



Carbon Neutrality by 2050 in Korea

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Content



1. Korea's National GHGs Reduction Targets
2. Green New Deal & Carbon Neutral Society by 2050
3. Tasks Ahead



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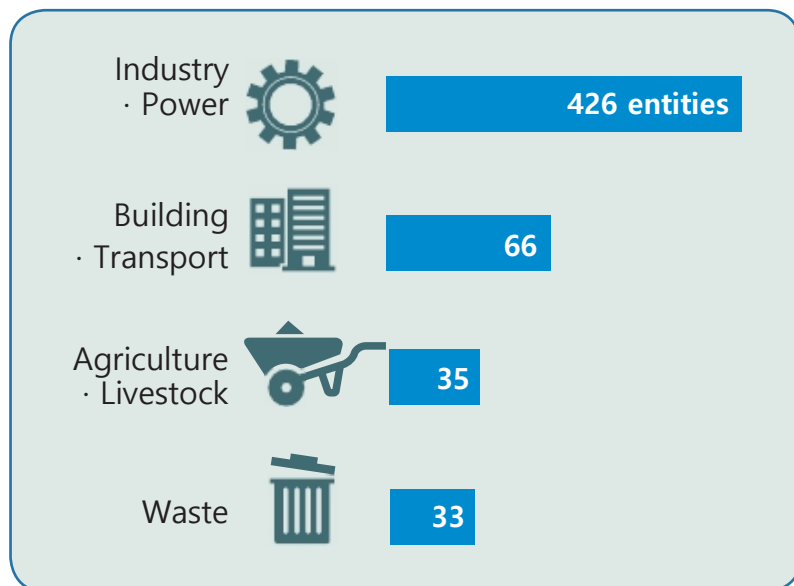


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Implementation of GHGs Policies in Korea

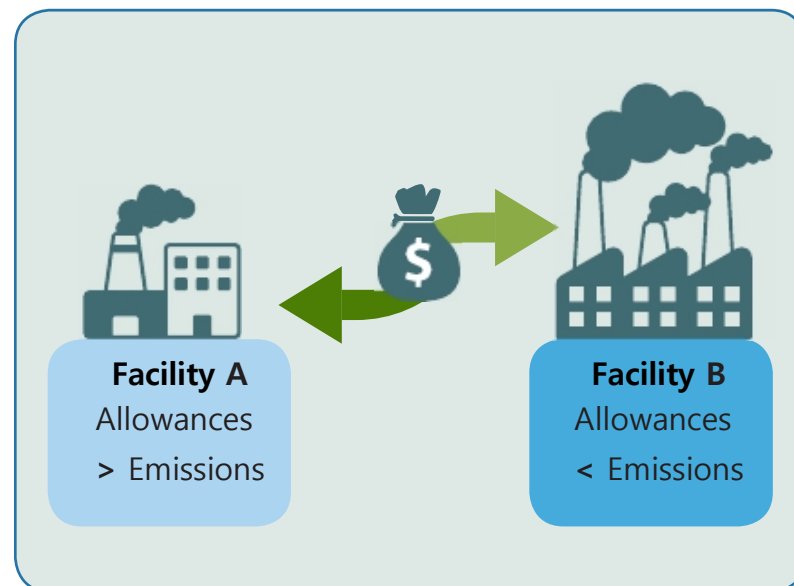
Target Management Scheme(2012~)

- Large GHG emitting & Energy consuming firms are imposed GHG reduction & energy conservation targets since 2012
- 560 controlled entities are subject to reduction as of 2014 (excluding firms subject to ETS)



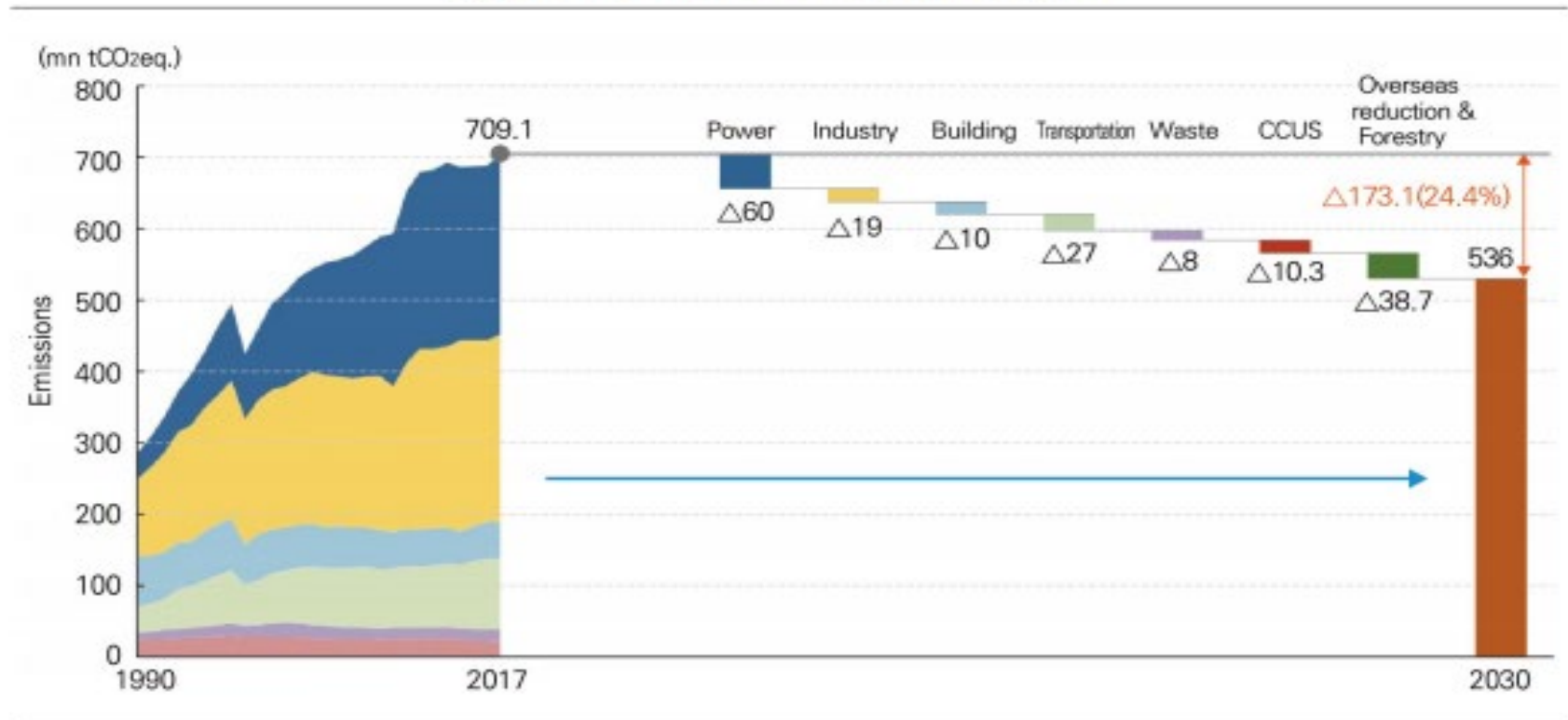
Emission Trading Scheme(2015~)

- Market-base policy to achieve GHG reduction targets through trading emission permits allocated.
- 525 companies in Emission trading Scheme in the Phase 1 period ('15~'17)



NDC of Korea by 2030

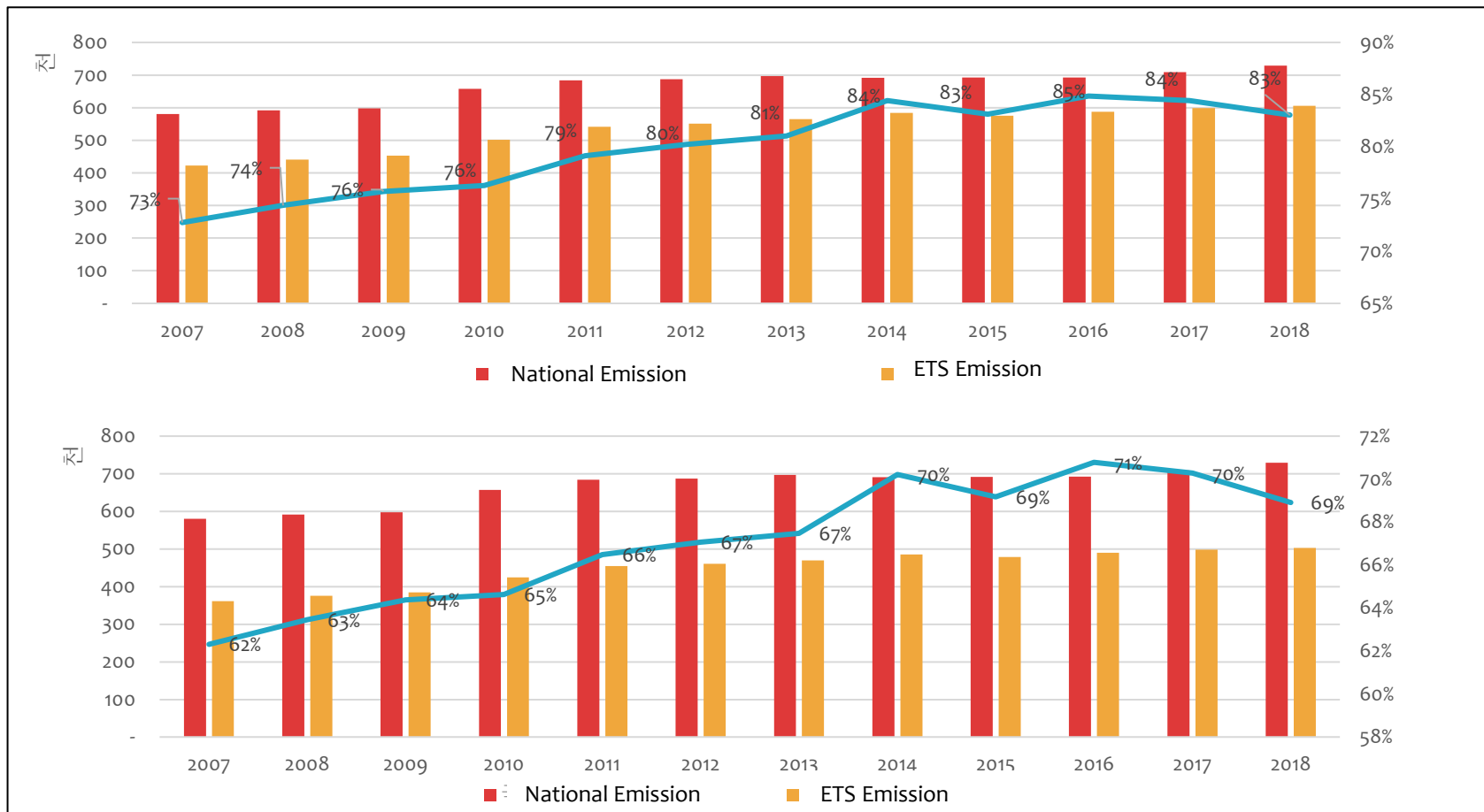
[Figure 2-3] 2030 GHG reduction targets²²⁾



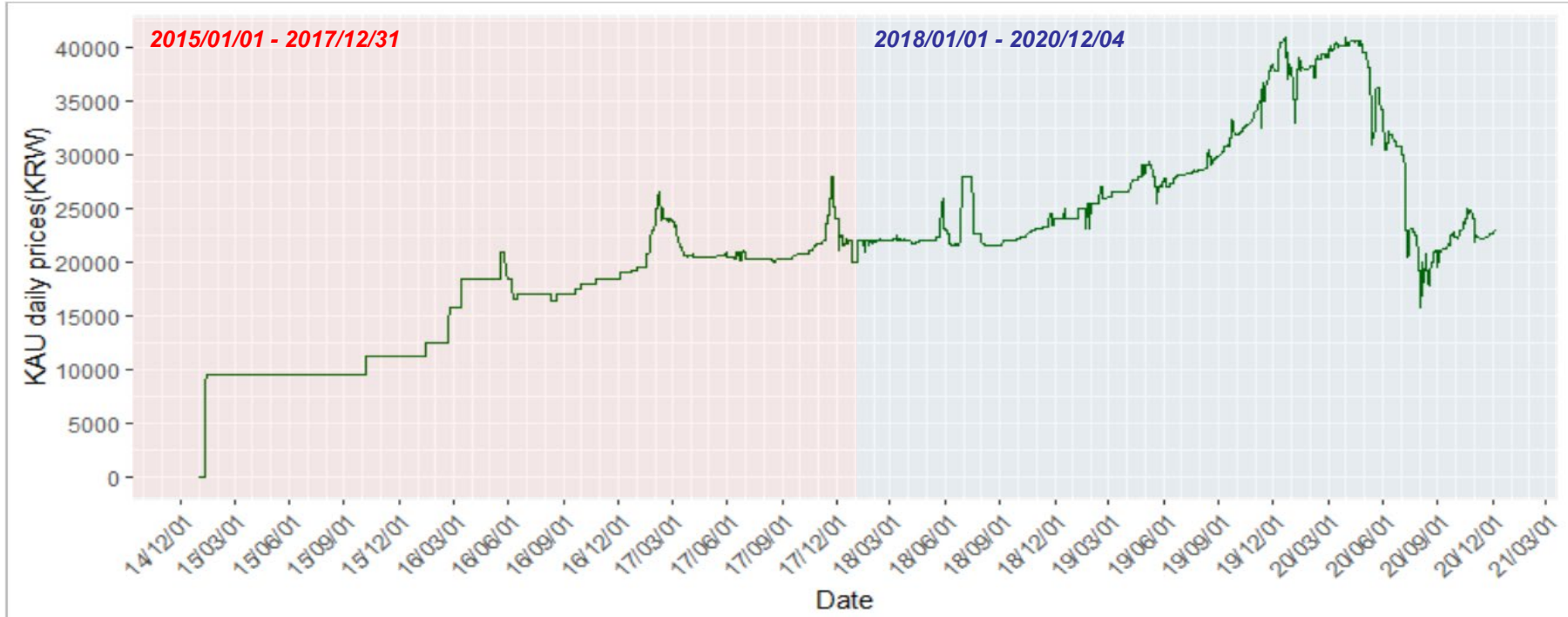
Source: The Government of the Republic of Korea, 2050 Carbon Neutral strategy, p.35, 2020.12.

Ratio of GHGs Emission controlled by ETS to National Emissions

Indirect Emissions Double Counted vs. Only Direct Emissions



Daily Permit Prices (1/2015~12/2020)

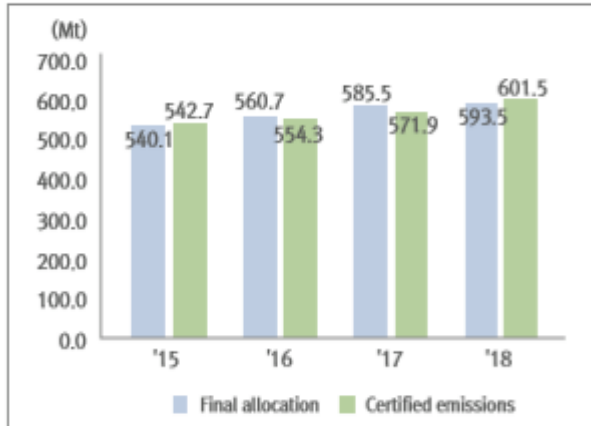


▶ Regulations in K-ETS

- ▶ Submission of Inventory Report by March 31st
- ▶ Surrender of Permits by June 30th

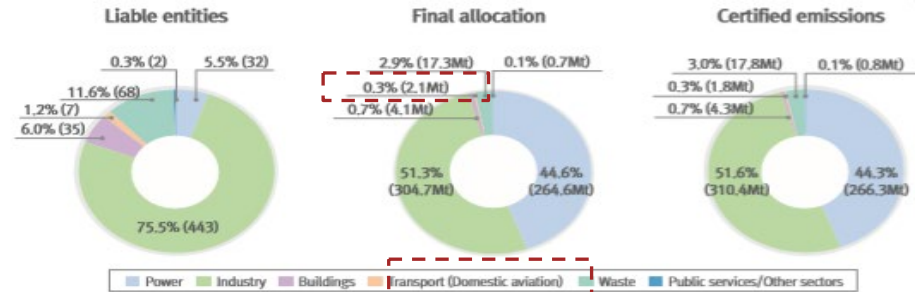
Summary of 2nd ETS Phase ('18)

〈 Final allocation and certified emissions by year 〉



GIR(2020) K-ETS Summary Report, p.07

Distribution by sector



Compliance results

2015	2016	2017	2018
99.8%(521/522 liable entities)	100%(560/560 liable entities)	99.7%(589/591 liable entities)	99.8%(585/586 liable entities)

GIR(2020) K-ETS Summary Report, p.12

Trading market performance





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Green New Deal in Korea

Green New Deal



Low Carbon ·
Environmental Friendly
Change



Drastic
Investment and Reform

**Concurrent Overcome both
Climate · Ecological Crisis and Economic Crisis**

Green New Deal in Korea

03. 8 Projects in 3 Fields



1 Green Transition of Infrastructures

- Pro. 1** Turning Public Facilities into Zero-Energy Buildings
- Pro. 2** Restoring the Terrestrial, Marine and Urban Ecosystems
- Pro. 3** Building a Management System for Clean and Safe Water

2 Low-carbon and Decentralized Energy Supply

- Pro. 4** Building a Smart Grid for more Efficient Energy Management
- Pro. 5** Promoting Renewable Energy Use and Supporting a Fair transition
- Pro. 6** Expanding the Supply of Electric and Hydrogen Vehicles

3 Innovation in the Green Industry

- Pro. 7** Fostering Promising Green Companies and Low-Carbon, Green Industrial Complexes
- Pro. 8** Creating Foundation for Green Innovation Including R&D, Green Finance, etc.



Korea's 2050 Vision



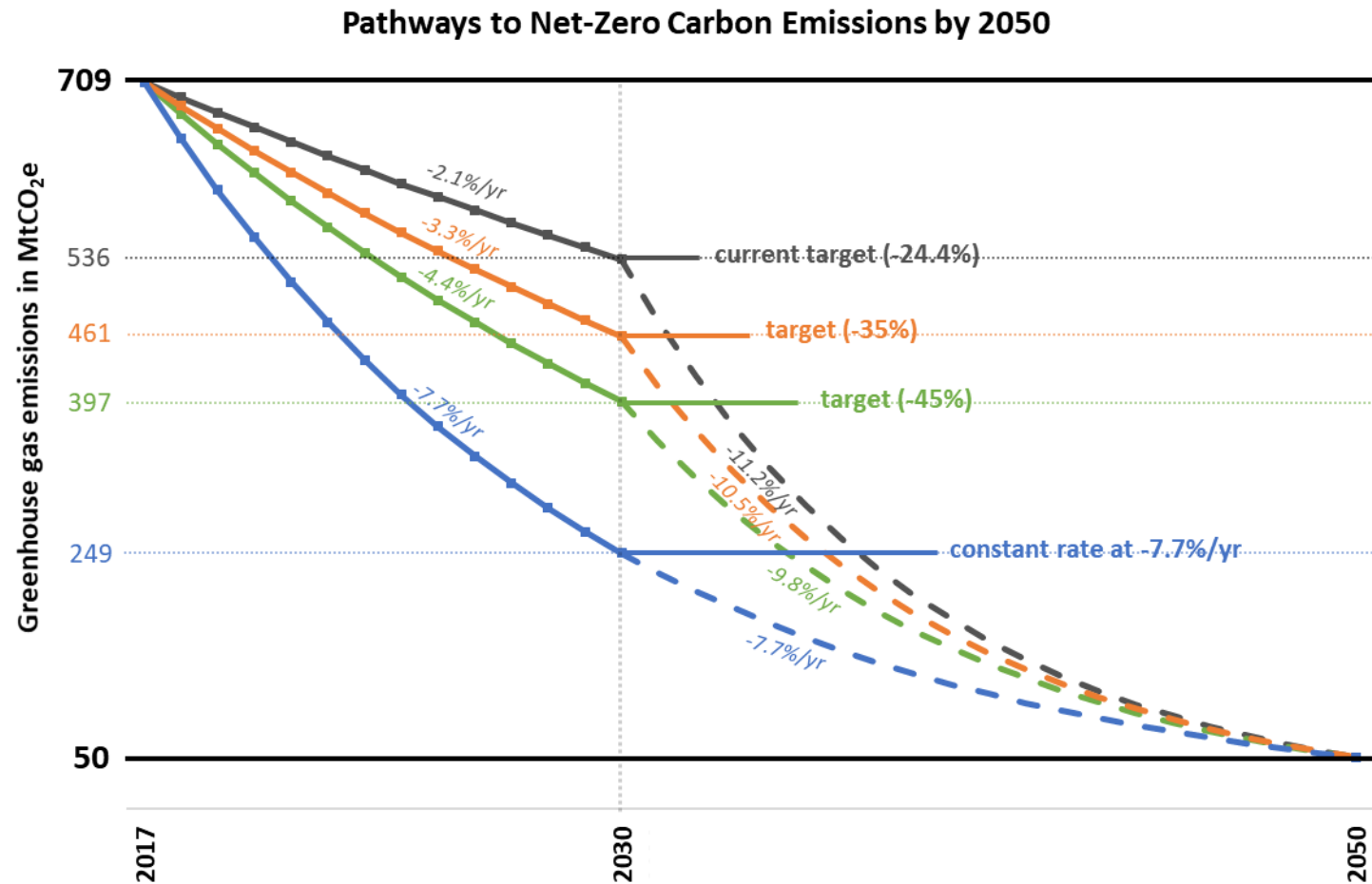
VISION

The Republic of Korea moves **towards the goal of carbon neutrality by 2050**. The **Korean New Deal** will serve as a stepping stone to reach carbon neutrality by 2050. Korea will harness **green innovations and advanced digital technologies** to create synergies between the **Green New Deal** and **the Digital New Deal**, the two pillars of **the Korean New Deal**. Korea will also take decisive action especially in supporting and investing in the development of **innovative climate technologies** to achieve carbon neutrality by 2050. Tackling climate change requires global efforts and collective engagement. **Korea will lead by example to help the international community** jointly make efforts to reach carbon neutrality by 2050.

KEY ELEMENTS

- [Key element 1](#): Expanding the use of clean power and hydrogen across all sectors
- [Key element 2](#): Improving energy efficiency to a significant level
- [Key element 3](#): Commercial deployment of carbon removal and other future technologies
- [Key element 4](#): Scaling up the circular economy to improve industrial sustainability
- [Key element 5](#): Enhancing carbon sinks

Scenario Development to 2050 Net Zero





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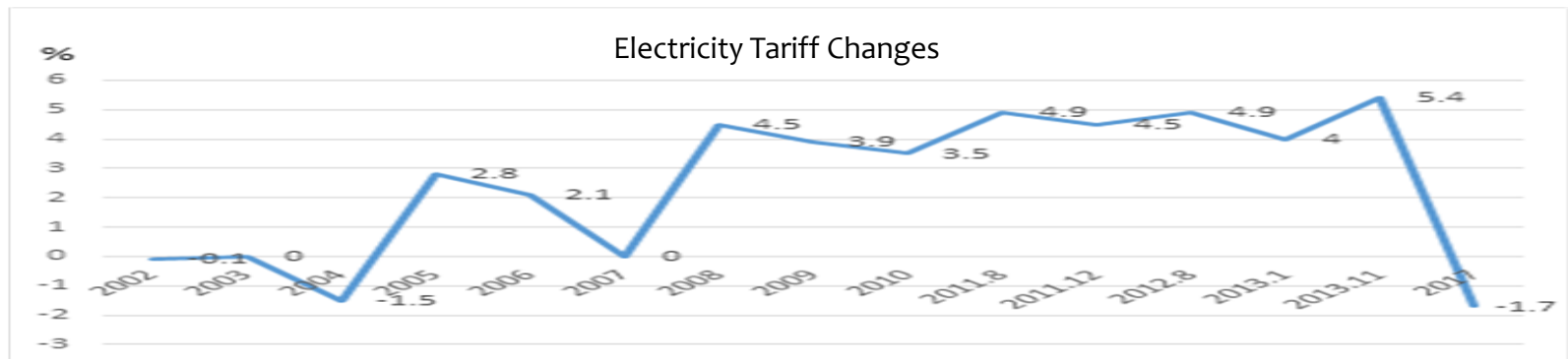
Policy Innovations



- Regular Systematic Assessment of Implementation
- Institutional Arrangement
 - Consistency among Policies and Plans
 - Considering Climate Change Impact in Policymaking
 - Foundations for Energy Transition
- Carbon Pricing
 - ETS : Key Policy
 - Increasing share of allowance auctioned and of application of Benchmark
 - Taxation and Charges

Electricity Tariffs

- Adjustments to electricity prices since 2002 : annual average increase in electricity prices is 2~5% since 2004, in which oil prices skyrocketed
 - Comparison b/t the changes in electricity prices and inflation rates : During 1982~2015, inflation rates and electricity prices increased respectively by 273% and 49.4%
 - Acceleration of electrification on account of low electricity prices
 - According to Park(2017), electricity prices for residential units are only 60-80% of the fuel prices (Low compared with OECD(140~210%) and Japan(230~320%))



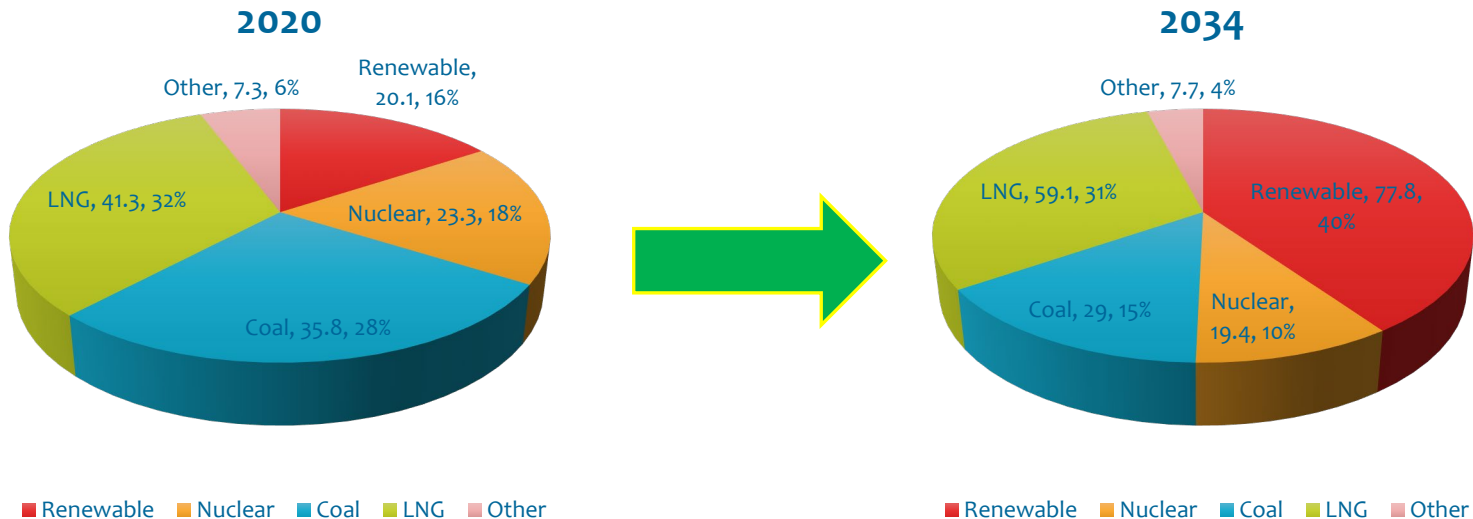
자료 출처: <http://cyber.kepco.co.kr/ckepco/front/jsp/CY/H/C/CYHCHP00105.jsp>

Power Sector

(9th Basic Plan for Electricity Supply and Demand)

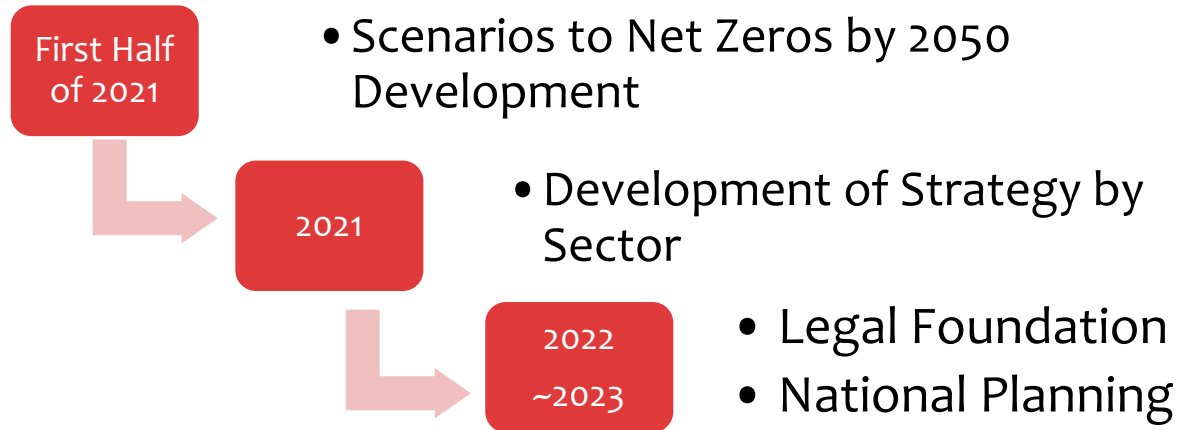
- Significant Increase in Share of Renewables
 - Photovoltaic (45.6GW), wind power (24.9GW) in 2034
- Decrease in number of Coal Generators from 58 to 37
- Increase in LNG Generators from 41.3GW to 58.1GW
- Decrease in Nuclear Generators from 23.3GW to 19.4GW

Installed Capacity in GW by Fuel Type



Follow ups

National Emission Scenarios For 2050 Net Zero



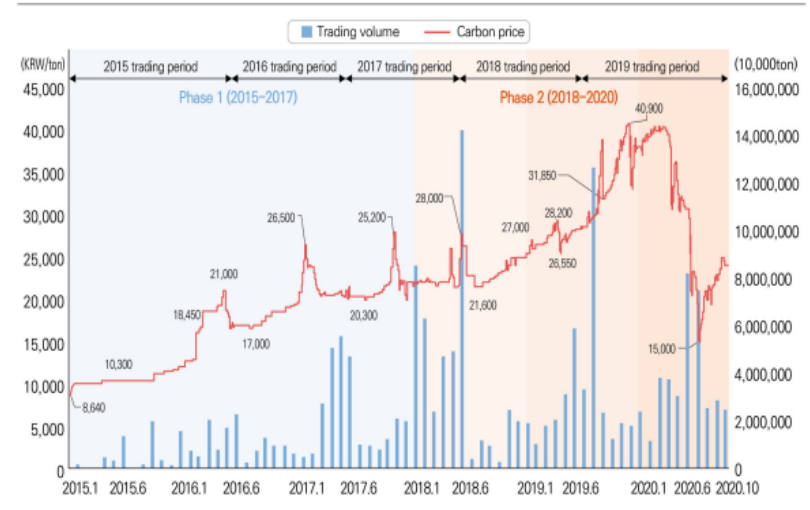
Carbon Cost in Power Generation

- Two Issues addressed
 - Fuel Switching in Power Generation : Next 1~2 yrs regulations will be introduced to include carbon cost in marginal cost of electricity generation to switch to low carbon fuel.
 - Pass through of Carbon Price to Retail Prices : full pass through of fuel cost (including carbon cost) to tariff Introduced in 2021

Follow ups

K-ETS as Principal Policy to 2050 Net Zero

- Stringent Emission Cap → Significant Increase in Allowance Prices
 - Adjustment of Penalty (\$90/ton) for the non-compliances
- Carbon Tax on Non-ETS Sectors/ Sources such as Transportation Fuels
 - Signals from Allowance Prices



To Have Low Allowance Prices in Market

- Early de-carbonisation in Electricity Power Generation
 - Lowering demand for allowances from the power sector
 - From Economic Merit Order to Environment Cost Reflected (internalized) Economic Merit Order and Full Pass Through to Retail Prices
- Accelerated Development and Deployment of Low Carbon Technology
 - R&D and Infrastructure Investment through Green New Deal



Thank You for Attentions!!

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