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Institute for the Advanced Study
of Sustainability

Low-carbon technology transfer as a means to tackle climate change

Achieving SDG 13: Climate Change & the Republic of Kiribati

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Presentation Outline

- **International climate action**

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- Mission Innovation
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- **Japanese activity on Low-Carbon Technology Transfer**

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- Ministry of Environment
- Adaptation: AP-PLAT
- Japan International Cooperation Agency (JICA)
- New Energy and Industrial Technology Development Organization (NEDO)

- **UNU-IAS Low-Carbon Technology Transfer (LCT) project**

International Climate Action - UNFCCC

- **United Nations Framework Convention on Climate Change (UNFCCC) adopted in 1992.**
- **1994: entry into force**
- **1995: first meeting of the Conference of the Parties (COP)**
- **1997: Kyoto Protocol (KP) adopted** (binding GHG emission reduction targets for developed countries)
- **2005: KP enters into force** (Commitment Period 1 = 2008-2012; CP 2 = 2013-2020)
- **2009: Copenhagen COP 15** fails to produce new global binding agreement
- **2015: Paris Agreement adopted at COP 21** (starts in 2020)
- **2017: COP 23**

UNFCCC COP 23



COP23 | FIJI
UN CLIMATE CHANGE CONFERENCE
BONN 2017



United Nations
Framework Convention on
Climate Change

- **By Fiji** in Bonn, Germany, 6-17 November 2017.
- Fiji's **vision** for COP 23:
 - “Forge a **grand coalition** to accelerate climate action before 2020 and beyond **between civil society, the scientific community, the private sector and all levels of government, including cities and regions.**
 - To **harness innovation, enterprise and investment** to fast track the **development and deployment of climate solutions** that will build future economies with net zero greenhouse gas emissions, in an effort to limit the rise of global temperatures to 1.5 degrees Celsius above pre-industrial levels.
 - To draw a stronger link between **the health of the world's oceans and seas** and the impacts of, and solutions to, climate change as part of a holistic approach to the protection of our planet.
 - To infuse COP23 with the **Fijian “Bula Spirit” of inclusiveness, friendliness and solidarity.**”

UNFCCC – Technology Transfer

- **Technology Framework (TF;** to be adopted by 2018) established by the Paris Agreement to provide overarching strategic guidance to the work of the **Technology Mechanism (TM)**.
 - **COP 23:** further discussions on what the TF should look like.
- **TM** (established in late 2010) consists of **Technology Executive Committee (TEC)** and **Climate Technology Centre and Network (CTCN)**.
- **TEC = policy component of TM.** It focuses on supporting developing country Parties to identify and prioritise their technology needs.
- **CTCN = implementation component of TM.** One of its main tasks is to respond to developing country requests for assistance in the development and transfer of technology.

Non-State Actor Zone for Climate Action (NAZCA) – Global Platform for Tracking Climate Action

NAZCA captures the commitments to climate action by companies, cities, subnational, regions, investors, and civil society organizations.

The landmark universal agreement and decision to address climate change, adopted by 195 nations in Paris in 2015, welcomes the efforts of these actors to scale up their climate actions and encourages the registration of these actions on NAZCA.

NAZCA aims to track the mobilization and action that are helping countries achieve and exceed their national commitments to address climate change.

[More](#)



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See who's taking action



Browse

2,508 CITIES	209 REGIONS	2,138 COMPANIES
479 INVESTORS	238 CSOs	COOPERATIVE INITIATIVES
12,549 TOTAL COMMITMENTS		

Join

Register your commitments

International Climate Action – Mission Innovation (MI)

- Focus is on **Research, Development and Demonstration (RD&D)** of technologies
- Announced in **November 2015** at UNFCCC COP 21 in Paris
- **22 countries and the EU** participate:
 - Australia, Brazil, Canada, Chile, China, Denmark, EU, Finland, France, Germany, India, Indonesia, Italy, Japan, Mexico, Netherlands, Norway, Republic of Korea, Saudi Arabia, Sweden, United Arab Emirates, United Kingdom, United States
- “to dramatically **accelerate global clean energy innovation**”
- Participants have committed to **double their governments’ clean energy research and development investments over five years.**
- **The Breakthrough Energy Coalition** will invest patient capital in early-stage technology development coming out of Mission Innovation participants.
- MI partnered with the **World Economic Forum** to facilitate engagement between leading businesses and MI members.

Innovation Challenges: Leads and Participants

		Australia	Brazil	Canada	Chile	China	Denmark	EC	Finland	France	Germany	India	Indonesia	Italy	Japan	Mexico	Norway	Republic of Korea	Saudi Arabia	Sweden	The Netherlands	UAE	UK	USA
1	Smart Grids Innovation Challenge	Participant	Participant	Participant		Lead	Participant	Participant	Participant	Participant	Participant	Lead	Participant	Lead		Participant	Participant	Participant	Participant	Participant	Participant		Participant	Participant
2	Off Grid Access to Electricity Innovation Challenge	Participant	Participant	Participant		Participant		Participant	Participant	Lead		Lead	Participant	Participant		Participant	Participant	Participant	Participant	Participant	Participant		Participant	Participant
3	Carbon Capture Innovation Challenge	Participant		Participant		Participant	Lead	Participant	Participant	Participant	Participant	Lead												
4	Sustainable Biofuels Innovation Challenge	Participant	Lead	Lead		Lead		Participant	Participant	Participant		Lead	Participant	Participant		Participant	Participant			Participant	Participant		Participant	Participant
5	Converting Sunlight Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Lead	Participant	Participant	Lead	Participant		Participant	Participant	Participant	Participant		Participant	Participant	Participant	Participant	Participant	Participant
6	Clean Energy Materials Innovation Challenge	Participant		Participant			Participant	Participant	Participant	Participant	Participant		Participant			Lead	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Lead
7	Affordable Heating and Cooling of Buildings Innovation Challenge	Participant	Participant	Participant		Participant	Participant	Lead	Participant	Participant	Participant	Participant		Participant		Participant	Participant		Participant	Participant	Participant	Lead	Lead	Participant

● Lead

● Participant

International Climate Action – Clean Energy Ministerial (CEM)

- A global forum to **promote policies and share best practices to accelerate the global transition to clean energy (deployment and diffusion)**
- **24 countries and the European Commission** participate (see next slide)
- Efforts focus on: **improving energy efficiency, enhancing clean energy supply, and expanding clean energy access**
- Main activities are:
 - **High-level policy dialogue** at **annual ministerial meetings** to advance international cooperation on clean energy policies and practices
 - **Public-private engagement** to connect industry, government and civil society in scaling up clean energy worldwide
 - **Action-driven transformative clean energy initiatives** and campaigns

Participation in Clean Energy Ministerial Initiatives and Campaigns

30 June 2017

	Australia	Brazil	Canada	Chile	China	Denmark	European Commission	Finland	France	Germany	India	Indonesia	Italy	Japan	Korea	Mexico	Netherlands (observer)	Norway	Russia	Saudi Arabia	South Africa	Spain	Sweden	United Arab Emirates	United Kingdom	United States*
Appliances (SEAD)	●	●	●	●	●		■			●	■	●			●	●			●	●	●		●	●	●	■
Electric Vehicles (EVI)			●		■			●	●	●	●			●	●	●	●	●			●		●		●	■
Energy Management (EMWG)	●		■	●	●	●	●	●		●	●	●		●	●	●				●	●		●	●		■
21st Century Power (21CPP)		●			●	●		●			■					■					●	●				■
Energy Access (Global LEAP)													●							●	●				●	■
Smart Grids (ISGAN)	●		●		●	●	●	●	●	●	●		■	●	■	●		●	●		●	●	■	●		■
Solar and Wind		●			●	■			●	■	●	●		●	●	●	●	●		●	●	■				●
Clean Energy Policy (Solutions Centre)	■		●		●				●		●	●	●			●							●	●		■
Women in Energy (C3E)			■	●				●			●		●	●		●					●		■	■		■
Advanced Cooling Challenge			●	●	●						■					●				●						●
Corporate Sourcing of Renewables		●			■	■	●			■						●							●		●	●
Energy Management			●	●	●	●	●	●		●		●	●	●	●	●			●		●		●	●		●
Global Lighting Challenge	●		●		●		●		●	●	■	●			●	●			●		●		●	●	●	●
EV 30@30			●		■			●	●		●			●		●	●	●					●			
Advanced Power Plant Flexibility		●	●		■	■	●			■	●	●		●		●				●	●	● ¹		●		
Sustainable City/Eco-Energy Town Initiative					●										■	●			■					●		
Nearly Zero Energy Buildings			●				■		■	●																

■ Lead ● Participant

¹ to be confirmed

* US participation and leadership are under review

Non-CEM countries, non-governmental organisations, and private businesses also participate in selected activities and campaigns.

Japanese activity on Low-Carbon Technology Transfer – National Designated Entity (NDE) to the Climate Technology Centre & Network (CTCN)

- **Regional (Asia-Pacific) workshops on Low-Carbon Technology Transfer and Diffusion to strengthen CTCN activities** (since 2015, yearly) (MOE)
 - Teach how to prepare requests to CTCN, share knowledge and experiences on using financing schemes.
 - Participants: NDEs and NDAs of Asia-Pacific countries, international/regional institutions, Japanese private companies, stakeholders in developing country where workshop is held.
 - Issues discussed: diffusion strategies, enabling environments, private sector involvement, access to finance, adapting technology to local conditions.

Japanese activity on Low-Carbon Technology Transfer - Ministry of Environment

- **Subsidy programme for innovation of low-carbon technologies for developing countries**
 - Partial project expenses subsidised.
 - Projects should demonstrate innovational modification of advanced low-carbon technologies to meet the requirements of host countries.
- **Joint Crediting Mechanism (JCM)**
 - Facilitating **diffusion of low-carbon technologies from Japanese companies** leading to GHG emission reductions abroad (credits are split), since 2011
 - **Japan Fund for Joint Crediting Mechanism** (ADB Trust Fund) – for funding expensive advanced low-carbon technologies.
 - There were **two feasibility studies, in 2013 and 2014, involving Kiribati**. One was about evacuation facilities using renewable energy as a low-carbon model for small island countries and the other about a demonstration project on integrated adaptation and mitigation measures in a low-carbon model for small island countries.

Japanese activity on Low-Carbon Technology Transfer – Adaptation: AP-PLAT

- Japan is in the process of establishing a **platform for knowledge sharing on adaptation for the Asia-Pacific region (AP-PLAT)**.
- **2017**: MOEJ will set up a **pilot AP-PLAT website**. They will share information on climate risks with the Asian Development Bank (ADB).
- **2018-19**: MOEJ will integrate the result of climate risk and vulnerability assessments in ADB projects where appropriate into the AP-PLAT and **provide developing countries with tailor-made information with a view to contribute to facilitate adaptation strategy creation, planning, project formulation and implementation, and monitoring and evaluation.**

Japanese activity on Low-Carbon Technology Transfer – Japan International Cooperation Agency (JICA)

- On 26 July 2016 JICA signed a grant agreement with the Government of the **Republic of Kiribati** for the **Project for Reconstruction of Nippon Causeway**.
 - “The Nippon Causeway is the only road connecting Betio Islet where Kiribati’s only international airport is located, and Bairiki Islet, home to many residents. The effects of aging and tidal waves have caused large-scale destruction to the road”.
- In 2015 JICA installed a **solar power system and a microgrid system** in **Tonga** (the first microgrid system in Oceania at the time), through a grant.
 - Japan hopes that this model of a microgrid system with renewable energy will spread further as a model for electric power for Oceania.

Japanese activity on Low-Carbon Technology Transfer – New Energy and Industrial Technology Development Organization (NEDO)

- **NEDO** has been exploring the installation of a **deep seawater cooling system in small islands**. Such systems are already being used in Japan.
- **Kiribati** is mentioned as a **potential site** for such a system.

UNU-IAS Low-Carbon Technology Transfer (LCT) project (FY2015-2017)

- Low-carbon technology transfer projects from Germany and Japan to India (solar PV) and Indonesia (micro-hydropower)
 - Who cooperates with who? What do the actors do? How successful is the transfer? What are main barriers/gaps? Comparison of German and Japanese approaches.
 - Interviews with stakeholders during fieldwork later this year and early next year
- City-to-city cooperation between Japanese and South-East Asian cities within JCM – evaluation
 - Yokohama and Da Nang, Vietnam
 - Yokohama and Bangkok, Thailand
 - Kitakyushu and Surabaya, Indonesia
 - Interviews with stakeholders during fieldwork later this year and early next year
- Presence at UNFCCC COP 23
- Past: Study of German, French and UK policies on LCT, initial case study of German GIZ LCT projects in Indonesia and India.

Thank you for your attention!

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