

# Multilateral and Trilateral Cooperation on Carbon Neutrality Goals

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1. Key Policies for Carbon-Neutral ROK
2. ROK's 2050 Carbon Neutrality Scenarios
3. Implication for Trilateral Cooperation
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# I. Key policies for carbon-neutral ROK

## 1. Framework Act on Carbon Neutrality and Green Growth

2050 carbon-neutral vision & harmony of the environment and economy

National strategies & 2030 NDC

Implementation System: master plans & governance

Policy Measures

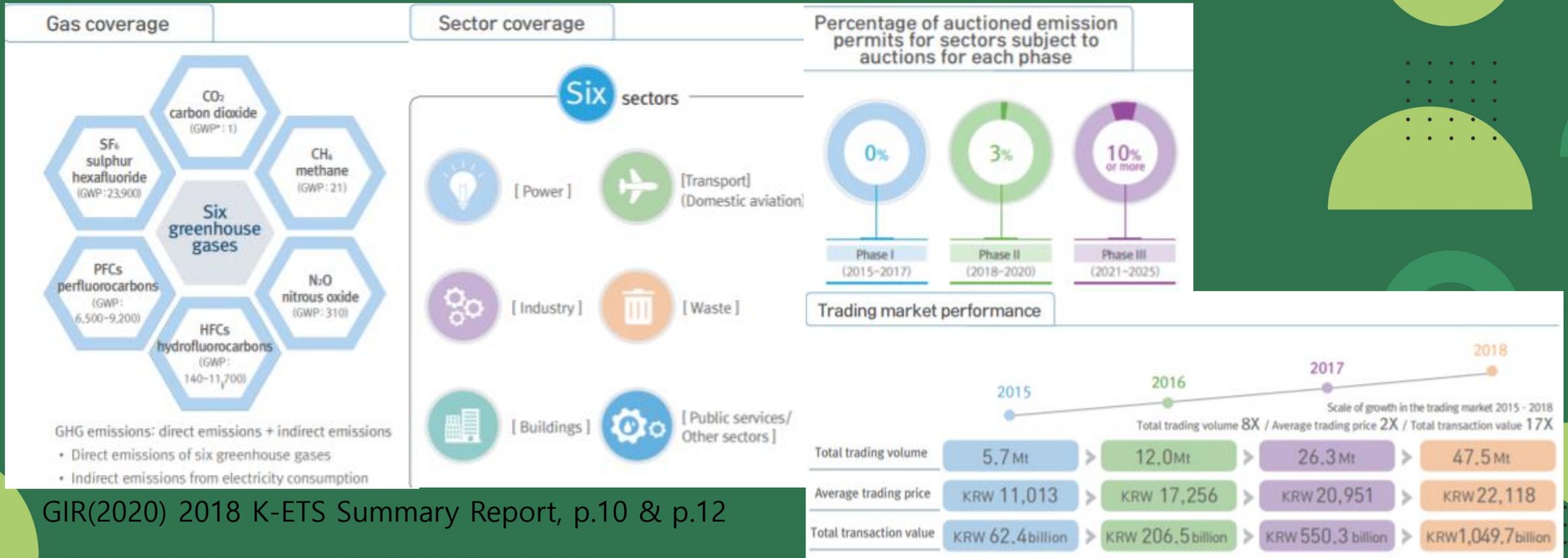
- (1) Mitigation
- (2) Adaptation
- (3) Just Transition
- (4) Green Growth

Participation of  
whole society's  
members

Climate  
response fund

# I. Key policies for carbon-neutral ROK

## 2. GHG Emissions Trading Scheme (ETS)



GIR(2020) 2018 K-ETS Summary Report, p.10 & p.12

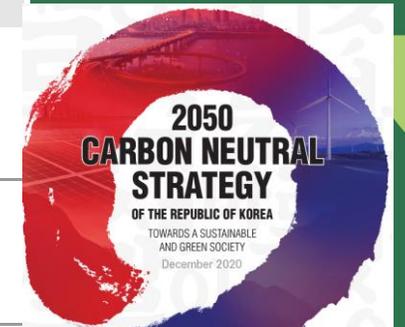
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# I. Key policies for carbon-neutral ROK

## 3. GHG and Energy Target Management System (TMS)

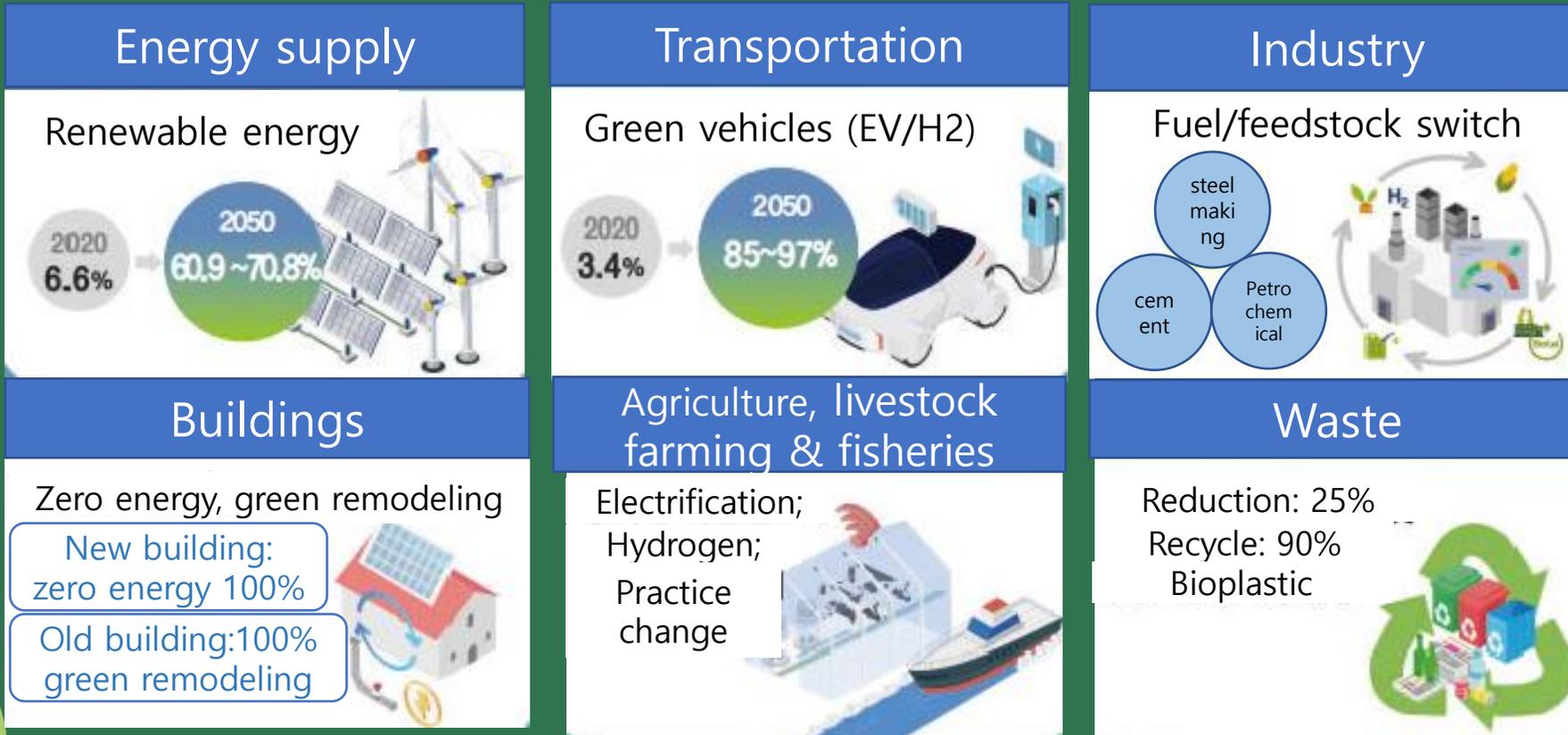
- Regulation program managing the emissions from the small- and medium-sized enterprises (not covered by the K-ETS)
- The thresholds of TMS in terms of the emissions and energy consumption levels have been lowered since 2010 (see below)

Index	Until 2011		From 2012		From 2014	
	Entity	Business site	Entity	Business site	Entity	Business site
GHG emissions (tCO <sub>2</sub> eq)	125,000	25,000	87,500	20,000	50,000	15,000
Energy consumption (TJ)	500	100	350	90	200	80



# II. 2050 Carbon Neutrality Scenarios

## 1. Carbon-neutral Future (sectoral)



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2050 Carbon Neutrality Committee (2021), Carbon Neutrality Scenarios (in Korean) p.28

# II. 2050 Carbon Neutrality Scenarios

## 2. Two Scenarios

- A: without all thermal power generation using fossil fuel (no LNG) + 100% green vehicles + green hydrogen only
- B: with some thermal power generation using fossil fuel (with LNG) + e-fuel + more CCUS/DAC
- Comparison of GHG emissions/removals (million tons of CO<sub>2</sub>-eq)

	2018 (base)	A (2050)	B (2050)
Net	686.3	0	0
emissions	727.7	80.4	117.3
removals	41.3	80.4	117.3

# II. 2050 Carbon Neutrality Scenarios

## 3. Principle towards carbon neutrality

- Intergenerational equity and sustainable development
- Comprehensive crisis response strategy
- Climate policies covering all sectors and based on scientific knowledge
- Climate justice so that responsibilities and benefits are evenly distributed
- Polluter pays principle
- Opportunities to support the national growth and create jobs
- Democratic participation of all citizens
- International cooperation contributing to global climate action and environmental and social justice in developing countries

Framework Act on Carbon Neutrality and Green Growth (article 3)

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# III. Implication for Trilateral Cooperation

## 1. Historical responsibility

- Historical responsibility for climate change based on the cumulative amount of GHG emitted is one of the key international issues.
- According to Gütschow et al.(2021), the following 20 countries are responsible for 76.4% of the global total GHG emissions since 1750: US, **China**, Russia, India, Germany, UK, **Japan**, France, Brazil, Ukraine, Canada, Poland, Australia, Indonesia, Mexico, Italy, South Africa, Iran, Kazakhstan, and **ROK**
- Three countries (China & Japan & ROK) have release around 463 billion ton(CO<sub>2</sub>-eq), which accounts for some 17.5% of the global total (1750~2019)

# III. Implication for Trilateral Cooperation

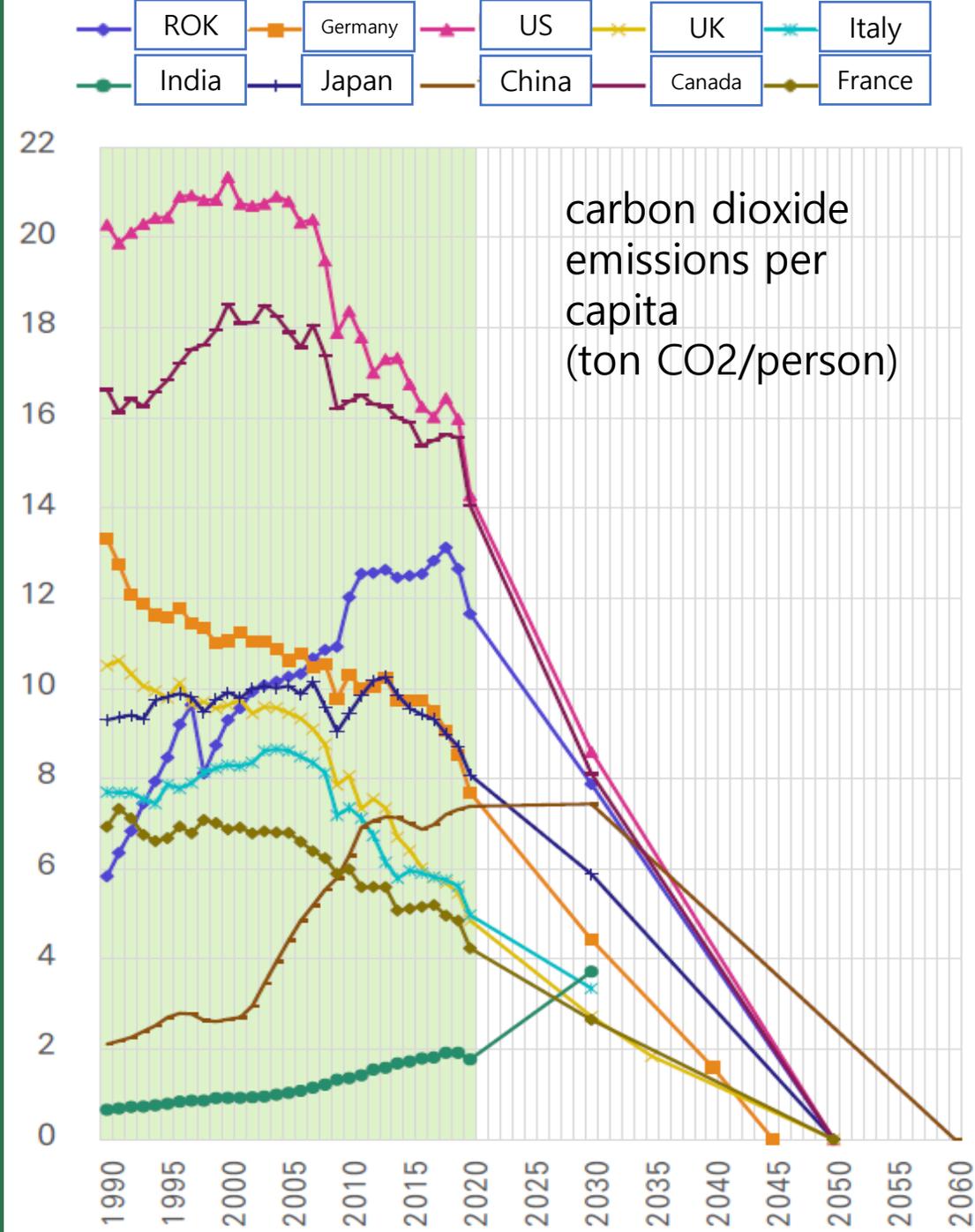
## 2. Carbon-neutral pathways

- For the world's 10 largest economies in 2020 based on IMF standards, it seems challenging to achieve their carbon neutrality goals since the emission reduction rates per capita towards the goals should be very steep.

Hun Park(2021) Climate Databook, p.210

Data source: Andrew, R., & Peters, G.. (2021). The Global Carbon Project's fossil CO<sub>2</sub> emissions dataset (Version 1). Figshare; Chinese Government. (2021). The 14th Five Year Plan for Economic and Social Development of the People's Republic of China; IMF. (2021). World Economic Outlook: Managing Divergent Recoveries—April 2021. International Monetary Fund; UN DESA. (2019). World Population Prospects 2019. United Nations Department of Economic and Social Affairs

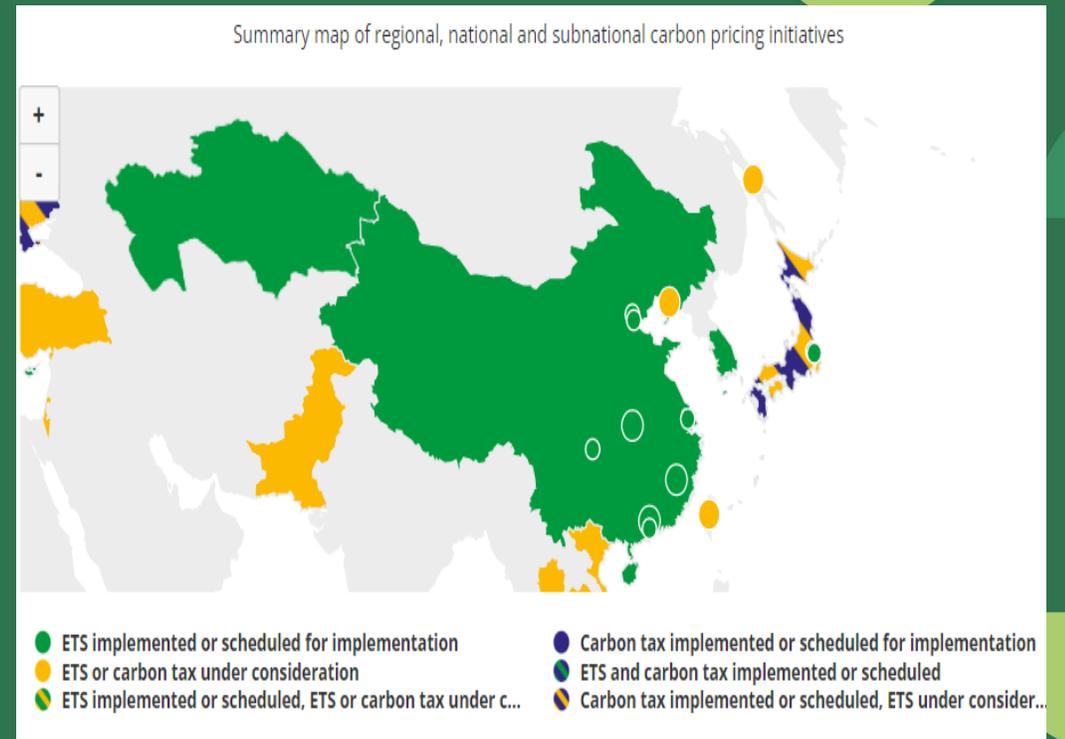
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# III. Implication for Trilateral Cooperation

## 3. Carbon pricing mechanism

- 65 carbon pricing initiatives are implemented
- The initiatives are implemented in 45 national jurisdictions
- These initiatives would cover 11.65 Gt (CO<sub>2</sub>-eq), 21.5% of global GHG emissions
- China: world's largest ETS
- ROK: first national ETS in East Asia
- Japan: carbon tax + ETS(Tokyo & under consideration)



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<https://carbonpricingdashboard.worldbank.org/>

# IV. Potential Areas for Multilateral Cooperation

## 1. Article 6 of the Paris Agreement

- Paris Agreement Rulebook adopted by COP24 & 25 & 26
- Article 6.2 of the Paris Agreement: voluntary bilateral cooperation that involves internationally transferred mitigation outcomes (ITMOs)
- Article 6.4 mechanism: contributing to GHG emissions mitigation and sustainable development
- 71% of new or updated NDCs as of July 2021 using international market mechanisms and cooperative approaches under Article 6 of the Paris Agreement to meet their NDCs

Sirini et al. (2021) Understanding Countries' Net-zero emissions targets

# IV. Potential Areas for Multilateral Cooperation

Sirini et al. (2021) Understanding Countries' Net-zero emissions targets

## 2. Roles and limitations of international carbon markets

- GHG emissions of all sectors should be radically reduced to accelerate the global transition to net-zero. International carbon markets can be used to help decarbonized hard-to-abate sectors **as a transitional measure in the short-term.**

a supplement to domestic mitigation action (risk delaying domestic investment)

a way to reduce GHG emissions beyond their domestic mitigation targets

Robust environmental integrity

Failure of issuing carbon credits

Double counting (interactions with voluntary carbon markets)

# IV. Potential Areas for Multilateral Cooperation

## 3. Cooperation on international carbon markets

- Perspective of buyer countries: focusing on the quality of mitigation actions (vs, quantity)
- MOU: competitive vs. cooperative approaches (regional governing f/w, guiding principles, co-funding/joint programme)
- Exchange information: knowledge-sharing, experience-sharing (corresponding adjustment, policies, rules & procedures)
- Participation from a variety of stakeholders (private sector)
- Linking systems (registry)



Thank you

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