

EGEEC 65 and EGNRET 63 Join Meeting Host Economy Presentation

19 November, 2025 | Korea Energy Agency



한국에너지공단
KOREA ENERGY AGENCY



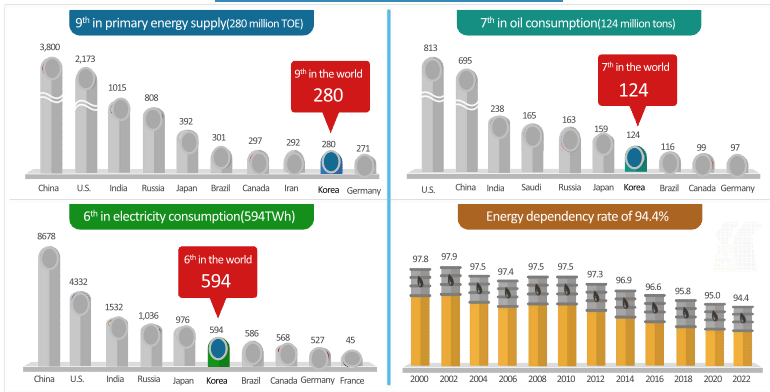
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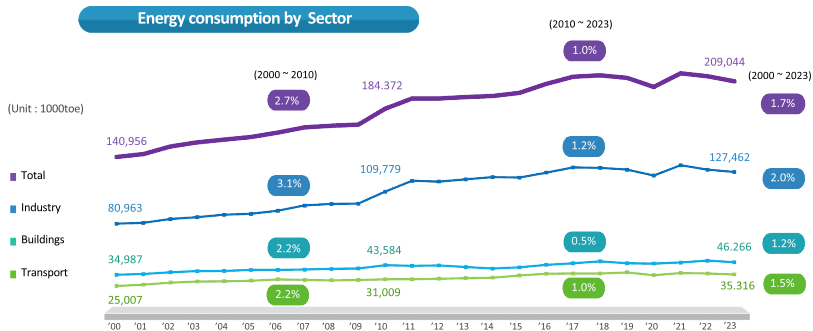
1. Energy Consumption Status in Korea

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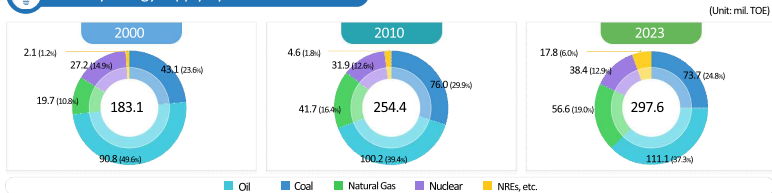
Korea's Rankings in Energy Consumption (2022)

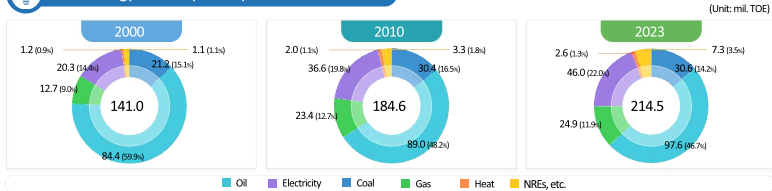


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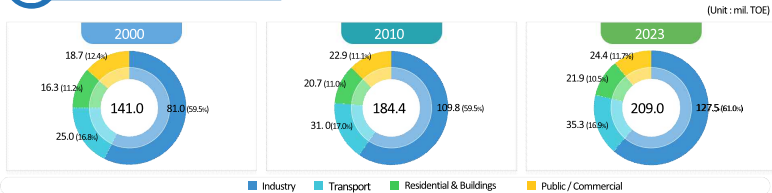

Primary energy supply by source


Final energy consumption by source


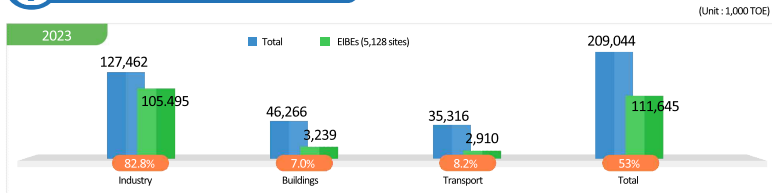
1. Energy Consumption Status in Korea



Energy consumption by sector



[Note] Energy-Intensive Business Entities



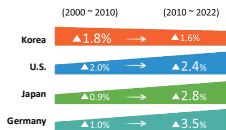
1. Energy Consumption Status in Korea

Trends in energy intensity of major countries

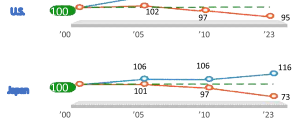
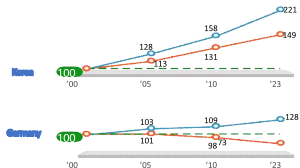


Average annual improvement (decrease) rate

(Unit: TES/GDP)



Trends in GDP and energy decoupling of major countries

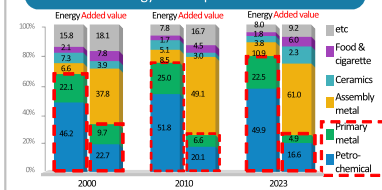
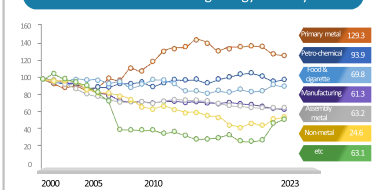
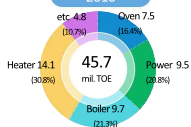
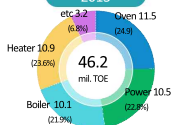
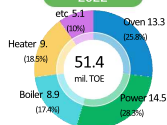


○ GDP
 ○ Energy

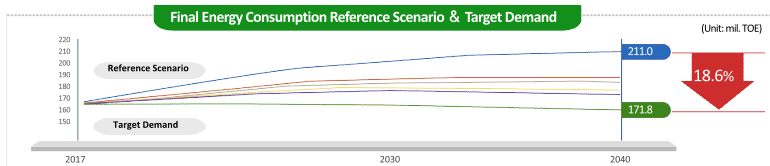
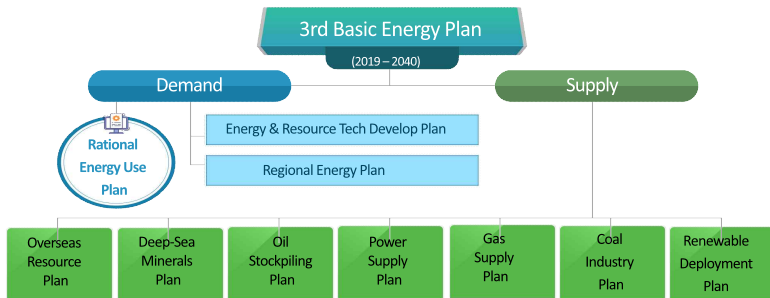
1. Energy Consumption Status in Korea


Industrial

Increased consumption by energy-intensive industries

Trends in energy consumption & added value

Trends in manufacturing energy intensity

2010

2013

2022


1. Energy Consumption Status in Korea



1. Energy Consumption Status in Korea



(2020 - 2024)

01

Expand efficiency investment & enhance local government's EE

02

Real-time monitoring & bottom-up demand management

03

Improve efficiency management system

Efficiency

☑ Boost efficiency investment

- ① Support promising energy-saving projects
- ② Create investment market via mandates
- ③ Strengthen energy service companies (ESCOs)

☑ Local government-led efficiency

- ④ Delegate audit & improvement authority to local govts
- ⑤ Support tailored improvements via local networks

Demand Mgmt

☑ Digitalize demand management with data

- ⑥ Foster new business with real-time data
- ⑦ Build data-driven policy feedback system

- ⑧ Advance strategic R&D using data
- ⑨ Expand citizen participation in demand management

System Reform

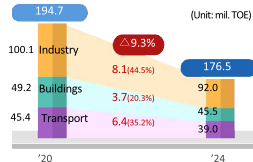
☑ Promote efficiency

- ⑩ Establish new value chain via appliance efficiency standards
- ⑪ Strengthen facility mgmt through energy-use plan system
- ⑫ Enhance demand mgmt in public institutions

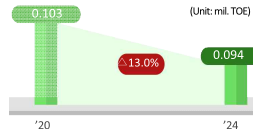


Energy Reduction Target

Energy consumption

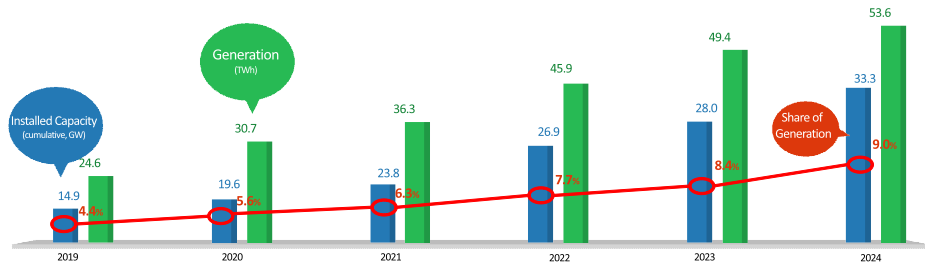


energy intensity



2. Changes in Korea's Renewable Energy Policy

2. Changes in Korea's Renewable Energy Policy



New Deployment by Renewable Source

Category	2019		2020		2021		2022		2023		2024		cumulative
Solar PV	3,375	88%	4,070	87%	3,946	94%	2,629	84%	2,797	91%	3,149	96%	27,096
Wind	92	2%	124	3%	72	2%	184	6%	258	8%	97	3%	2,248
Others	383	10%	486	10%	160	4%	326	10%	15	0%	31	1%	3,916
Total	3,850	100%	4,680	100%	4,178	100%	3,141	100%	3,070	100%	3,277	100%	33,260

2. Changes in Korea's Renewable Energy Policy

Renewable energy Share of Electricity Production (2023)

	Korea	USA	China	EU
Total renewable	7.8%	21.6%	30.1%	30.1%
Solar PV	63.1%	22.3%	20.5%	20.3%
Wind	7.2%	44.3%	31.2%	39.3%
Hydro	7.8%	25.6%	43.3%	27.1%
Bio	21.0%	5.4%	4.9%	12.4%
Others	0.9%	2.0%	0%	0.5%

* IRENASTAT Online Data Query Tool

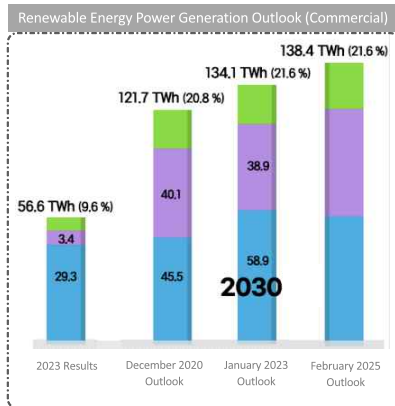
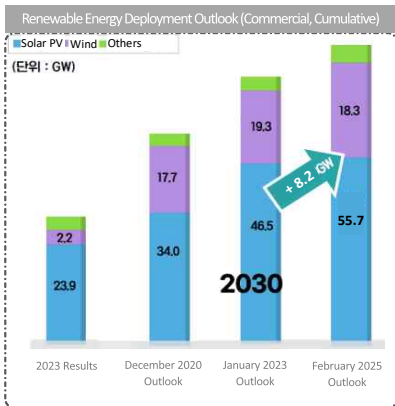
2. Changes in Korea's Renewable Energy Policy

		First (Feb. 2001)	Second (Dec. 2003)	Third (Dec. 2008)	Fourth (Sep. 2014)	Fifth (Dec. 2020)
Policy Period		2001~2003	2003~2012	2009~2030	2014~2030	2020~2034
Goal	Primary Energy Share	2% by 2003	5% by 2011	11% by 2011	14.3% by 2030	13.7% by 2034
	Electricity Share	-	7% by 2011	7.7% by 2030	21.6% by 2030	25.8% by 2034
Key Policies		Introduction of Renewable Energy Feed-in Tariff (FIT) (2002) Mandatory Installation for Public Institutions (2004)	Expansion of Government Solar Deployment (100,000 homes)	Renewable Portfolio Standard (RPS) Announced (2012)	Korea's FIT Introduction Announced (2017)	Establishment of Fixed-Price Long-Term Auctions Strengthening the Framework for Renewable Energy Use (RE100)
Significance of the Policies		First Plan with Proposals for New Schemes, including FIT	Mid-term Plan Proposing New Deployment and Infrastructure Programs	Linking Detailed Scenarios to the Master Plan Proposal for Strengthening Market Functions	Public-Private Partnership-Based Market Development Incorporation of Energy Transition Vision	Acceleration of Transition to a Low-Carbon Economy and Society

2. Changes in Korea's Renewable Energy Policy

Adjustment

Holistic Consideration of Potential, Grid, and Policy Factors → Upward Revision of Solar and Wind Deployment Outlook



2. Changes in Korea's Renewable Energy Policy

Goal	Long-term, structured RE expansion for carbon neutrality & energy security
Direction	Gov't-led deployment, stronger industry competitiveness, improved market system

1	Build robust offshore wind ecosystem	<ul style="list-style-type: none"> Planned offshore wind rollout led by gov't Strengthen competitiveness across supply chain Ensure stable operation of offshore wind farms
2	Orderly solar PV expansion	<ul style="list-style-type: none"> Strategic deployment by site type (industrial, farmland, etc.) Grid-aware, orderly new capacity entry Support for stable supply chains & technology
3	Market system transition for new era	<ul style="list-style-type: none"> RPS reform for structured, gov't-led deployment Promote PPAs & voluntary RE market
4	Support overseas market entry	<ul style="list-style-type: none"> One-stop support (tentative RE Overseas Council) G2G cooperation: top-down development & phased support

2. Changes in Korea's Renewable Energy Policy

Objectives

Boosting Renewable Industry Competitiveness via Expansion and Reform

Establishing Balanced Regional Growth through Solar · Wind Expansion, and RE100 Industrial Zones

Expanding Renewable Energy

1. Updating and Executing 2030 Renewables Target Roadmap (78GW)

- Fast-tracking Wind Farm Deployment via Site Discovery and Permitting
- Diversifying Solar Sites across Industrial · Agrivoltaic · Public Land, Municipal Properties
- Diversifying Renewables with Tidal and Ocean Thermal; Coal Phase-Out by 2040

Improving Renewable Energy Policies

1. Gradually Transitioning Renewable Deployment into Contract Markets

2. Streamlining Permitting Processes

- Government-Led Site Planning with Streamlined Permitting and Assessment Reforms

3. Pursuing Regulatory Reforms Including Setback Relaxation · Elimination

Enhancing Industrial Competitiveness

1. Accelerating Next-Gen Solar Commercialization

2. Developing Offshore Wind Turbine

Components and Technologies

3. Built Installation Vessels and Dedicated Ports

Regional Co-Benefits

1. Boosting Local Income via Solar · Wind Dividends and Energy Independence

- Enhancing Public Acceptance by Fostering One-Stop Renewable Service Companies

RE100 Industrial Complex

1. Creating Localized RE100 Zones in Renewable-Rich Areas

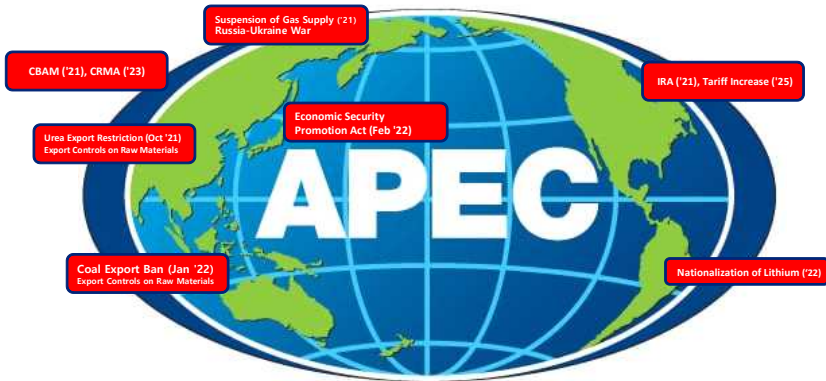
- Introducing Special Act with Innovative Incentives
- Promoting Distributed Models and Renewable Pricing to Attract Businesses
- Enhancing Livability and Infrastructure to Attract Investment and Talent

Expected Outcomes

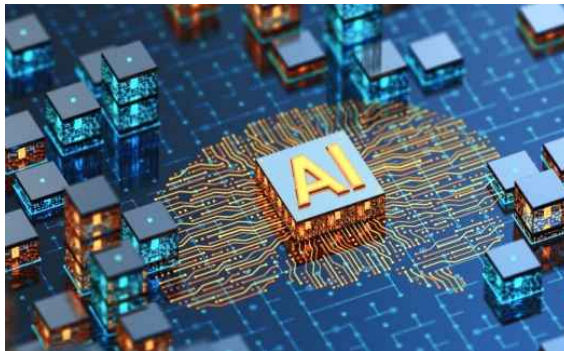
- Strengthening Energy Security and Exporting Renewables through Energy Transition
- Developing RE100 Complexes as Regional Growth Hubs and Enhancing Competitiveness of High-Tech Firms

3. Global Trends in Energy

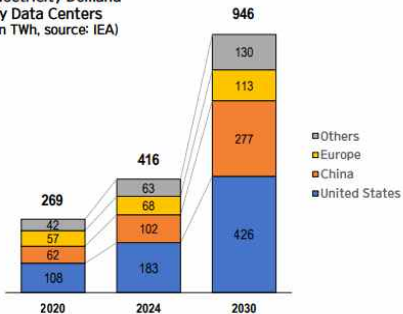
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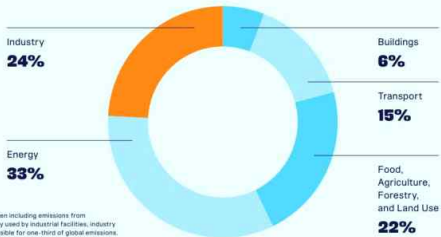
Electricity Demand
by Data Centers
(in TWh, source: IEA)



3. Global Trends in Energy

Greenhouse Gas Sources

Emissions from industry contribute about one-quarter of total global emissions, and are projected to increase significantly without intervention.



Note: When including emissions from electricity used by industrial facilities, industry is responsible for one-third of global emissions.

Electricity used by the buildings and industry sectors are included in the energy sector.

Source: Intergovernmental Panel on Climate Change Sixth Assessment Report, Climate Change 2022: Mitigation of Climate Change



3. Global Trends in Energy



Thank you

