

Options to Reduce GHG Emissions in Transportation Sector of Korea

The Korea Transport Institute

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CONTENTS

- I Comprehensive Plan on Reducing GHG**
- II Importance of Transportation Sector**
- III Characteristics of Transportation Sector**
- IV Transportation Policy Measures**
- V Key Measures and Challenges/Opportunities**

Comprehensive Plan on Combating Climate Change

Policy Direction

- **Low-Carbon, Green Growth**, the nation's vision
 - Developing climate industry as a new economic driving force (111 trillion KRW (100 billion US\$) will be invested for renewable energy, 5 trillion KRW for R&D in climate change mitigation)
 - Improving quality of life and the environment
 - Contributing to Global Efforts to Combat Climate Change

Comprehensive Plan on Combating Climate Change

Action Plan

- **Developing Climate Industry as a New Economic Driving Force**
 - Improving energy efficiency in the industrial sector
 - Expending R&D investment in green technologies
 - Fostering climate industry

Comprehensive Plan on Combating Climate Change

Action Plan

- Improving Quality of Life and the Environment
 - Enhancing quality of life
 - Green life-style change
 - Enhancing adaption
 - Enhancing awareness and changing patterns
 - Scientific monitoring and prediction

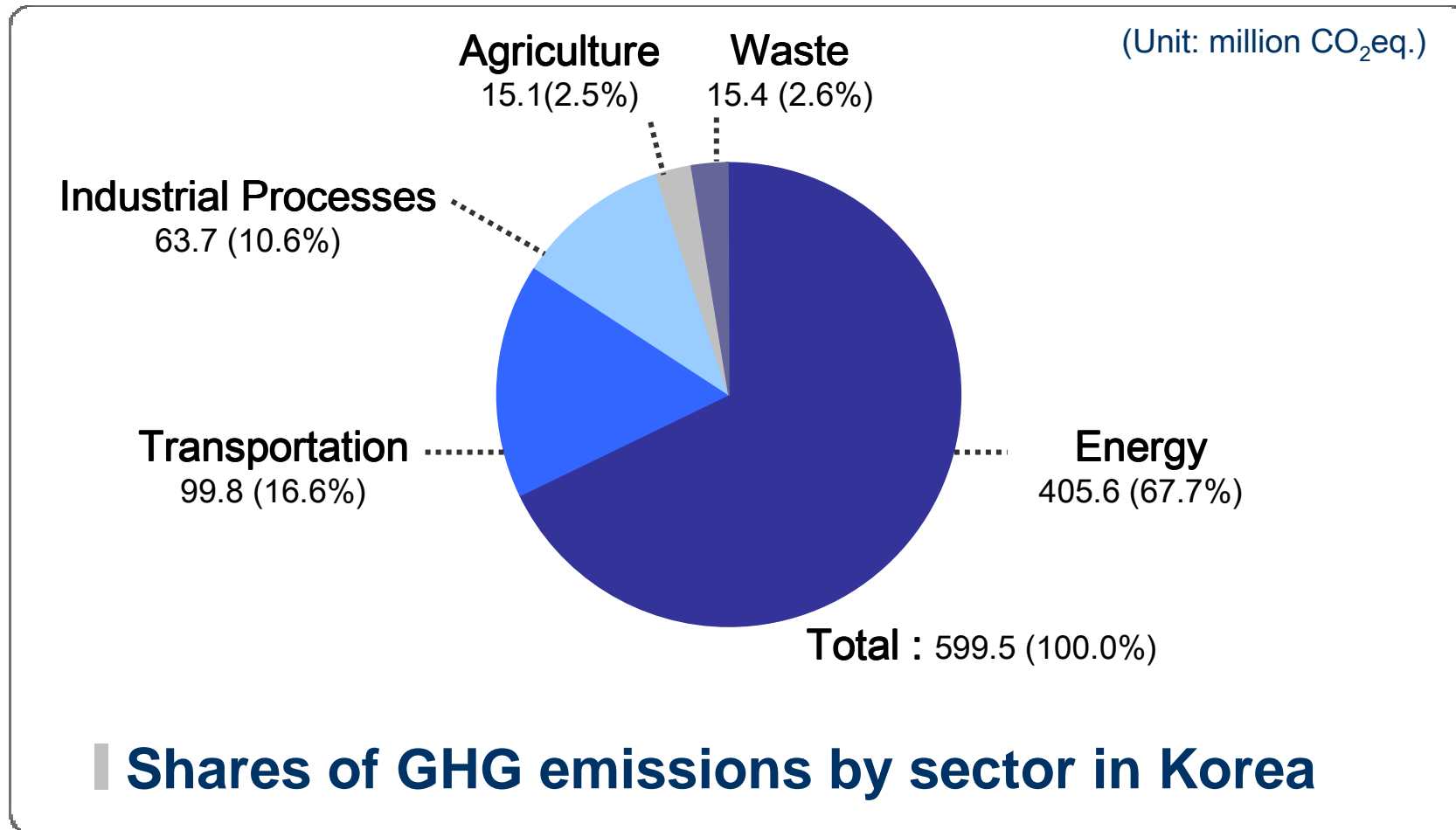
Comprehensive Plan on Combating Climate Change

Action Plan

- Contributing to Global Efforts to Combat Climate Change
 - Setting a mid-term mitigation goal
 - Contributing to post-2012 negotiations
 - Active developing country assistance and international cooperation

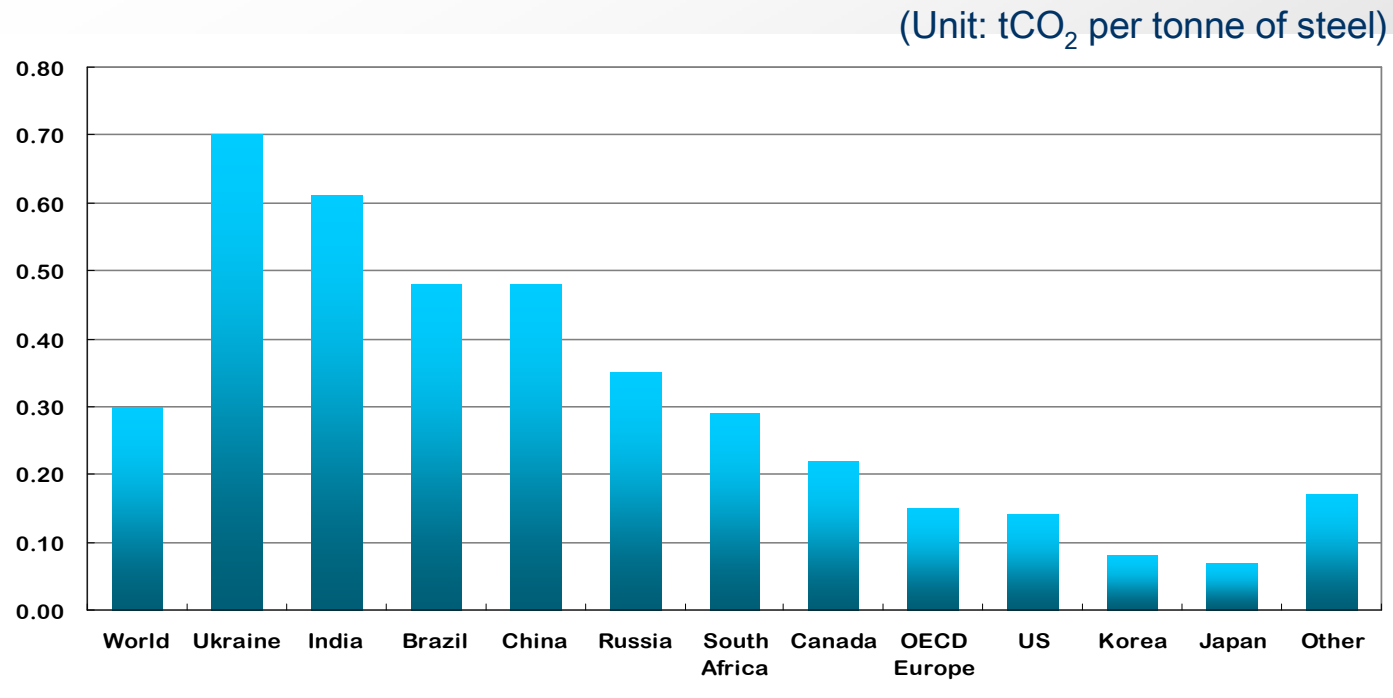
Importance of Transportation Sector in Reducing GHG

Weight of Transportation sector



Importance of Transportation Sector in Reducing GHG

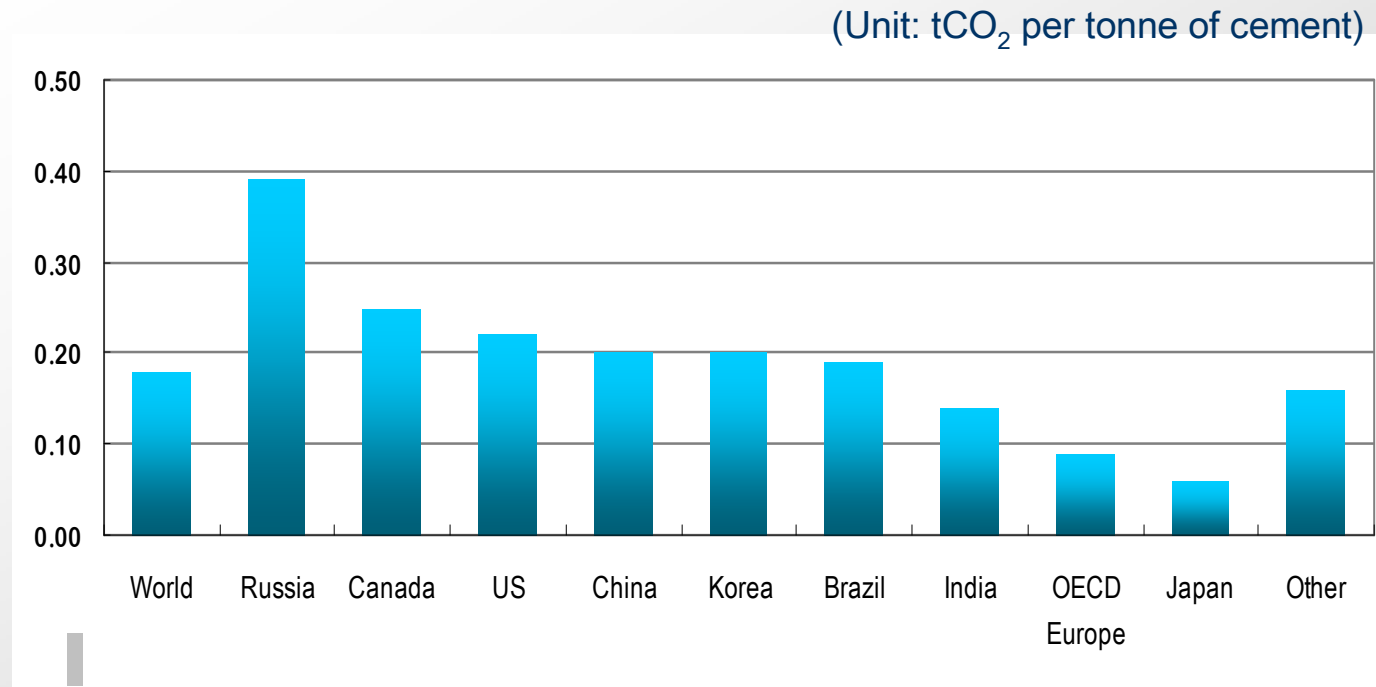
Limited Reduction Potentials of Industrial Sector



CO₂ Reduction Potentials in Iron and Steel in 2005,
Based on Best Available Technology

Importance of Transportation Sector in Reducing GHG

Limited Reduction Potentials of Industrial Sector



CO₂ Reduction Potentials in Cement in 2005,
Based on Best Available Technology

Characteristics of Transportation Sector

Characteristics of Reduction Potentials

- Characteristics of Reduction Potentials of Transportation Sector
 - Abundant, based on present technology
 - Very difficult to realize the potentials
 - Closely related with human behavior
 - Very difficult to change human behavior

Characteristics of Transportation Sector

Types of Reduction Measures in Transportation Sector

- Vehicle Improvement (low or no emission vehicles, all kinds of technology options related with vehicle)
- Demand Management
 - Demand reduction (telecommuting, video conference, urban planning, weekly car-free day, etc.)
 - Mode Shift (car → public transit, bicycle, walking)
- Operational Efficiency Improvement (reducing congestion, transportation facility improvement)
- Fuel Improvement (diesel→ CNG, electricity, bio-fuel, etc.)

Characteristics of Policy Measures by Type

Vehicle Improvement

- Importance
 - Biggest reduction potentials
 - Industrial competitiveness is important
- Major Policy Measures
 - R&D investment, Taxation, Subsidy, Fuel price and fee regulation
- Korean Condition
 - Relatively easy to implement
 - Being dealt with more importantly by the motor industry sector

Characteristics of Policy Measures by Type

Demand Reduction

- Importance
 - Relatively small reduction potentials
 - Requiring behavioral change
- Major Policy Measures
 - Transit oriented urban planning
 - Promotion of tele-commuting
- Korean Condition
 - Difficulties caused by cultural characteristics
 - Newtown boom has already passed

Characteristics of Policy Measures by Type

Mode Shift

- Importance

- Big potential, Most important in transportation sector
- Requiring behavioral change

- Major Policy Measures

- **Congestion charge**, Fare and toll regulation, Taxation
- Promotion of public transit including **railroad expansion**
- **Promotion of bicycle**

- Korean Condition

- Same difficulties as in other countries related with behavioral change
- **Strong Will of the Government** will help to resolve those difficulties

Characteristics of Policy Measures by Type

Operational Efficiency Improvement

- Importance
 - Big potential, Important in transportation sector
 - Requiring behavioral change in some area
- Major Policy Measures
 - **Bus Rapid Transit, Improvement of connecting and congested facilities**
 - **Promotion of small displacement engined car**
- Korean Condition
 - Same difficulties as in other countries related with behavioral change
 - Strong preference for large displacement engined car

Characteristics of Policy Measures by Type

Fuel Improvement

- Importance
 - Big potential
 - Requiring infrastructure such as fuel station
- Major Policy Measures
 - Regulation of fuel price, Taxation, Subsidy
- Korean Condition
 - Korea imports all of oil, and produces only few biomass
 - Relatively low potential

Key Policy Measures of Korea in Transportation Sector



Congestion Charge



Promotion of Bicycle: share 1.2%→15% by 2020



Railroad Expansion: mode share 8.7%→15% by 2020



BRT Expansion and Improvement of Connecting Facilities:
1,000km of new BRT by 2020



Promotion of small displacement engined car

Challenges and Opportunities in Korea's Transportation Sector

Challenges

- Difficulties in changing human behavior and preference
- Barrier between organizations

Opportunities

- High population density, Advanced IT technology
- Strong Will of the Government

Conclusion

- Changing human behavior and preference is the most important difficulty
 - Technological and financial difficulties are not so serious in Korea's transportation sector
- Strong will of the government will overcome the difficulties and realize the vision
 - Sufficient and persistent investment
 - Advantage to green modes and much bigger disadvantage to car than before



Thank you

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