

The 9th International Greenhouse Gas Conference

Program Book





The 9th International Greenhouse Gas Conference

Preparation for NDC Implementation of Paris Agreement 파리협정 NDC 이행 준비

> 11 July, 2018 The Plaza Hotel, Seoul







The 9th International Greenhouse Gas Conference



Ministry of Environment Greenhouse Gas Inventory and Research Center of Korea



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18 United Kingdom 영국

> David Markey Head of Business Environment & Climate Diplomacy, British Embassy Seoul David Markey 경영환경 및 기후외교 팀장(영국대사관)

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52 Germany 독일

Martin Cames Head of Energy and Climate, Öko-Institut Martin Cames 팀장(독일 오코연구소)

54 Japan 일본

> Yuko Komiya Senior Researcher, Overseas Environmental Cooperation Center(OECC) Yuko Komiya 선임연구원(일본 해외환경협력센터, OECC)

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18:00~ Closing	18:00~	Closing			

주요일정

시간	프로그램	발표자	
13:30~14:00 (30min)	등록		
14:00~14:20 (20min)	개회식		
14:00~14:05 (5min)	개회사	김병훈 기획총괄팀장 온실가스종합정보센터	
14:05~14:10 (5min)	축사	김영훈 기후변화정책관 ^{환경부}	
14:10~14:20 (10min)	사진 촬영	·	
14:20~16:00 (100min)	[Session 1] NDC 이행계획 수립	동향	
14:20~14:40 (20min)	몰디브	Hamdhoon Mohamed 담당관 몰디브 환경·에너지부	
14:40~15:00 (20min)	영국	David Markey 경영환경 및 기후외교 팀장 ^{영국대사관}	
15:00~15:20 (20min)	한국	강부영 사무관 ^{환경부}	
15:20~16:00 (40min)	토의	<u>좌장</u> 유승직 교수 숙명여자대학교 <u>토론자</u> 강상인 선임연구위원 한국환경정책·평가연구원/국제협력·교육센터 노동운 선임연구위원 에너지경제연구원	
16:00~16:20 (20min)	휴식		
16:20~18:00 (100min)	[Session 2] NDC 달성을 위한 탄소시장 활용계획		
16:20~16:40 (20min)	싱가포르	Gautam Jindal 연구원 싱가포르 에너지연구원(ESI)	
16:40~17:00 (20min)	독일	Martin Cames 팀장 독일 오코연구소	
17:00~17:20 (20min)	일본	Yuko Komiya 선임연구원 일본 해외환경협력센터(OECC)	
17:20~18:00 (40min)	토의	<u>좌</u> 장 홍종호 교수 서울대학교 <u>토론자</u> 김성우 소장 김앤장 법률사무소 환경에너지연구소 오형나 교수 경희대학교	
18:00~	베외식		



몰디브

United Kingdom 영국

David Markey Head of Business Environment & Climate Diplomacy, British Embassy Seoul David Markey 경영환경 및 기후외교 팀장(영국대사관)

한국

강부영 사무관(환경부)

Seung Jick Yoo Professor, Sookmyung Women's Univ. 유승직 교수(숙명여자대학교)

Sang In KANG 강상인 선임연구위원(한국환경정책·평가연구원/국제협력·교육센터)

Dong-Woon Noh

The 9th International Greenhouse Gas Conference

> Chair 좌장

> > Discussants

토론자

Speaker

발표자

Session 1

NDC Implementation Plan NDC 이행계획 수립동향

Republic of Maldives

Hamdhoon Mohamed Hamdhoon Mohamed 담당관(몰디브 환경·에너지부)

Republic of Korea

Buyoung Kang Deputy Director, Ministry of Environment

Senior Research Fellow, Korea Energy Economics Institute 노동운 선임연구위원(에너지경제연구원)

Republic of Maldives 몰디브

NDC Implementation Plan of the Maldives



Hamdhoon Mohamed

Assistant Director, Ministry of Environment and Energy

Hamdhoon Mohamed 담당관 몰디브 환경·에너지부

Hamdhoon Mohamed is Assistant Director Climate Change Department, Ministry of Environment and Energy from September 2014 to Present.

And He is also Part-time Lecturer, Faculty of Science, Maldives National University. He prepare lecture material and tutorial material for the subject Pollution prevention & control (ENV303) unit under the Bachelor of Environmental Management course.

He attended the National Adaptation Plans (NAPs) Expo organized by UNFCCC from 04thto 06thApril 2018 in SharmElShiek, Egypt. And He attended the Informal consultation to prepare for a Ministerial Roundtable on building health system resilience to climate change from 14th to 15th July in Male', Maldives.

And He organized and conducted awareness programs on water safety and water conversation issues in the Maldives as Environment Analyst from May 2010 to January 2013.



Outline of the presentation

- National Circumstances
- Maldives NDC

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- Mitigation Contribution of Maldives NDC
- Additional Information on Maldives NDC
- NDC process in the Maldives
- NDC Implementation Plan
 - Institutional Arrangement for NDC Implementation in the Maldives
- Components of NDC Implementation Plan
 - Challenges and Limitations



Nationa	l Circumstances	- 2- Altan Netty Machinesedate
Population	407,660	See Anno Anno Anno Anno Anno Anno Anno An
Land Area	300 Km ²	Touristian Bandlow Bandhow Bandhow
Total GDP (Nominal)	\$ 4.825 Billion	and the factor of the factor o
GDP per Capita (Nominal)	\$13,196	R Normber S. Normber 2 ¹
Main Economic Activities	Tourism Fisheries	Hadvaldsontration
Total Emissions (2011)	1225.6 Gg CO ₂ e	tivesfeet
Emission per	3696.604 kg CO ₂ e	ato un

Mitigation Contribution of Maldives NDC Unconditional Maldives communicated Reduction that it intends to reduce unconditionally 10% of its Greenhouse Gases (below BAU) for the year 2030 The 10% reduction expressed Conditional above could be increased up to Reduction 24% in a conditional manner, in the context of sustainable development, supported and enabled by availability of financial resources, technology transfer and capacity

building

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Maldives NDC

- Maldives submitted its INDC on September 2015.
- Maldives INDC had both conditional and unconditional targets.
- Maldives INDC had both mitigation adaptation contribution.
- Adaptation component of the Maldives INDC proposed aspirational adaptation goals from key sectors

Source: Ministry of Environment and Energy (2015)

s INDC on Septemb oth conditional and .



Additional Information on Maldives NDC

Time frame for implementation	2021 to 2030
Sectors	Energy • Electricity gener • Energy Efficience use Transportation
Gases	$\rm CO_2$ and $\rm CH_4$

Source: Ministry of Environment and Energy (2015)

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Mitigation projects identified during NDC process

Sector	Mitigation option identified	
Energy Efficiency	 Energy Efficient appliances Centralized cooling in new service buildings Upgrading of power system efficiencies 	
Transport Sector	Better maintenance of motor bikesFuel Switching	
Renewable Energy	 Installation of Solar Heater Regional waste to energy projects Installation of PV 	Source: Ministry of Environment and Energy (2015)

NDC Implementation Plan Maldives started to develop its NDC implementation plan on December 2015. • The main objectives of NDC implementation plan is to Monitor and evaluate the implementation of the actions proposed in the Maldives NDC; Ensure that Maldives meet the commitments to the implementation of the Paris Agreement; D Prioritize the identified activities required for implementation of the NDC. *****10 Institutional Arrangement for NDC Implementation in the Maldives Climate Change Steering Committee NDC Coordination Unit **Climate Change Department** Ministry of Environment and Energy





Components of NDC Implementation Plan

- Actions to strengthen institutional arrangement • for implementation of NDC
- Mitigation Projects
- Actions to strengthen tracking of NDC implementation



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Actions to strengthen institutional arrangement for implementation of NDC (2017 - 2020)

- Develop legal frameworks for supporting the implementation of NDC
- Establishment of NDC Coordination Unit
- Establishment of Climate Change Steering Committee
- Appoint environmental focal points in all relevant . institutions both in the government and the private sector

Mitigation Projects

- Total of 21 mitigation projects identified
- The following information detailed for each of the mitigation project;
 - Project Description; Goals and Objectives;
 - Baseline Scenario;
 - Project Mitigation Scenario;
 - Potential Indicators;
 - Implementation Timeframe;
- Support Needed & Costs;
- Lead Agency for project implementation.

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Actions to strengthen tracking of NDC implementation Improvement of Institutional framework for GHG Inventory Compilation and data on mitigation actions Gap analysis of existing MRV processes and systems, • including Energy Balance, National GHG inventories and institutional set-ups Development of a national MRV database system linking existing databases from Different Stakeholders Undertake capacity building in other agencies to developing an understanding of the importance of a national MRV system



Challenges and Limitations

- Lack of a legal framework to ensure continuous collection of data
- Lack of permanent institutional Arrangement for data collection.
- Lack of general awareness of data collection and archiving
- Weak inter-stakeholder coordination
- Co-benefits of the mitigation projects not estimated



Thank for your kind attention

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References

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UK NDC Implementation:

Clean Growth Strategy



David Markey

Head of Business Environment & Climate Diplomacy, British Embassy Seoul

David Markey 경영환경 및 기후외교 팀장 영국대사관

David Markey has been Head of Business Environment & Climate Diplomacy at the British Embassy in Seoul since August 2017. He covers climate change, energy, the UK's Chevening programme and other areas of economic diplomacy. Before that he spent almost two years studying Korean in preparation for his posting. Prior to joining the Embassy in Seoul, David worked at the Foreign & Commonwealth Office in London, focusing mainly on conflict issues in Somalia and the South Caucasus. From 2011 - 2013 he was posted to the British Embassy in Tbilisi, Georgia. He also spent a year on loan to UK Trade & Investment (now Department for International Trade).

UK NDC Implementation: **Clean Growth Strategy**

David Markey, Head of Business Environment & Climate Diplomacy British Embassy Seoul

Climate Policy in the UK

- Climate Change Act 2008
- Carbon Budget & Carbon Price Floor
- Energy Transition
- NDC Implementation: Clean Growth Strategy 2017



British Embassy Seoul





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Plan

Energy Transition Figure 23: UK electricity generation by fuel type, 2000-2016²⁴⁵ 350 300 250 Clean power has grown by 64% per cent over the last 10 200 ears, displacing fossil fuels 150 100 Source: BEIS

British Embassy

British Embassy

Seoul

Seoul

Unabated Coal

- UK coal use in electricity generation is down 89% since 1990, and by 28% between 2016 and 2017
- Complete domestic phase out by 2025
- No UK Export Finance support for unabated coal projects since 2002
- Negotiated significant restrictions on the financing of coal-fired power plants by OECD export credit agencies

Powering Past Coal Alliance

- Joint UK-Canada initiative launched at COP23 in Bonn
- Targets global coal phase out by 2050 (OECD 2030)
- Currently 58 members:
 - 26 countries (including France, Italy, Mexico and Ethiopia),
- 8 states and cities (including California)
- Voluntary commitment to support the phase-out of unabated coal within a timeframe compatible with the Paris Agreement
- Investor guidance: More to come later in 2018

Offshore Wind

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• 24 international organisations (including BT, Storebrand and EDF Group)

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Clean Growth Strategy 2017

- Business and industry efficiency
- Improving our homes
- Low carbon transport
- Agriculture and natural resources
- Public sector
- Clean, affordable energy
- Green finance



British Embassy

Seou



Improving business and industry efficiency British Embassy Seoul their energy productivity, by at least 20% by 2030 to lower carbon fuels

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British Embassy Seoul Accelerating the shift to low carbon transport

- End the sale of new conventional petrol and diesel cars and vans by 2040
- Spend £1 billion supporting the take-up of ultra low emission vehicles electric car
- Accelerate the uptake of low emission taxis and buses
- Invest around £841 million of public funds in innovation in low carbon transport technology and fuels



• Develop a package of measures to support businesses to improve

• Invest £162 million in research and innovation in energy, resource and process efficiency, including up to £20 million to encourage switching

• Support innovative energy technologies and processes with £14 million of further investment through the Energy Entrepreneurs Fund

(ULEV), including helping consumers to overcome the upfront cost of an

• Develop one of the best electric vehicle charging networks in the world



Delivering Clean, Smart, Flexible Power



British Embassy

Seoul

Figure 25: Actual and projected power sector emissions, taking into account the clean growth pathway, 1990-2050



Plan

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Improving our Homes

- £3.6 billion to upgrade around a million homes for home energy efficiency improvements by 2028
- All fuel poor homes to upgrade their energy efficiency of their home (C band in Energy Performance certificate) by 2035
- Improve energy performance standards of privately rented homes
- Rolling out low carbon heating-build and extend heat networks
- Phase-out installation of high carbon fossil fuel heating
- £4.5 billion investment to support low carbon heat technology
- £184 million investment to develop new energy efficiency and heating technologies

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- Design a new system of future agricultural support to focus on delivering better environmental outcomes, including addressing climate change more directly
- Establish a new network of forests in England, plant 11 million trees
- Work towards our ambition for zero avoidable waste by 2050, minimising negative environmental and carbon impact

Innovation



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Agriculture and natural resources



Specific products and proposals in the Strategy Develop world leading Green Finance capabilities, including by: 1. Develop world leading Green Finance capabilities, including by: Setting up a Green Finance market: Working with the British Standards Institution to develop a set of voluntary green and sustainable finance market: Working with the British Standards Institution to develop a set of voluntary green and sustainable finance market: Working with the British Standards Institution to develop a set of voluntary green and sustainable finance market: Working with the British Standards Institution to develop a set of voluntary green and sustainable finance market: Working with the British Standards Institution to develop a set of voluntary green and sustainable finance market: Working with mortgage lenders to develop green mortgage products that take account of the lower lending risk and enhanced repayment associated with more energy efficient properties

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Thanks

- For more info on the UK's Clean Growth Strategy:
- <u>https://www.gov.uk/government/publications/clean-growth-strategy</u>

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Seoul

- <u>http://www.etrans.go.kr/energy/data.php?admin_mode=read&no=1</u> 73&make=&search=&page=1
- Contact: <u>david.markey@fco.gov.uk</u>



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Session 1

United Kingdom

Republic of Korea 한국

Climate Change Mitigation Policy of S. Korea



Buyoung Kang Deputy Director, Ministry of Environment

강부영 사무관 환경부

Buyoung Kang is Deputy Director, Ministry of Environment from March 2009 to present.

She was in Climate Change Mitigation Team from August 2017 to January 2018 and she did Master's degree program from August 2016 to August 2017 and she was in Regulation Reforming Team, Sewage System Improvement Division, Global Cooperation Team. She got Master of Public Administration on May 2018 in University of Southern California, U.S.A and she got Master of Public Administration Seoul National University as well.

"Scientific Consensus : Human Influence on the Climate System is Clear" 390 2012 2014 2016 2006 YEAR

< Global Carbon Dioxide Level>

• 408 parts per million

 \Rightarrow at the highest level in 650,000 years

Climate Change Mitigation Policy of S. Korea



Ministry of Environment





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Panel Discussion

토론

Chair

좌장



Seung Jick Yoo

Professor, Sookmyung Women's Univ.

유승직 교수 숙명여자대학교

He is professor in the College of Climate and Environmental Studies at Sookmyung Women's University. He has been the task force leader to set the national mid-term greenhouse gas reduction targets up to 2020 and 2030 of Republic of Korea from 2008 to 2015. He has also been deeply involved in the development of national green growth strategies and implementation plan in Korea. Since He was nominated as the President of Greenhouse Gas Inventory & Research Center of Korea, the principal national agency in management of national and entity level GHG inventories and setting national, sectoral and entity-level greenhouse gas emission reduction targets, He has been in charge of publication of annual national inventory and management of entity-level greenhouse gas emission and the allocation of GHG emissions. He has been working on design and law-making of GHG emission permit trading system, which was implemented in 2015 and in charge of allocating permits to the entities in Korea.

Discussants

토론자



Sang In KANG

강상인 선임연구위원 한국환경정책·평가연구원/국제협력·교육센터

Dr. Sang In Kang is a chief research fellow in Korea Environment Institute (KEI), public think-tank under the National Research Council of Korea. Recently he is working as a member of Korean delegation to the UNFCCC and Paris Agreement negotiating New Climate Regime beyond 2020. During his professional career, he worked for the Bank of Korea and the UN Office for Sustainable Development as a senior expert of development management. He joined the OECD Environment Directorate as climate change specialist. He led lots of joint researches on climate change and sustainable development policies as well as diverse capacity building activities for policy makers and experts from developing countries over the world. He holds a Ph.D. in International Economics from University of Pantheon-Sorbonne in Paris France, and is the author of numerous scientific articles, chapters and books on the topics of Trade and Environment, Climate Change, Sustainable Development and Green Economy Transition.

Dong-Woon Noh

노동운 선임연구위원

에너지경제연구원

Management.

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Chief Research Fellow, Korea Environment Institute

Senior Research Fellow, Korea Energy Economics Institute

Dr. Dong-Woon Noh has been working at Korea Energy Economics Institute(KEEI) since 1988 and has focused on climate change policy. He has been estimating the greenhouse gas emission reduction potential and the marginal abatement cost(MAC) in Korea using bottom-up optimization model(MARKAL/TIMES). He recommends policy options to government on UN Climate Change negotiation issues as Korean delegation. He received Ph.D in economics from Oregon State University and published

some papers in the Journal of Econometrics and the Journal of Environmental



Carbon Market for the NDC Achievement NDC 달성을 위한 탄소시장 활용계획



The 9th International Greenhouse Gas Conference

Speaker 발표자

> Chair 좌장

토론자

Discussants

싱가포르 Gautam Jindal

Germany 독일 Martin Cames

Japan 일본 Yuko Komiya

Jong Ho Hong Professor, Seoul National Univ. 홍종호 교수(서울대학교)

Sungwoo Kim

Hyungna Oh Professor, Kyung Hee Univ. 오형나 교수(경희대학교)

Session 2

Singapore

Research Fellow, Energy Studies Institute(ESI), National University of Singapore Guatam Jindal 연구원(싱가포르 에너지연구원, ESI)

Head of Energy and Climate, Öko-Institut Martin Cames 팀장(독일 오코연구소)

Senior Researcher, Overseas Environmental Cooperation Center(OECC) Yuko Komiya 선임연구원(일본 해외환경협력센터, OECC)

김성우 소장(김앤장 법률사무소 환경에너지연구소)



Singapore's NDC and **Carbon Pricing**



Gautam Jindal

Research Fellow, Energy Studies Institute(ESI), National University of Singapore

Gautam Jindal 연구원 싱가포르 에너지연구원(ESI)

Gautam is a Research Fellow at Energy Studies Institute, National University of Singapore. He holds a Master's degree in Carbon Management from the University of Edinburgh, Scotland and a Bachelors with Honours in Electrical & Electronics Engineering. Gautam has eight years' experience in energy and low carbon policy research, corporate GHG measurement and management, and sustainability reporting. At ESI, Gautam's research areas include developments of the Paris Agreement Work Programme, integration of renewable energy in electricity markets, and management of HFCs under the Montreal Protocol.

Singapore's NDC and Carbon Pricing



Gautam Jindal International Greenhouse-Gas Conference 2018

Introduction to Energy Studies Institute

- Energy think-tank based at National University of Singapore
- Research on all aspects of climate and energy policy, specifically on implications to Singapore and the region
- Ranked 8th in "Energy and Resource Policy" category of the 2015 Global Go To think-tank Index
- Key Research Projects
 - MARKAL model for Long Term GHG Emission Pathways
 - Multi-Region Environmental CGE Model for ASEAN
 - Nuclear Governance Policy and Law for Nuclear Safety and Security

ENERGY STUDIES INSTITUT









National Circumstances



- · Small, low-lying island citystate of about 719 sq.km.
- Export oriented and open economy
- Alternative energy disadvantaged
- Early Action on Mitigating Emissions

NUS



Economic Structure & GHG Emissions 49 MT GHG emissions in 2012 (0.1% of global) Nominal PRIMARY EMISSIONS STRUCTURE OF ECONOMY Value-Added (% Share) Power 43% TOTAL 100.0 Industry 41% **Goods Producing Industries** 26.8 20.7 Manufacturing Transport 15% Construction 4.4 Buildings 0.9% Utilities 1.6 Household 0.4% Other Goods Industries 0.0 Waste 0.3% Services Producing Industries 68.5 Wholesale & Retail Trade 17.0 SECONDARY EMISSIONS Transportation & Storage 7.7 Accommodation & Food Services 2.5 Industry 18% 3.8 Information & Communications Buildings 16% Finance & Insurance 11.9 **Business Services** 14.6 Household 6% Other Services Industries 11.0 Transport 2% Ownership of Dwellings 4.8 Source: MTI (2012). Economic Survey of Singapore Others 0.4% Source: NCCS (2016) Singapore's Second Biennial Update Report Under the UNFCCC ENERGY STUDIES INSTITUT



#3





Solar Photovoltaics (PV) in Singapore

- Currently, installed capacity is at 130 MWp
- Target of 350 MWp by 2020, 1 GWp beyond 2020
- No Feed-in Tariffs (FiTs) for PV generation
- PV has reached grid parity with respect to regulated tariff
- Technical Potential of 5-10 GWp by 2050*
- Challenges → Limited deployment space, Intermittency
- Novel Approaches
- Engineering and environmental studies for Floating PV
- Energy Storage System (ESS) Testbed



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* Solar Energy Research Institute of Singapore (2014): Solar Photovoltaic (PV) Roadmap for Singapore (A Summary)





2010

ENERGY STUDIES

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2011

Singapore International Energy Week

First public communication on the

need to price carbon to send the

right signals if there is a global

deal on climate change

2012



Singapore's Carbon Tax

- What it is: S\$5/tCO₂e (~US\$4/tCO₂e) from 2019-2023 as a transition period for companies to adopt energy efficiency projects
 - Tax level to be reviewed by 2023 with intention to increase it to between S\$10 - 15/tCO₂e (~ US\$7.50/tCO₂e and US\$11/tCO₂e) by 2030
- Coverage: All GHGs that Singapore reports to UNFCCC*
- Who it affects: Companies emitting ≥25,000 tCO₂e direct emissions annually → Approx 40 large emitters which account for about 80% of Singapore's emissions (Gencos, Refineries etc.)



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* Currently includes CO2, CH4, N2O, HFCs, PFCs, SF6

Singapore's Carbon Tax

- · Carbon tax applied upstream
 - Allows price signal flows to end consumers
 - End-consumers are incentivised to improve energy efficiency as carbon tax liability is passed on from power generators through electricity prices
- No exemptions to ensure a transparent, uniform and consistent price signal across the economy
 - Even "Emission-Intensive Trade-Exposed" (EITE) sectors are not exempted

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FPCB Design of Carbon Tax

- Carbon tax to be implemented as a Fixed-Price Credit-Based (FPCB) system
 - Surrender credits equal to the tax liability (1 credit = 1 ton CO₂e)
- Unlimited quantity of credits available for sale through a credit registry

Year	Jan	Feb	Mar	Apr	May	Jun
2018	←Qualifi	ed facilitie	s to prepa	re Monito	ring Plans	(MPs)—
2019					- Mo	nitor Emi
2020		Prepare v	verified En	nissions Re	eport (ER)	
ENE STU INS	RGY Dies Titute					

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FPCB Design of Carbon Tax

- Currently, use of international credits is not allowed
 Incentivize domestic EE efforts and other low carbon solutions
- Singapore recognizes that linking the carbon tax with other CP jurisdictions can potentially lower abatement cost for businesses
 - Open to linking with other CP jurisdictions in future; will study any such opportunity carefully
- Implementation of tax with a FPCB system for the purpose of facilitating linkages in the future, if needed
 - FPCB system will put in place key building blocks such as a credit registry, which will facilitate linking
- Help businesses build up necessary capabilities to operate in a linked market
- Singapore is also monitoring developments in rules governing use of international credits (PA Art 6, Art 4.13, Art 13.7)







Tax Revenue

- More grants and support could be provided to help companies improve their energy efficiency. Support to be enhanced through existing grants:
- Productivity Grant (Energy Efficiency)
- Energy Efficiency Fund
- Government is prepared to spend more than the revenue collected for the initial 5 years to support worthwhile projects



Thank You

Energy Studies Institute

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Disclaimer: The views and opinions expressed herein are those of the author and do not represent the views and opinions of the National University of Singapore or any of its subsidiaries or affiliates.



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MEMO

Session 2

apore

Germany 독일



Martin Cames Head of Energy and Climate, Öko-Institut

Martin Cames 팀장 독일 오코연구소

Dr. Martin Cames joint Öko-Institut's Energy and Climate Protection division in 1994 as research fellow and heads the Berlin branch of the division since 2008. After his apprenticeship and three years of work experience as metal worker he was awarded the master craftsman diploma. In 2006, he was visiting researcher at the Massachusetts Institute of Technology (MIT), Joint Program on the Science and Policy of Global Change, Cambridge, MA (USA). In 2009, he finished his PhD on Emissions Trading and Innovation in the German Electricity Industry.

Since many years he is working on national and international climate policies with specific focus on new market-based mechanisms as well as on instruments to address greenhouse gas emissions of international maritime transport and aviation.

Since 2008, he is member of the German delegation for the climate change talks under the United Nation's Framework Convention on Climate Change (UNFCCC) focusing on offset mechanisms (CDM, JI) and international aviation and maritime transport (bunker fuels). From 2012 to 2014 he was a member of the Executive Board of the Clean Development Mechanism under the UNFCCC. Martin speaks German, English and Spanish.





Promoting development of JCM projects by MOE



Yuko Komiya

Senior Researcher, Overseas Environmental Cooperation Center(OECC)

Yuko Komiya 선임연구원 일본 해외환경협력센터(OECC)

Yuko is a Senior Researcher at Overseas Environmental Cooperation Center in Japan.

From 2007 to 2011, she engaged in survey and analysis on European carbon emissions markets and energy trading markets.

And she Involved in data survey and input of 2006 IPCC databas as working IPCC Data Assistant in 2006.

Since 2011, She engaged in several international environment projects, including capacity development for NAMAs, as part of technical cooperation, feasibility studies, evaluation studies of low-carbon projects and project development for Joint Crediting Mechanism (JCM) in Asia Pacific Countries.



Article 6 of the Agreement

- involve the use of internationally transferred mitigation outcomes towards nationally determined contributions, promote sustainable development and shall apply robust accounting to ensure, inter alia, the avoidance of double counting, consistent with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement.
- by participating Parties.
- appropriately counted as Japan's reduction in accordance with the Paris Agreement.
- for avoidance of double counting to be adopted by the CMA*.



ι	Japan's INDC (Excerpt)
	Japan's INDC
C	Japan's INDC towards post-2020 GHG emission reductions is at the level of a reduction
	of 26.0% by fiscal year (FY) 2030 compared to FY 2013 (25.4% reduction compared to FY
	2005) (approximately 1.042 billion t-CO2eq. as 2030 emissions), ensuring consistency with
	its energy mix, set as a feasible reduction target by bottom-up calculation with concrete policies
	technological and cost constraints, and set based on the amount of domestic emission
	reductions and removals assumed to be obtained.
I	nformation to facilitate clarity, transparency and understanding
¢	The JCM is not included as a basis of the bottom-up calculation of Japan's emission
	reduction target, but the amount of emission reductions and removals acquired by Japan under the ICM will be appropriately counted as Japan's reduction
_	under the Sem will be appropriately counted as Sapar S reduction.
R	eference information
G	HG emissions and removals
2	Linear actablishes and implements the ICM in order both to appropriately evaluate
5	contributions from Japan to GHG emission reductions or removals in a quantitative manner
	achieved through the diffusion of low carbon technologies, products, systems, services, and
	infrastructure as well as implementation of mitigation actions in developing countries, and to us
	them to achieve Japan's emission reduction target.
C	Apart from contributions achieved through private-sector based projects, accumulated
	emission reductions or removals by FY 2030 through governmental JCM programs to be
	undertaken within the government's annual budget are estimated to be ranging from 50
	1 - 400

Japan's INDC and JCM

- As stated in Japan's INDC, the 26% reduction target is set based on the amount of domestic emission reductions and removals assumed to be obtained. It is therefore anticipated that Japan will achieve the target through domestic emission reductions and removals without using international reductions and removals (credits).
- The amount of emission reductions and removals acquired by Japan under the JCM will be appropriately counted as Japan's reduction.

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Construction of pilot plant for scaling up

- > Pilot waste to energy plant which typically faces barriers for installation was built using JCM financing programme
- > Appropriate operation fostered understanding among local government officials and stakeholders leading to establishing institutional arrangements for waste management including waste collection and sequestration, which became the basis for implementing scaled up projects





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sion 2

Panel Discussion

토론

Chair

좌장



Jong Ho Hong

Professor, Seoul National Univ.

홍종호 교수 서울대학교

Hong, Jong ho is a professor of Economics at the Graduate School of Environmental Studies, Seoul National University. His teaching and research are focused on environmental economics and sustainable economy and policy. After receiving his Ph. D. in economics at Cornell University, he held academic positions at Korea Development Institute(KDI) and Hanyang University in Seoul, Korea.

He worked as a consultant for the World Bank and Asian Development Bank. He served as the President of Korea Environmental Economics Association and the Director of Environmental Planning Institute, Seoul National University. He currently is the Vice - president of the East Association of Environmental and Resource Economics, Vice-president of the Korean Economic Association, Director of Asian Institute for Energy, Environment and Sustainability at Seoul National University, member of the Board of Directors of Korea Social Investment, and a policy advisor to Korea Chamber of Commerce and Industry.

Discussants

토론자



Sungwoo Kim

김성우 소장

Environmental Sciences

Hyungna Oh Professor, Kyung Hee Univ.

오형나 교수 경희대학교

economics. her Ph.D. from Cornell University.

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Head of Environment & Energy Research Institute, Kim & Chang

김앤장 법률사무소 환경에너지연구소

Sungwoo Kim has a master in Civil & Environmental Engineering from Duke University in US, and PhD in Business Administration from Seoul School of Integrated Science and Technology(aSSIST) in Korea.

He leads environment & energy research center at Kim & Chang(the biggest law firm in Korea) as well as an adjunct professor of Korea University in Earth &

Now, he is a senior advisor for the Korean Governments and corporates. With frequent publications, media exposure, speech & panel at major global conferences such as B4E(Business for Environment), Carbon Expo(Innovate 4 Climate), Carbon Finance, Asia Clean Energy Forum as a prominent Asian speaker, he teaches in executive MBA in many renowned universities to always reinforce the relationships with the decision makers from private sector.

Dr. Hyungna Oh is a Professor in the College of International Studies at Kyung

Hee University, with expertise in the areas of climate change and environmental

Before she joined Kyung Hee University, she had served as Fellow at the Korea Development Institute (KDI) and Assistant Professor of Economics at West Virginia University in the USA. Dr. Oh assisted the Korean Ministry of Strategy and Finance (MOSF) to host the Green Climate Fund and to design a carbon cap and trade system for Korea (KETS).

Her works have appeared in academic journals including Climate Policy and the Economics Letters. Dr. Oh currently serves as a member of the Allocation Committee of the KETS, Tax and Public Finance Committee, the CO2 Absorption Committee for the Korea's government and the Advisory Board for the Korea Chamber of Commerce & Industry.

Dr. Oh received her Bachelor's and Master's degrees from Korea University, and



Secretariat

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Ministry of Environment Greenhouse Gas Inventory and Research Center of Korea