Ministry of Environment
Greenhouse Gas Inventory and Research Center of Korea

UNOSD
UNITED NATIONS OFFICE FOR SUSTAINABLE DEVELOPMENT

Low Emission Development to Achieve

CARBON NEUTRALITY AND SDGs

:12th International Greenhouse Gas Conference

PROGRAM BOOK

Low Emission Development to Achieve

CARBON NEUTRALITY AND SDGs

:12th International Greenhouse Gas Conference

PROGRAM

14:00 – 14:27
OPENING SESSION

Opening Remarks	Heung-Won Seo President of Greenhouse Gas Inventory and Research Center (GIR)
Welcoming Remarks	Han Jeoung Ae Minister of Environment, Republic of Korea Park Nam-choon Mayor of Incheon Metropolitan City, Republic of Korea
Congratulatory Remarks	Liu Zhenmin Under-Secretary-General for Economic and Social Affairs of the United Nations (UN DESA) Yeonseob Ha Executive Vice President of International Campus, Yonsei University

14:27 – 15:05
LAUNCHING THE DECADE OF ACTION IN KOREA & THE 2ND PHASE OF UNOSD

Video	Decade of Action Video
Presentation on 2nd phase of UNOSD	Chun Kyoo Park Head, United Nations Office for Sustainable Development (UNOSD)
Message from Stakeholders	Sun-Jin Yun Chair, Sustainable Development Committee, Republic of Korea
	Kim Hong-jang Chair, Korea Local Governments Alliance for Sustainable Development
	Kyung-Ho Lee Chair, Korea Business Council for Sustainable Development
	Yelin Heo Chair, Youth-Level Political Forum Korea (YLPF Korea)
Launching Ceremony	Decade of Action in Korea and 2nd phase of UNOSD Launching Ceremony

15:05 – 15:20
PHOTO SESSION & BREAK

15:20 – 16:40
SESSION I: SYNERGIES IN JOINT IMPLEMENTATION OF CLIMATE ACTION AND THE SDGS FOR RECOVERY

Moderator	Ganbold Baasanjav Head, Subregional Office for East and North-East Asia, UN Economic and Social Commission for Asia and the Pacific (UN ESCAP)
Global Trends Financing the Climate Ambition	Oyun Sanjaasuren Director of External Affairs, Green Climate Fund (GCF)
Country Experience 1 Climate diplomacy– the Danish case	Tomas Anker Christensen Climate Ambassador of Denmark
Country Experience 2 Intervention with insights on sustainable development, climate policies and recovery plans from Germany	Marc-Oliver Pahl Secretary General, German Council for Sustainable Development
Country Experience 3 Korean Green New Deal and K-SDGs	Eunhae Jeong Director of Green Transition, Ministry of Environment of the Republic of Korea
Discussion Session	Speakers of Session I

16:40 – 18:20
SESSION II: PREPARING FOR CARBON NEUTRALITY BY 2050

Global Trends The role of international markets in reaching net zero	Stefano De Clara International Policy Director, International Emissions Trading Association (IETA)
Country Experience 1 UK Net Zero Goals and Strategy for 2050	Alistair Ritchie Director of Asia-Pacific Sustainability, Asia Society Policy Institute (ASPI)
Country Experience 2 Carbon Neutrality Reinforce Green Low Carbon Transition in China	Min Li China Representative, International Emissions Trading Association (IETA)
Country Experience 3 Carbon Neutrality by 2050 in Korea	Seung Jick Yoo Professor, Sookmyung Women's University
Discussion Session	Moderator William Acworth Head of Secretariat, International Carbon Action Partnership (ICAP) Panelist Yeo Ra Chae Director General, Integrated Assessment of Climate and Air Pollution, Korea Environment Institute (KEI) Panelist Ji Hye Jo Director/Senior Research Fellow, Circular Economy Policy, Korea Environment Institute (KEI)

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CONTENTS

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LAUNCHING THE DECADE OF ACTION IN KOREA & THE 2ND PHASE OF UNOSD

Presentation on 2nd phase of UNOSD

Chun Kyoo Park Head, United Nations Office for Sustainable Development (UNOSD)

LAUNCHING THE DECADE OF ACTION IN KOREA & THE 2ND PHASE OF UNOSD

Presentation on 2nd phase of UNOSD

Chun Kyoo Park

Head, United Nations Office for Sustainable Development (UNOSD)

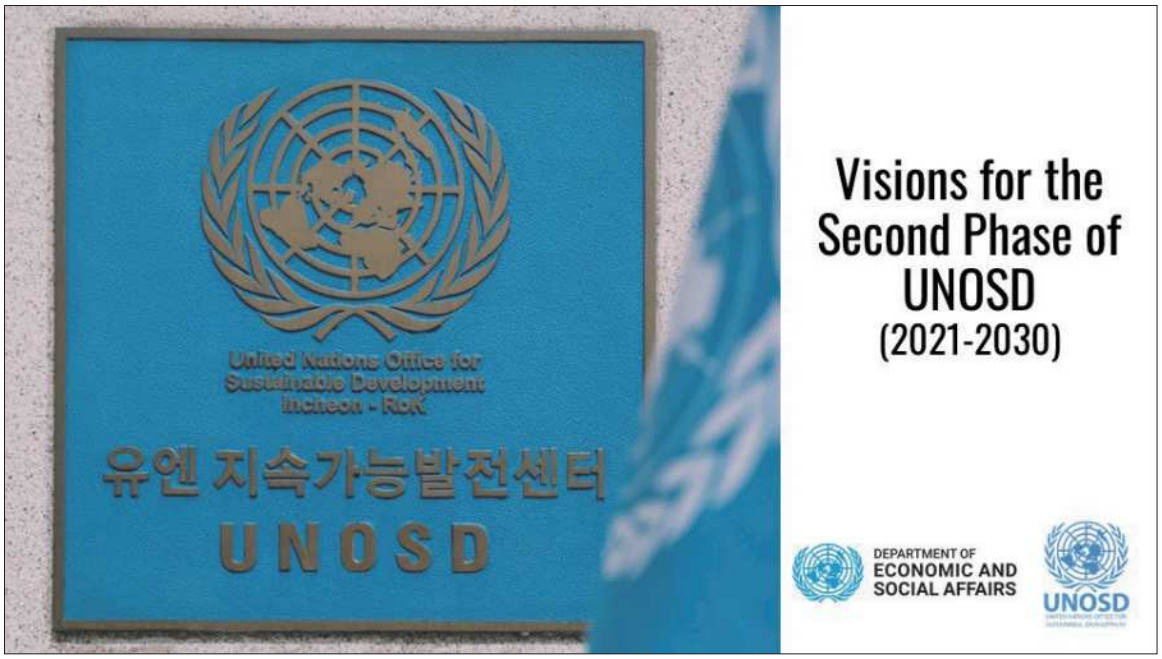
Career History

Mr. Chun Kyoo PARK is the Head of UN Office for Sustainable Development as of 26 October 2020. Before that, he has served at the government for almost 30 years mainly at the Ministry of Environment of the Republic of Korea where he joined in 1991 starting at mid-level management rising to the rank of the Vice Minister of Environment. Throughout the experience, he has built various capacities and broadened the scope of work by engaging in many different areas of sustainable development. Mr. Park's works range from air and water quality management to nature conservation, waste management, chemicals management, sewerage system, etc. Tackling climate change has been his major concern and produced lots of achievements at the ministry including setting up Korean National Mitigation Targets.

Moreover, his career stretches to the international cooperation where he worked as the first secretary of the Republic of Korea Mission to the UN in charge of works related to the UN General Assembly 2nd Committee, and the Commission on Sustainable Development. He has attended various international meetings which include CBD COP13 in Cancun, Mexico as the chair of the COP12 Presidency and the most recently the 4th UN Environment Assembly in 2019 in his capacity as the head of Korean delegation.

He worked closely with UN organizations to support program such as the UNEP's PAGE (Partnership for Action on Green Economy) and the first international workshop for developing country officials on MRV (Measurement, Reporting, and Verification) jointly with UNFCCC and/or EU. He graduated from Yonsei University majoring Public Administration and holds a master's degree in Development Policy and Public Administration at the University of Wisconsin at Madison. He is co-author of three books including "Carbon Market, Are You Ready to Buy or Sell It."

K E Y N O T E


United Nations Office for Sustainable Development Incheon - RoK
유엔 지속가능발전센터
UNOSD
Visions for the Second Phase of UNOSD
(2021-2030)
DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
UNOSD


Introduction
The United Nations Office for Sustainable Development (UNOSD) was established in 2011 in Incheon, the Republic of Korea
UNOSD serves as a technical arm of the Division for Sustainable Development Goals (DSDG) of the United Nations Department of Economic and Social Affairs (UN DESA)
Established under the framework of a Host Country Agreement (HCA) with the Government of the Republic of Korea, and a Memorandum of Understanding with the Ministry of Environment of the Republic of Korea.
UNOSD

UNOSD Mandate

- Supporting development pillar of the United Nations Secretariat by ensuring international cooperation in the pursuit of sustainable development for all.
- Strengthening the capacity of Member States to undertake integrated sustainability transformation to the 2030 Agenda and the SDGs, and other internationally agreed development goals.
- Assisting developing countries in developing and implementing strategies and policies for sustainable development.

UNOSD

COLLABORATING PARTNERS

Ministry of Environment

인천광역시
Incheon Metropolitan City

K E Y N O T E


1st Phase (2011-2020)
28
43
35
51
15
173 Member States
• 43 in Asia
• 51 in Africa
• 28 in Europe
• 35 in Latin America and Caribbean
• 15 in Oceania
• 89% of Member States
• 81% of SIDS, LDCs, and LLDCs


3500+ Participants / 120 Activities
Youth Summer Camp

Second Phase
(2021-2030)

UNOSD
UNITED NATIONS OFFICE FOR SUSTAINABLE DEVELOPMENT

UNOSD Mission and Objectives

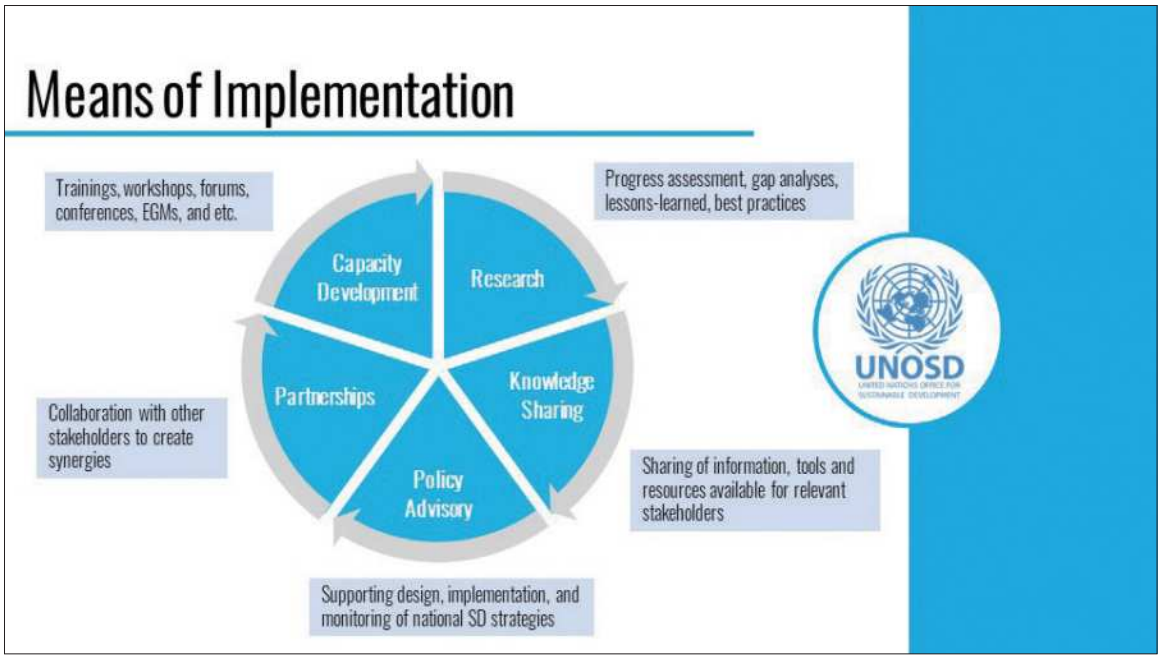
Enhanced Action: To accelerate the progress for the 2030 Agenda and the SDGs in the Decade of Action

Enhanced Knowledge: To disseminate and share best practices, lessons learned, strategies, policies and practical solutions for achieving sustainable development through

Enhanced Capacity: To strengthen the capacity for planning and undertaking integrated sustainability transformation

UNOSD
UNITED NATIONS OFFICE FOR SUSTAINABLE DEVELOPMENT

K E Y N O T E


Means of Implementation
Trainings, workshops, forums, conferences, EGMs, and etc.
Progress assessment, gap analyses, lessons-learned, best practices
Capacity Development
Research
Knowledge Sharing
Policy Advisory
Partnerships
UNOSD
Collaboration with other stakeholders to create synergies
Sharing of information, tools and resources available for relevant stakeholders
Supporting design, implementation, and monitoring of national SD strategies


Flagship Activities
Executive Training Course (ETC)
• Targets policymakers at national and subnational levels, and normally uses the thematic focus of the HLPF as the backbone for structuring the training
Sustainable Development Transformation Forum (SDTF)
• Hosts an open debate among global policy communities inviting decisionmakers from both public and private sector as well as other stakeholders to induce and facilitate large-scale, collective, and positive transformation towards sustainable development
International Mayors Forum
• Builds capacities of the mayors and leaders of local governments who face challenges in localizing the SDGs in their cities and communities
Lilongwe International Mayors Forum

Youth Engagement

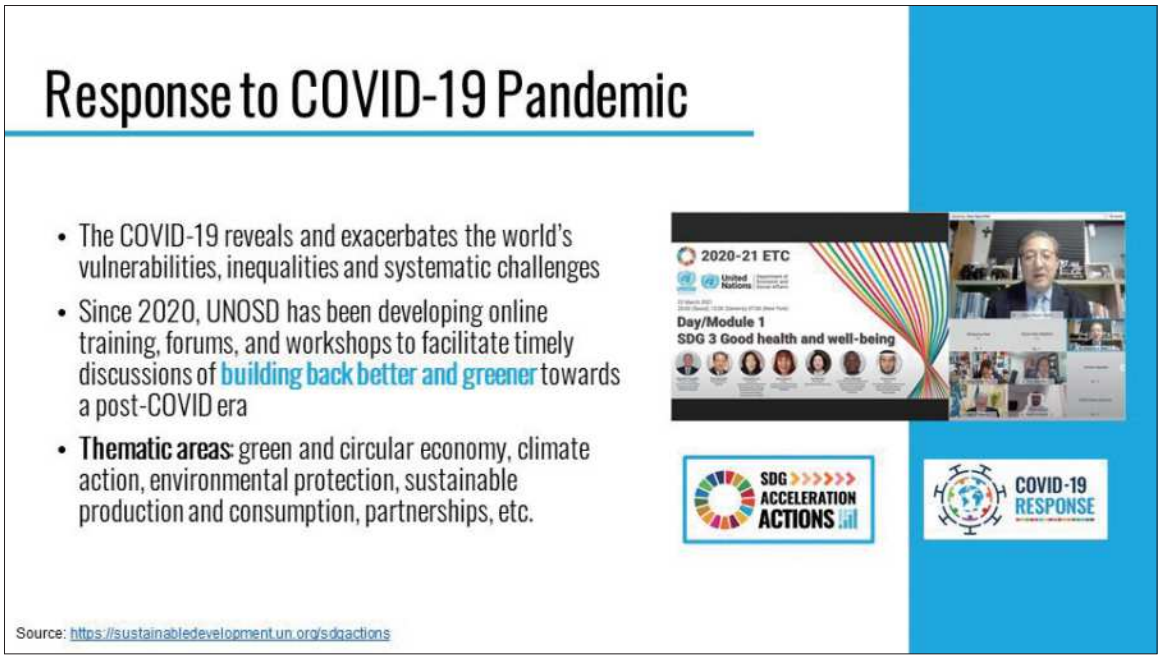
SDGs Youth Summer Camp

- UNOSD reflects the UN commitment to building a connected, sustainable, and transformed future through the youth
- Aims to develop capacities of youth leaders and empower them to think critically and get engaged in implementing the 2030 Agenda and the Sustainable Development Goals
- UNOSD will aim to gather participants from more diverse backgrounds to engage the youth

Policy Advisory Services

- UNOSD will provide tailored advisory services in their specific priorities, needs, and circumstances
- Expand its advisory services to developing countries with priorities given to SIDS, LDCs, and LLDCs
- Identify target countries through needs assessment based on Voluntary National Reviews and UNOSD-led diagnosis
- Collaborate with UN Country Team, UN Resident Coordinators, and UN Regional Commissions

K E Y N O T E


Response to COVID-19 Pandemic
• The COVID-19 reveals and exacerbates the world's vulnerabilities, inequalities and systematic challenges
• Since 2020, UNOSD has been developing online training, forums, and workshops to facilitate timely discussions of building back better and greener towards a post-COVID era
• Thematic areas: green and circular economy, climate action, environmental protection, sustainable production and consumption, partnerships, etc.
2020-21 ETC
Day/Module 1
SDG 3 Good health and well-being
SDG ACCELERATION ACTIONS
COVID-19 RESPONSE
Source: https://sustainabledevelopment.un.org/sdgactions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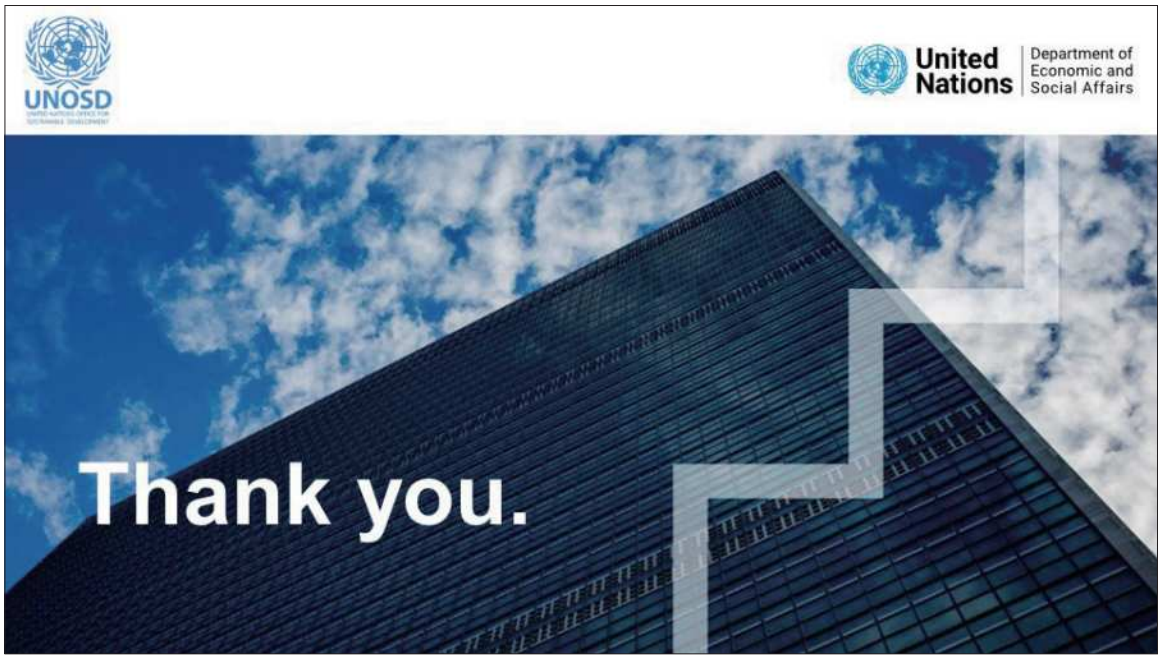
UNOSD
United Nations
Department of Economic and Social Affairs
Thank you.

Low Emission Development to Achieve

CARBON NEUTRALITY AND SDGs

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SESSION I

Synergies in Joint Implementation of Climate Action and the SDGs for Recovery

Moderator

Ganbold Baasanjav Head, Subregional Office for East and North-East Asia, UN Economic and Social Commission for Asia and the Pacific (UN ESCAP)

Financing the Climate Ambition

Oyun Sanjaasuren Director of External Affairs, Green Climate Fund (GCF)

Climate diplomacy– the Danish case

Tomas Anker Christensen Climate Ambassador of Denmark

Intervention with insights on sustainable development, climate policies and recovery plans from Germany

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Korean Green New Deal and K-SDGs

Eunhae Jeong Director of Green Transition, Ministry of Environment of the Republic of Korea

Discussion Session

SESSION 1

Synergies in Joint Implementation of Climate Action and the SDGs for Recovery

MODERATOR

Ganbold Baasanjav

Head, Subregional Office for East and North-East Asia,
UN Economic and Social Commission for Asia and the Pacific (UN ESCAP)

Career History

Dr. Ganbold Baasanjav is the Head of United Nations Economic and Social Commission for Asia and the Pacific (UN ESCAP) East and North-East Asia Office based in Incheon, Republic of Korea.

Prior to UNESCAP, Dr. Ganbold has worked extensively for the government of Mongolia serving within the country in the Foreign Ministry as well as abroad in a diplomatic capacity. He was most recently the Ambassador-at-large for Sustainable Development at the Ministry of Foreign Affairs of Mongolia (2018-2019). Prior to this, he has served as the Mongolian Ambassador to the Republic of Korea (2013-2018), Director-General of the Asia and the Pacific Department at the Ministry of Foreign Affairs of Mongolia (2008-2013), and the Mongolian Ambassador to Vietnam (2004-2008). Dr. Ganbold has also served as the State Secretary of the Ministry of Foreign Affairs of Mongolia (2001-2003) and as the Director-General of the Public Affairs Department at the Ministry of External Relations of Mongolia (1998-2000). His earlier career includes overseas diplomatic assignments with the Mongolian Embassy in Pyongyang, DPR of Korea (1989-1993). Dr. Ganbold was also a part-time lecturer and Dean for the Department of International Relations, School of Foreign Service, at the National University of Mongolia (1997-2001).

Dr. Ganbold is fluent in English, Korean and Russian, and earned his BA in International Relations from Moscow State Institute of International Relations (MGIMO), Russia an MA in Political Science from University of Hawaii at Manoa, USA and a PhD in Law from Hankuk University of Foreign Studies, Republic of Korea.

He is married with four children.

SESSION 1

Synergies in Joint Implementation of Climate Action and the SDGs for Recovery

GLOBAL TRENDS

Financing the Climate Ambition

Oyun Sanjaasuren

Director of External Affairs, Green Climate Fund

Career History

Dr. Oyun Sanjaasuren is the Director of External Affairs of Green Climate Fund, where she leads the fund's work on resource mobilization, partnerships, communications and advocacy.
Dr. Oyun served as the first President of the United Nations Environment Assembly, the Governing Body of UN Environment (2014-2016), and has been an active advocate for sustainable development, climate change and water security. She served as Chair of the Global Water Partnership and as an Advisory Board member of the Future Earth. One of the leading politicians in Mongolia, she formerly served as a Member of Parliament (1998-2016), as Minister of Environment and Green Development and Minister of Foreign Affairs. She is a founder of the Zorig Foundation, a leading Mongolian NGO that advances democracy, social and human rights and supports youth leadership and education.
Oyun has a Ph.D in Earth Sciences from University of Cambridge.

Abstract

We know that the current decade 2020 to 2030 is crucial

A DECADE OF NATURE AND CLIMATE ACTION

➔ With the need to Halve emissions by 2030 and halve again the decade after and then reach net-zero by 2050…
➔ And reverse biodiversity loss

These are enormous tasks.
The recent net-zero drive: has been creating true momentum; it's a pivotal time in the fight against climate change.
Green resilient recovery is essential if we are to meet the goals of both SDGs and PA. The recovery measures are not sufficiently green and not aligned with SDGs.
South Korea has become a model for developing countries in the way it has rapidly industrialised and built an economy based on fast internet speeds. We applaud Korea's carbon neutrality pledge and the "Korean Green New Deal" – paving the way for the country to become a leader in sustainable economic growth

*UNFCCC NDC synthesis report in March 2021 – indicated that we are nowhere close to where we need to be in order to achieve net-zero by 2050

UNSG calls this year, 2021, to be a LEAP year for building a true global coalition for carbon neutrality. We are seeing both the political will building (with net-zero pledges by China, US, European countries, Japan; RoK and another 120+ countries – equaling now at cca. 70% of the global economy and 65% of total emissions); and we are definitely seeing the public support growing, especially from the new generation. However, all of the pledges must now be translated into roadmaps to reach net-zero; translated into concrete actions – by enhanced commitments in COP26 in Glasgow

The COVID pandemic brought unprecedented humanitarian and financial crisis, has taken more than 3.4 million lives; driven the economy down, millions lost their jobs which led to rising poverty; there is a risk of default in many countries – especially developing countries are hit hardest – already most vulnerable to climate change

At the same time, we know that we have to come out from this pandemic more resilient,

build back better and choose a new path for growth and development; the key message here is getting the recovery right

The unprecedented crisis also unleashed unprecedented measures, the resources freed for stimulus packages – in trillions – almost all of it still in G20 countries.

Over USD 14 trillion in announced spending across the world's largest 50 countries in 2020, of which only 13% (1.9t) was directed to long-term 'recovery-type' measures an of that less than 20% (340b) – to green recovery measures (UNEP, University of Oxford, March 2021)[1)]

The drop in carbon emissions from coronavirus lockdowns in 2020 is expected to have a negligible effect on average global temperature. However, strong green economic recovery measures from the Covid-19 pandemic that invest in low-carbon technologies, practices, and infrastructure and do not bail out carbon-intensive industries could cut warming by 0.3C and put us back on track to avert catastrophic climate change.

We must not repeat the errors of the past. In many countries, austerity measures implemented in response to the 2008 debt crisis have significantly constrained the ability of governments to spend on infrastructure development and maintenance, as well as technology and skills development.

*With the value of climate finance opportunities in developing countries between now and 2030 estimated up to USD 23t vs. USD 18t of negative-yielding debt in OECD countries → increasing the flow of climate finance should be a logical and natural win-win way for both climate action and green recovery measures. This is not happening.

* This is because of perceived risks:

- Green investments tend to have higher upfront capital requirements, longer pay-back periods and can have higher perceived policy, technical and operational investment risks. At GCF we are leveraging our investments to unblock the barriers to transformative climate investments.
- blended climate finance so far has mostly benefited high and middle-income countries, largely bypassing LDCs and SIDs, and has catalysed private investment in mature technologies such as on-grid renewable energy technologies.

The needs for green/sustainable investments are huge, but they can also bring returns - If invested smart and if externalities are taken into consideration. Just increasing the volume of climate finance is not enough: investments required in a different set of assets, and best if these investments create co-benefits for Covid-recovery, including creating jobs.

Currently, GCF's portfolio is USD 30B with the fund's investment at 8.3b and the rest is co-investment.

1 https://www.greengrowthknowledge.org/research/are-we-building-back-better-evidence-2020-and-pathways-inclusive-green-recovery-spending

I want to use examples of some of the fund's projects - examples of what we, at GCF, do with our partner countries and partner accredited entities (more than 100 diverse network) - to explain the fund's approach to bring this transformative change.

The key is Innovation:

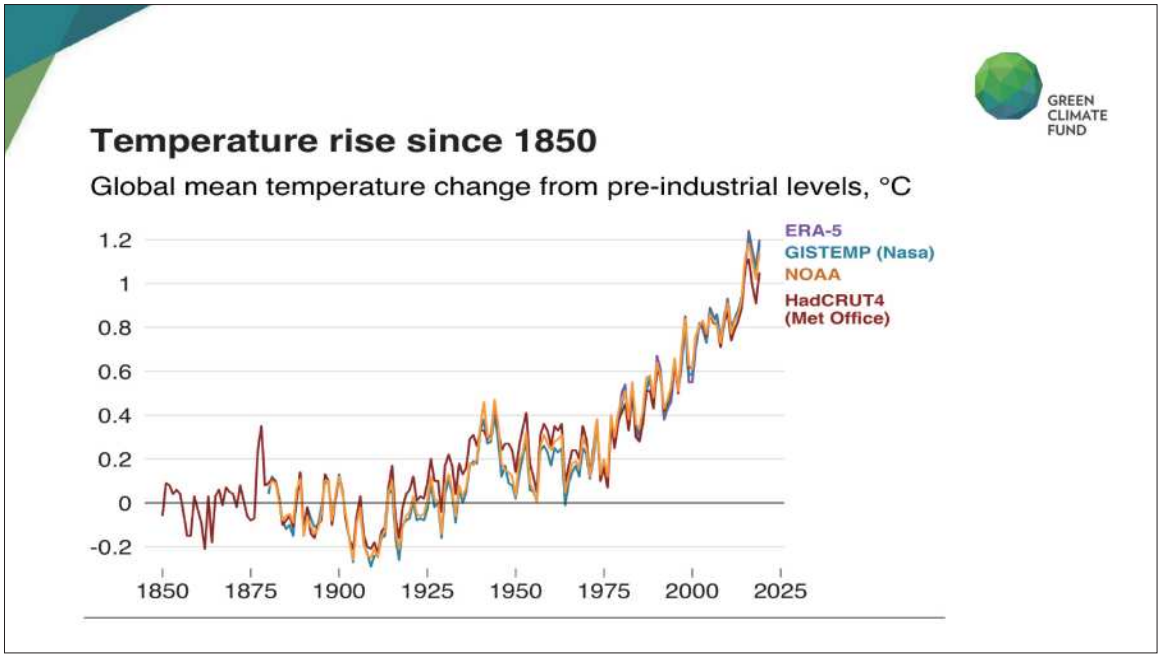
- in Policy and regulatory – transformative planning (integrating policies to achieve the SDGs and the PA - that capture multiple wins - could reduce total required investment by up to 40%.)
- In institutions (including in capacity strengthening that will support countries craft green, resilient recovery measures and incorporate such measures into NDCs and stimulus packages.)
- Innovation in technology, and
- Financial innovations, including de-risking investments of private sector is often key

We must green existing investments and also secure the new investments required to deliver green growth. Catalysing private investment to foster a low emission, climate resilient recovery is vital to supplement public resources. But there is also to an array of financing and entrepreneurial barriers to private green investment:

First: we support developing countries to create integrated climate and sustainable development strategies. This fosters the establishment of a conducive policy environment for green, resilient investment.
Second: we encourage and pilot innovation. We support innovations in policy, institutions, business, technology and in finance.
Third: we scale up successful climate investments. We do this through tools like blended finance as well as through dedicated climate financing facilities and institutions.
Fourth: we create knowledge and share it. Sharing knowledge and lessons learned promotes the incorporation of climate risks into every single financial decision. In this way finance can be aligned with sustainable developments.

K E Y N O T E


FINANCING THE CLIMATE AMBITION
GREEN CLIMATE FUND
Low Emission Development to Achieve Carbon Neutrality and SDGs
The 12th International Greenhouse Gas Conference; UNOSD
28 May 2021
Oyun Sanjaasuren, GCF


GREEN CLIMATE FUND
Temperature rise since 1850
Global mean temperature change from pre-industrial levels, °C
ERA-5
GISTEMP (Nasa)
NOAA
HadCRUT4 (Met Office)
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
1850
1875
1900
1925
1950
1975
2000
2025

AN EMISSION PATHWAY CONSISTENT WITH THE 1.5C TARGET

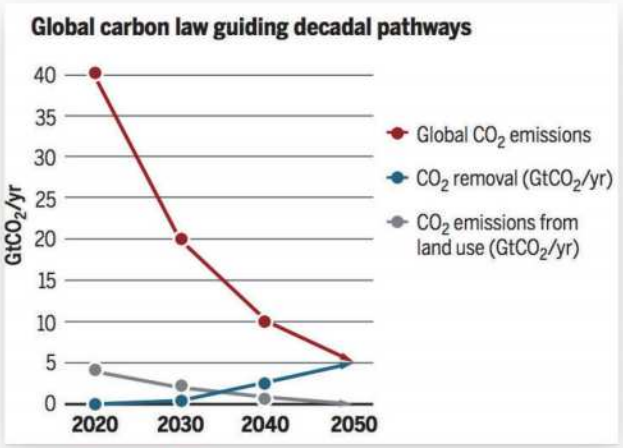
GREEN CLIMATE FUND

A 1.5 C emissions pathway will require the world halve emissions by two each decade from 2020, reaching net zero around 2050.

This would require **four** transitions in the management of:

(i) energy systems and industries
(ii) built environment;
(iii) Human security and livelihoods;
(iv) natural environment.

Adaptation efforts will need to be dramatically scaled up even if we achieve an emission pathway consistent with the 1.5 C target.



Science Magazine (ias.edu)

NET ZERO MOMENTUM

GREEN CLIMATE FUND

Political momentum with more than 120 countries pledging net-zero representing:

- 65% of global CO2 emissions
- More than 70% of the world economy

4

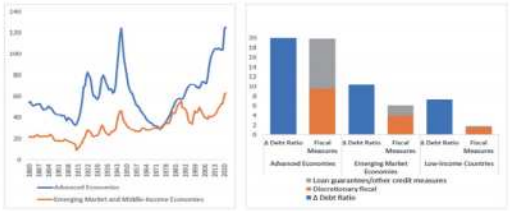
K E Y N O T E

FINANCIAL IMPLICATIONS OF COVID-19 IN DEVELOPING COUNTRIES

GREEN CLIMATE FUND

- Fall in domestic public revenue and downgrades in sovereign credit rating
- Decline in private external finance (portfolio & investment flows, FDI, remittances)
- Solvency and liquidly crisis for SMEs

Debt and deficits
Projections for 2019–21 show the COVID-19 pandemic has pushed debt to historically high levels.
(percent of GDP)

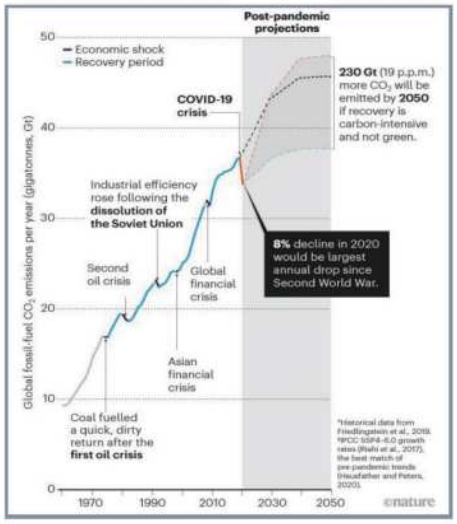


Sources: IMF Historical Public Debt Database, IMF World Economic Outlook, and IMF staff calculations.
Note: The left chart shows historical and projected 2020 debt for AEs and EMEs based on a constant sample of 25 and 27 countries, respectively, weighted by GDP in purchasing power parity terms. The right chart shows the projected increase in 2021 debt over 2019 debt for the AEs, EMEs and LICs as defined in the IMF's World Economic Outlook, as well as key fiscal measures governments announced or taken in selected economies in response to the COVID-19 pandemic as of September 2020.

INTERNATIONAL MONETARY FUND

A SINGULAR OPPORTUNITY TO RESET EMISSIONS' TRAJECTORY IN THE AFTERMATH OF COVID-19

GREEN CLIMATE FUND



SHOCK AND RECOVERY
Emissions* from fossil fuels dip during recessions as the world economy slows. The rate of growth during recovery depends on whether green or dirty technologies supplant old infrastructure.

— International Energy Agency's 2020 forecast
··· Current trajectory, no pandemic†
··· Dirty recovery
··· Green recovery

Source: R. Hanna et al (2020) based on P. Friedlingstein et al. (2019); K. Riahi et al. (2017); Z. Hausfather & G. Peters (2020).

Source: Independent Expert Group on Climate Finance (2020): Delivering on the $100 billion climate finance commitment and transforming climate finance (Amar Bhachatarya, et al. Dec 2020)

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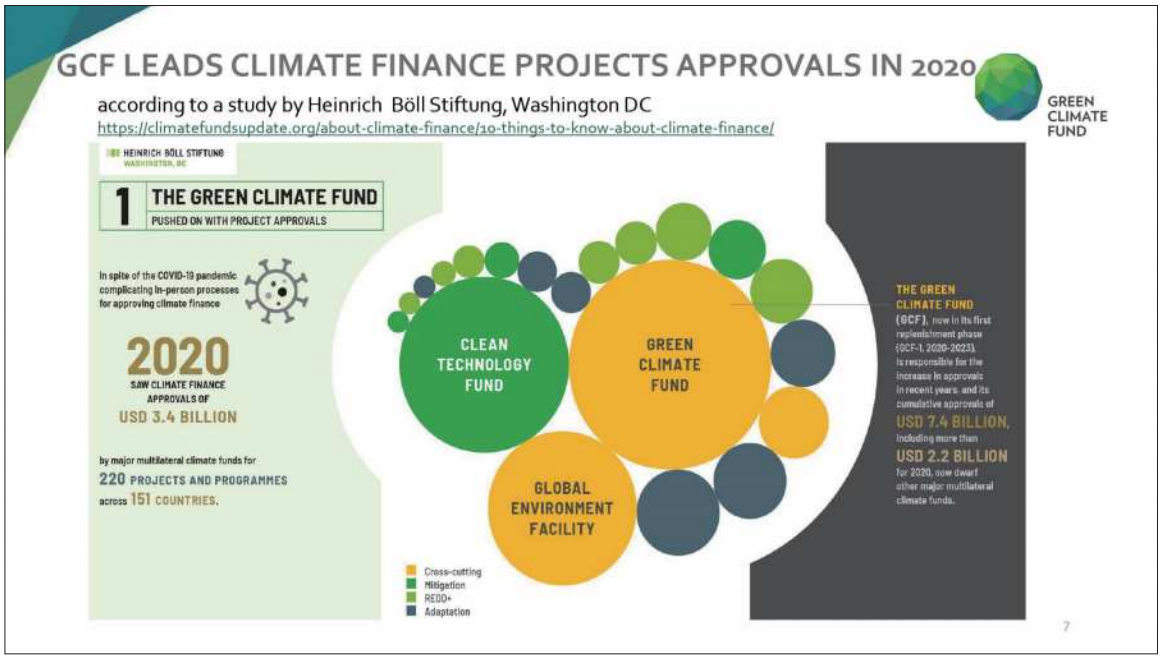
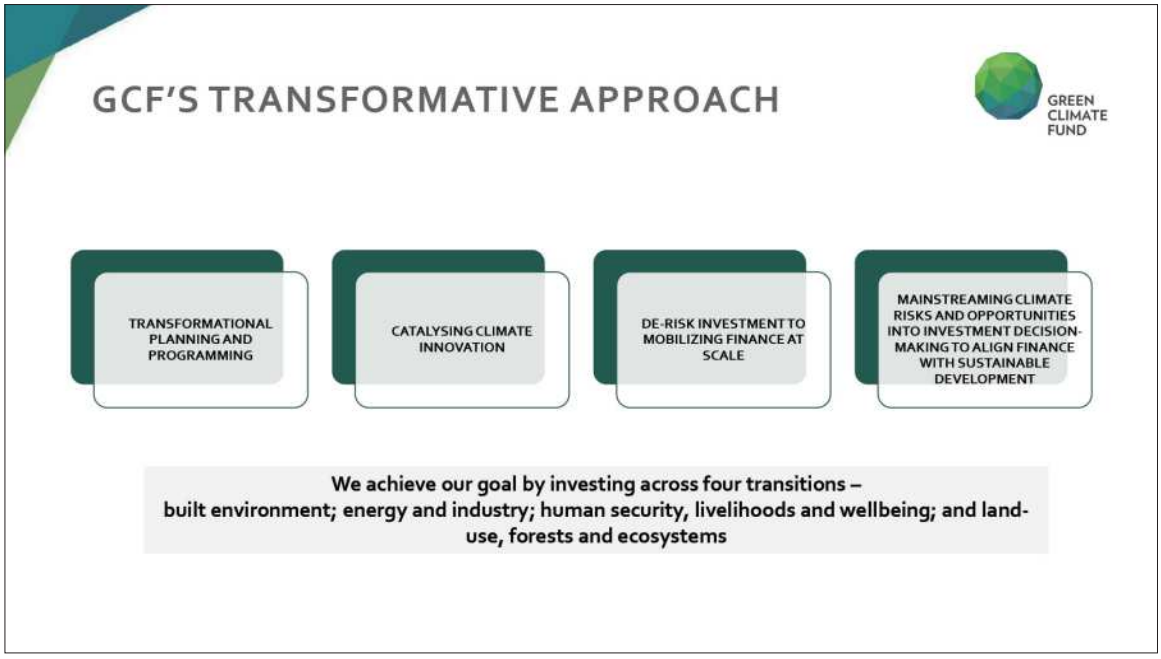
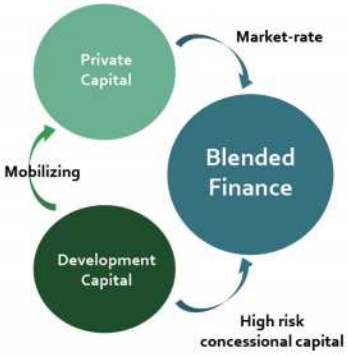

GCF LEADS CLIMATE FINANCE PROJECTS APPROVALS IN 2020
according to a study by Heinrich Böll Stiftung, Washington DC
https://climatefundsupdate.org/about-climate-finance/10-things-to-know-about-climate-finance/
GREEN CLIMATE FUND
HEINRICH BÖLL STIFTUNG
WASHINGTON, DC
1 THE GREEN CLIMATE FUND
PUSHED ON WITH PROJECT APPROVALS
In spite of the COVID-19 pandemic complicating in-person processes for approving climate finance
2020
SAW CLIMATE FINANCE APPROVALS OF
USD 3.4 BILLION
by major multilateral climate funds for
220 PROJECTS AND PROGRAMMES
across 151 COUNTRIES.
CLEAN TECHNOLOGY FUND
GREEN CLIMATE FUND
GLOBAL ENVIRONMENT FACILITY
Cross-cutting
Mitigation
REDD+
Adaptation
THE GREEN CLIMATE FUND (GCF), now in its first replenishment phase (GCF-1, 2020-2023), is responsible for the increase in approvals in recent years, and its cumulative approvals of
USD 7.4 BILLION,
including more than
USD 2.2 BILLION
for 2020, now dwarf other major multilateral climate funds.
7


GCF'S TRANSFORMATIVE APPROACH
GREEN CLIMATE FUND
TRANSFORMATIONAL PLANNING AND PROGRAMMING
CATALYSING CLIMATE INNOVATION
DE-RISK INVESTMENT TO MOBILIZING FINANCE AT SCALE
MAINSTREAMING CLIMATE RISKS AND OPPORTUNITIES INTO INVESTMENT DECISION-MAKING TO ALIGN FINANCE WITH SUSTAINABLE DEVELOPMENT
We achieve our goal by investing across four transitions –
built environment; energy and industry; human security, livelihoods and wellbeing; and land-use, forests and ecosystems

K E Y N O T E

BLENDED FINANCE AND
DE-RISKING INSTRUMENTS IS KEY

GREEN CLIMATE FUND



INSTRUMENTS

Loans
- Concessional **pricing & tenor**
- Relatively **high-risk tolerance**

Equity
- **Early stage** risk
- Enable higher **mobilization**

Guarantees
- Tailored guarantees
- **Catalytic** – enable crowding-in

Grants
- **Capacity building**
- Enabling affordability

9

DE-RISKING INVESTMENT AND SCALING UP: EXAMPLES OF PROJECTS

GREEN CLIMATE FUND

- **SnCF Global** aims to catalyze long-term climate investment at the sub-national level and is designed to attract primarily private institutional investment to deliver certified climate and SDGs impacts and Nature-based Solutions at global scale.

FP152 Global Subnational Climate Fund (SnCF Global) – Equity
Total project investment: **$750m**
GCF finance: **$150m in equity**
Project beneficiaries: **77.6m**
Accredited Entity: **Pegasus Capital Advisors**

FP151 Global Subnational Climate Fund (SnCF Global) – Technical Assistance (TA) Facility
Total project investment: **$28.0m**
GCF finance: **$18.5m grant**
Accredited Entity: **International Union for Conservation of Nature**

- **The Great Green Wall (GGW)** is an umbrella programme that aims to restore 100 million hectares of currently degraded land; sequester 250 million tons of carbon and create 10 million green jobs by creating an 8,000-kilometre green barrier stretching across the entire width of the Africa.

10

CATALYSING CLIMATE INNOVATION: EXAMPLE OF PROJECTS

GREEN CLIMATE FUND

- **FP115 - Espejo de Tarapacá** is a renewable energy project in Chile and is funding what will be the world's largest hydropower station using seawater, providing a vast energy source, and making more freshwater available for drinking water and agriculture.
  - Located in the Tarapacá desert, this project combines a 561 MW photovoltaic solar plant that provides power during the day and a 300 MW pumped storage hydroelectric facility that generates electricity at night, using the Pacific Ocean as its lower reservoir and a natural geographic feature as its upper reservoir.

- **Readiness Grant:** Facilitating an enabling environment for a Caribbean Green Bond listing on the Jamaica Stock Exchange to establish the Caribbean's first regional green bond market.
  - **A GCF readiness grant will help develop a regulatory framework for green bonds and raise awareness in the marketplace among potential issuers and investors.**

11

MAINSTREAMING CLIMATE RISKS AND OPPORTUNITIES INTO INVESTMENT DECISION-MAKING TO ALIGN FINANCE WITH SUSTAINABLE DEVELOPMENT

GREEN CLIMATE FUND

- **FP050-Bhutan for life** aims to provide times and resources for Bhutan's government to secure long-term revenues and maintain improvements. **The project will support Bhutan's development without the cost of extensive environmental degradation.**
  - Total project investment: **$118m grant**
  - GCF finance: **$26.6m grant**
  - Accredited Entity: **WWF**

- **FP138 – ASER Solar Rural Electrification Project** aims to ensure access to clean energy for all in Senegal in partnership with the West African Development Bank (BOAD). By providing affordable funding in the form of low-interest loans, **GCF resources will mobilise the private sector to invest in solar-powered mini-grids for the electrification of 1,000 isolated villages**.
  - Total project investment: **$232.9m grant and loan**
  - GCF finance:**$86.3m grant and loan**
  - Accredited Entity: **BOAD**

12

K E Y N O T E

MEMO

SESSION 1

Synergies in Joint Implementation of Climate Action and the SDGs for Recovery

COUNTRY EXPERIENCE 1

Climate diplomacy– the Danish case

Tomas Anker Christensen

Climate Ambassador of Denmark

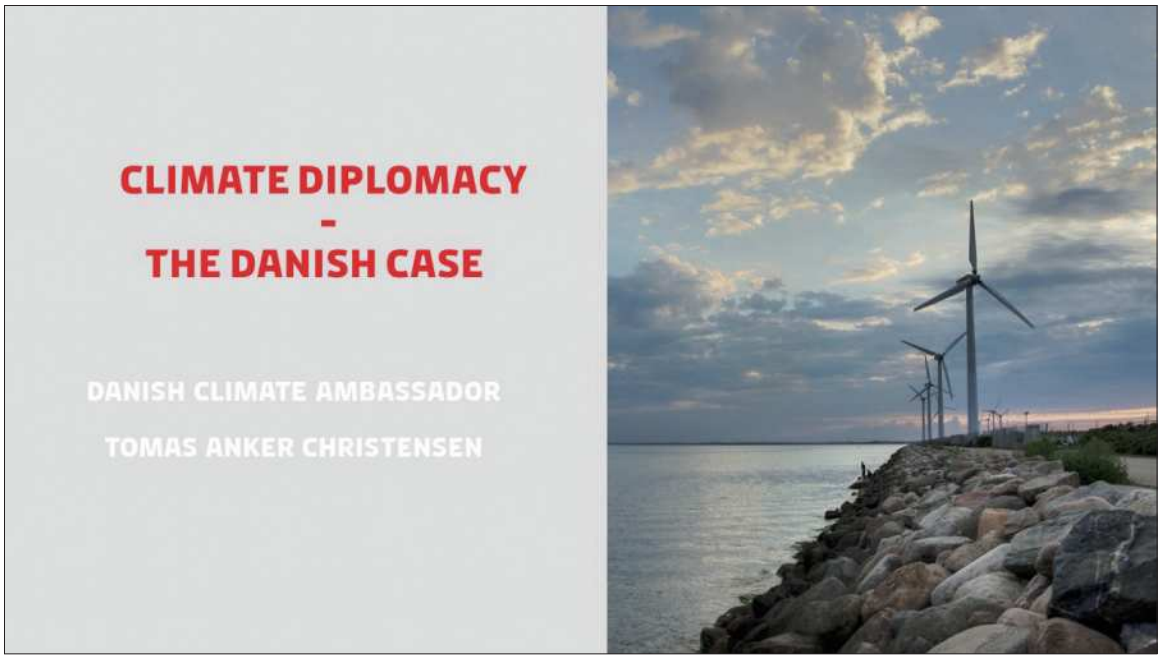
Career History

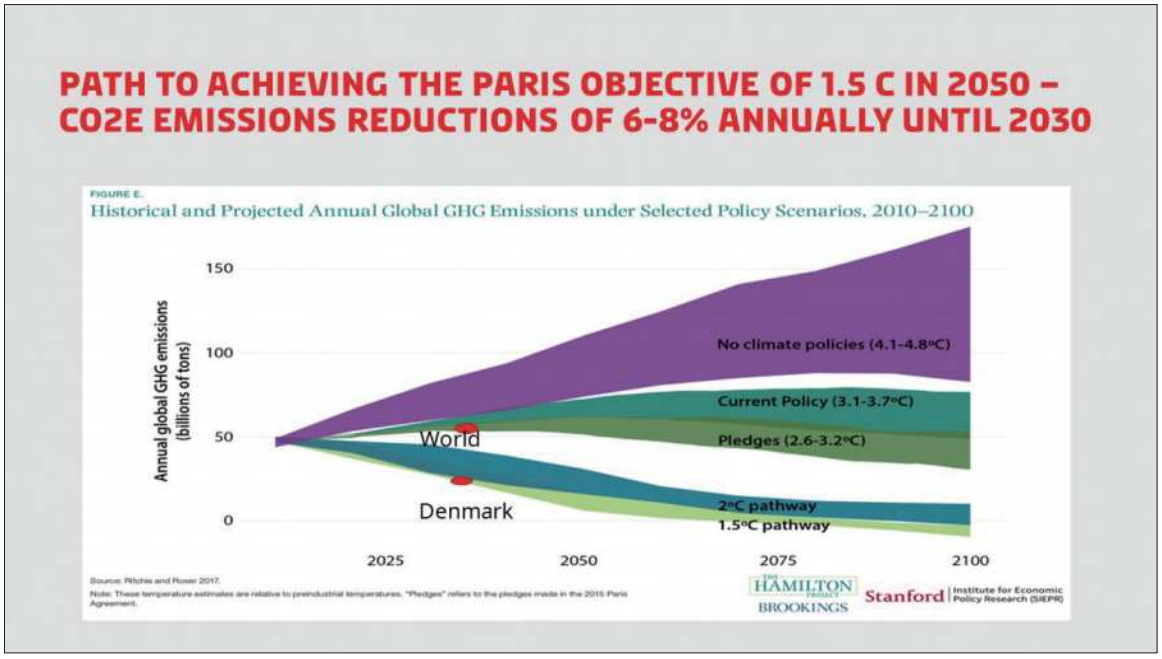
Tomas Anker Christensen is the Climate Ambassador of Denmark at the Ministry of Foreign Affairs and the Ministry of Climate, Energy and Utilities. He has been Under-Secretary for Global Challenges, where he was at the head of the establishment of the 3GF – an international partnership for green growth, partnerships and transition. Subsequently, he was Senior Advisor for Partnerships to UN Secretary-General Ban Ki-moon and head of the climate team with responsibility for preparing and conducting the 2014 UN Climate Summit. Following this, he was Assistant Secretary General at the United Nations and chef de cabinet for two presidents of the General Assembly (Mogens Lykketoft and Peter Thomson, respectively) with particular focus on implementation of the Paris Agreement and the UN Sustainable Development Goals. Thereafter, Tomas Anker Christensen served as special advisor to the UN's Special Envoy on Climate Action, Michael Bloomberg and to the Special Envoy on the Ocean, Peter Thomson. Ambassador Christensen has also served as Denmark's ambassador to Iran and to Egypt.

Abstract

Increased global ambitions and actions are necessary to reach the Paris Agreement's objectives. Denmark wants to be a green frontrunner in global climate action that inspires and encourages the rest of the world. Our goal is 70% emissions reductions by 2030and climate neutrality by 2050. We will help lead the green transition, further global ambitions on climate, environment and nature, and actively promote and support the Paris Agreement and sustainable development aligned with the SDGs. We will work for a socially just green transition that creates green skilled jobs and avoids increasing inequality. In my talk, I will go through how and with whom Denmark works climate diplomatically to achieve these goals and further the green transition.

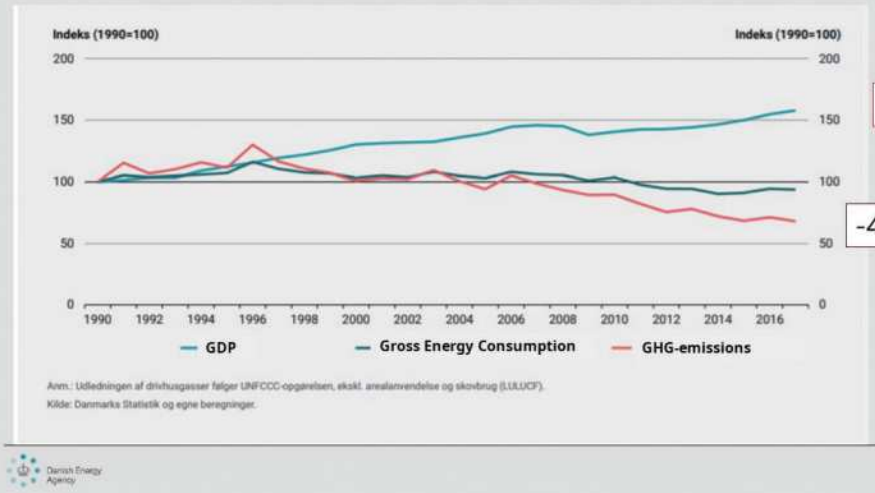
K E Y N O T E


CLIMATE DIPLOMACY
-
THE DANISH CASE
DANISH CLIMATE AMBASSADOR
TOMAS ANKER CHRISTENSEN


PATH TO ACHIEVING THE PARIS OBJECTIVE OF 1.5 C IN 2050 –
CO2E EMISSIONS REDUCTIONS OF 6-8% ANNUALLY UNTIL 2030
FIGURE E.
Historical and Projected Annual Global GHG Emissions under Selected Policy Scenarios, 2010–2100
Annual global GHG emissions (billions of tons)
150
100
50
0
2025
2050
2075
2100
No climate policies (4.1-4.8°C)
Current Policy (3.1-3.7°C)
Pledges (2.6-3.2°C)
2°C pathway
1.5°C pathway
World
Denmark
Source: Fitchie and Power 2017.
Note: These temperature estimates are relative to preindustrial temperatures. "Pledges" refers to the pledges made in the 2015 Paris Agreement.
THE HAMILTON PROJECT
BROOKINGS
Stanford | Institute for Economic Policy Research (SIEPR)

Denmark's example of economic growth and emission reductions

Economic growth, stable energy consumption and emission reductions last 30 years



Anm.: Udledningen af drivhusgasser følger UNFCCC-opgørelsen, ekskl. arealanvendelse og skovbrug (LULUCF).
Kilde: Danmarks Statistik og egne beregninger.

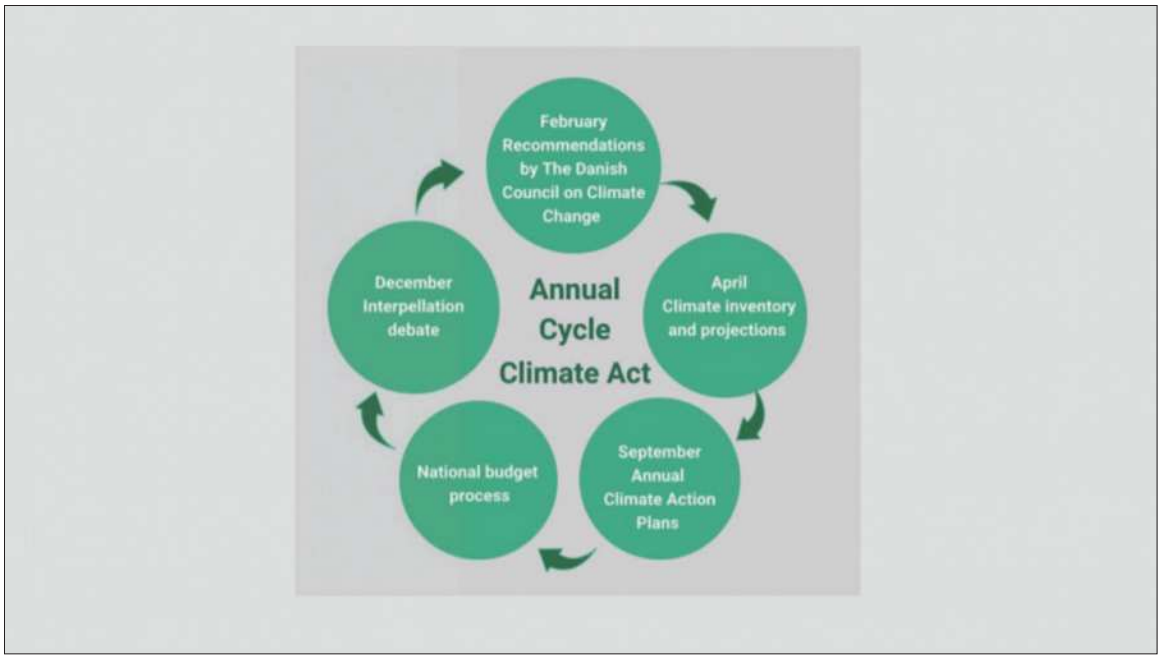
Danish Energy Agency

24 May 2021 Page 3

NEW DANISH GOVERNMENT 2019 WITH HIGH CLIMATE AMBITIONS

- **JUNE 2019: NEW AMBITIOUS CLIMATE AGENDA: 70% TARGET BY 2030**
- **DECEMBER 2019: BROAD POLITICAL AGREEMENT ON A NEW CLIMATE ACT**
- **CLIMATE LAW ADOPTED JUNE 2020 5-6 IMPLEMENTATION TRACKS**

K E Y N O T E

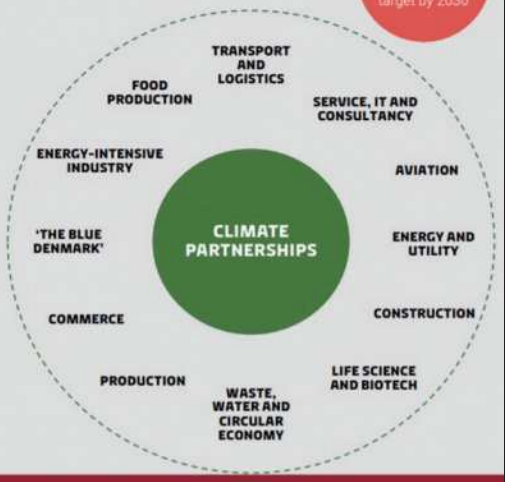

February Recommendations by The Danish Council on Climate Change
April Climate inventory and projections
September Annual Climate Action Plans
National budget process
December Interpellation debate
Annual Cycle
Climate Act


DENMARK'S NEW GOVERNMENTS 2030 VISION
▪ 70% reduction in CO2 emissions by 2030 mandated by law 50% by 2025.Climate neutrality at the latest in 2050.
Six implementation tracks/action plans:
▪ Buildings (May 2020)
▪ Energy and industry - 100% RE by 2028 and PtX (June 2020)
▪ Waste management and Circular Economy (June 2020)
▪ Road transport (December 2020)
▪ Agriculture (2021)
▪ Taxation (2020/2022)
▪ Global Climate Action Strategy
▪ 13 climate partnerships w private sector incl. institutional investors
MINISTRY OF FOREIGN AFFAIRS OF DENMARK

CLIMATE PARTNERSHIPS - FROM AMBITIONS TO ACTION

70% emission reduction target by 2030

- Danish government based on **green ambitions** of making Denmark a green powerhouse again
- Established in November 2019 by **the Danish government** as a part of **climate action plan** with 70 % emission reduction target
- **13 climate partnerships across all sectors and industries** – most ambitious broad-based cooperation so far



MINISTRY OF FOREIGN AFFAIRS OF DENMARK

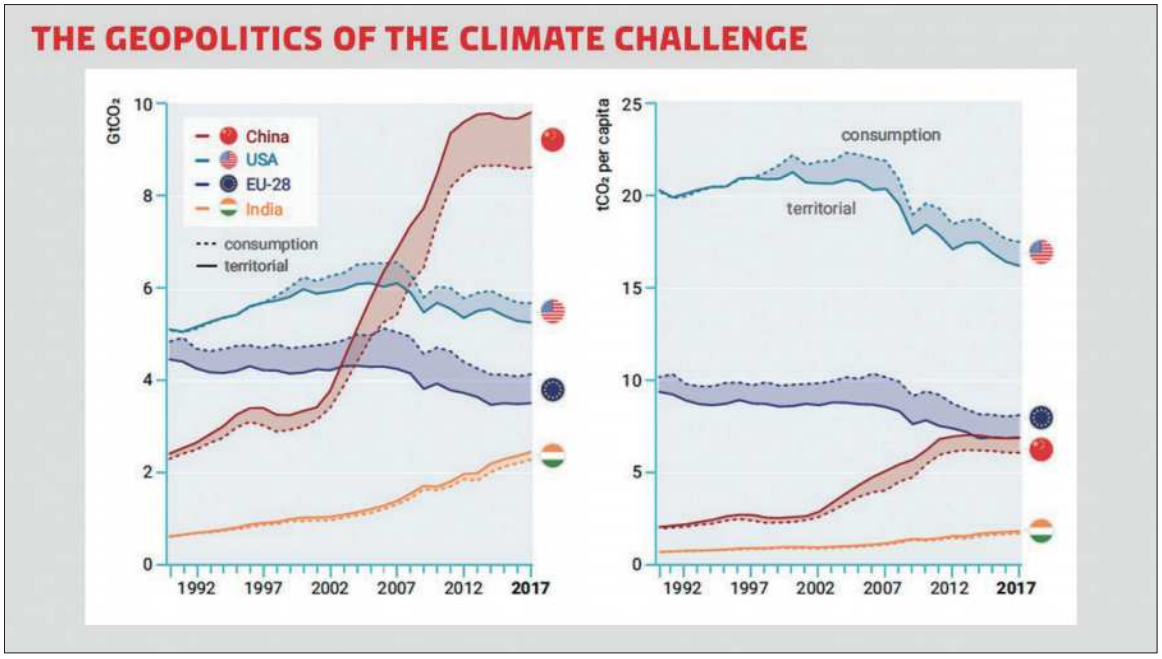
GREEN AREAS OF BUSINESS EXCELLENCE

- **WIND POWER** Denmark is the global wind power hub and major global wind turbine manufacturers have established R&D and innovations centres here. The interaction with all parts of the value chain and user-driven innovation makes the cluster second to none globally
- **DATA CENTRES** Apple and Facebook are placing some of the world's largest data centres in Denmark due to power grid uptime, excellent sites, low latency and electricity prices and 100 % electricity available from green sources
- **BIOENERGY** The bioenergy industry is the biggest contributor to Denmark's green energy transition – offering lucrative opportunities for international companies that are looking to invest
- **POWER TO X** Denmark has all the prerequisites for scaling up a power to x value chain, including affordable and reliable green power, and strong policy support for PtX
- **CARBON CAPTURE, UTILISATION, AND STORAGE (CCUS)** Clear policy goals, public funding, geological mapping, and research infrastructure in place

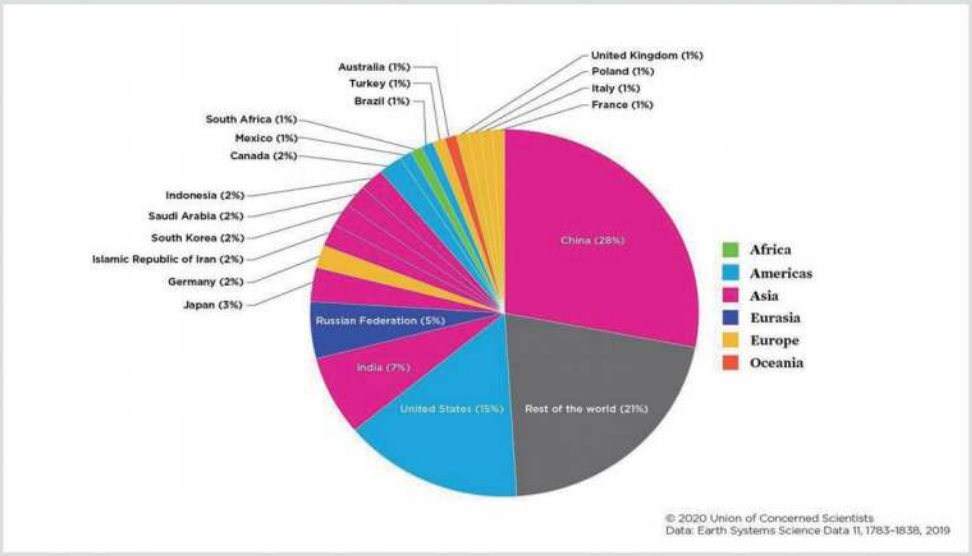
8

K E Y N O T E

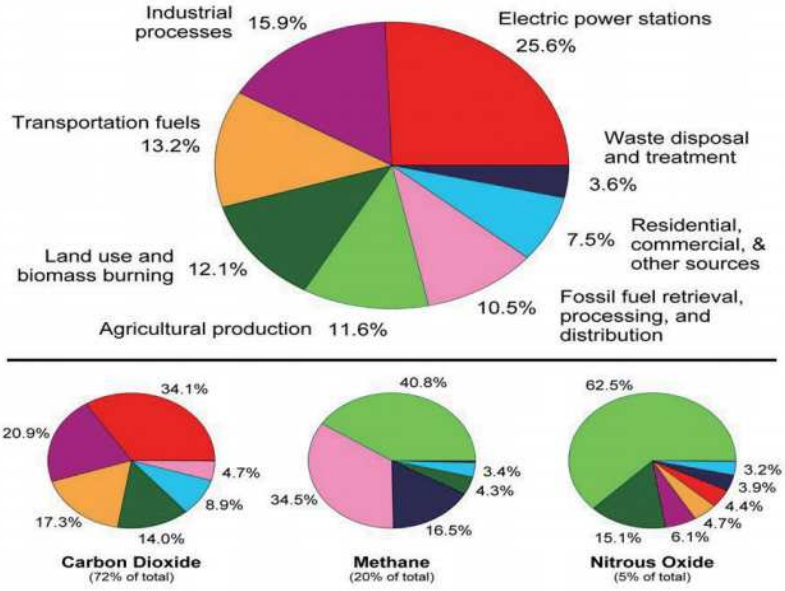

A Green and Sustainable World -
Denmark's Global Climate Action Strategy
Denmark will work to:
Increase global climate ambition
Reduce global greenhouse gas emissions
Strengthen focus on climate adaption and sustainable development
Shift financial flows and investments from black to green
Collaborate with the private sector on green solutions
9


THE GEOPOLITICS OF THE CLIMATE CHALLENGE
GtCO₂
China
USA
EU-28
India
consumption
territorial
1992
1997
2002
2007
2012
2017
tCO₂ per capita
consumption
territorial

DISTRIBUTION OF GLOBAL CO2 EMISSIONS



Annual Greenhouse Gas Emissions by Sector



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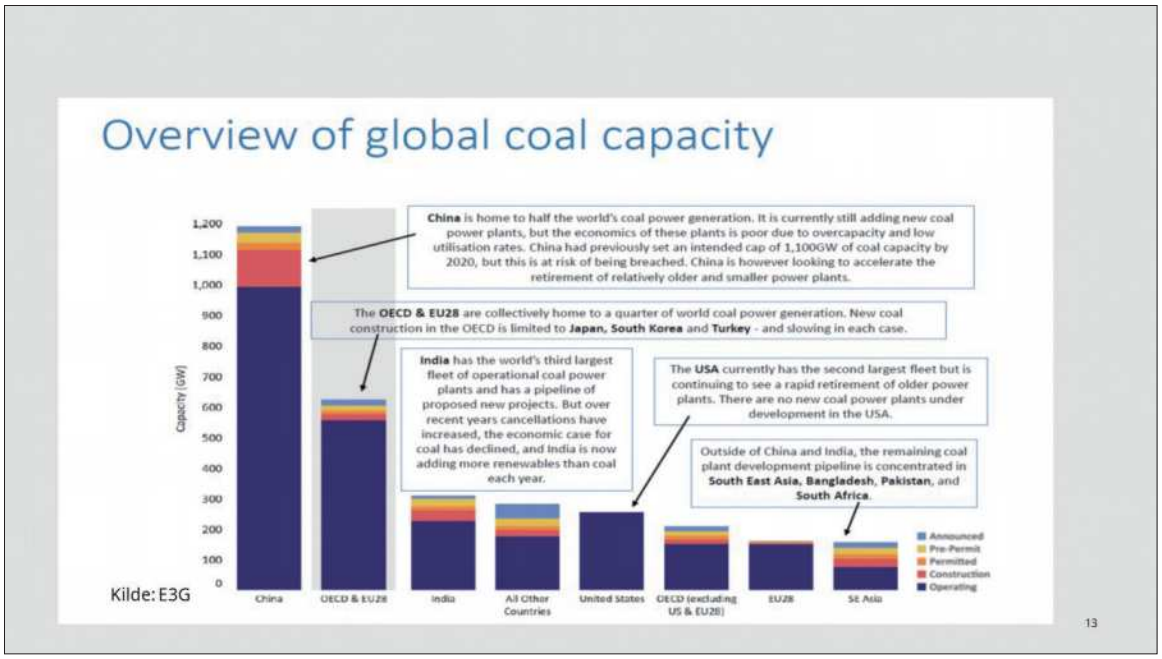
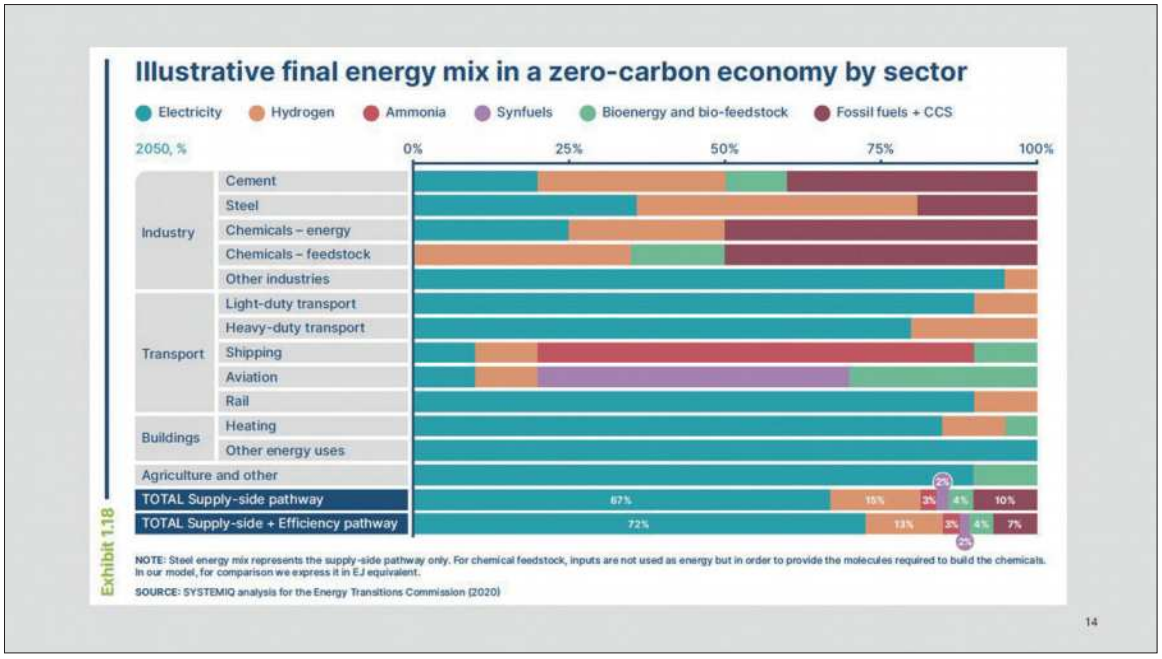
K E Y N O T E


Overview of global coal capacity
China is home to half the world's coal power generation. It is currently still adding new coal power plants, but the economics of these plants is poor due to overcapacity and low utilisation rates. China had previously set an intended cap of 1,100GW of coal capacity by 2020, but this is at risk of being breached. China is however looking to accelerate the retirement of relatively older and smaller power plants.
The OECD & EU28 are collectively home to a quarter of world coal power generation. New coal construction in the OECD is limited to Japan, South Korea and Turkey - and slowing in each case.
India has the world's third largest fleet of operational coal power plants and has a pipeline of proposed new projects. But over recent years cancellations have increased, the economic case for coal has declined, and India is now adding more renewables than coal each year.
The USA currently has the second largest fleet but is continuing to see a rapid retirement of older power plants. There are no new coal power plants under development in the USA.
Outside of China and India, the remaining coal plant development pipeline is concentrated in South East Asia, Bangladesh, Pakistan, and South Africa.
Capacity (GW)
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
China
OECD & EU28
India
All Other Countries
United States
OECD (excluding US & EU28)
EU28
SE Asia
Announced
Pre-Permit
Permitted
Construction
Operating
Kilde: E3G
13


Illustrative final energy mix in a zero-carbon economy by sector
Electricity
Hydrogen
Ammonia
Synfuels
Bioenergy and bio-feedstock
Fossil fuels + CCS
2050, %
0%
25%
50%
75%
100%
Industry
Cement
Steel
Chemicals – energy
Chemicals – feedstock
Other industries
Transport
Light-duty transport
Heavy-duty transport
Shipping
Aviation
Rail
Buildings
Heating
Other energy uses
Agriculture and other
TOTAL Supply-side pathway
TOTAL Supply-side + Efficiency pathway
67%
15%
3%
4%
10%
72%
13%
3%
4%
7%
2%
2%
Exhibit 1.18
NOTE: Steel energy mix represents the supply-side pathway only. For chemical feedstock, inputs are not used as energy but in order to provide the molecules required to build the chemicals. In our model, for comparison we express it in EJ equivalent.
SOURCE: SYSTEMIQ analysis for the Energy Transitions Commission (2020)
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THANK YOU FOR YOUR ATTENTION

SESSION 1

Synergies in Joint Implementation of Climate Action and the SDGs for Recovery

COUNTRY EXPERIENCE 2

Intervention with insights on sustainable development, climate policies and recovery plans from Germany

Marc-Oliver Pahl

Secretary General, German Council for Sustainable Development

Career History

Dr Marc-Oliver Pahl is head of the office of the German Council for Sustainable Development since March 2020. From 2011 to 2020 he was Head of the Sustainable Development and Environmental Trends department of the Ministry for Environment, Agriculture, Conservation and Consumer Protection of the State of North Rhine-Westphalia (MULNV) in Düsseldorf and in this capacity responsible for devising, implementing and further developing the federal state's sustainable development strategy. Prior to this he worked in the Europe/International Affairs department of the MULNV, in the office of the Committee on Budgets of the European Parliament in Brussels and Strasbourg as well as for the Minister of Federal and European Affairs in North Rhine-Westphalia's state chancellery office. He completed diplomatic training at the German Federal Foreign Office in Bonn and Bamako (Mali). Following law studies in Bayreuth and Münster as well as clerkships in Frankfurt/Oder, Berlin and Brussels, he wrote a dissertation on European constitutional law at the Humboldt-Universität zu Berlin.

Abstract

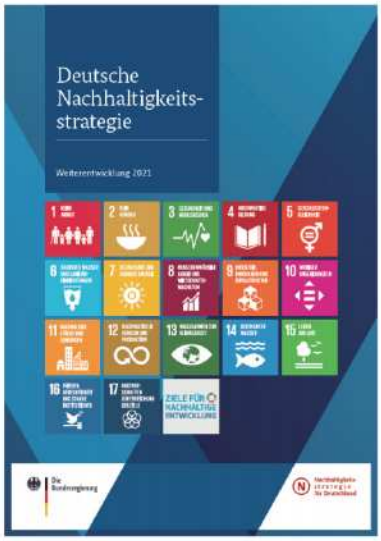
The German Council for Sustainable Development (RNE) is a multi-stakeholder body that provides recommendations to the German government along the German Sustainable Development Strategy. In doing so, it engages in recommendations and coherence for the national climate plan and pathway towards climate neutrality as well as sustainable development policymaking. Due to a recent decision of the German Constitutional Court, climate action, intergenerational justice and sustainable development must play a major role in policy making, unleashing an enormous dynamic and competition for pathways for socially just climate neutrality before 2050. Building better forward is one element among several that needs to serve this new and ambitious climate and sustainability goals in Germany.

K E Y N O T E


German Council for
SUSTAINABLE
Development
Sustainable development, climate neutrality pathways and recovery in Germany
Insights from the German Council for Sustainable Development (RNE)
Marc-Oliver Pahl, Secretary General RNE
28 May 2021


Agenda
1. The German Sustainable Development Strategy – transformation areas
2. The German Council for Sustainable Development (RNE)
3. The Sustainable Development Strategy and climate protection
4. RNE engagement for climate neutrality in, by and with Germany
21/05/2021
2

The German Sustainable Development Strategy



Source (English version forthcoming): German Government 2021: Germany's National Sustainable Development Strategy (bundesregierung.de)

The German Council for Sustainable Development

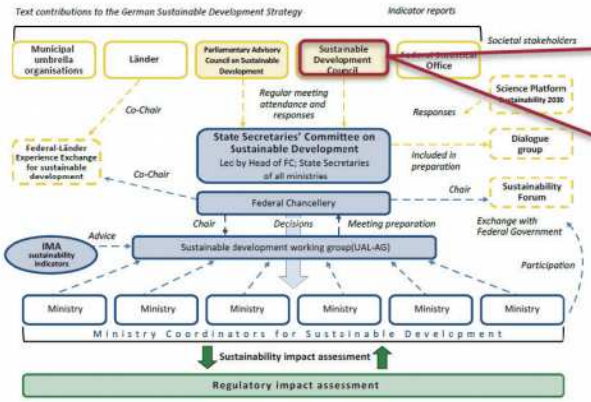


Figure: Sustainability management system derived from the German Sustainable Development Strategy

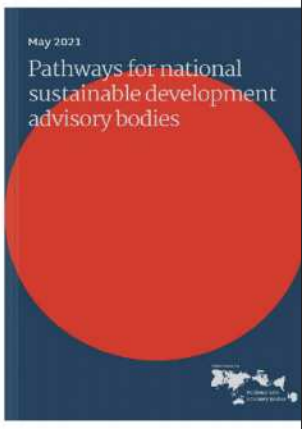
Recommendations & Statements of the Council

"Systematically laying the foundations for a sustainable food system is essential" - Statement of the German Council for Sustainable Development for the State Secretaries' Committee for Sustainable Development on 8 June of 30/04/2020

"Decade of action requires ambition!" - First recommendations of the Sustainability Board for the further development of the German Sustainability Strategy 2020/2021 of 13/05/2020

"Sustainable supply chains" - Statement by the German Council for Sustainable Development for effectively embedding sustainability and human rights in global supply chains of 13/05/2020

"Laying the financial foundations for a sustainable recovery from the coronavirus crisis in the EU" - Statement by the German Council for Sustainable Development (17/09/2020)



Find the documents here: *German Council for Sustainable Development Media library - German Council for Sustainable Development (nachhaltigkeitsrat.de)*

21/05/2021 5

Sustainable Development Strategy (2021) and the role of climate protection

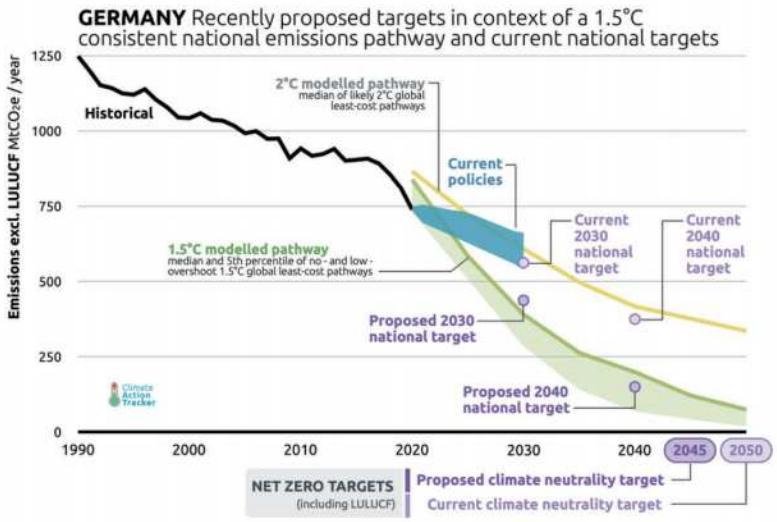
Energy Transition and Climate Protection is a **transformation area** in the German **Sustainable Development Strategy**:

- Focus on „**off track indicators**", incl. final energy productivity, primary energy consumption, GHG emission reduction
- Range of activities and **key measures for delivery**, incl. Climate Law, Climate Action Programme, Renewable Energy Act, coal phase-out, national carbon pricing scheme for non-ETS sectors, international climate finance, sustainable finance strategy
- Many additional measures expected in coming months in the context of the **European Green Deal** and **ruling of the Constitutional Court**

Source: Climate Action (bundesregierung.de)

21/05/2021 6

The Consititutional Court's „Climate Ruling" and the revision of the German Climate Law

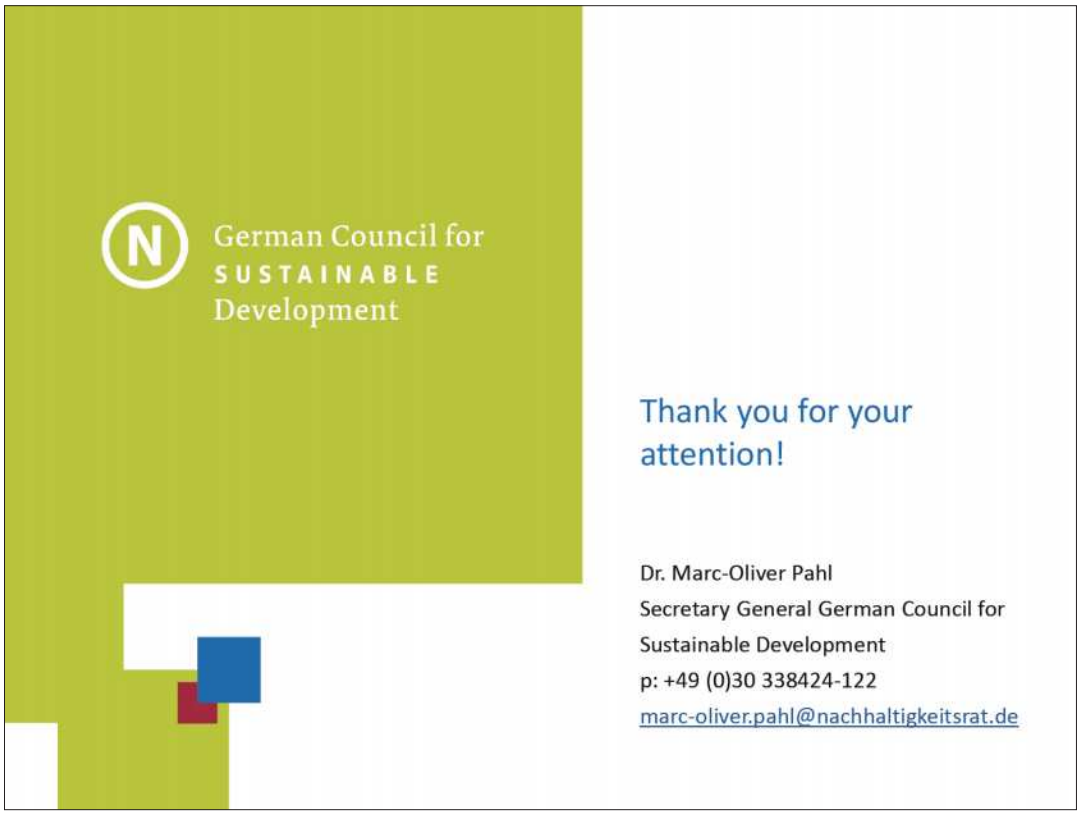


Source: Climate Action Tracker 2021: Germany's proposed 2030 national target not yet 1.5°C-compatible (climateactiontracker.org)

RNE engagement for climate neutrality

- Joint project with the **German National Academy of Sciences Leopoldina** on **reaching climate neutrality**: "Climate neutrality: Setting course in the next decade - Options for an ambitious and comprehensive implementation"
- **Host of Chapter Germany** of the **Climate Governance Initiative** (initiated by the World Economic Forum): Supporting non-executive directors and supervisory board members to align business models with ambitious climate policy
- Anchoring **climate change** and policy as a **systemic issue for sustainability**, as part of recent and upcoming position papers, incl. on **hydrogen, circular economy** and the **sustainable economic recovery**

K E Y N O T E


German Council for
SUSTAINABLE
Development
Thank you for your attention!
Dr. Marc-Oliver Pahl
Secretary General German Council for Sustainable Development
p: +49 (0)30 338424-122
marc-oliver.pahl@nachhaltigkeitsrat.de

MEMO

SESSION 1

Synergies in Joint Implementation of Climate Action and the SDGs for Recovery

COUNTRY EXPERIENCE 3

Korean Green New Deal and K-SDGs

Eunhae Jeong

Director of Green Transition, Ministry of Environment of the Republic of Korea

Career History

Ms Eunhae Jeong is currently a director of green transition policy at the Ministry of Environment, Government of Republic of Korea. She recently coordinated the establishment of Korea's Sustainable Development Plan and is keen on making policies to make synergies between the SDGs and Climate Action.
She worked for the Korean government over two decades in the various posts in the Ministry of Environment, Office of the President and the Presidential Committee on Sustainable Development.
She actively engaged in international discourse in the field of Sustainable Development, Climate Change and Biodiversity. She worked for the United Nations Office for Sustainable Development of UN Department of Economic and Social Affairs (UNDESA) for four years as Senior Development Management Expert. During her time at the UNOSD, she led various capacity development activities to assist countries' implementation of internationally agreed Sustainable Development Goals in applying integrated approaches for envisioning, planning, implementing and monitoring national development plans and strategies.
She served as a Council member of Global Environment Facility from 2011 to 2012.
Ms Jeong holds a Masters of Science from School of Environment, Yale University, and a Bachelor's degrees in Biology and Education from Seoul National University.

Abstract

This year is the first year of implementation of the Paris Agreement, which was adopted at COP21 in 2015, and it made 'climate action' gain more international attention. One of the main goals of the Korean New Deal, which was initiated to overcome the economic and social crisis caused by COVID-19, is the transition to a low-carbon society. In particular, the Green New Deal, which is led by the Ministry of Environment, aims to shift to an eco-friendly, low-carbon, and green economy. The Paris Agreement, the Sustainable Development Goals, and Korean Green New Deal all aim for a sustainable future. The Sustainable Development Goals cover all sectors of economy, society and environment, and 'climate action' is one of its 17 goals. This presentation intends to discuss the relationship between the projects under the Korean Green New Deal and the Korean Sustainable Development Goals.
Korean Sustainable Development Goals (K-SDGs) were established in 2018 to localize the UN Sustainable Development Goals by incorporating Korea's specific national circumstances. Many of the Green New Deal projects are directly related to eight of the K-SDGs: 6. Healthy and Safe Water Management, 7. Eco-friendly Production and Consumption of Energy, 9. Industrial Growth and Innovation, 11. Sustainable City and Housing, 12. Sustainable Production and 13. Climate Change Response, etc.
It appears that social goals such as gender equality, inequality, and inclusiveness are relatively under addressed in the Green New Deal. However, since another axis of the Korean New Deal, "Stronger Safety Net," focuses on protecting the vulnerable, it complements the implementation of the goals related to equality and social inclusion.
The government intends to prepare scenarios for greenhouse gas reduction and materialize the results of the Korean Green New Deal. In particular, institutional and policy measures will come into place to ensure a just transition in the process towards carbon neutrality. Enhancing the implementation of relevant sustainable development goals through carbon neutrality while securing social equity through just transition is the key to achieving carbon neutrality and sustainable development goals at the same time.

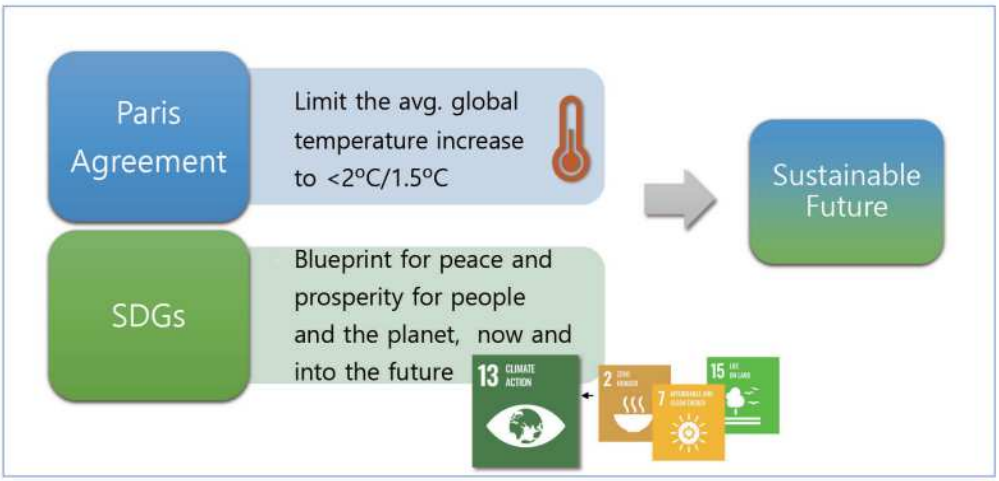
K E Y N O T E

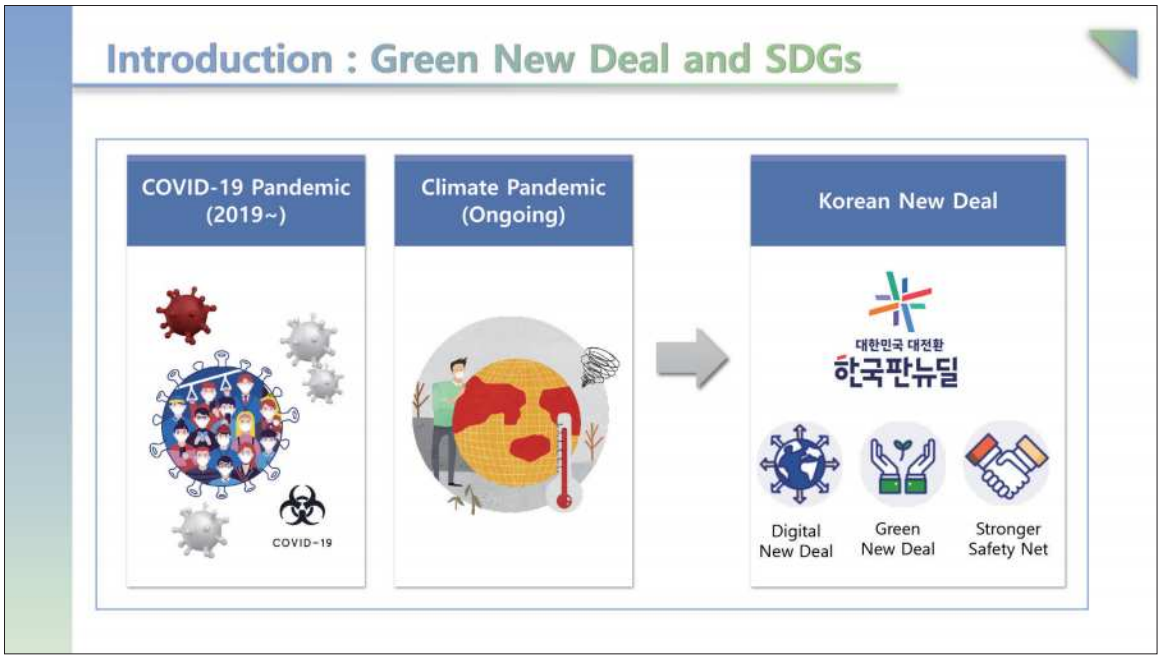

Korean Green New Deal & K-SDGs
2021. 5. 28
Ms. Eunhae Jeong, Acting Director General for Green Transition Policy Bureau,
Ministry of Environment, Republic of Korea
환경부

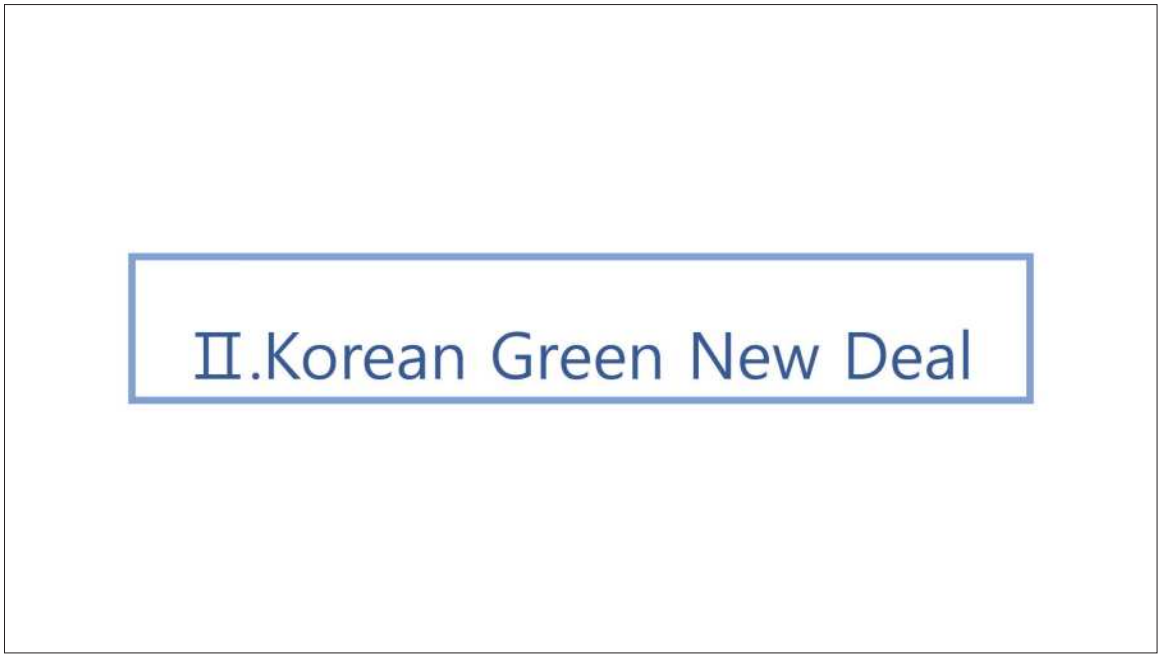

CONTENTS
Ⅰ. Introduction
Ⅱ. Korean Green New Deal
Ⅲ. Korean Sustainable Development Goals
Ⅳ. Korean Green New Deal and K-SDGs
Ⅴ. Conclusion

Ⅰ. Introduction

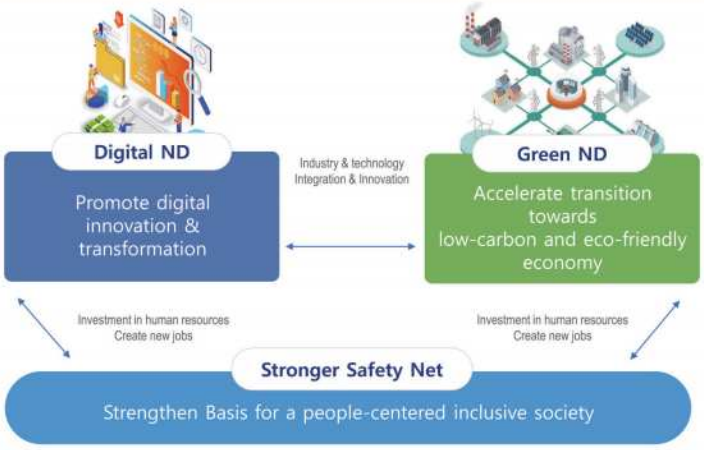
Introduction : Paris Agreement and SDGs




Introduction : Green New Deal and SDGs
COVID-19 Pandemic (2019~)
COVID-19
Climate Pandemic (Ongoing)
Korean New Deal
대한민국 대전환
한국판뉴딜
Digital New Deal
Green New Deal
Stronger Safety Net


Ⅱ.Korean Green New Deal

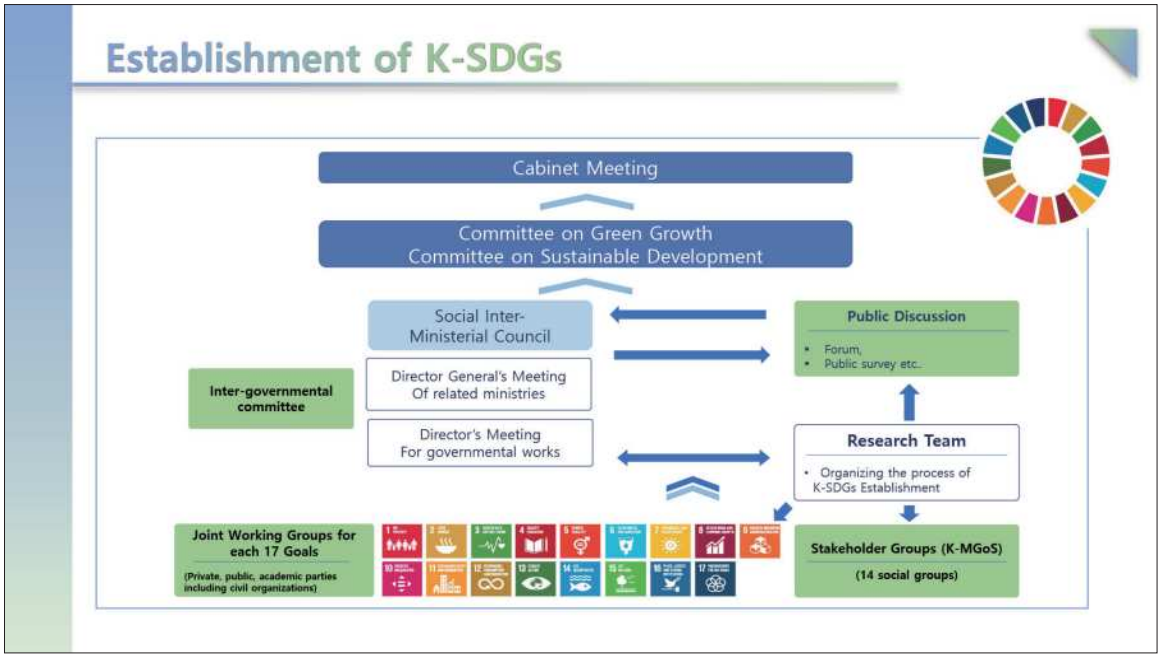
Structure of the Korean New Deal

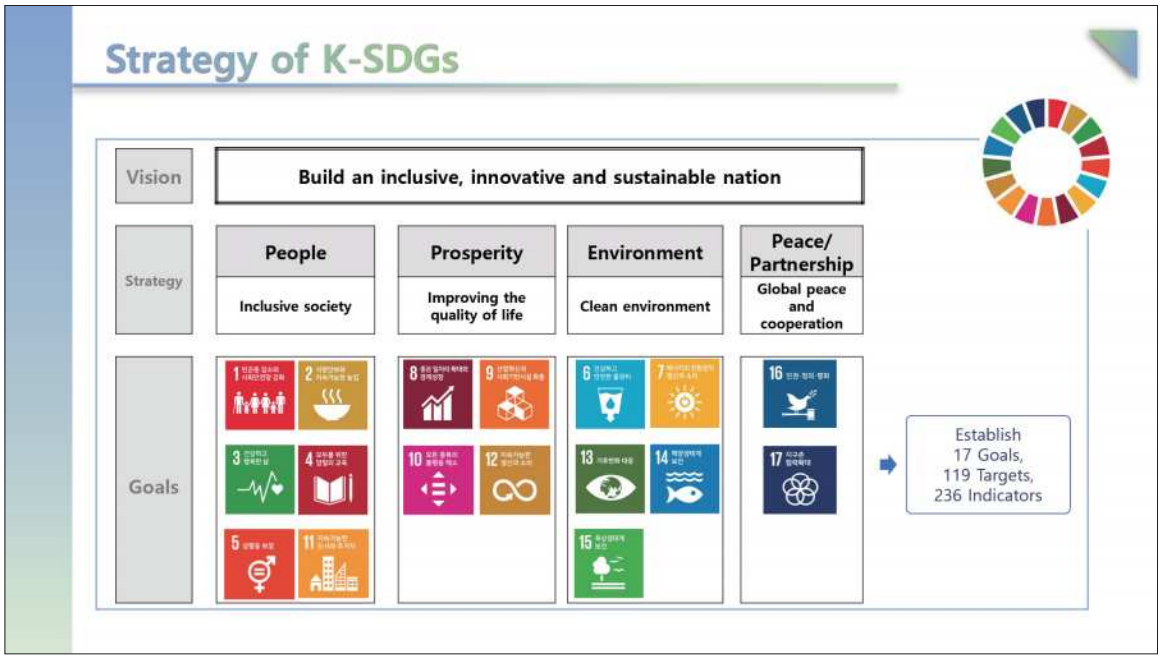


Contents of the Green New Deal

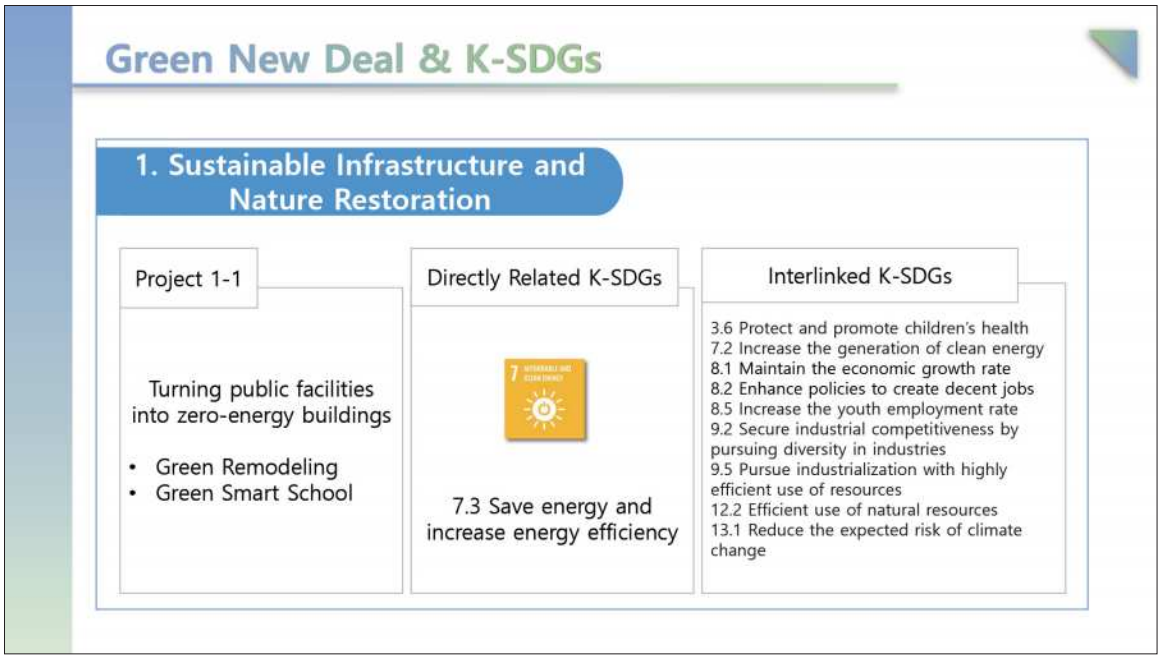
Strategies	Focus Areas
• Transition to a low-carbon green economy aiming at carbon neutrality; strengthen the competitiveness in green industry • Global Green Leader: lead climate actions and pursue balanced development	Green Remodeling Green Smart School Renewable Energy Green Mobility

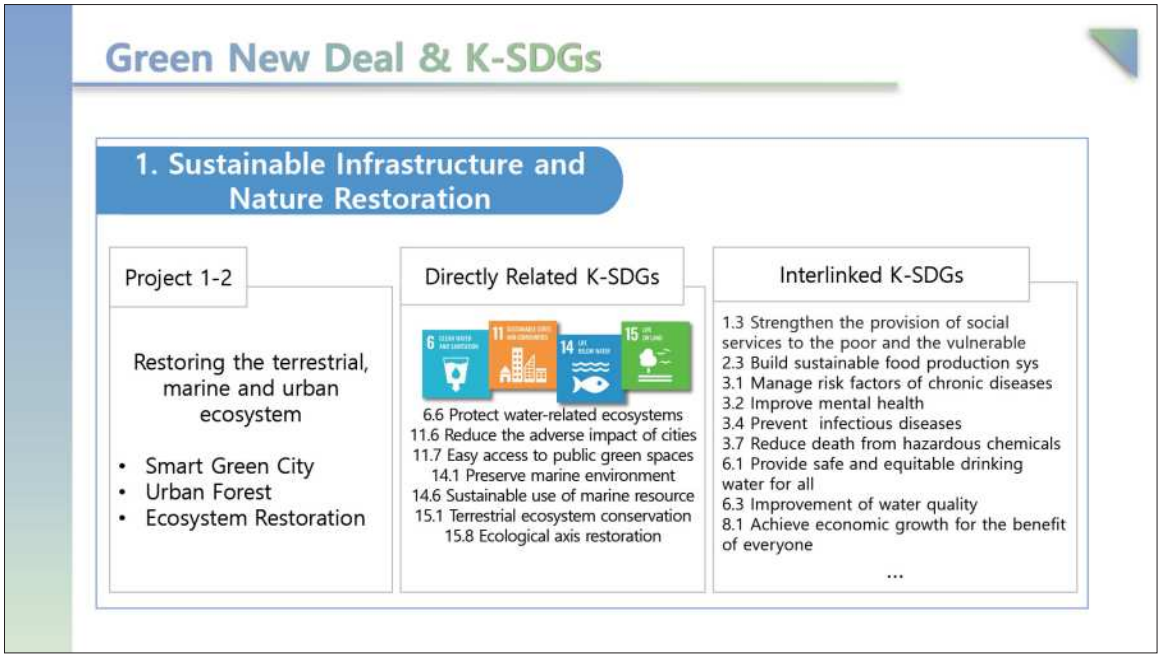
Ⅲ.K- SDGs


Establishment of K-SDGs
Cabinet Meeting
Committee on Green Growth
Committee on Sustainable Development
Social Inter-
Ministerial Council
Director General's Meeting
Of related ministries
Director's Meeting
For governmental works
Inter-governmental committee
Public Discussion
Forum,
Public survey etc.
Research Team
Organizing the process of K-SDGs Establishment
Joint Working Groups for each 17 Goals
(Private, public, academic parties including civil organizations)
Stakeholder Groups (K-MGoS)
(14 social groups)



IV.Green New Deal & K- SDGs


Green New Deal & K-SDGs
1. Sustainable Infrastructure and Nature Restoration
Project 1-1
Turning public facilities into zero-energy buildings
• Green Remodeling
• Green Smart School
Directly Related K-SDGs
7.3 Save energy and increase energy efficiency
Interlinked K-SDGs
3.6 Protect and promote children's health
7.2 Increase the generation of clean energy
8.1 Maintain the economic growth rate
8.2 Enhance policies to create decent jobs
8.5 Increase the youth employment rate
9.2 Secure industrial competitiveness by pursuing diversity in industries
9.5 Pursue industrialization with highly efficient use of resources
12.2 Efficient use of natural resources
13.1 Reduce the expected risk of climate change


Green New Deal & K-SDGs
1. Sustainable Infrastructure and Nature Restoration
Project 1-2
Restoring the terrestrial, marine and urban ecosystem
• Smart Green City
• Urban Forest
• Ecosystem Restoration
Directly Related K-SDGs
6.6 Protect water-related ecosystems
11.6 Reduce the adverse impact of cities
11.7 Easy access to public green spaces
14.1 Preserve marine environment
14.6 Sustainable use of marine resource
15.1 Terrestrial ecosystem conservation
15.8 Ecological axis restoration
Interlinked K-SDGs
1.3 Strengthen the provision of social services to the poor and the vulnerable
2.3 Build sustainable food production sys
3.1 Manage risk factors of chronic diseases
3.2 Improve mental health
3.4 Prevent infectious diseases
3.7 Reduce death from hazardous chemicals
6.1 Provide safe and equitable drinking water for all
6.3 Improvement of water quality
8.1 Achieve economic growth for the benefit of everyone
...

Green New Deal & K-SDGs

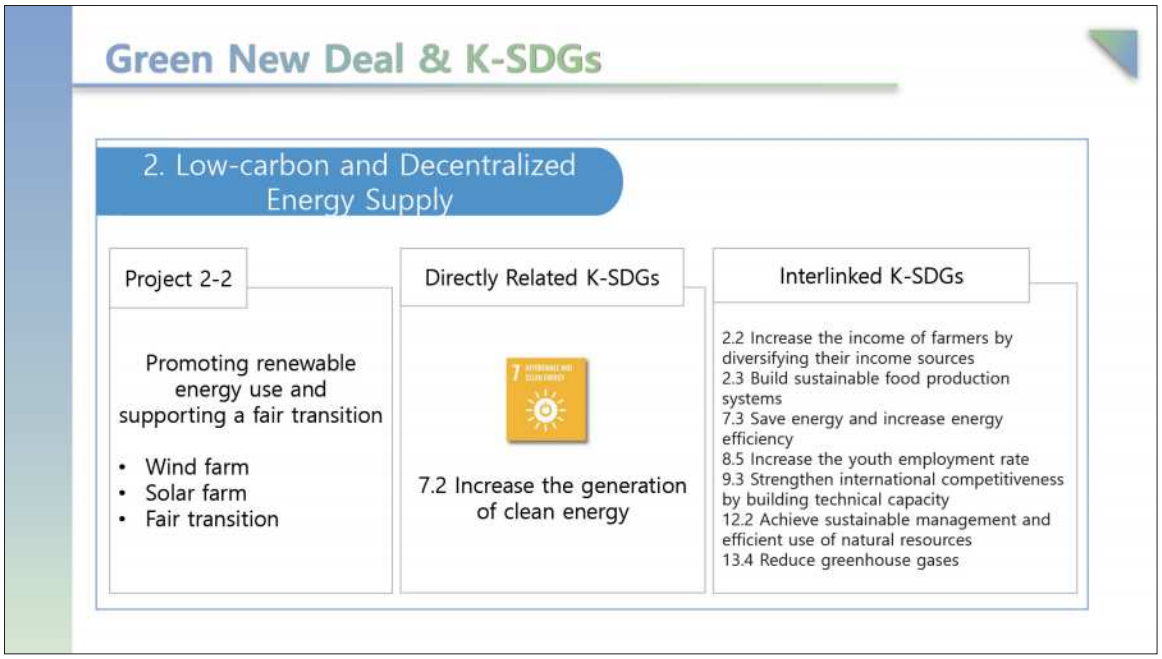
1. Sustainable Infrastructure and Nature Restoration

Project 1-3	Directly Related K-SDGs	Interlinked K-SDGs
Building a management system for clean and safe water • Smart Water Supply and Sewerage • Drinking Water Management	 6.1 Provide safe and equitable drinking water for all 6.2 Provide sufficient and equitable sewer service 6.4 Pursue the effective use of water resource	1.3 Strengthen the provision of social services to the poor and the vulnerable 2.2 Increase the income of farmers by diversifying their income sources 3.1 Manage risk factors of chronic diseases 3.2 Improve mental health 3.4 Prevent infectious diseases 8.1 Achieve economic growth for the benefit of everyone 8.8 Improve working conditions 9.1 Provide reliable welfare services 11.5 Reduce the number of deaths and economic losses from disasters

Green New Deal & K-SDGs

2. Low-carbon and Decentralized Energy Supply

Project 2-1	Directly Related K-SDGs	Interlinked K-SDGs
Building a smart grid for more efficient energy management • Smart meters • Eco-friendly generation system • Underground cables	 7.3 Save energy and increase energy efficiency	3.3 Prevent death and injuries from accidents including traffic accidents 3.6 Protect and promote children's health 4.8 Build and upgrade education facilities 7.1 Ensure reliable access to energy services 7.2 Increase the generation of clean energy 8.1 Achieve economic growth for the benefit of everyone 8.3 Limit environmental damage caused by economic growth 8.5 Increase the youth employment rate


Green New Deal & K-SDGs
2. Low-carbon and Decentralized Energy Supply
Project 2-2
Promoting renewable energy use and supporting a fair transition
• Wind farm
• Solar farm
• Fair transition
Directly Related K-SDGs
7.2 Increase the generation of clean energy
Interlinked K-SDGs
2.2 Increase the income of farmers by diversifying their income sources
2.3 Build sustainable food production systems
7.3 Save energy and increase energy efficiency
8.5 Increase the youth employment rate
9.3 Strengthen international competitiveness by building technical capacity
12.2 Achieve sustainable management and efficient use of natural resources
13.4 Reduce greenhouse gases


Green New Deal & K-SDGs
2. Low-carbon and Decentralized Energy Supply
Project 2-3
Expanding the supply of electric and hydrogen vehicles
• Electric and hydrogen vehicles
• Old diesel cars phase-out
Directly Related K-SDGs
7.4 Minimize air pollution from energy consumption in the transportation sector
Interlinked K-SDGs
3.7 Reduce death from hazardous chemicals
9.2 Secure industrial competitiveness by pursuing diversity in industries
9.3 Strengthen competitiveness by building technical capacity
9.4 expand the country's human and financial resources
11.6 Reduce the adverse environmental impact of cities
13.4 Reduce greenhouse gases

Green New Deal & K-SDGs

3. Innovation in the Green Industry

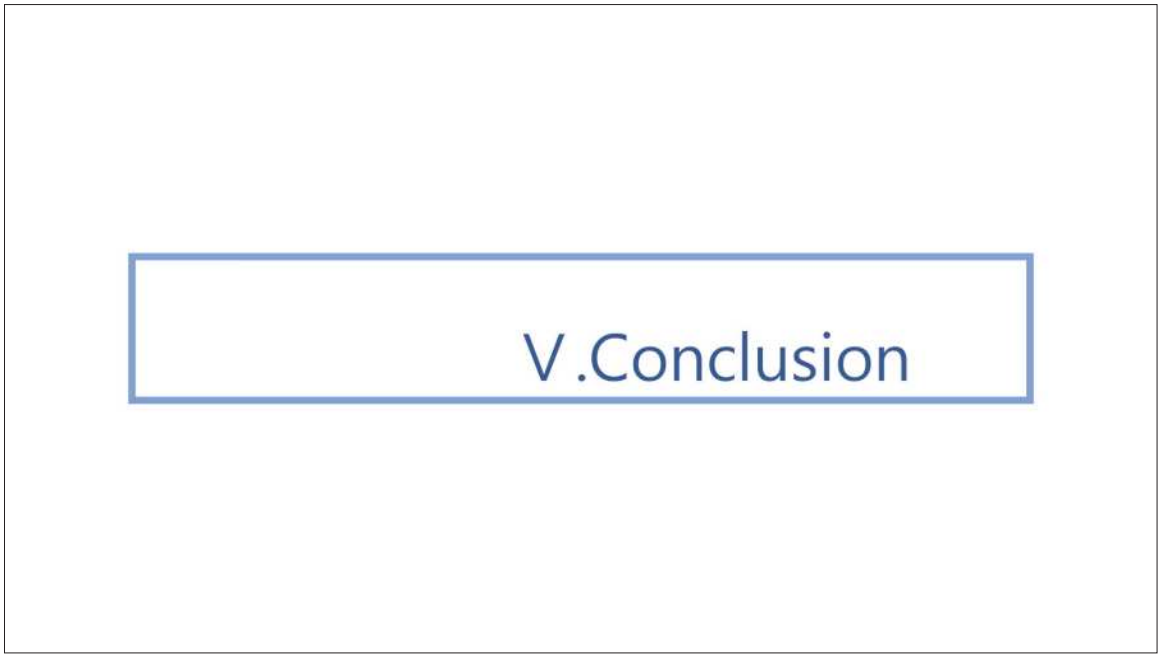
Project 3-1	Directly Related K-SDGs	Interlinked K-SDGs
Promoting prospective businesses to lead the green industry, and establishing low-carbon and green industrial complexes • Green startup town • Smart energy platforms	 9.2 Secure industrial competitiveness by pursuing diversity in industries 9.4 Expand the country's human and financial resources 9.5 Pursue industrialization with efficient use of resources through eco-friendly industrial activities	2.2 Increase the income of farmers by diversifying their income sources 2.3 Build sustainable food production systems 7.2 Increase the generation of clean energy 7.3 Save energy and increase energy efficiency 8.1 Achieve economic growth for the benefit of everyone 8.2 Enhance policies to create decent jobs 8.5 Increase the youth employment rate 13.1 Climate change adaption

Green New Deal & K-SDGs

3. Innovation in the Green Industry

Project 3-2	Directly Related K-SDGs	Interlinked K-SDGs
Laying the foundation for green innovation via the R&D and finance • Carbon capture utilization and storage(CCUS) • Measures against fine dust • Resource recycling • Green finance	 9.2 Sustainable Industry 11.6 Urban air quality and waste management 12.9 Plastic recycle 13.4 Reduction of greenhouse gases	3.6 Protect and promote children's health 3.7 Reduce death from hazardous chemicals 8.1 Achieve economic growth for the benefit of everyone 8.2 Enhance policies to create decent jobs 8.3 Limit environmental damage caused by economic growth 12.2 Achieve sustainable management and efficient use of natural resources 12.5 Reduce waste generation 13.1 Reduce the expected risk of climate change

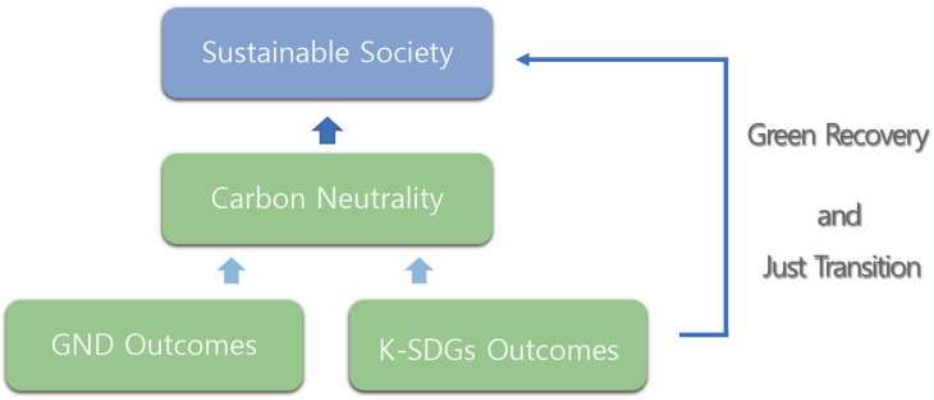

Green New Deal & K-SDGs
Green ND
Directly Related K-SDGs
Interlinked K-SDGs


V.Conclusion

Conclusion

- Greener Recovery Package for Covid-19
- Inclusive dialogue for Green Transition for All
- Aligning Green Recovery Package/Climate Actions and the SDGs
- Good Practices for synergies (CC, Air Pollution, Health, Job)

Conclusion



Low Emission Development to Achieve

CARBON NEUTRALITY AND SDGs

:12th International Greenhouse Gas Conference

SESSION 2

Preparing for Carbon Neutrality by 2050

The role of international markets in reaching net zero

Stefano De Clara International Policy Director, International Emissions Trading Association (IETA)

UK Net Zero Goals and Strategy for 2050

Alistair Ritchie Director of Asia-Pacific Sustainability, Asia Society Policy Institute (ASPI)

Carbon Neutrality Reinforce Green Low Carbon Transition in China

Min Li China Representative, International Emissions Trading Association (IETA)

Carbon Neutrality by 2050 in Korea

Seung Jick Yoo Professor, Sookmyung Women's University

DISCUSSION SESSION

Moderator

William Acworth Head of Secretariat, International Carbon Action Partnership (ICAP)

Panelist

Yeo Ra Chae Director General, Integrated Assessment of Climate and Air Pollution, Korea Environment Institute (KEI)

Panelist

Ji Hye Jo Director/Senior Research Fellow, Circular Economy Policy, Korea Environment Institute (KEI)

SESSION 2

Preparing for Carbon Neutrality by 2050

GLOBAL TRENDS

The role of international markets in reaching net zero

Stefano De Clara

International Policy Director, International Emissions Trading Association (IETA)

Career History

Stefano De Clara is International Policy Director at the International Emissions Trading Association (IETA). Stefano joined IETA in 2014, initially focusing on the EU ETS and UNFCCC negotiations. He currently heads IETA's international work, covering the implementation of the Paris Agreement, Article 6, and international carbon markets. Leading IETA's Business Partnership for Market Readiness (B-PMR) initiative, he also focuses on emerging carbon markets, particularly in Asia.
Prior to joining IETA he focused on emissions trading in the Academia and for consulting companies. He holds a M.Sc. in Sustainable Development from the Utrecht University and a B.Sc. in Environmental Science from the University of Trieste.

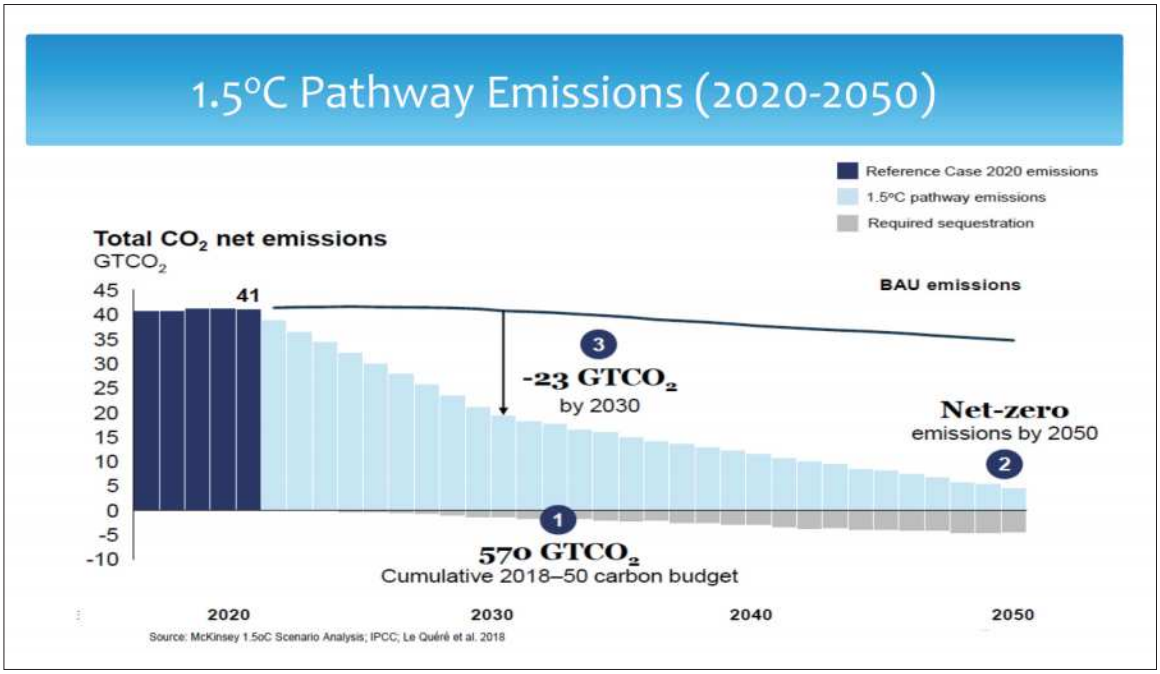
Abstract

Article 6 of the Paris Agreement aims at establishing a framework for countries to cooperate on NDC achievement, including through market-based approaches. Article 6 has therefore the potential to create a unique driver for the use of international carbon markets as well as domestic carbon pricing policies. Research has also shown that Article 6 has the potential to significantly lower the cost of meeting NDC targets, therefore unlocking more ambition at lower costs. Article 6 also provides a unique entry point for private sector engagement in climate action.
Implementing rules for Article 6 are still being negotiated and they are one of the few unresolved issues in UNFCCC negotiations. Attempts at finding agreement on a common ruleset for Article 6 proved unsuccessful both at COP24 in Katowice, when the Paris Rule Book was adopted, and at COP25 in Madrid. The adoption of implementing rules for Article 6 is now on the agenda for COP26, which will take place in November 2021 in the UK.
At COP26, negotiations on Article 6 will likely face the same challenges as in previous years. At the same time, outside the negotiation process, Article 6 pilots and real world implementations of Article 6 approaches are going ahead, and will provide valuable lessons learnt for the UNFCCC process.
This presentation will provide context on the key components of Article 6, its functioning and its economic and mitigation potential. The presentation will also cover the state of play in the Article 6 discussion, outlining the main roadblocks in the negotiations. It will analyse the implications of the COP25 outcome and will reflect on the way forward for the Article 6 negotiations.

K E Y N O T E


Prospects for carbon markets and net zero
Stefano De Clara – International Policy Director, IETA
28 May 2021
IETA
A IS FOR AMBITION


About IETA
IETA INSIGHTS
IETA @
Collective voice of business on carbon pricing, markets and finance
Global non-profit association
Policy design, thought leadership, best practices, global capacity building,
Global Partnerships & Dialogues with UNFCCC, World Bank, OECD-IEA and many more
Climate Challenges, Market Solutions
IETA


1.5°C Pathway Emissions (2020-2050)
Reference Case 2020 emissions
1.5°C pathway emissions
Required sequestration
Total CO_2 net emissions
$GTCO_2$
45
40
35
30
25
20
15
10
5
0
-5
-10
41
BAU emissions
3
-23 $GTCO_2$
by 2030
Net-zero
emissions by 2050
2
1
570 $GTCO_2$
Cumulative 2018–50 carbon budget
2020
2030
2040
2050
Source: McKinsey 1.5oC Scenario Analysis; IPCC; Le Quéré et al. 2018


Net Zero Tracker: 2021 Scorecard (Countries)
SURINAME -
BHUTAN -
ACHIEVED
SWEDEN 2045
UNITED KINGDOM 2050
FRANCE 2050
DENMARK 2050
NEW ZEALAND 2050
HUNGARY 2050
IN LAW
EUROPEAN UNION 2050
CANADA 2050
SOUTH KOREA 2050
SPAIN 2050
CHILE 2050
FIJI 2050
PROPOSED LEGISLATION
Net Zero Tracker: 2021 Scorecard (24 May 2021)
Energy and Climate Intelligence Unit
https://eciu.net/netzerotracker
IETA


Net Zero Tracker: 2021 Scorecard (Countries)
FINLAND 2035
AUSTRIA 2040
ICELAND 2040
GERMANY 2045
US 2050
JAPAN 2050
SOUTH AFRICA 2050
BRAZIL 2050
SWITZERLAND 2050
NORWAY 2050
IRELAND 2050
PORTUGAL 2050
PANAMA 2050
COSTA RICA 2050
SLOVENIA 2050
ANDORRA 2050
VATICAN CITY 2050
MARSHALL ISLANDS 2050
CHINA 2060
KAZAKHSTAN 2060
IN POLICY DOCUMENT
And many others "under discussion", for a total of 124
Net Zero Tracker: 2021 Scorecard (24 May 2021)
Energy and Climate Intelligence Unit
https://eciu.net/netzerotracker
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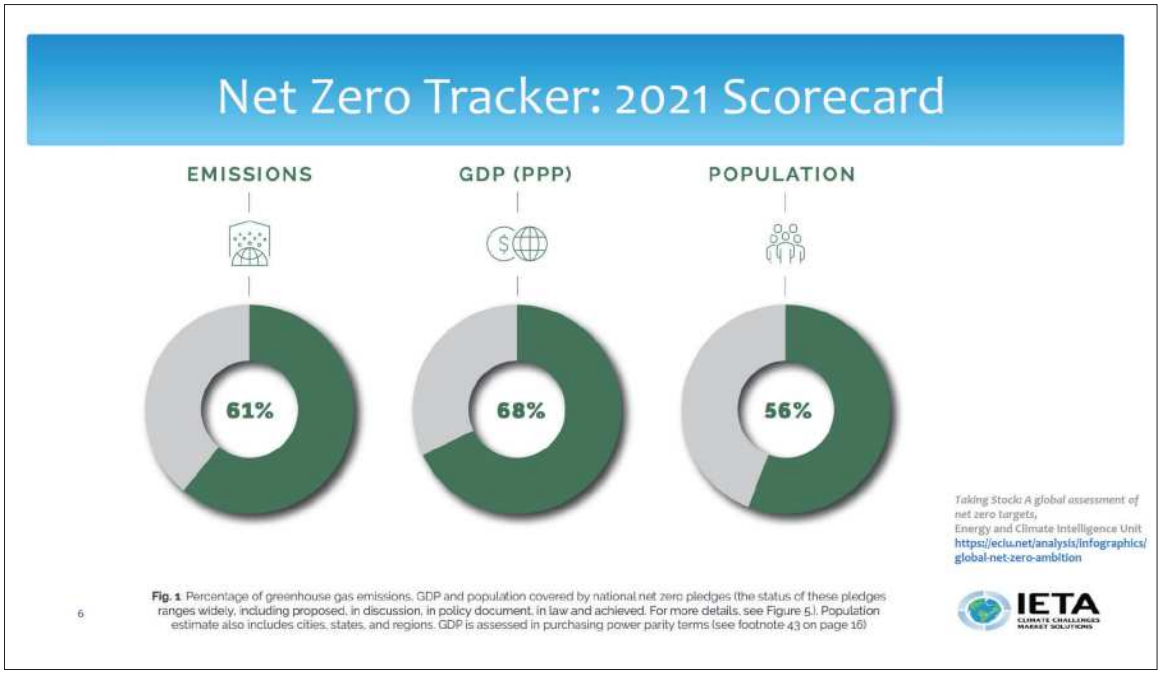
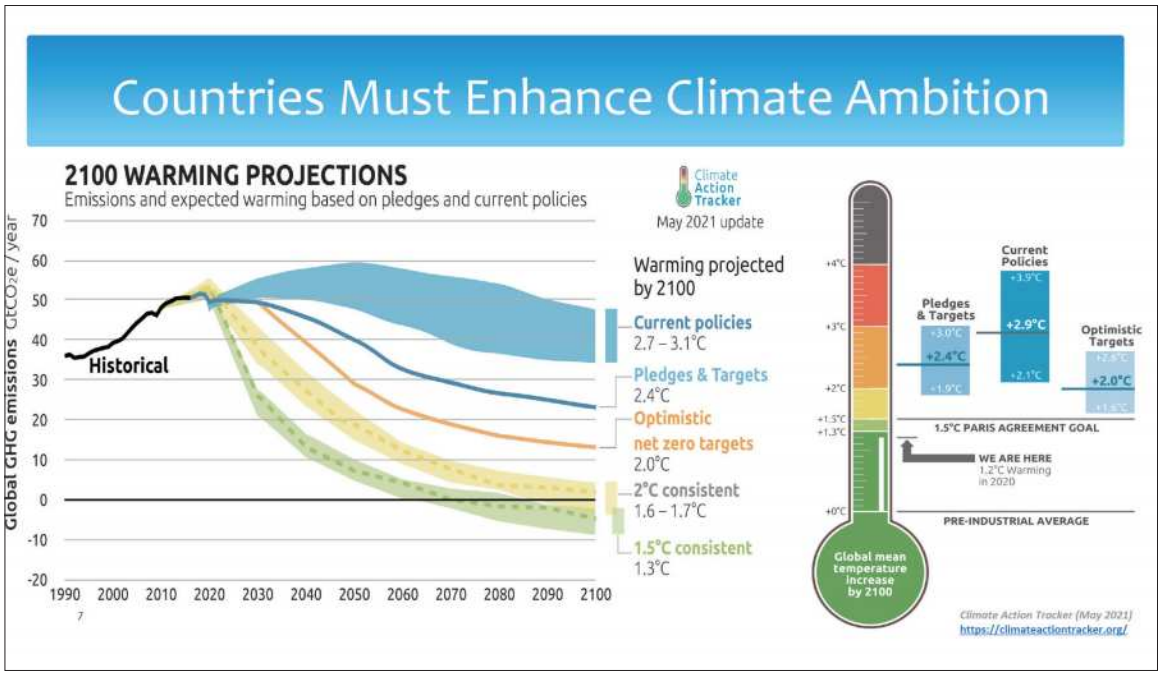
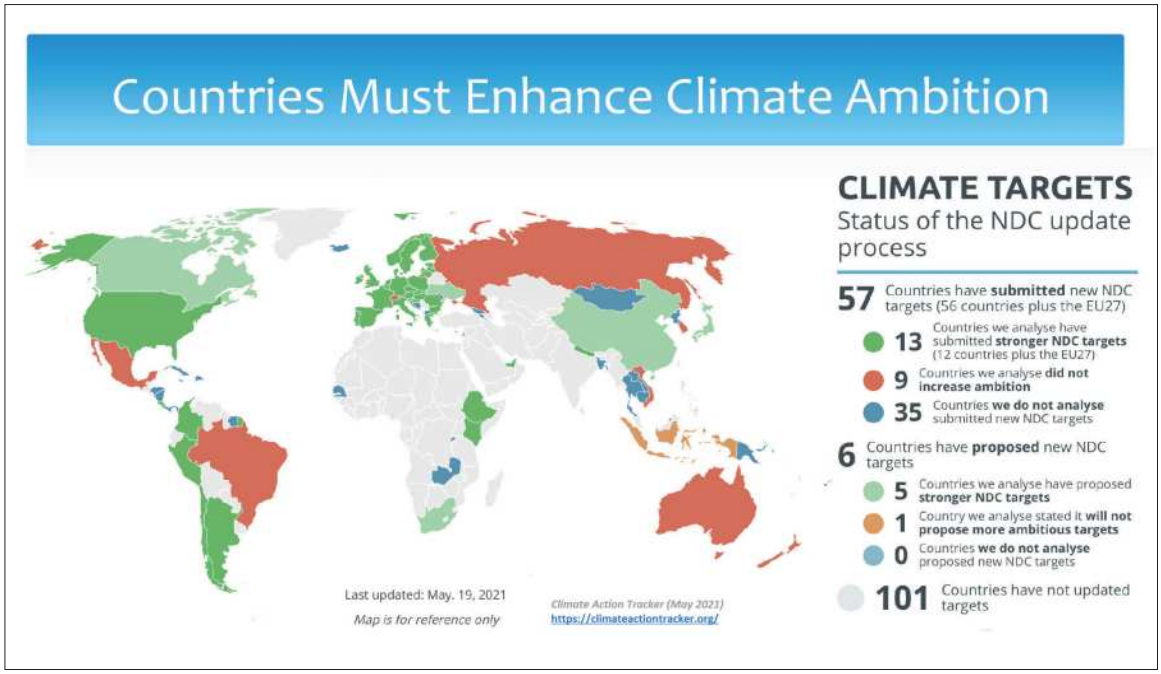
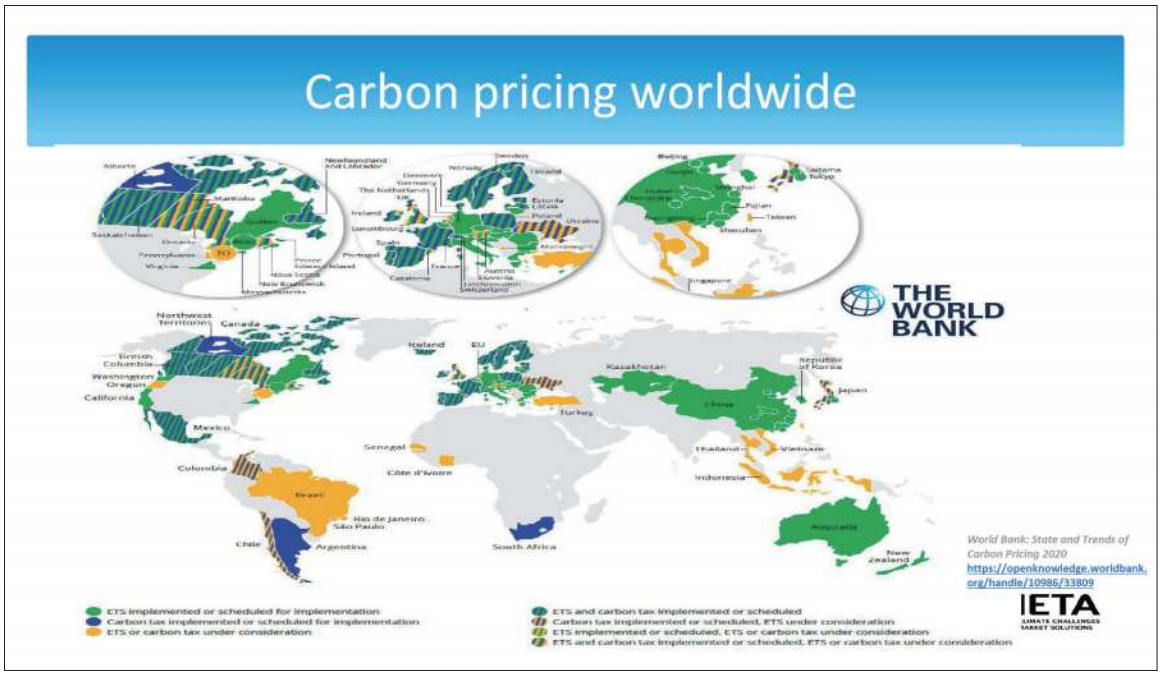
CLIMATE CHALLENGES MARKET SOLUTIONS

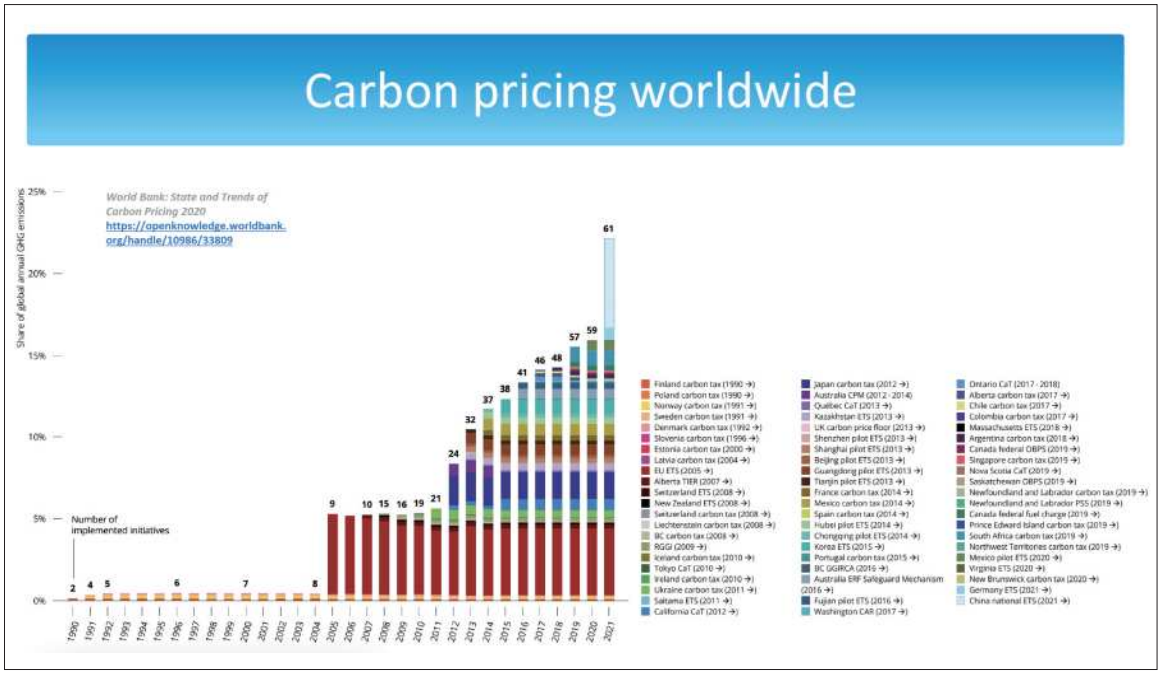

Net Zero Tracker: 2021 Scorecard
EMISSIONS
GDP (PPP)
POPULATION
61%
68%
56%
Taking Stock: A global assessment of net zero targets,
Energy and Climate Intelligence Unit
https://eciu.net/analysis/infographics/global-net-zero-ambition
IETA
CLIMATE CHALLENGES MARKET SOLUTIONS
6
Fig. 1 Percentage of greenhouse gas emissions, GDP and population covered by national net zero pledges (the status of these pledges ranges widely, including proposed, in discussion, in policy document, in law and achieved. For more details, see Figure 5.). Population estimate also includes cities, states, and regions. GDP is assessed in purchasing power parity terms (see footnote 43 on page 16)

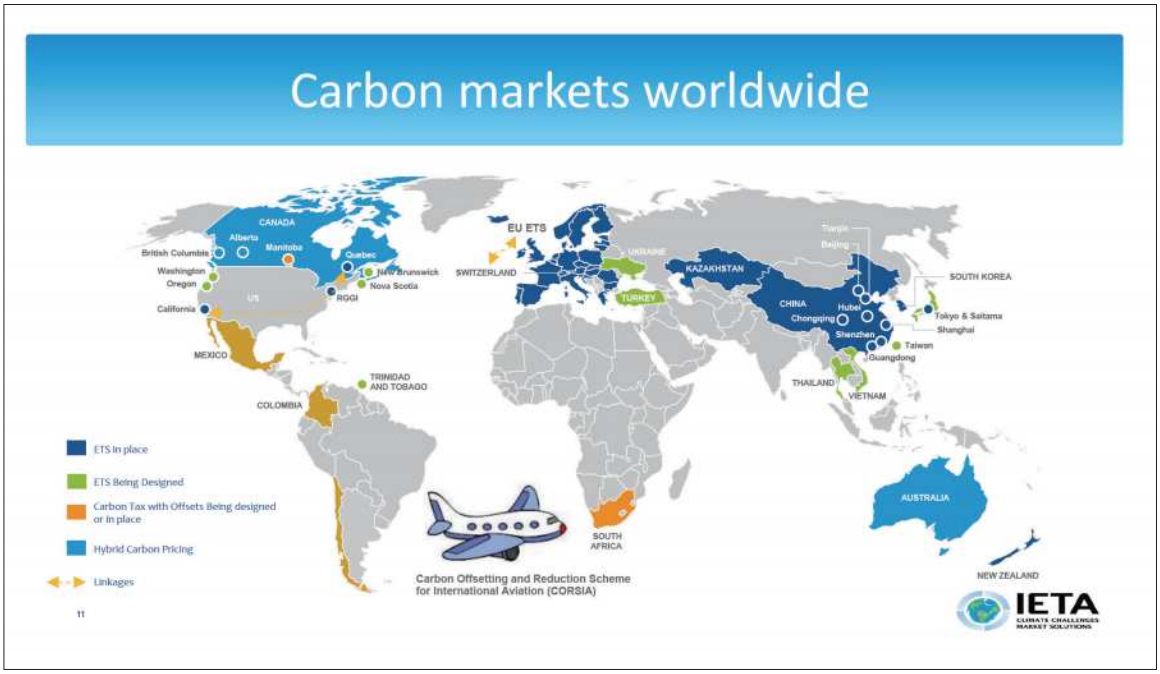

Countries Must Enhance Climate Ambition
2100 WARMING PROJECTIONS
Emissions and expected warming based on pledges and current policies
Global GHG emissions GtCO2e / year
Historical
Climate Action Tracker
May 2021 update
Warming projected by 2100
Current policies 2.7 – 3.1°C
Pledges & Targets 2.4°C
Optimistic net zero targets 2.0°C
2°C consistent 1.6 – 1.7°C
1.5°C consistent 1.3°C
Current Policies
Pledges & Targets
Optimistic Targets
+2.9°C
+2.4°C
+2.0°C
1.5°C PARIS AGREEMENT GOAL
WE ARE HERE
1.2°C Warming in 2020
PRE-INDUSTRIAL AVERAGE
Global mean temperature increase by 2100
Climate Action Tracker (May 2021)
https://climateactiontracker.org/

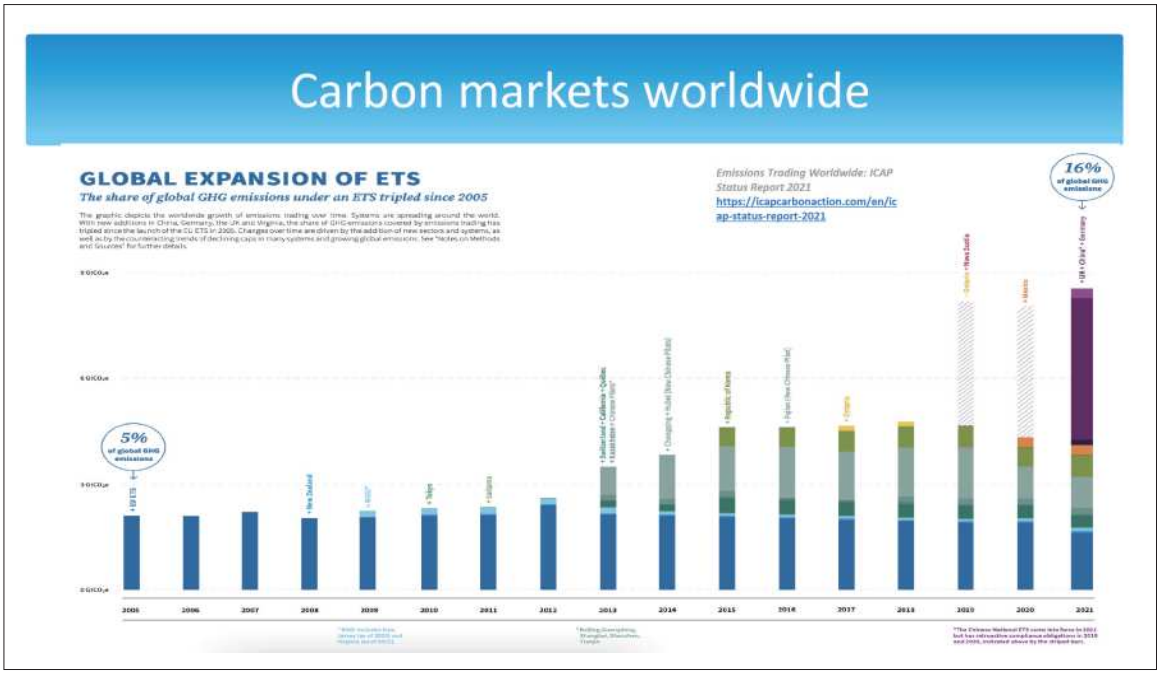

Countries Must Enhance Climate Ambition
CLIMATE TARGETS
Status of the NDC update process
57 Countries have submitted new NDC targets (56 countries plus the EU27)
13 Countries we analyse have submitted stronger NDC targets (12 countries plus the EU27)
9 Countries we analyse did not increase ambition
35 Countries we do not analyse submitted new NDC targets
6 Countries have proposed new NDC targets
5 Countries we analyse have proposed stronger NDC targets
1 Country we analyse stated it will not propose more ambitious targets
0 Countries we do not analyse proposed new NDC targets
101 Countries have not updated targets
Last updated: May. 19, 2021
Map is for reference only
Climate Action Tracker (May 2021)
https://climateactiontracker.org/

K E Y N O T E

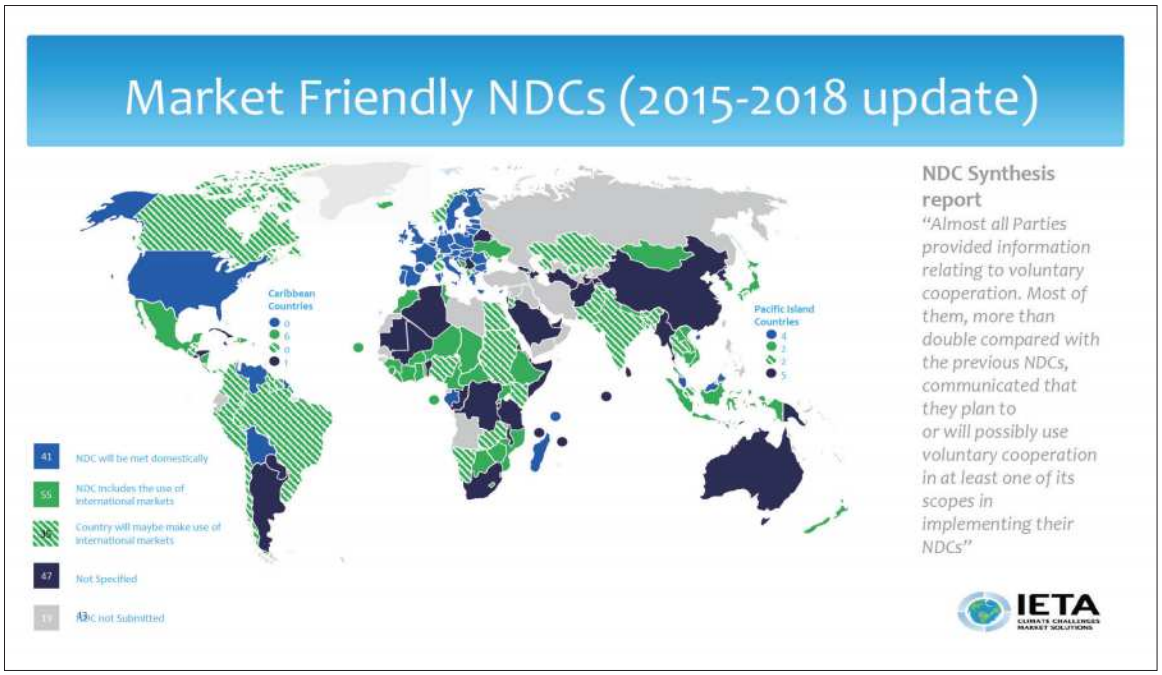

Carbon pricing worldwide
THE WORLD BANK
World Bank: State and Trends of Carbon Pricing 2020
https://openknowledge.worldbank.org/handle/10986/33809
ETA
ETS implemented or scheduled for implementation
Carbon tax implemented or scheduled for implementation
ETS or carbon tax under consideration
ETS and carbon tax implemented or scheduled
Carbon tax implemented or scheduled, ETS under consideration
ETS implemented or scheduled, ETS or carbon tax under consideration
ETS and carbon tax implemented or scheduled, ETS or carbon tax under consideration

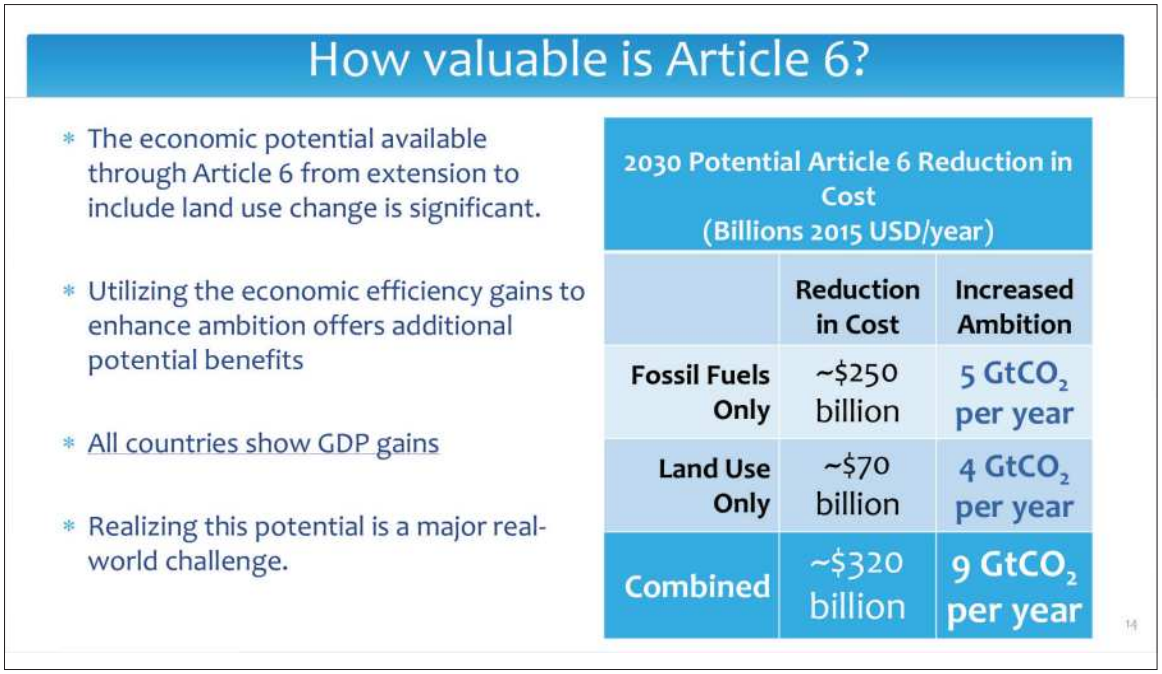

Carbon pricing worldwide
World Bank: State and Trends of Carbon Pricing 2020
https://openknowledge.worldbank.org/handle/10986/33809
Share of global annual GHG emissions
25%
20%
15%
10%
5%
0%
Number of implemented initiatives
2 4 5 6 7 8 9 10 15 16 19 21 24 32 37 38 41 46 48 57 59 61
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021


Carbon markets worldwide
CANADA
Alberta
Manitoba
British Columbia
Quebec
New Brunswick
Nova Scotia
RGGI
Washington
Oregon
California
US
MEXICO
COLOMBIA
TRINIDAD AND TOBAGO
EU ETS
SWITZERLAND
UKRAINE
TURKEY
KAZAKHSTAN
CHINA
Tianjin
Beijing
Hubei
Chongqing
Shenzhen
Guangdong
SOUTH KOREA
Tokyo & Saitama
Shanghai
Taiwan
THAILAND
VIETNAM
AUSTRALIA
NEW ZEALAND
SOUTH AFRICA
ETS in place
ETS Being Designed
Carbon Tax with Offsets Being designed or in place
Hybrid Carbon Pricing
Linkages
Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)
IETA
CLIMATE CHALLENGES MARKET SOLUTIONS


Carbon markets worldwide
GLOBAL EXPANSION OF ETS
The share of global GHG emissions under an ETS tripled since 2005
Emissions Trading Worldwide: ICAP Status Report 2021
https://icapcarbonaction.com/en/icap-status-report-2021
5%
of global GHG emissions
16%
of global GHG emissions

K E Y N O T E


Market Friendly NDCs (2015-2018 update)
Caribbean Countries
Pacific Island Countries
41 NDC will be met domestically
55 NDC includes the use of international markets
36 Country will maybe make use of international markets
47 Not Specified
19 NDC not Submitted
NDC Synthesis report
"Almost all Parties provided information relating to voluntary cooperation. Most of them, more than double compared with the previous NDCs, communicated that they plan to or will possibly use voluntary cooperation in at least one of its scopes in implementing their NDCs"
IETA
CLIMATE CHALLENGES MARKET SOLUTIONS


How valuable is Article 6?
* The economic potential available through Article 6 from extension to include land use change is significant.
* Utilizing the economic efficiency gains to enhance ambition offers additional potential benefits
* All countries show GDP gains
* Realizing this potential is a major real-world challenge.
2030 Potential Article 6 Reduction in Cost (Billions 2015 USD/year)
Reduction in Cost
Increased Ambition
Fossil Fuels Only
~$250 billion
5 GtCO2 per year
Land Use Only
~$70 billion
4 GtCO2 per year
Combined
~$320 billion
9 GtCO2 per year
14

Article 6 pilots

Figure 5: The global Article 6 piloting landscape

Climate Finance Innovators – Observations from Article 6 pilots

ETA
CLIMATE CHALLENGES MARKET SOLUTIONS

15

Thank you!

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CLIMATE CHALLENGES MARKET SOLUTIONS

16

SESSION 2

Preparing for Carbon Neutrality by 2050

COUNTRY EXPERIENCE 1

UK Net Zero Goals and Strategy for 2050

Alistair Ritchie

Director of Asia-Pacific Sustainability, Asia Society Policy Institute (ASPI)

Career History

Alistair Ritchie leads and oversees activities on Asian carbon market development and net zero GHG emission goals. Alistair is an international expert in greenhouse gas emissions trading systems (ETSs), and a known leader in their development. He is currently leading a major project to contribute to resolving design challenges of China's national ETS and building regional connections across Asia to support ETS development. He is also leading a project to share international experience and best practice in developing strategies to achieve net zero GHG emission goals with climate and energy policy specialists from Korea. Previously, he was leader of the European Commission project to support the Korean government's implementation and upgrade of the K-ETS. He was also the technical lead for the European Commission project to support the development of China's national ETS and led studies to support ETS development in Chinese Taipei. In Europe, Alistair played a key role in improving the EU ETS through managing and directing several projects to support Phase 3 and 4 policy design and implementation. Alistair holds a degree in Chemical Engineering from Nottingham University in UK and an MBA from the Open University.

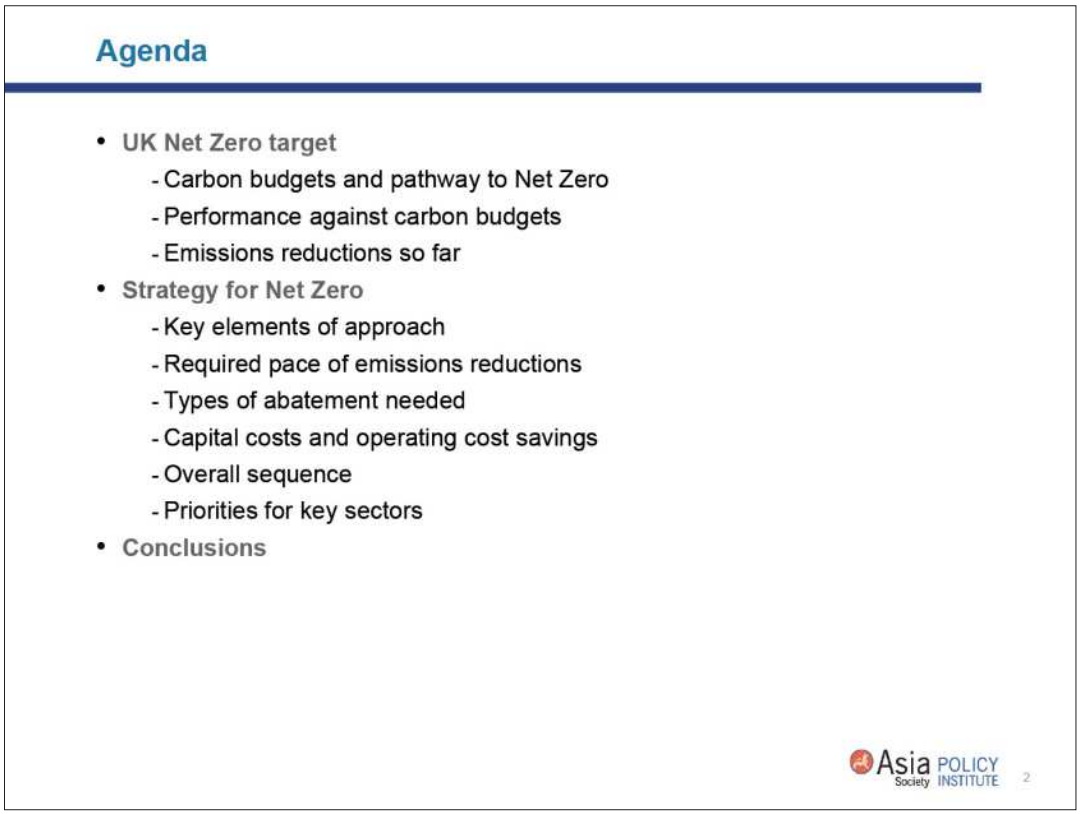
Abstract

Since the UK put net zero GHG emission goals by 2050 into legislation in 2019 there have been some further significant developments. In April 2021 it was announced that the UK will reduce emissions by 78% by 2035 compared to 1990 levels in its sixth carbon budget, which would take the UK more than three-quarters of the way to reaching net zero by 2050. This was in line with the recommendation from the independent Climate Change Committee that has described the path to net zero as part of a blueprint for a fully decarbonized UK which meets the Paris Agreement stipulation of 'highest possible ambition'. The pathway is challenging but also hugely advantageous, creating new industrial opportunities and ensuring wider gains for the nation's health and for nature. However, there is concern about whether there are sufficient policies to meet these targets and sufficient action and investment on the ground.

This presentation will explore the UK's net zero GHG emission goals and milestone reduction targets, the associated governance system, the expected costs of achieving the targets, the transition pathway and the required policies and investments in key emitting sectors. The key issues and challenges facing the UK in achieving these targets will be summarized and lessons for other jurisdictions will be highlighted.

K E Y N O T E


Asia Society POLICY INSTITUTE
UK Net Zero target and strategy for 2050
Low Emission Development to Achieve Carbon Neutrality and SDGs:
12th International Greenhouse Gas Conference
May 28th 2021
Alistair Ritchie


Agenda
UK Net Zero target
- Carbon budgets and pathway to Net Zero
- Performance against carbon budgets
- Emissions reductions so far
Strategy for Net Zero
- Key elements of approach
- Required pace of emissions reductions
- Types of abatement needed
- Capital costs and operating cost savings
- Overall sequence
- Priorities for key sectors
Conclusions
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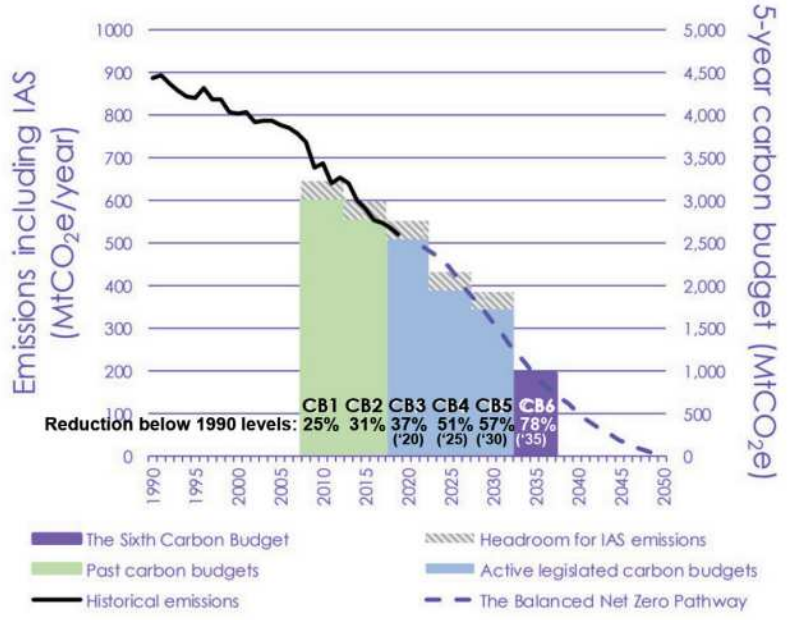
2

UK Net Zero target: Carbon budgets and pathway to Net Zero

- Legislation for the UK's Net Zero target by 2050 was passed in 2019.
- Legally-binding 5 year carbon budgets act as stepping stones towards target.
- Latest (6th) carbon budget to be legislated by June 2021.
- 6th carbon budget target is 78% reduction by 2035 from 1990 levels.

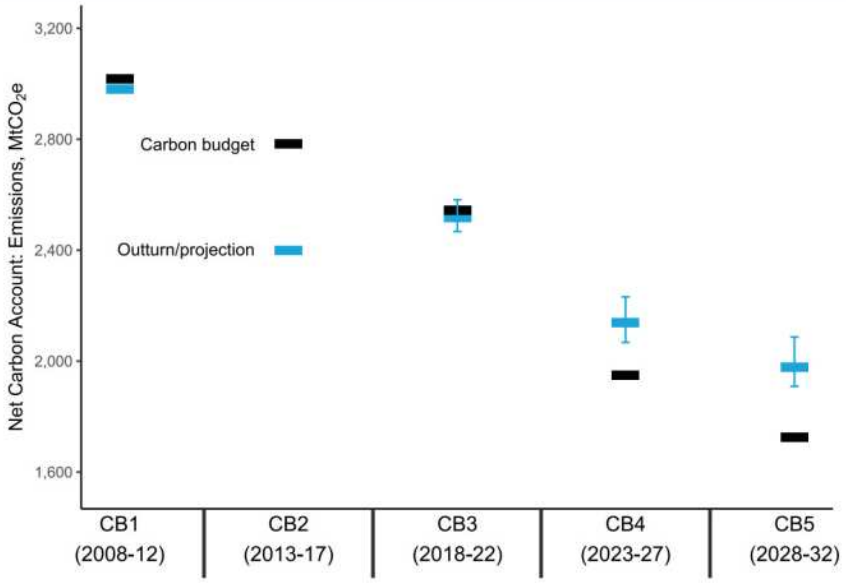


Source: The Sixth Carbon Budget – The UK's Path to Net Zero, UK Committee on Climate Change, December 2020

Asia Society POLICY INSTITUTE

3

UK Net Zero target: Performance against carbon budgets



Target met? Yes (1st) Yes (2nd) On track (3rd) Off track (4th) Off track (5th)

Source: Updated energy and emission projections 2019, Department for Business, Energy & Industrial Strategy, October 2020

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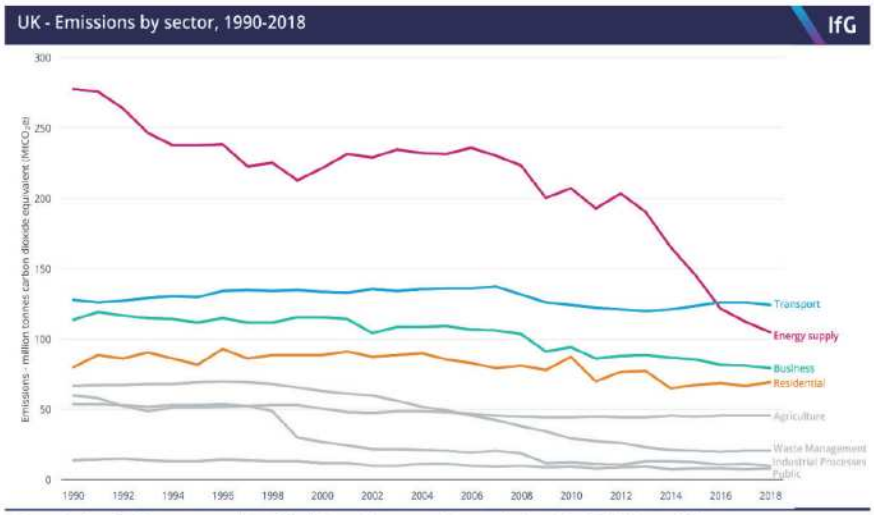
4

UK Net Zero target: Emission reductions so far



Source: Institute for Government analysis of: *Final UK greenhouse gas emissions national statistics*, BEIS, February 2020
Note: Net negative emissions from LULUCF not shown.

- Most progress in reducing emissions from power sector – due to EU-ETS carbon price, support for offshore wind & closure of coal power stations.
- Emissions largely unchanged in transport, homes & agriculture.

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Strategy for Net Zero: Key elements of the approach

- The Climate Change Act provides the legal framework for Net Zero targets.
- It assigns duties and responsibilities for action based around independent expert advice and monitoring.
- The basic framework of the Act ensures that goals are evidence-based and translated into near-term action.
- Key elements of the approach are summarized below.

1	A goal	**2050 Emissions Target**
2	A pathway	**Carbon Budgets**
3	A toolkit	Requirement that Government brings forward **policies**
4	A monitoring framework	**Committee on Climate Change** to monitor progress and suggest changes

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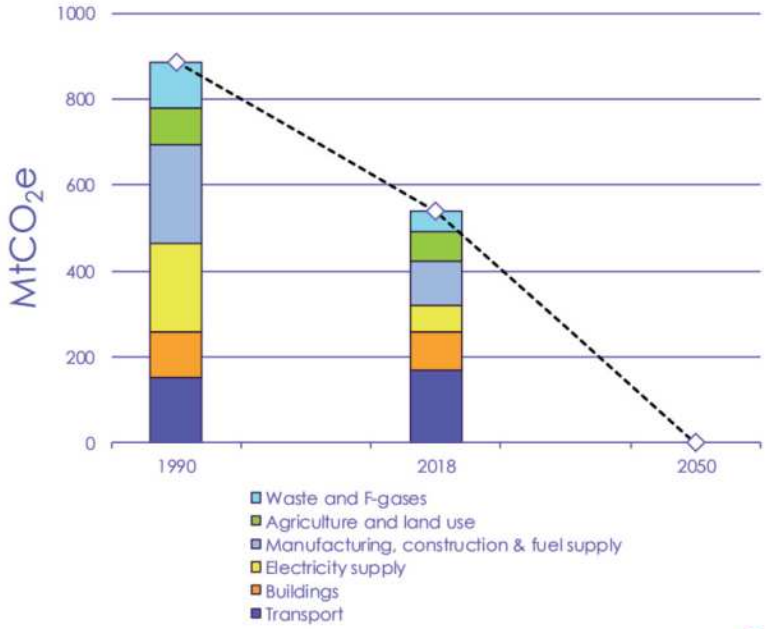
Strategy for Net Zero: Required pace of emission reductions



Source: The Sixth Carbon Budget – The UK's Path to Net Zero, UK Committee on Climate Change, December 2020

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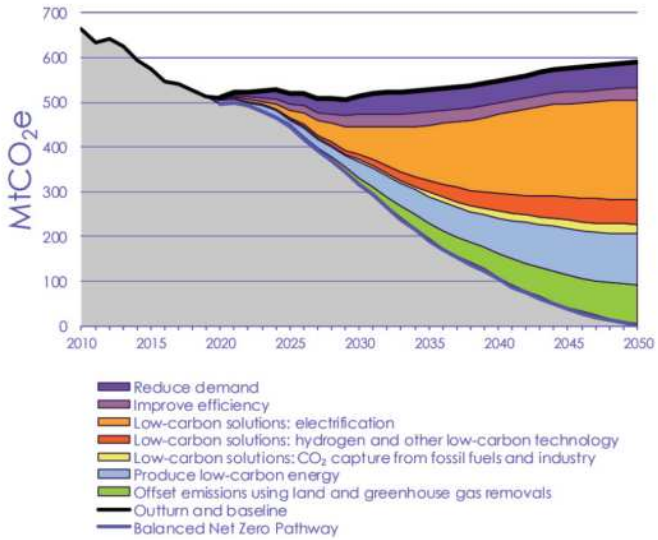
Strategy for Net Zero: Types of abatement needed



Source: The Sixth Carbon Budget – The UK's Path to Net Zero, UK Committee on Climate Change, December 2020

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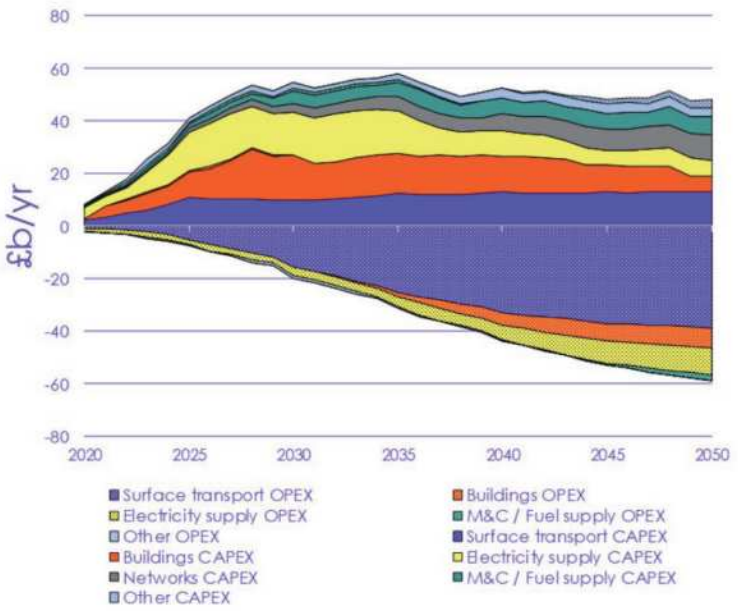
Strategy for Net Zero: Capital costs and operating cost savings

- Low carbon investment must scale up to £50 billion each year.
- This generates substantial fuel savings from cleaner, more-efficient technologies.
- In time, savings cancel out the investment costs entirely.
- Central estimate for costs now below 1% of GDP throughout the next 30 years.



Source: The Sixth Carbon Budget – The UK's Path to Net Zero, UK Committee on Climate Change, December 2020

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Strategy for Net Zero: Overall sequence

Legislation & strategies	Before COP26	• Legislate 6th Carbon Budget • Update NDC • Comprehensive Net Zero strategy • Finalisation of multiple strategies and decisions: energy, heat & buildings, carbon pricing, transport, industrial, hydrogen, etc
Progress across all areas	By 2024	• Business models for hydrogen, CCS & industrial decarbonisation • Goals and policies for aviation & shipping aligned with Paris Agreement • Large scale trials for HGVs • Future homes standard legislated • By 2024: No more coal-fired power generation
Scale up	Mid-2020s - 2030	• By 2030: 40 GW offshore wind • By 2030: 25 TWh low-carbon hydrogen • By 2030: 25 TWh of manufacturing energy use to electricity or hydrogen • Heat pumps at scale, CCS at industrial clusters, widespread EV charging infrastructure
Roll out **Net zero**	2030 – 2050	• By 2032: No new fossil fuel cars & vans (by 2040 almost no new diesel HGVs) • By 2033: No new gas boilers • By 2035: All ore-based steel-making near zero emissions • By 2035: No more unabated gas-fired power generation • Scale up of low-carbon electricity and hydrogen, GHG removals and CCS infrastructure

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Strategy for Net Zero: Priorities for key sectors

- Surface transport
  - Policies to phase out new sales of petrol & diesel cars & vans by 2030.
  - Commitment to phase out sales of diesel heavy goods vehicles no later than 2040.
  - Recharging and refuelling infrastructure to develop to meet the range of emerging needs.
  - Policies to reduce travel demand.
- Industry
  - Comprehensive transition support framework including funding to ensure industries stay internationally competitive while reducing emissions.
  - Development of longer-term policies, such as border carbon tariffs or carbon standards.
  - Policy must tackle both demand-side and supply-side for low-carbon products.
- Buildings
  - Heat and buildings strategy including phase-out of fossil heating, rebalancing of policy costs between electricity and gas, & commitments to funding and delivery plans.
  - Timetables for standards to make all buildings energy efficient and ultimately low-carbon.
  - Scale up supply chains for heat pumps & heat networks & develop option of hydrogen for heat.
- Electricity generation
  - Auctions of renewable contracts to support scale-up of low-carbon generating capacity.
  - Policy to address barriers to major scale-up required, including connections from offshore windfarms to onshore network and strengthening UK's power grid.
  - Following on from 2024 coal phase-out, gas-fired power without CCS phased out by 2035.
  - Improve flexibility must accelerate to accommodate the increasing shares of variable power.
- Low-carbon hydrogen
  - Hydrogen strategy to be published in 2021. To set out vision for hydrogen's role in meeting Net Zero together with actions, regulations and incentives.

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Conclusions

- To reach Net Zero target there must be a process, a sequence and a governance system.
- The early years of the UK's pathway focus on scaling up new policy development, ramping up new supply chains for low-carbon goods & addressing sectors that have progressed too slowly: transport, industry, buildings, agriculture.
- Sales of most high carbon goods are phased out in UK altogether by the early 2030s. Emissions fall sharply over the 2030s, before levelling off in the 2040s, as final hurdles are cleared to reach Net Zero.
- Utmost focus is required from UK government over the next ten years to scale up policy across every sector, encourage business to invest and engage people in the challenge.
- The UK has already made significant progress towards Net Zero in the power sector due to carbon pricing and investments in renewables.
- The UK's process & governance system for achieving Net Zero can be a good example, although detailed pathway may not be transferable to other countries as it depends on country-specific emissions profiles and other circumstances.
- Based on the UK's estimates, investment costs to achieve Net Zero are below 1% of GDP per year, with savings due to more efficient technologies outweighing these costs in later years.

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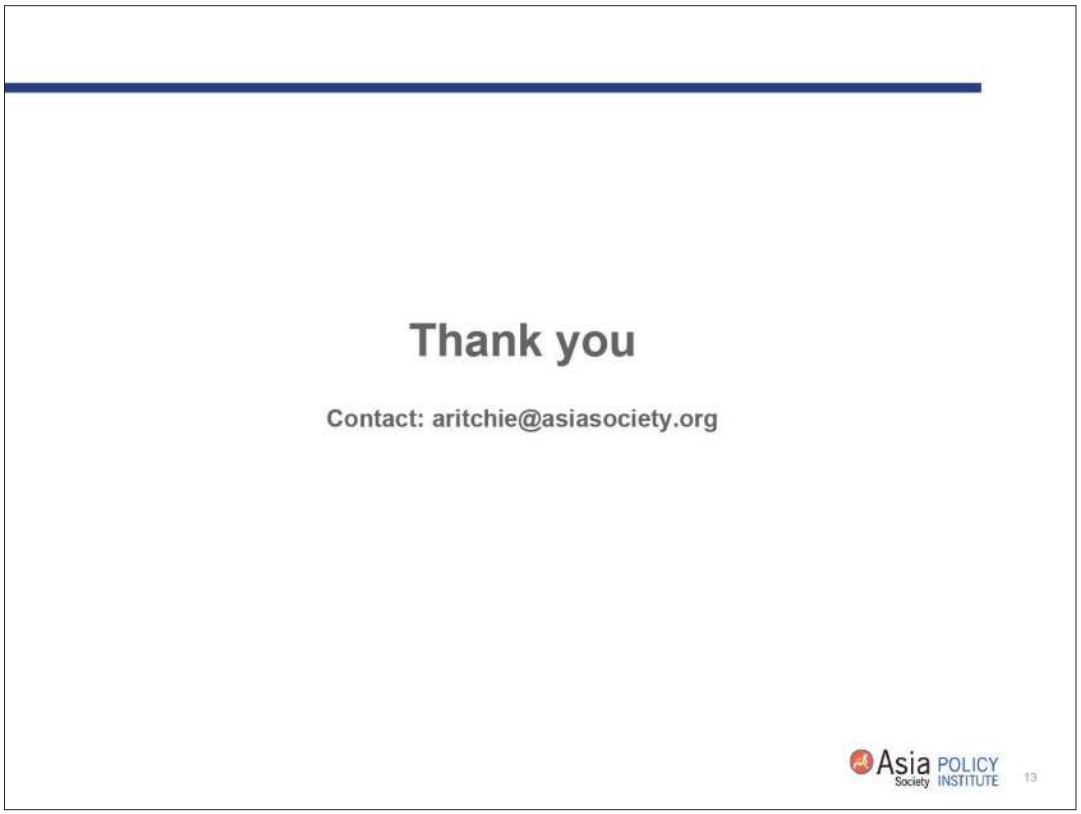
K E Y N O T E


Thank you
Contact: aritchie@asiasociety.org
Asia Society POLICY INSTITUTE
13

MEMO

SESSION 2

Preparing for Carbon Neutrality by 2050

COUNTRY EXPERIENCE 2

Carbon Neutrality Reinforce Green Low Carbon Transition in China

LI Min

China Representative, International Emissions Trading Association (IETA)

Career History

Li Min has long engagement in climate change and sustainable development activites in China since 2004 through numbers of international/multilateral capacity training programs, as CDM, MDG, etc. in the central governmental body and later on GmbH German Technology Cooperation (GTZ, now renamed GIZ) as the programme officier and Country Coordinator of German BMU CDM Programme to set up a sizeable CDM portfolio with the support of programme advisor and China CDM experts. The programme also developed regular bilingual briefings and policy papers on the regulatory and commercial developments of Chinese carbon market. From 2010-2016, she worked for Blue World Carbon Capital Ltd. (one of the top carbon credit buyers in China) as China Representative and took charge of the Beijing Rep Office, including the office daily operation, human resource & financial management, projects origination and aquisation. At present, she is leading IETA's overall tasks and activities in China as its China Representative and in coordination with IETA secretariat and key memers in regular updates on policy and market briefings, reports and global events.

Abstract

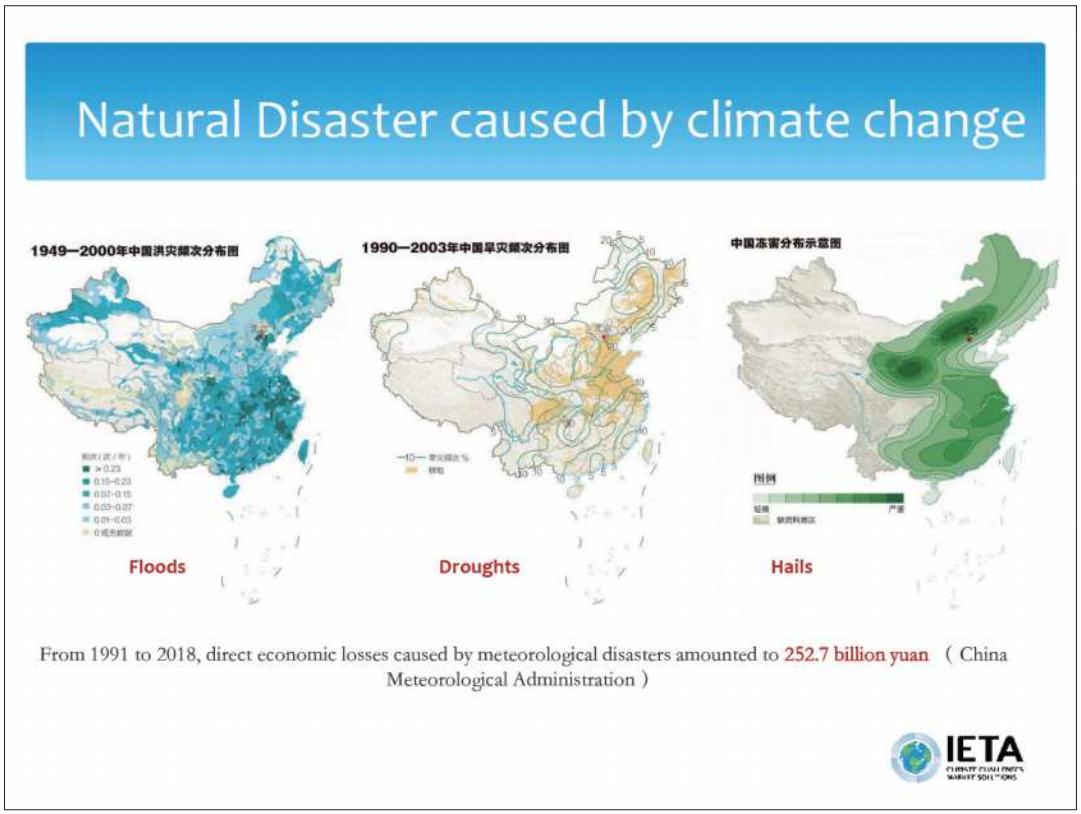
On September 22, 2020, President Xi Jinping has made a solemn declaration to the world that "China will strive to reach the peak of carbon dioxide emissions before 2030 and achieve carbon neutrality before 2060", these goals have been repeatedly emphasized later on at seven major international conferences. Carbon peaking and carbon neutrality have become national strategies relevant content has been written into the CPC Central Committee's Proposal on Formulating the Fourteenth Five-Year Plan for National Economic and Social Development and the Long-Term Outlook for the year 2035. Listed as one of the eight key tasks of the Central Economic Work Conference in December. Reinterated at the ninth meeting of the Financial and Economic Commission of the CPC Central Committee held in March 2021.

Carbon peak and carbon neutral goals are the inherent requirements of China's sustainable development, to take the international responsibility for addressing climate change and promoting the building of a community with a shared future for mankind. It concerns China's future national development strategy and will have a fundamental impact on China's economic structure and social development orientation, triggering a profound change in governance, energy, technology, consumption and so on. Carbon peak and carbon neutrality goals will lead and restructure the current mindmap and pattern of China's efforts to deal with climate change and low-carbon development set new directions and requirements for work in the next stage, including economic and social development, climate change, and ecological and environmental protection.

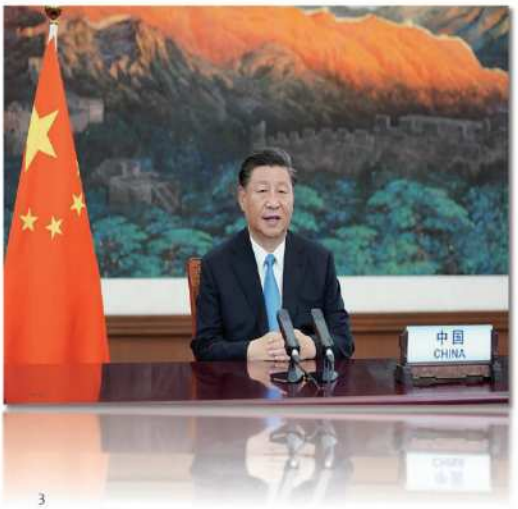
The presentation will focus on: The proposal, policy background and significance of carbon peak and carbon neutral target in China. The work task force structure for achieving carbon peak and carbon neutrality, as well as the actions of relevant ministries and commissions, provinces and cities, and enterprises in key industries. Raise a few personal suggestions and development prospects for China's next strategic pathway to achieve carbon peak and carbon neutrality, coping strategies for enterprises, highlights of the Chinese National ETS.

K E Y N O T E


Carbon Neutrality Reinforce Green Low Carbon Transition in China
28 May 2021
Li Min
IETA China Representative
IETA
CLIMATE CHALLENGES
MARKET SOLUTIONS


Natural Disaster caused by climate change
1949—2000年中国洪灾频次分布图
1990—2003年中国旱灾频次分布图
中国冻害分布示意图
Floods
Droughts
Hails
From 1991 to 2018, direct economic losses caused by meteorological disasters amounted to 252.7 billion yuan (China Meteorological Administration)
IETA

Peak Co2 Emission & Carbon Neutrality Goals



- **Peak Co2 Emission earlier than 2030;**
- **Reach Carbon Neutrality earlier than 2060;**
- **Green recovery**

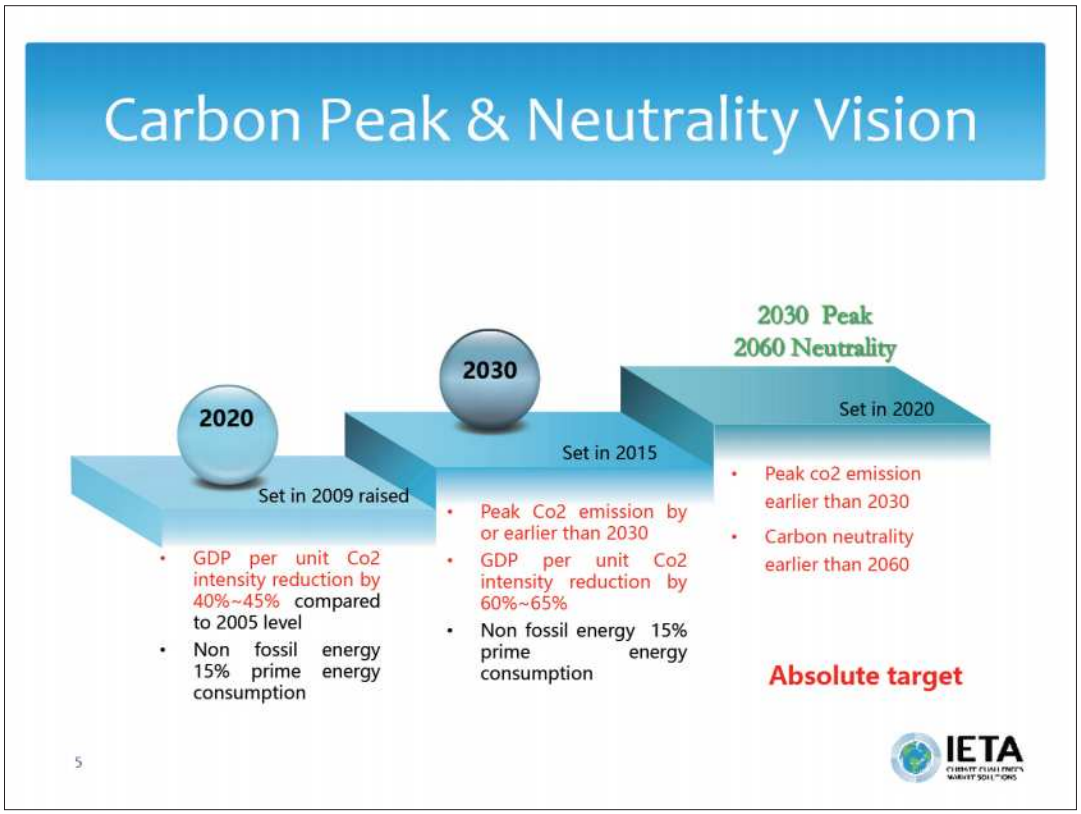
3

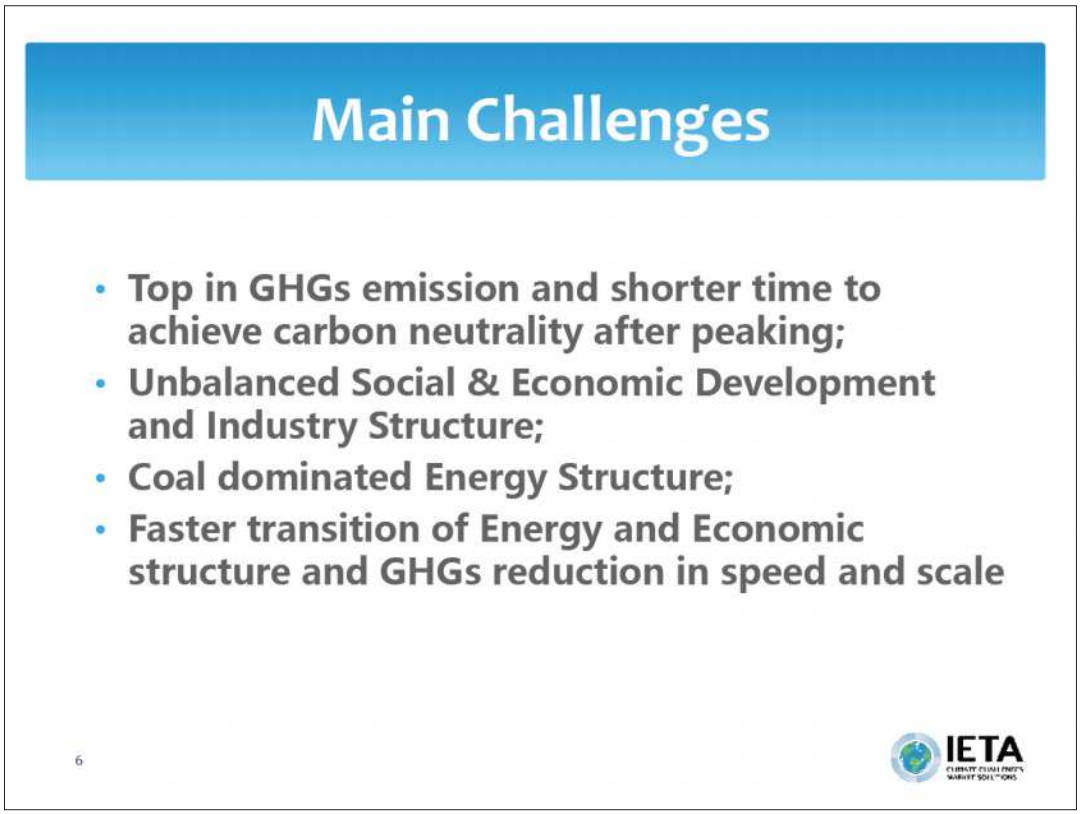
Highlight in 14th FYP & 2035 Outlook

- 第十四个五年规划建议：“…推动能源清洁低碳安全高效利用。发展绿色建筑。开展绿色生活创建活动。降低碳排放强度，支持有条件的地方率先达到碳排放峰值，制定二〇三〇年前碳排放达峰行动方案。…”
- 14th FYP support certain region with advantages to peak co2 emission in earler stage, formulate action plan to peak co2 emission earlier than 2030
- Total & intensity of energy consumption
- Trading of carbon, pollutant permit, energy certificant, water, etc.
- 二〇三五年社会主义现代化远景目标：“…广泛形成绿色生产生活方式，碳排放达峰后稳中有降，生态环境根本好转，美丽中国建设目标基本实现；…”
- 2035 Outlook: Green production and life style, carbon emission is steady with decline after peaking


中共中央
关于制定国民经济和社会发展
第十四个五年规划和二〇三五年
远景目标的建议

4


Carbon Peak & Neutrality Vision
2020
Set in 2009 raised
GDP per unit Co2 intensity reduction by 40%~45% compared to 2005 level
Non fossil energy 15% prime energy consumption
2030
Set in 2015
Peak Co2 emission by or earlier than 2030
GDP per unit Co2 intensity reduction by 60%~65%
Non fossil energy 15% prime energy consumption
2030 Peak
2060 Neutrality
Set in 2020
Peak co2 emission earlier than 2030
Carbon neutrality earlier than 2060
Absolute target
5
IETA


Main Challenges
Top in GHGs emission and shorter time to achieve carbon neutrality after peaking;
Unbalanced Social & Economic Development and Industry Structure;
Coal dominated Energy Structure;
Faster transition of Energy and Economic structure and GHGs reduction in speed and scale
6
IETA

Major Changes Needed

1. Natioanl Target

- Included into general national economic and social development plan
- Intensified reducdion target set in 14th & 15th FYP

2. Indudrty Optimizing & Restructuring

Convential: upgrade, smart, green

New impetus in emerging, service, digital economy

3. Transformation in Energy systems

Change the domination of coal

Increase renewabls wind, solar, hydro **20%** by 2020, **25% by** 2030

1.2 billion kw by end of 15th FYP 2030

5. Direct fund to low carbon

2020-2050, **100 trillion Yuan** needed for energy system restructuring; 30 **trillion Yuan** for energy supply to industries, constrution, transportaiton, etc.

4. Technology Innovation

Tecology in decarbonlizaiotn in energy, industry, transportaiton, etc.

Digitalizaiton, smarterlization

7

Previous Achievements

* Policy Structure introduced in 13th FYP, GHG WP, 14th FYP;
* Action Plan of Peaking Carbon Emission Peak in Central and Provincial Level;
* Pilots in Low Carbon Development Cities and Net-Zero Emission Communities;
* Promotion and Action in the general public.

8

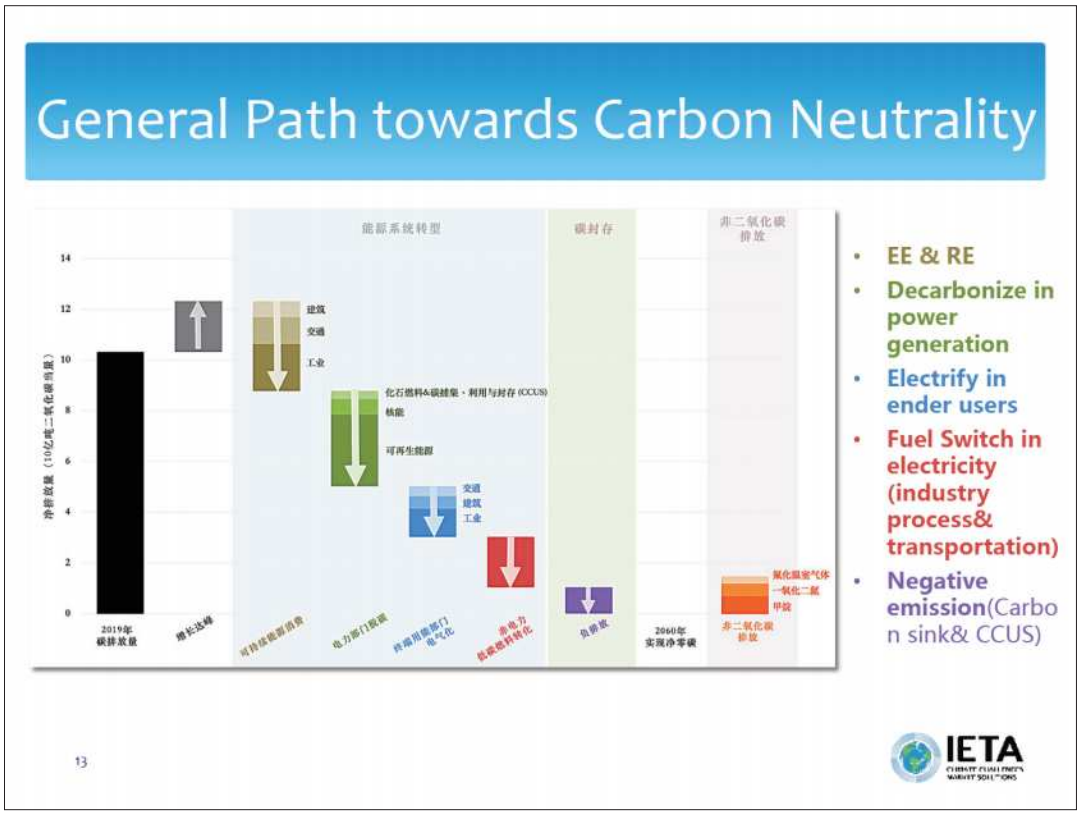

Climate Actions/Commitment among Enterprises &Entities
中国石化
中国石化启动碳排放达峰和碳中和战略研究
国家能源集团
抓紧制定2025年碳排放达峰行动方案
2020.10.24
2020.12.8
2020.12.21
2020.12.28
1
2
3
4
5
6
7
2020.11.23
2020.12.20
2020.12.28
伊利
伊利率行业之先承诺实现碳中和，积极响应"中国2060年前实现碳中和"的国家目标
国家电力投资集团
国家电力投资集团宣布到2023年将实现在国内的碳达峰
中国华能
勇担历史使命，抓紧制定公司碳排放达峰方案
国家电网
国家电网有限公司召开专题会议研究"碳达峰、碳中和"行动方案
9
IETA

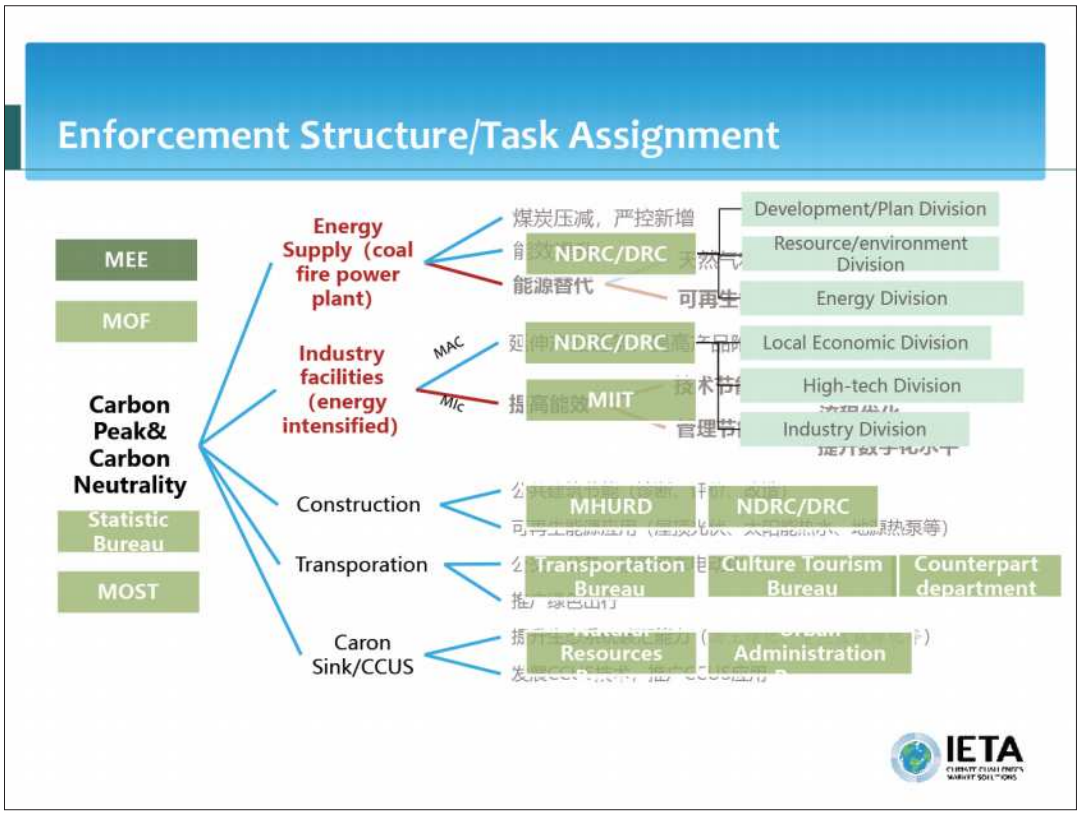

Climate Actions/Commitment among Enterprises &Entities
隆基
隆基作为光伏行业首家企业率先发布《绿色供应链减值议》
腾讯
腾讯积极响应中国碳中和目标，并已着手推进碳中和规划
中国建筑材料联合会
发布建筑材料行业碳达峰、碳中和行动倡议，向全行业郑重提出并倡议：我国建筑材料行业要在2025年前全面实现碳达峰。水泥等行业要在2023年前率先实现碳达峰
2020.12.30
2021.1.12
2021.1.15
8
9
10
11
12
13
2021.1.8
2021.1.12
2021.1.16
晋能控股集团
召开"碳达峰、碳中和"战略研究安排部署会，从战略和全局的高度统筹推进"碳达峰、碳中和"战略研究攻关
《中国石油和化学工业碳达峰与碳中和宣言》
17家石油和化工企业、化工园区以及中国石油和化学工业联合会在京联合签署并发布《中国石油和化学工业碳达峰与碳中和宣言》
中国海油
中国海油宣布正式启动碳中和规划，将全面推动公司绿色低碳转型
10
IETA

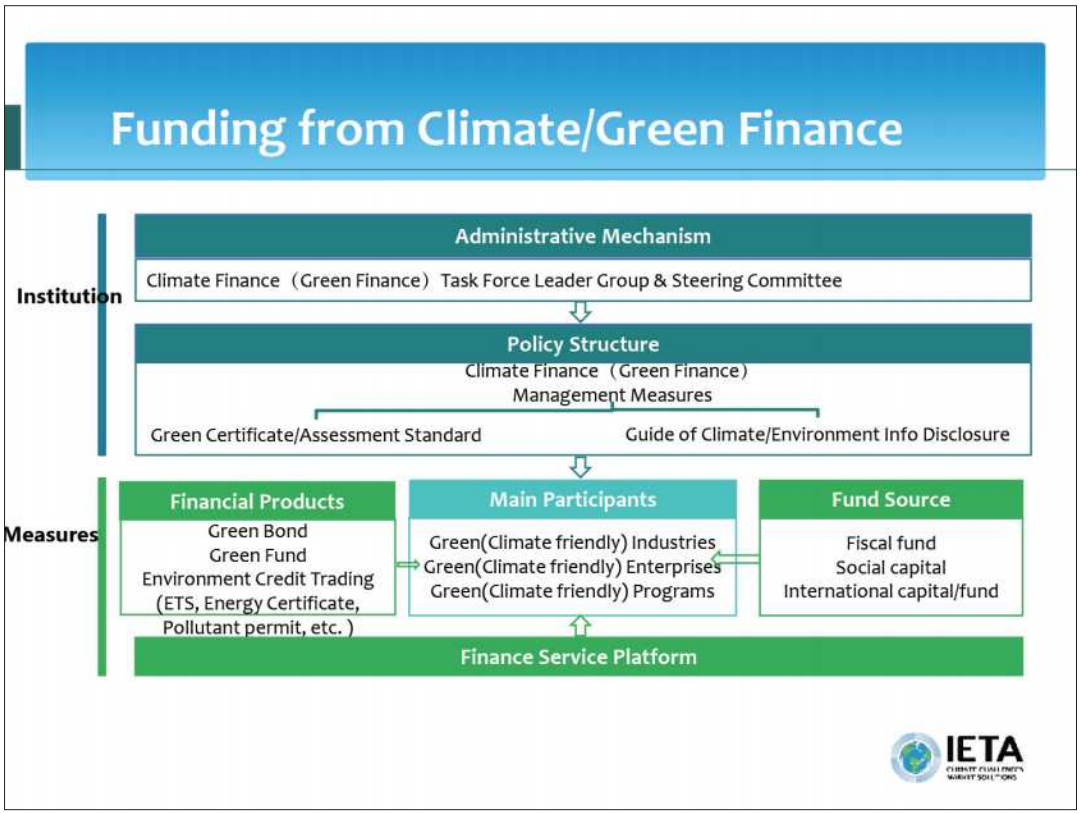

Climate Actions/Commitment among Enterprises &Entities
大唐集团
大唐集团2021年工作会议：提前5年（2025年）实现碳达峰
华电集团
集团正在抓紧制定碳达峰行动方案，有望2025年实现碳排放达峰。
通威集团
宣布全面启动碳中和规划，并计划于2023年前实现碳中和目标
2021.1.20
2021.1.25
2021.2.1
14
15
16
17
18
19
2021.1.21
2021.1.28
2021.2.3
中国宝武
2021年发布低碳冶金路线图，2023年力争实现碳达峰，2025年具备减碳30%工艺技术能力，2035年力争减碳30%，2050年力争实现碳中和
南方电网
加紧研究制定实施服务碳达峰、碳中和工作方案
比亚迪
比亚迪宣布启动企业碳中和规划研究，探索新能源汽车行业碳足迹标准，引领中国汽车行业迈入绿色发展新阶段
11
IETA


Climate Actions/Commitment among Enterprises &Entities
Alibaba 阿里巴巴
阿里
Baidu 百度
百度
Lenovo
联想
滴滴出行
滴滴
中国三峡 China Three Gorges Corporation
三峡集团
美团外卖
美团
ByteDance 字节跳动
字节跳动
12
IETA

K E Y N O T E


General Path towards Carbon Neutrality
EE & RE
Decarbonize in power generation
Electrify in ender users
Fuel Switch in electricity (industry process& transportation)
Negative emission(Carbon sink& CCUS)
IETA


Enforcement Structure/Task Assignment
MEE
MOF
Carbon Peak& Carbon Neutrality
Statistic Bureau
MOST
Energy Supply（coal fire power plant）
Industry facilities (energy intensified)
MAC
MIC
Construction
Transporation
Caron Sink/CCUS
煤炭压减，严控新增
能源替代
NDRC/DRC
MIIT
MHURD
Development/Plan Division
Resource/environment Division
Energy Division
Local Economic Division
High-tech Division
Industry Division
Transportation Bureau
Culture Tourism Bureau
Counterpart department
Resources
Administration
IETA


Funding from Climate/Green Finance
Institution
Administrative Mechanism
Climate Finance （Green Finance） Task Force Leader Group & Steering Committee
Policy Structure
Climate Finance （Green Finance）
Management Measures
Green Certificate/Assessment Standard
Guide of Climate/Environment Info Disclosure
Measures
Financial Products
Green Bond
Green Fund
Environment Credit Trading
(ETS, Energy Certificate,
Pollutant permit, etc.)
Main Participants
Green(Climate friendly) Industries
Green(Climate friendly) Enterprises
Green(Climate friendly) Programs
Fund Source
Fiscal fund
Social capital
International capital/fund
Finance Service Platform
IETA


Many Thanks!
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www.ieta.org
IETA

SESSION 2

Preparing for Carbon Neutrality by 2050

COUNTRY EXPERIENCE 3

Carbon Neutrality by 2050 in Korea

Seung Jick Yoo

Professor, Sookmyung Women's University

Career History

Prof. Seung Jick Yoo has played the principal roles in setting the national mid-term GHGs reduction goal up to 2030 as well as the GHGs reduction goal up to 2020 of Republic of Korea. The national greenhouse gas reduction plan up to 2020 was approved by presidential cabinet meeting and announced by former President Lee, Myong-bak in the held in Copenhagen, Denmark in 2009. He has also been deeply involved in the development of national green growth strategies and implementation plan in Korea.

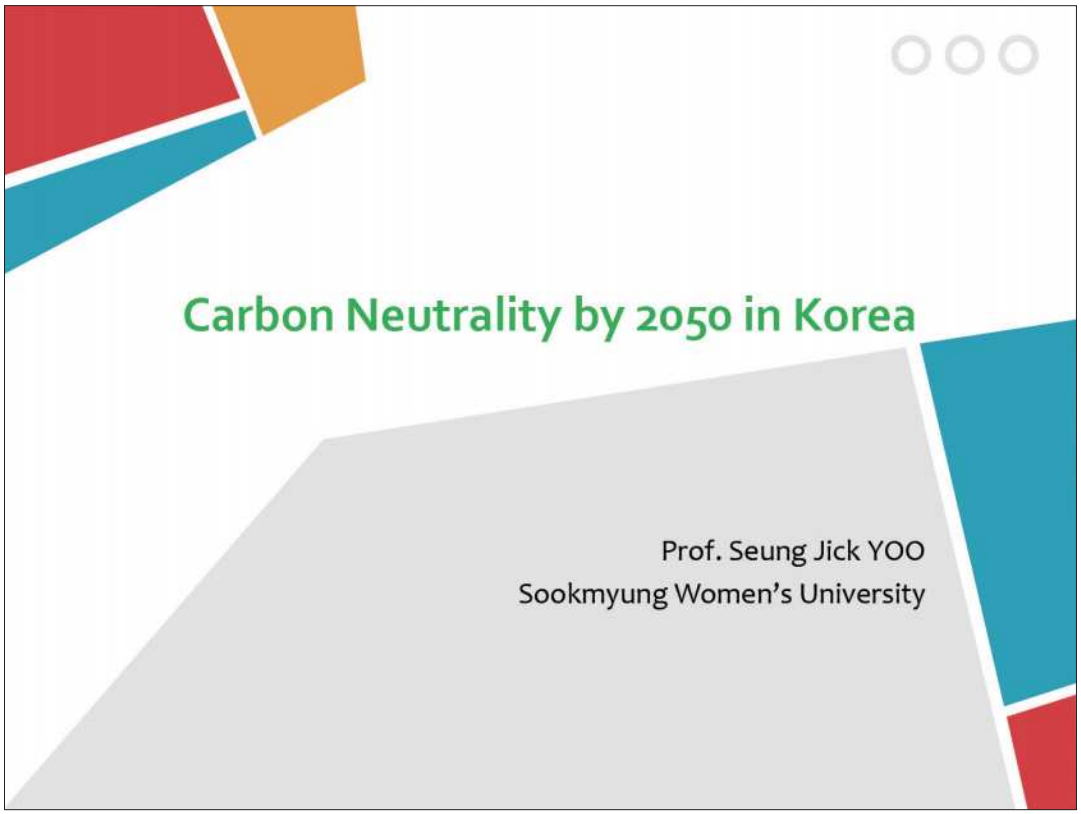
Since he was nominated as the President of Greenhouse Gas Inventory & Research Center of Korea, the principal national agency in management of national and entity level GHG inventories and setting national, sectoral and entity-level greenhouse gas inventory reduction targets, he has been in charge of publication of annual national inventory, national communications and management of entity-level greenhouse gas emission. He designed and implemented the National Emission Permit Trading System (Korean ETS) and developed national permit allocation plan and allocated the permits to the entities in 2014. He, as the President of GIR, developed the national GHGs emission reduction target up to 2030, which was approved the presidential cabinet meeting under Former President Park, Geun-Hye in 2015. After moving to Sookmyung Women's University 20 January 2016, he is teaching the climate change modeling, environmental and energy policies. Prof. Yoo also deeply involved in the national climate change policy setting and implementation as a key member for the Prime minister's committee on Green Growth and the Minister of Environment's advisory committee.

Abstract

Korean government submitted its long term low carbon development strategy, "2050 Carbon Neutrality Strategy of the Republic of Korea" in December 2020 to UNFCCC secretariat. This presentation reviews the key components of the 2050 Carbon Neutrality Strategy and investigates the challenges ahead. Facing significant economic slow-down of Korean economy due to COVID19, the Green New Deal and the Digital New Deal are the two pillars to make the Korean economy into the carbon neutral by 2050. Massive development and deployment of innovative green technology is the engine of transition of Korean economy. For example, electric power, generated from renewable sources, will be the main energy type used in the economy. The self-driving vehicles will use electricity or hydrogen fuels in the transport sector.

However, transition to carbon neutral economy by 2050 faces a lot of challenges in Korea because it requires very rapid negative growth rate in GHG emissions from now. It needs very well organized strategies and detailed plans for the successful and harmonious outcomes. The transition is not a simple solution to address an environmental issue alone, but is to build a comprehensive and innovative pathway to carbon neutral economy by addressing changes in industrial structure, job security and retraining of the workforces for net zero economy.

It concludes that a well-designed plan needs to be announced to the public as soon as possible in order to have the consumers and the producers prepared the dramatic changes in their lifestyles, production process as well as the products produced. In addition, carbon prices will be the principal driver to give incentives to the development and deployment of innovative green technology as well as the change in the consumption behaviors.


Carbon Neutrality by 2050 in Korea
Prof. Seung Jick YOO
Sookmyung Women's University


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

Content

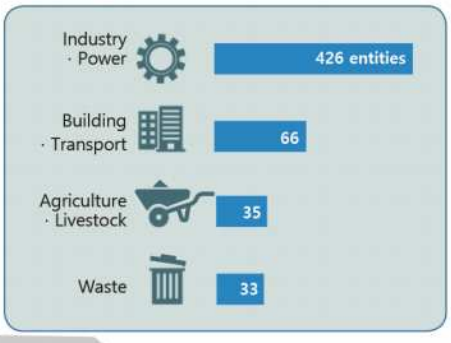
1. Korea's National GHGs Reduction Targets
2. Green New Deal & Carbon Neutral Society by 2050
3. Tasks Ahead

3

Implementation of GHGs Policies in Korea

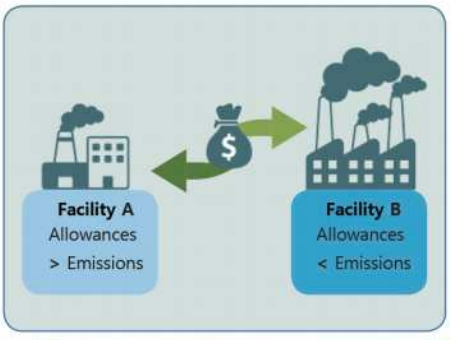
Target Management Scheme(2012~)

- **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~)

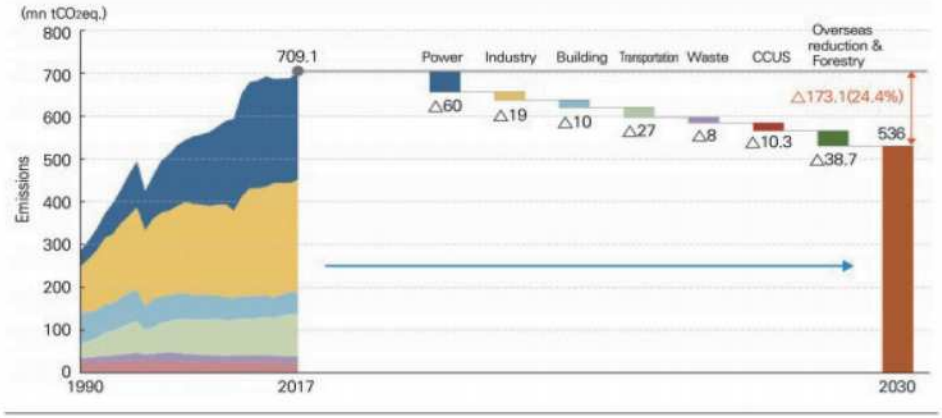
- **Market-base policy to achieve GHG reduction targets through trading emission permits allocated.**
- **525 companies in Emission trading Scheme in the Phase 1 period ('15~'17)**



5

NDC of Korea by 2030

[Figure 2-3] 2030 GHG reduction targets[22]



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

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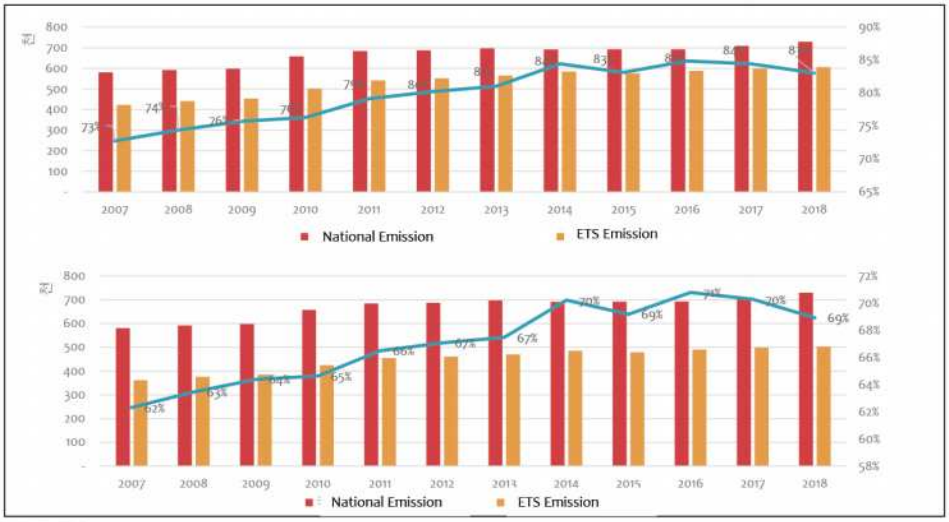
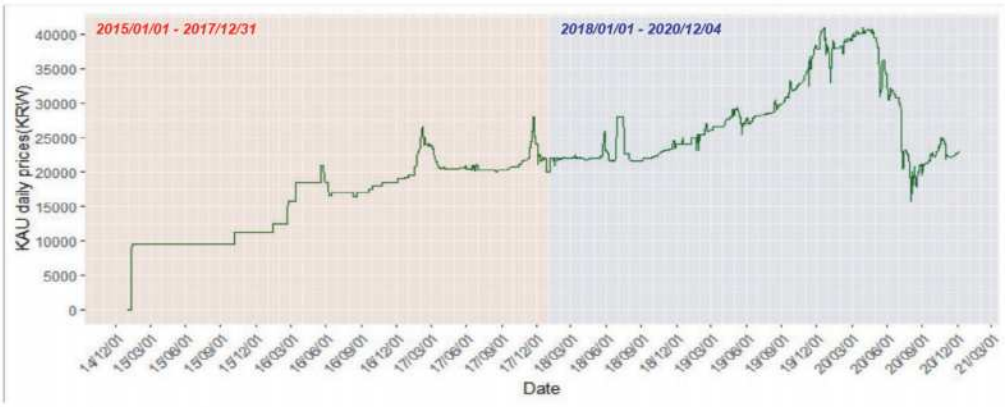
Ratio of GHGs Emission controlled by ETS to National Emissions

Indirect Emissions Double Counted vs. Only Direct Emissions



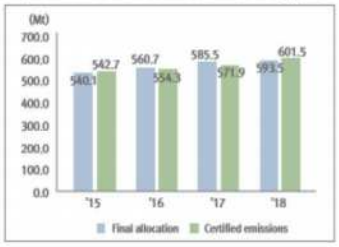
Daily Permit Prices (1/2015~12/2020)



- 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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Content

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

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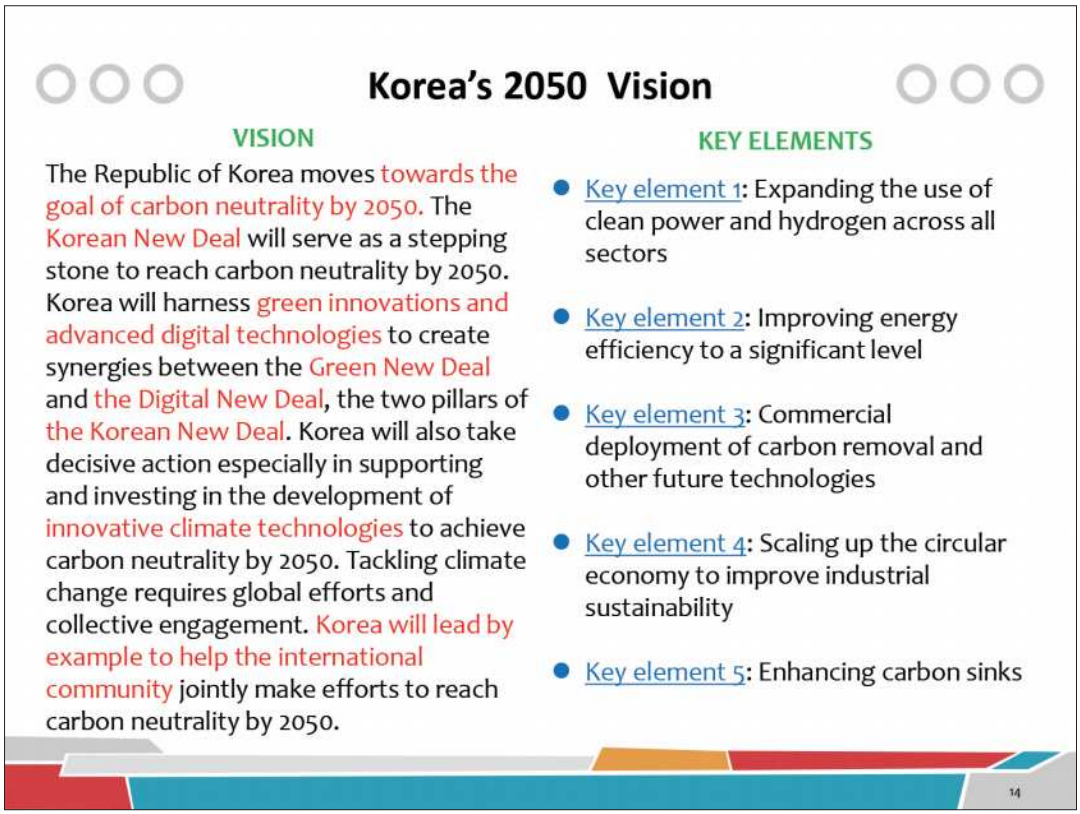
Green New Deal in Korea

Source: Sanghun, Kim Green New Deal in the Age of Climate Crisis, 5th Korea-China-Japan Carbon Pricing Forum, Seoul, 2020.10.29, p.114


Green New Deal in Korea
03. 8 Projects in 3 Fields
Ministry of Environ
Republic of Korea
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.
Source: Sanghun, Kim Green New Deal in the Age of Climate Crisis, 5th Korea-China-Japan Carbon Pricing Forum, Seoul, 2020.10.29, p.15


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
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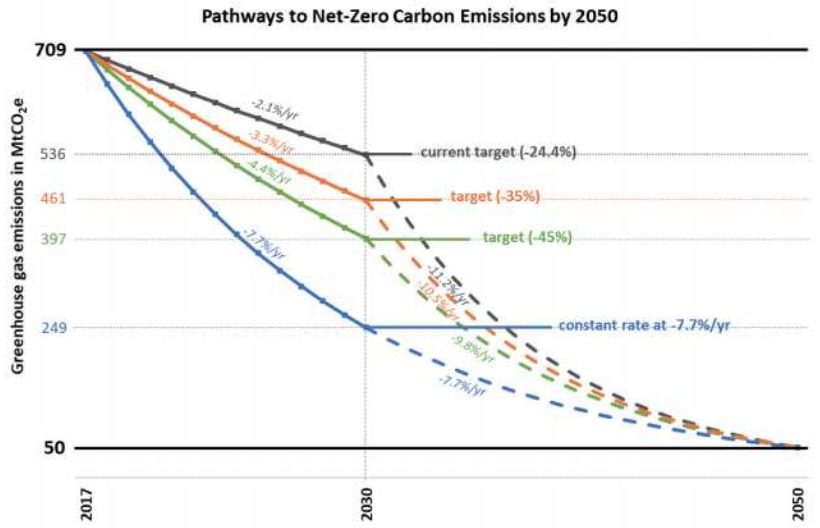
Scenario Development to 2050 Net Zero



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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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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

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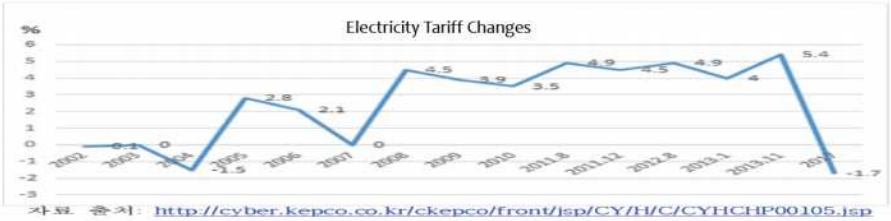
Electricity Tariffs

- 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 Nuclare Generators from 23.3GW to 19.4GW

Installed Capacity in GW by Fuel Type

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Follow ups

National Emission Scenarios For 2050 Net Zero

- First Half of 2021 — Scenarios to Net Zeros by 2050 Development
- 2021 — Development of Strategy by Sector
- 2022 ~2023 — Legal Foundation; National Planning

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

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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

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Thank You for Attentions!!

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DISCUSSION SESSION

Preparing for Carbon Neutrality by 2050

MODERATOR

William Acworth

Head of Secretariat, International Carbon Action Partnership (ICAP)

Career History

William Acworth co-leads the Carbon Markets and Pricing team at adelphi. In his role as Head of the Secretariat of the International Carbon Action Partnership (ICAP), he works together with more than thirty governments around the world to advance carbon pricing as a key tool on the path to decarbonizing our economies. Over the past half decade, William has led ICAP's work on building capacity for emissions trading as well as key projects within ICAP's technical dialogue. Recently his focus has been on industrial decarbonization as well as carbon pricing implementation in Latin America and East Asia. Prior to joining adelphi, William worked as a research associate in the climate policy team at the German Institute for Economic Research (DIW Berlin) as well as with the Potsdam Institute for Climate Impact Research. He began his career in Australia, where he held positions with ACIL Allen Consulting as well as the Australian Bureau for Agricultural and Resource Economics, where he advised State and Commonwealth governments on climate policy. William holds a first class honours degree in Resource Economics from the University of Sydney, Australia, as well as a Masters of Public Policy from the Hertie School of Governance in Berlin, Germany.

DISCUSSION SESSION

Preparing for Carbon Neutrality by 2050

PANELIST

Yeo Ra Chae

Director General, Integrated Assessment of Climate and Air Pollution, Korea Environment Institute (KEI)

Career History

Dr. Yeora Chae is a director of climate, air and safety division at Korea Environment Institute. Dr. Chae is specialized in integrated assessment of climate change and air pollution. Her recent works include “Analysis of socio-economic impacts of heatwave”, “Integrated analysis of climate mitigation and adaptation”. She completed MSc in Climate Change with distinction at University of East Anglia, UK. She obtained PhD. in climate change policy analysis with Dr. Chris Hope at University of Cambridge, UK.

DISCUSSION SESSION

Preparing for Carbon Neutrality by 2050

PANELIST

Ji Hye Jo

Director/Senior Research Fellow, Circular Economy Policy, Korea Environment Institute (KEI)

Career History

Dr. Jo works in the Division of Resource Circulation, Korea Environment Institute (KEI). Her field of research is related to Circular Economy (CE) policy. Prior to joining the institute, she worked as a postdoctoral researcher at the National Renewable Energy Laboratory (NREL), USA. She was involved in research related to biological hydrogen production from lignocellulosic biomass.

Low Emission Development to Achieve

CARBON NEUTRALITY AND SDGs

:12th International Greenhouse Gas Conference

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