
Energy Efficiency Policy in Korea

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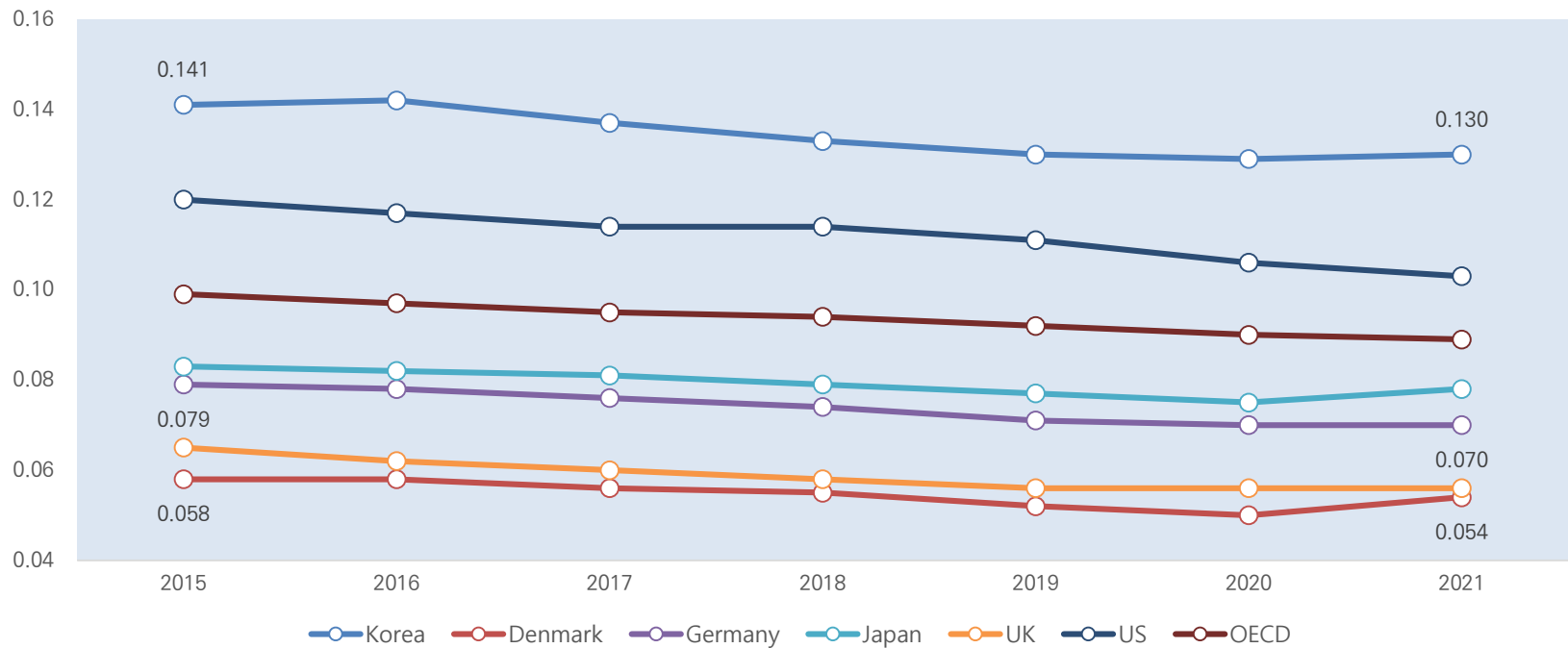


Energy Intensity

Energy intensity of Korea has been improved slowly compared to these countries because of large share of energy-intensive industries & rapid electrification

TPE/GDP(PPP), toe/2015 USD

Energy Intensity (2015~2021)



Source: IEA, World Energy Balance 2022



Energy Efficiency Indicators in 2019

- In Korea, most of indices are worse than those of the other countries.
- Efficiency of electricity consumption is one of the keys to reduce GHG emissions.

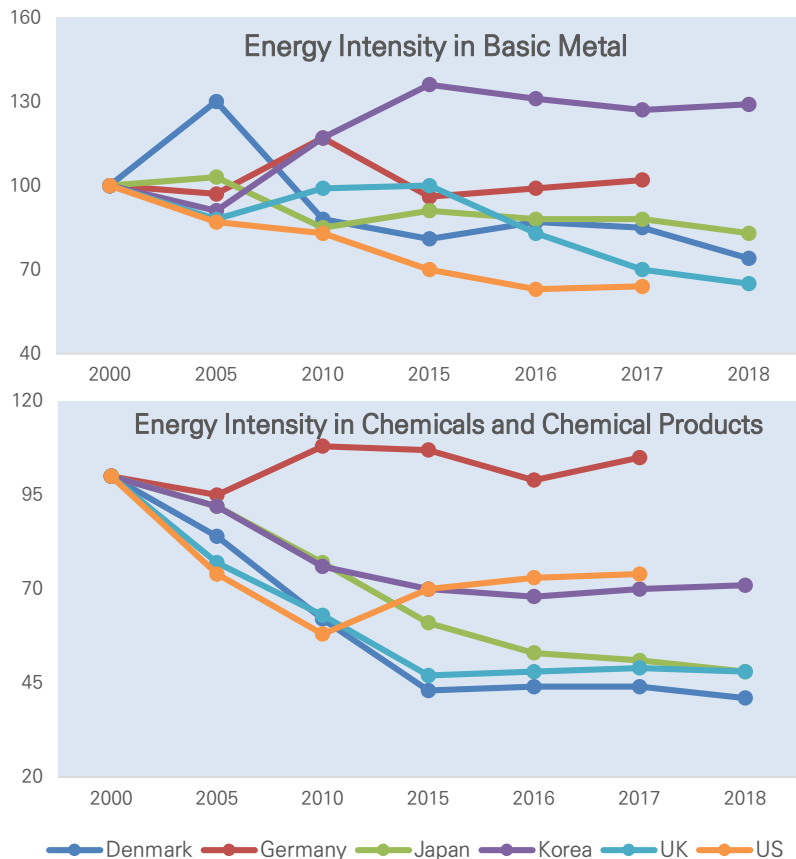
	TFC/GDP (toe/2015 USD, PPP)	TFC per capita (toe/capita)	Elec. Cons. per capita (kWh/capita)	Elec.Cons./TFEC (%)
Korea	0.084	3.52	10,878.00	24.76
Germany	0.053	2.67	6,606.10	19.37
Denmark	0.043	2.32	5,797.70	19.85
France	0.051	2.22	7,042.60	24.75
Japan	0.052	2.21	7,934.70	28.58
UK	0.043	1.91	4,749.90	19.95
US	0.080	4.84	12,743.80	20.73
OECD	0.065	2.79	7,773.10	21.96

Source: IEA, World Energy Balance 2022



Energy-Intensive Industries

The Korean economy has been highly dependent on manufacturing, especially energy-intensive industries, including basic metals and petrochemicals



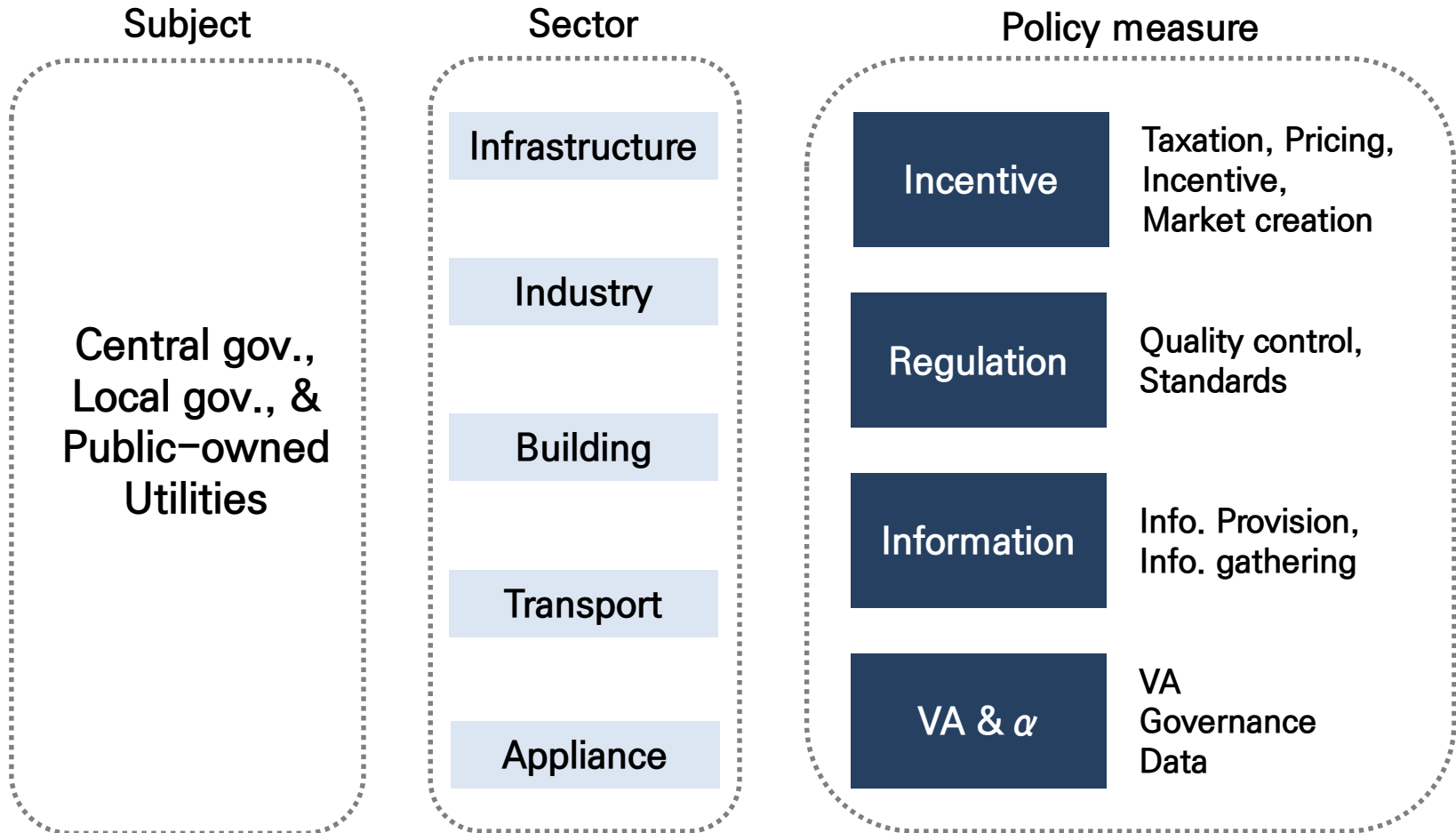
Source: IEA, Energy Efficiency Indicator

Country	Value added in manufacturing		Value added in energy-intensive industries	
	2000	2016	2000	2016
Australia	10.2%	6.2%	6.5%	3.8%
Canada	–	10.3%	–	3.7%
France	12.3%	11.4%	3.7%	3.4%
Germany	21.5%	23.1%	6.9%	6.4%
Italy	17.6%	16.3%	5.6%	4.9%
Japan	18.7%	20.4%	3.3%	3.4%
Korea	29.3%	28.8%	8.3%	8.1%
Netherlands	12.6%	12.0%	3.8%	4.0%
Norway	30.2%	33.6%	1.9%	1.5%
Poland	12.1%	20.0%	14.2%	7.7%
Spain	16.5%	12.4%	5.7%	4.1%
Sweden	18.3%	15.3%	4.2%	3.4%
Switzerland	18.2%	20.1%	3.7%	2.4%
UK	14.2%	10.2%	4.0%	2.6%
US	13.0%	11.9%	5.3%	4.2%

Source: OECD; Cho, Kim & Kim (2020)



Energy Efficiency Policy Structure





Infrastructure

Fund

- **Special Account for Energy and Resources:** EE accounts for about **50%** of budget plan for FY 2022
- **Electricity Industry Infrastructure Fund:** EE accounts for about **10%** of budget plan for FY 2022

Market

- Energy Efficiency Market Creation Program
- Demand Response Market (Negative DR, Plus DR)
- KEPCO Energy Market Place

Data

- Korea Green-Button Program
- Survey Data: Energy Census, House Energy Panel Survey (HEPS)
- National GHG Emission Total Information System (NETIS)

Utility

- Energy Efficiency Resource Standard (EERS)
- Electricity (KEPCO), Gas (KOGAS), Heat (KDHC)



Industry

Two-track strategy for large- and small-sized companies

Regulation

- **ETS**(Emission Trading System) for companies with GHG emissions of 125 kton or more
- **TMS**(Target Management System) for companies with GHG emissions of 50 kton or more
- Covers about **70%** of national total GHG emissions

KEEP 30 (VA)

- 30 firms that consume over 200 kTOE a year will sign an agreement with the government to set an energy use reduction goal
- Covers about 40% of national total final consumption

Financial Support

- Soft Loan for Energy Saving Facilities & Tax Incentives
- **ESCO**(Energy Service Company) Business
- Energy New Industry Financing

Consulting

- Mandatory Energy Audit & Consulting
- Korean **LEEN**(Local/Learning Energy Efficiency Networks)

Regulation & VA for large companies, Support for small companies

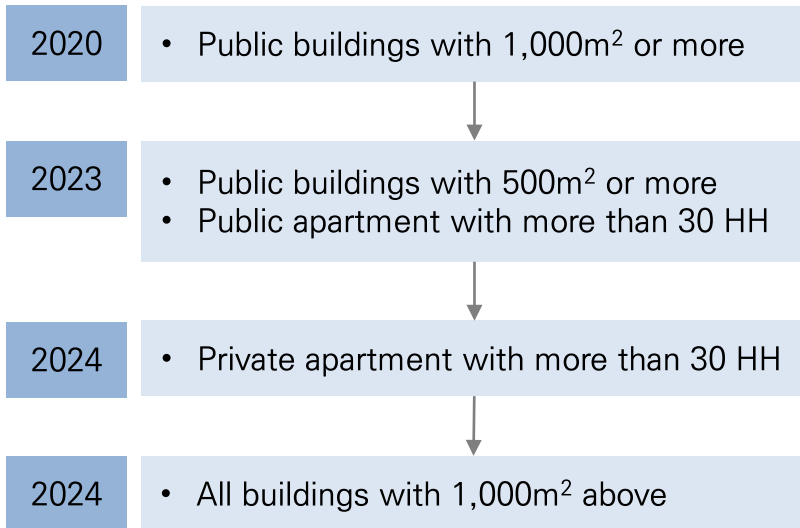


Building

Two-track strategy for new and existing buildings

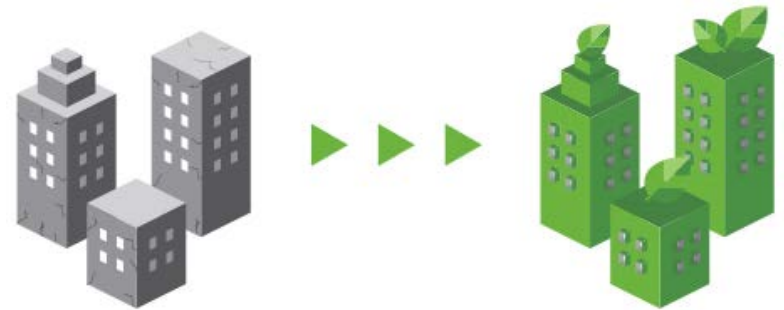
ZEB(Zero Energy Buildings) for new buildings

Mandates for new buildings to obtain ZEB certificates in stages



Green Remodeling for existing buildings

Incentivize to remodel existing buildings in an energy-efficiency ways



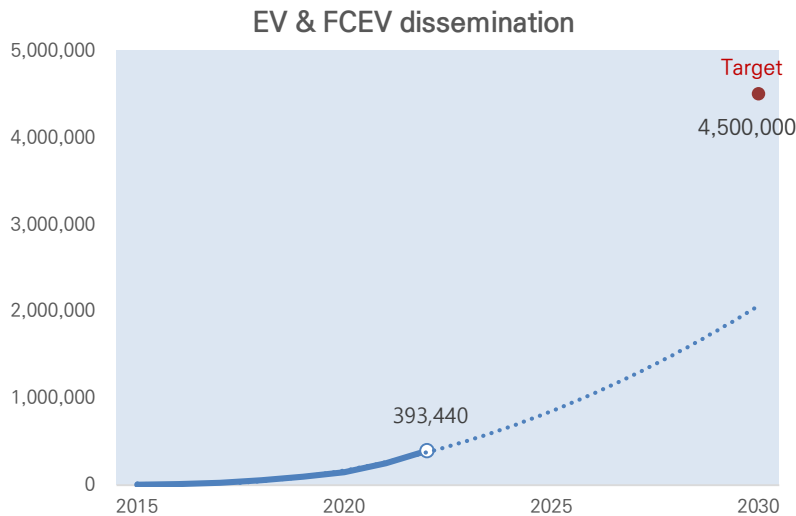
- Subsidizes green remodeling costs of public buildings for special use
- Give interest subsidies to green remodeling of private buildings



Transportation

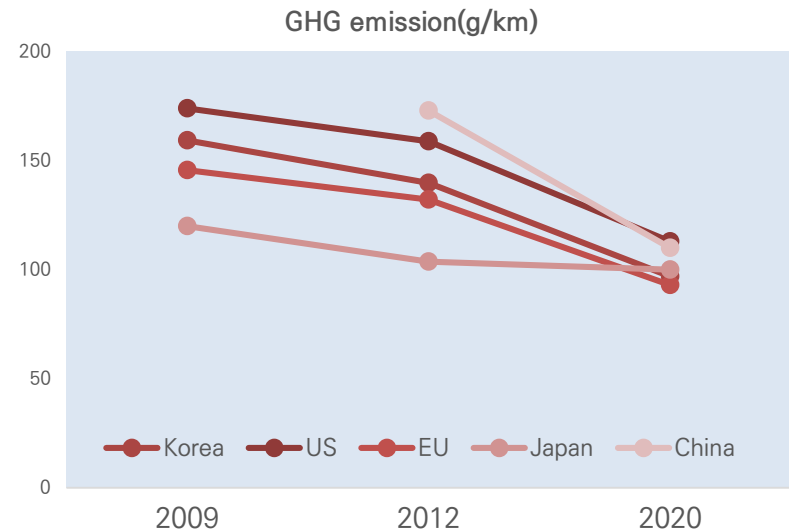
Eco-Friendly Vehicle Promotion

- Set a target of EV & FCEV dissemination
- Subsidizes EV & FCEV purchases
- Mandates EV & FCEV purchases in public sector



CAFE Reinforcement

- CAFE(Car Average Fuel Economy)
- Mandates for automobile makers to meet the average fuel efficiency

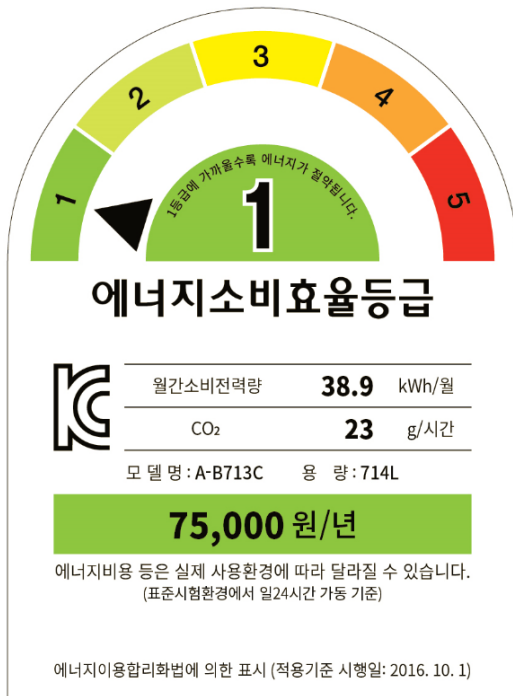




Appliance

Energy Efficiency Labeling and Standard

Mandatory EE rating of 19 items and MEPS(Minimum Energy Performance Standard) for 14 items



High-Efficiency Appliance Certificate

Voluntary certification of 23 items



e-Standby Power Program

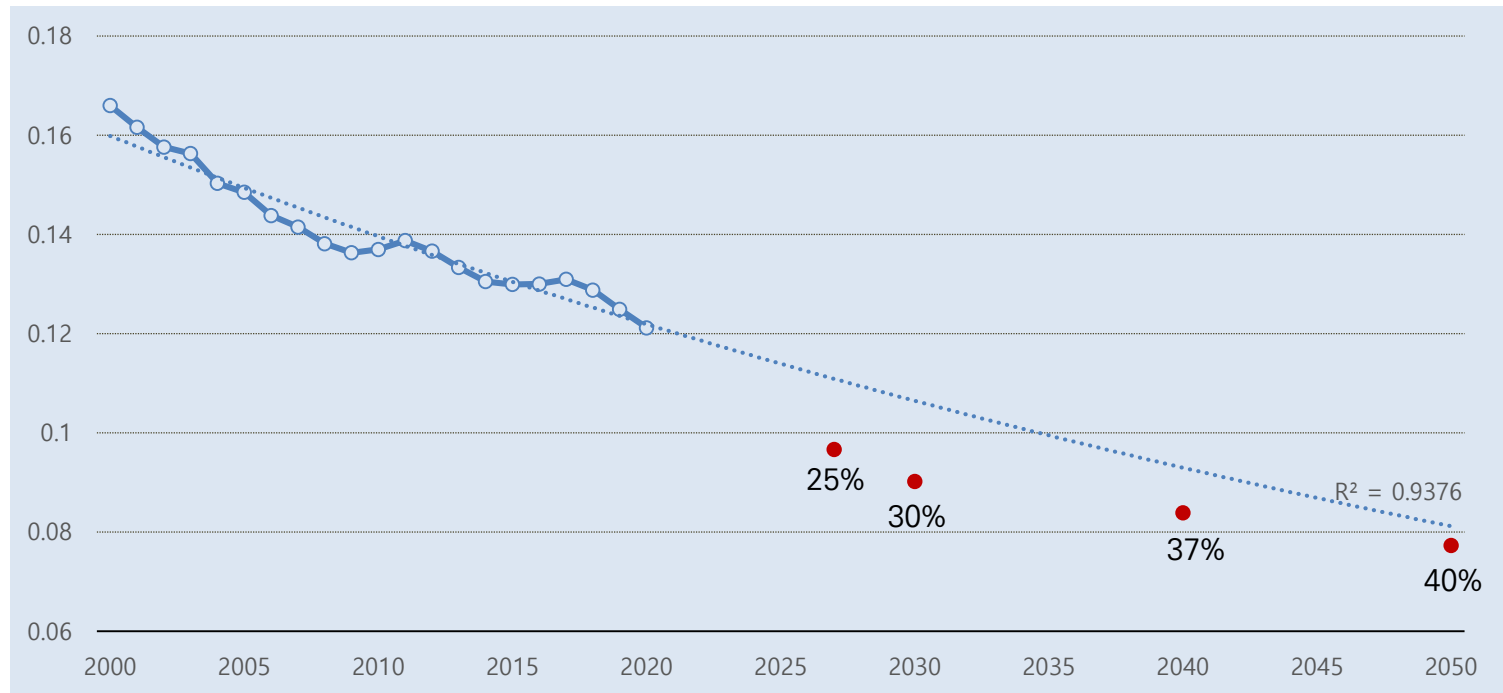
Warning of failing to meet the standard of standby power to 21 items





EE Target for 2030 NDC & 2050 Net-Zero

EE improvement: (2027) 25% → (2030) 30% → (2040) 37% → (2050) 40~45%



Keys: Energy Efficiency Technologies & Behavior Change



Three Elements for EE Improvement

01

TECHNOLOGY

- Ultra-high-efficient technologies
- R&D portfolio for electrification

02

DISSEMINATION

- Policy package including regulations, incentives, and information
- Scheduled electrification for reducing GHG emissions

03

BEHAVIOR

- Mechanisms for change energy consumption behavior
- Flexible demand for meeting the needs of energy system

Thank You.

Question?
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