

Japan-Germany cooperation on GHG emissions reduction scenarios and long-term strategies

Background

At the G7 Elmau Summit held in June 2015, each country affirmed to carry out reductions in the upper range of the latest IPCC recommendation of 40 to 70% compared to 2010 by 2050, as a common vision toward global greenhouse gas emissions reduction targets.



The Paris Agreement was adopted at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) held from November to December 2015, as a new international framework for post-2020 greenhouse gas emissions reduction. The objective of the Paris Agreement, historically the first fair and legally binding framework to be applied to all nations, is to maintain temperature increase to well below 2°C and pursue efforts to limit it to 1.5°C. To achieve this objective, the agreement aims for early reductions in line with the latest science in order to bring about a peak in global emissions as early as possible and to achieve a balance between anthropogenic GHG emissions and removal by sinks in the latter half of the century. Additionally, the Agreement stipulates that all countries including major emitters are to submit and update Nationally Determined Contributions (NDCs) every five years, as well as further giving heed to the objective of the Agreement, make efforts to create and submit long-term low GHG emission development strategies.

Japan, in keeping with the Paris Agreement, announced within the Plan for Global Warming Countermeasures decided by the Cabinet in May 2016 its aim to lead the world community by engaging in emissions reductions corresponding to its capacity as a major emitter under the fair and effective international framework in which all major industrial nations participate, and its aim to reduce GHG emissions 80% by 2050 as a long-term target, while balancing global warming countermeasures and economic growth.

In addition, at the G7 Environment Ministers' Meeting in May 2016 chaired by Japan, G7 members recognised the importance of leading efforts in the formulation of long-term low GHG emission development strategies, and further recognised the importance of research on each country's future scenarios, strategies and targets, and knowledge-sharing via researcher networks in the formulation of strategies. Strengthening of these types of exchanges from 2016 on was incorporated into the Communiqué.

Based on the current state of affairs, in May 2016, Japan and Germany signed the "Joint Statement on bilateral cooperation on the dissemination of low-carbon technologies towards transformation to decarbonized societies", agreeing to steadily engage in information exchange related to greenhouse gas emissions reduction scenarios and long-term strategies corresponding to the specific characteristics of each country.

The following bilateral cooperation between Japan and Germany on long-term low-carbon strategies has already begun.

LCS-RNet 8th Annual Meeting

The International Research Network for Low Carbon Societies (LCS-RNet) is a network composed of policymakers and researchers who have been contributing to the climate policies of each country, mainly from G7 countries. The LCS-RNet 8th Annual Meeting, jointly sponsored by Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety and The Wuppertal Institute for Climate, Environment and Energy, with support from German Research Foundation and the Ministry of the Environment, Japan, was held from 6-7 September 2016 in Wuppertal, Germany, on the theme of "How to trigger the long-term transformation towards full decarbonisation"



Presentation Overview 1



Parallel session
1.1

How to deal with non-linear and disruptive developments: long-term scenarios, modeling, innovation and structural change

Mr. Martin Weiß of Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, referring to the Paris Agreement that requires major low-carbon transitions from all countries, discussed from the policymaker perspective the benefits and challenges involved in incorporating models and scenario results into policy.

Mr. Weiß pointed out that while the majority of existing scenarios focus only on technological and economic feasibility, social transitions must also be taken into account. Moreover, he spoke on improvement points for scenario formation and modelling, noting that in addition to enhancing the accessibility and usability of scenarios, they should play a primary role as a tool for communication among policymakers, diverse stakeholders and the public in future strategy formulation processes.

Presentation Overview 2



Parallel session
3.1

Technology concepts and ambitions of carbon-neutral or 100% renewable societies

In this session, Dr. Mikiko Kainuma of IGES and Dr. Harry Lehmann of the German Environment Agency presented the respective low-carbon scenarios of Japan and Germany.

From the two presentations, the following points were made: (i) in order for Japan and Germany to attain the 1.5°C target, and to achieve further drastic GHG emissions reductions by 2050, initiating reductions at an early stage is essential; (ii) although improved end-use energy efficiency, renewable energies and technological innovation will contribute significantly, broad-ranging policies and awareness-raising measures are also important; (iii) substantial reduction in end-use energy, acceleration of rapid electrification, and near complete decarbonisation by 2050 are essential; and (iv) cross-cutting policies and measures that pursue a wide range of options and synergistic effects are essential. These include co-location of energy-material complementary industries, reduction of resource use, increased recycling and reuse throughout entire value chains of all industries and sectors, and utilisation of multiple energy conversion and storage options.

Presentation Overview 3



Parallel session
3.4

Sustainable production and consumption as core fields of transition

Dr. Carolin Baedeker of the Wuppertal Institute for Climate, Environment and Energy presented research results on the state of heating in German households. This research examined the actual daily life of consumers to pinpoint energy intensive behaviours, and applied the LivingLab methodology to promote the introduction of energy-saving devices or shifts to more sustainable life cycles. A notable discovery of this research is that it found that consumers did not engage in sustainable heating merely due to a lack of information on it. The point was made that given opportunities to learn, and based on choices of energy-saving devices and lifestyle changes, considerable contributions to reduction in energy consumption were possible.

Invitation of German policymakers and researchers to Japan

The Ministry of the Environment of Japan, recognising the need to examine not only technologies, but also a "long-term low-carbon vision" that takes reforms in lifestyles and economic and social systems into consideration, established the Long-term Low Carbon Vision subcommittee, under the Global Environment Committee of the Central Environment Council. In November 2016, Dr. Hans Joachim Schellnhuber of the Potsdam Institute for Climate Impact Research in Germany and Mr. Harald Neitzel of Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety were invited to Japan to present to this committee (7th meeting).

Dr. Schellnhuber indicated that there is very little doubt of climate change being an anthropogenic phenomenon and that implementation of the Paris Agreement is absolutely essential. He further stated that although considerable resistance to major social changes and transitions is to be expected, there is no longer any time left for humans to hesitate on change. Further, he noted that changes have the potential to present unprecedented economic opportunities. Likewise, Mr. Neitzel gave an overview of Germany's "Climate Action Plan 2050" (see below) and related to the "Joint Statement on bilateral cooperation on the dissemination of low-carbon technologies towards transformation to decarbonized societies", expressed expectations for future cooperation between the research institutes of Japan and Germany.

Germany's long-term strategy

In September 2016, Germany released a draft of its "Climate Action Plan 2050", and following negotiations within the government, submitted the final version to the UNFCCC Secretariat on 14 November during COP22. Within this plan, Germany aims to achieve "extensive greenhouse gas neutrality" and has set a long-term target to reduce GHGs by 80-90% compared to 1990 by 2050. Moreover, it has set overall targets for a reduction rate up to 2030 and emissions limits (55% reduction, 543 million tons CO₂ equivalent) as well as contribution amounts for each sector (e.g. energy sector 61-62% reduction, transportation sector 40-42% reduction, industrial sector 49-51% reduction) to serve as milestones for strategy implementation. Distribution of contribution amounts are to be reviewed in 2018 as necessary.

Upcoming plans

A recommendation issued by the Climate Change Long-term Strategy Round Table in February 2016 purports that innovations in the structures of society are indispensable in order to aim for simultaneous solutions to the issues Japan faces, namely drastic reductions and structural economic and social issues.

A new joint project carried out by Japan and Germany was also introduced at the LCS-RNet 8th Annual Meeting. The Wuppertal Institute for Climate, Environment and Energy that implements this joint project pointed out that, "both countries are facing similar energy reform issues, and under these conditions we must avoid risk and maintain our international competitiveness."

From here on in, follow-up on the "Joint Statement on bilateral cooperation on the dissemination of low-carbon technologies towards transformation to decarbonized societies", we will continue to advance Japan-Germany cooperation through information exchange on greenhouse gas emissions reduction scenarios and long-term strategies and via joint research by research institutions in both countries.