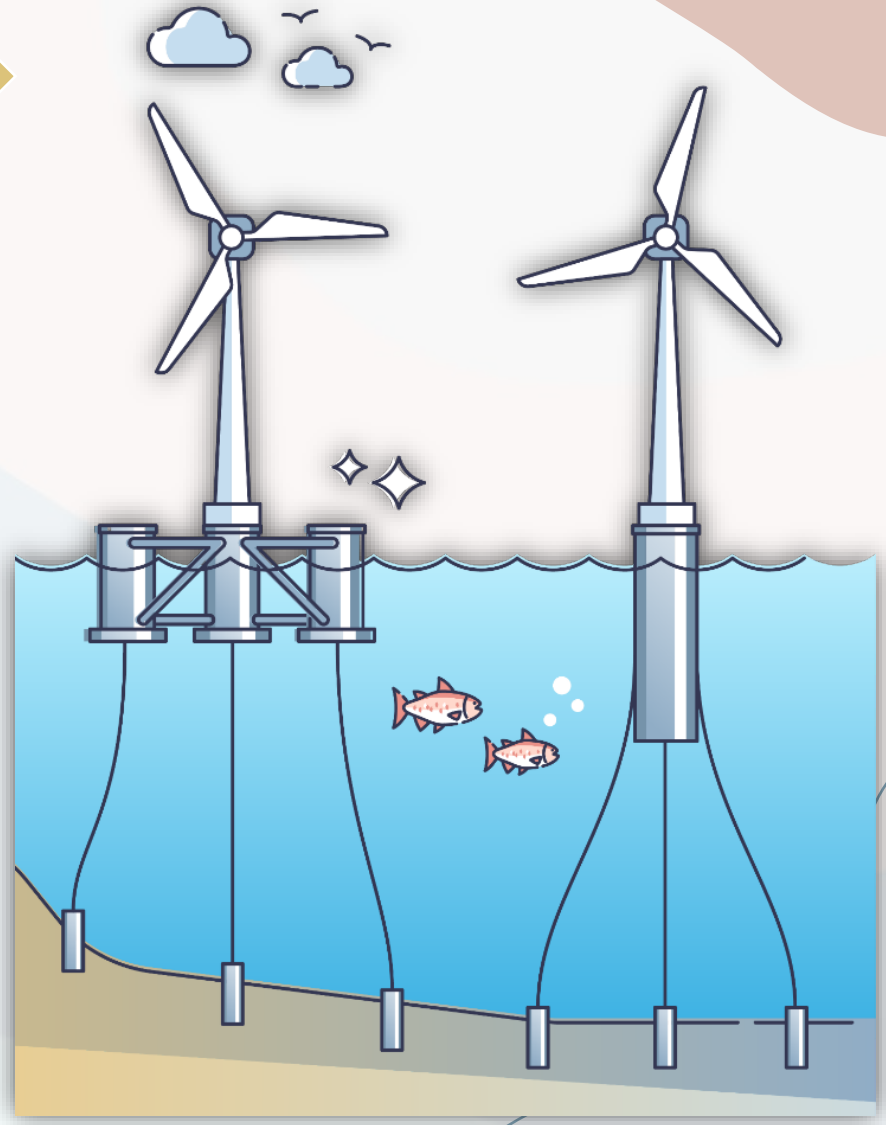
Floating Offshore Wind Demo. Program (Draft)

Selection Mechanism Announced
2024

Commissioned
2028

Current Draft:

- **Scale:** **6-12 floaters** for a single application
- **Number of cases:** **2 cases** as principle, subject to **1 additional case** as appropriate
- **Qualifications:** **No overlap** with **sensitive sea areas**; **Environmental Impact Assessment** (EIA) **preliminary approval**
- **Review items:** Technical capability, financial capability and domestic collaboration



Hydrogen Energy Development (1/2)

Application side

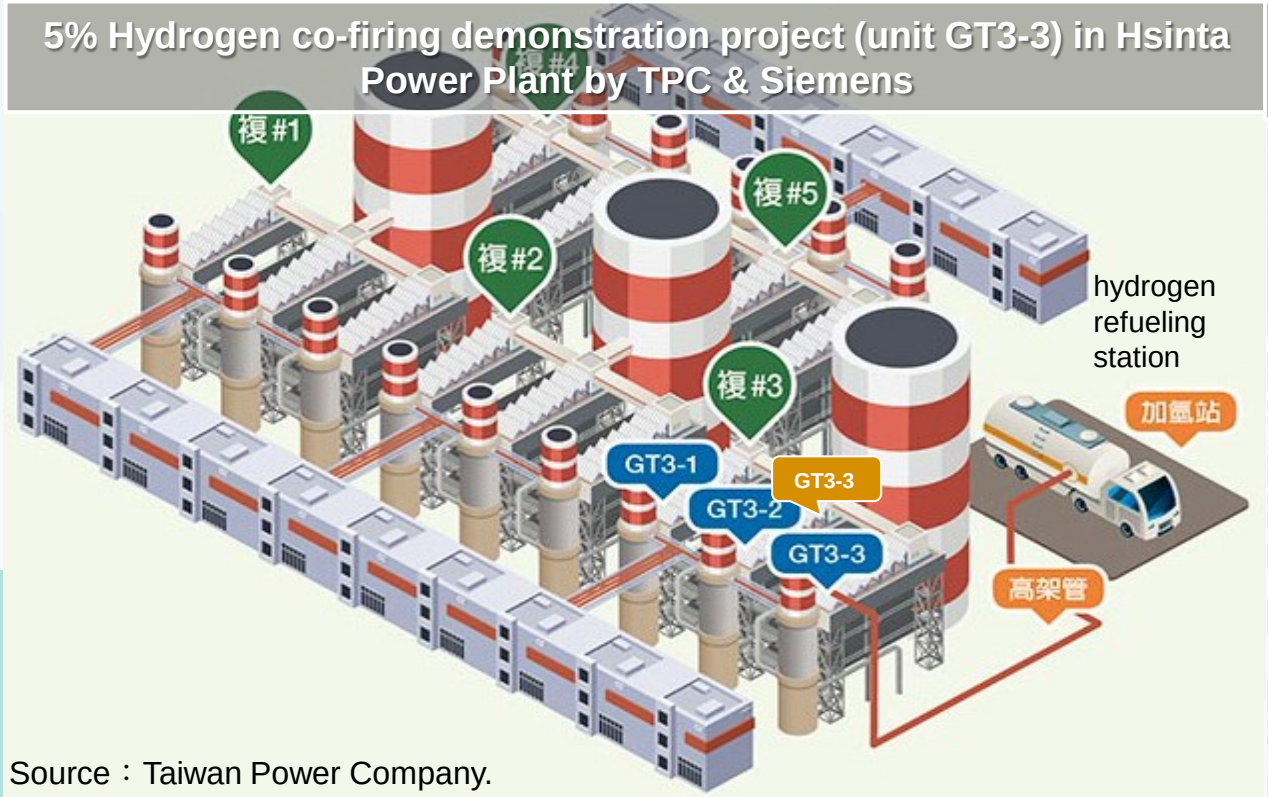
■ Demonstration projects

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

■ Industrial application

- 1st demonstration assembly line will be online by 2025.

5% Hydrogen co-firing demonstration project (unit GT3-3) in Hsinta Power Plant by TPC & Siemens



Source：Taiwan Power Company.

Cogeneration of hydrogen and chemicals by CSC & CPC

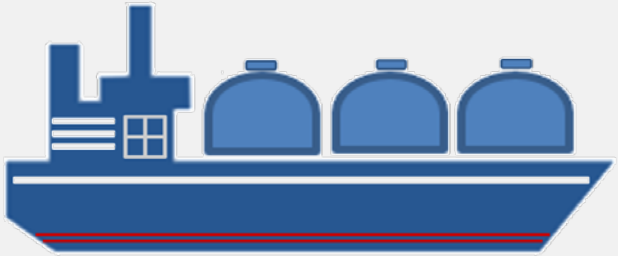
Hydrogen Energy Development (2/2)

Short-term

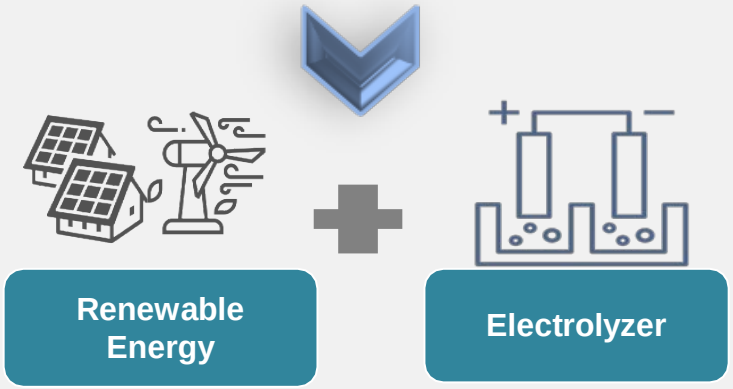
Middle-term

Long-term

Resource Side



Blue H_2 / Green H_2 Import

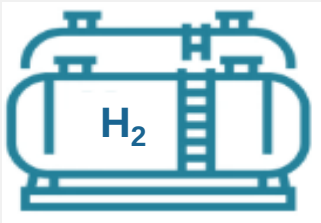


Self-Produced Green H_2
With sufficient renewable energy

Infrastructure Side

- **Infrastructure evaluation**
- **Demonstration site**

Large Scale Storage Infrastructure



Storage Tank

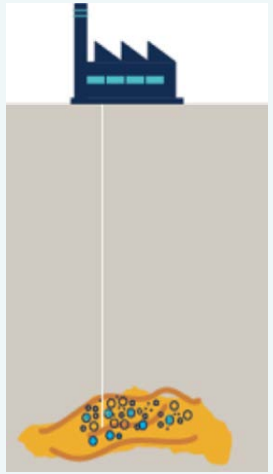
- **Infrastructure construction (LH_2 receiving station)**

Carbon Capture and Storage

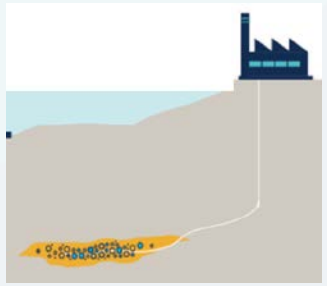
Short-term

Middle-term

Long-term



Onshore



Near-shore

Offshore

2023-2030 **Validation**

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

2030-2040 **Commercial Demonstrations**

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

2040-2050 **Commercial Deployment**

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

PART

05

Conclusion

- Confronting with the highly dependence on imported energy, a net zero transition plan **help boosts energy independence**.
- Energy transition is at the central of Net-zero transition, zero carbon strategies will focus on **development of renewables and innovative energy technologies** (e.g. ccs, hydrogen).
- We welcome **policy-sharing** of new and renewable energy in APEC region.

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Energy Administration,
Ministry of Economic Affairs

Thank you.

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