

Outlines of Japan's Long-term Strategy under the Paris Agreement (Cabinet decision, June 11, 2019)

Provisional Translation

Chapter 1: Basic Concepts

- **Proclaiming a “decarbonized society” as the ultimate goal and aiming to accomplish it ambitiously as early as possible in the second half of this century**, while boldly taking measures towards the reduction of GHGs emissions by 80% by 2050
* an unconventional vision of an “ideal future model” * contributing to the achievement of the long-term goals of the Paris Agreement, including efforts to limit the temperature increase to 1.5°C
- **Realizing “a virtuous cycle of environment and growth”** towards the vision with business-led disruptive innovation, Swift implementation of actions from now, contributing to the world, **Action Towards a bright Society with Hope for the Future**
[Factors: Achievement of SDGs; “Co-innovation”, Society 5.0; the “Circulating and Ecological Economy”; and leading country in solving problems]

Chapter 2: The Vision of Each Sector and the Direction of Measures

- ### Section 1: Measures for Emissions Reductions
- #### 1. Energy: For energy transition/decarbonization, pursuing every option
- Utilizing renewable energy as the major power source
 - Reducing CO₂ emissions from the thermal power in line with the long-term goals of the Paris Agreement
 - Promoting CCS&CCU/Carbon Recycling
 - Realizing a “Hydrogen Society”/battery/nuclear/energy efficiency
- #### 2. Industry: Decarbonized manufacturing
- Use of CO₂-free hydrogen (e.g. a challenge towards “zero-carbon steel”)
 - Feedstock change (e.g. CCU including artificial photosynthesis and biomass utilization)
 - Achieving drastic energy efficiency, and complete transition from fluorocarbons in mid-long term
- #### 3. Transport: the challenge of “Well-to-Wheel Zero Emission”
- Achieving the highest level of environmental performance of Japanese vehicles supplied worldwide by 2050
 - Road/transport systems using big data and IoT
- #### 4. Community and Living: Achieving carbon neutral, resilient and comfortable communities and living by 2050/creating the “Circulating and Ecological Economy”
- Capable communities and corporations to achieve carbon neutrality even before 2050
 - Shift to carbon neutral living (encouraging technology development and dissemination to achieve net Zero Energy Buildings, equivalency in stock average of housing and office buildings/ shift of lifestyles)
 - Carbon-neutral community building (urban city building, farming/forestry/fishing villages building, and development of distributed energy systems)

Section 2: Measures for Carbon Sinks

- ## Chapter 4: Other Measures
- Human Resource Development
 - Government-led initiatives
 - Integrating climate change adaptation with development of a resilient society
 - Carbon Pricing (Expert/technical level discussions)

Chapter 3: Cross-sectoral Measures for Achieving a Virtuous Cycle of Environment and Growth

- ### Section 1: Promotion of Innovation
- Promoting innovation for practical application and wide usage of cross-sectoral decarbonization technologies leading to drastic reduction of GHG, achieving cost that allows commercialization for social application
- #### (1) Progressive Environment Innovation Strategy
- Setting clear goals such as costs, maximizing investment of public and private resources, discovering and creating technological seeds in and outside Japan, setting issues from demands, strengthening support that leads to commercialization
 - Challenging R&D, and enhancing alliances among R&D institutes with facilitation of international joint R&D activities [Research and Development 20 for clean energy technologies(RD20)]
 - Target setting and visualizing challenges for the practical use
 - Realizing hydrogen cost equivalent to existing energy: e.g. lowering manufacturing cost of CO₂-free hydrogen to 1/10
 - CCU/carbon recycled products to be provided with costs equivalent to existing products, nuclear power(such as Reactor, Fusion)
- #### (2) Innovation in Economic and Social Systems/lifestyle
- ### Section 2: Promotion of Green Finance
- Appropriately “visualizing” corporate efforts in innovation etc. and mobilizing finance for innovation by financial institutions
- #### (1) Mobilizing green finance through TCFD* disclosures and dialogues
- *Task Force on Climate-related Financial Disclosures
- Industry: improving TCFD Guidance & Scenario Analysis Guide / Financial sector: Formulating a guidance on green investment
 - Facilitating dialogue between industry and financial sector (TCFD Consortium)
 - Promoting discussion and share the above initiatives with the world (TCFD Summit)
- #### (2) Promoting initiatives to expand ESG finance
- Initiatives for ESG finance (Support to the issuance of green bonds, encouraging local ESG finance), development of ESG Dialogue Platform, enhancing ESG finance literacy, ESG Finance High-Level Panel
- ### Section 3: Business-led Promotion of International Application, and International Cooperation
- Promoting competitive technologies and products with high environmental performance/ promoting co-innovation benefiting participants from both countries
- #### (1) Promoting international application of decarbonization technologies together with policy/institutional development and international rule-making
- Promoting international application of decarbonization technologies and reductions of GHG emissions through development of business environment by improving business environment including working for institutional development in partner countries leading international rule-making cooperating in building policy and institutional framework in partner countries and by international rule-making (e.g. establishing public and private-sector initiatives in ASEAN, and developing appropriate international frameworks for utilizing market-based mechanisms)
- #### (2) Strengthening Development and Investment of infrastructure that contributes to CO₂ emission reductions
- Development and investment of energy and city/transport infrastructure that contributes to CO₂ emission reductions in line with the long-term goals of the Paris Agreement (e.g. renewable energy such as offshore wind power and geothermal power, hydrogen, CCS&CCU/Carbon Recycling, smart cities)
- #### (3) Creating platforms for global scale decarbonized society building
- Supporting partner countries in the formulation of NDCs and mitigation measures, enhancing transparency in the overall supply chains

- ## Chapter 5: Review and Implementation of the Long Term Strategy
- **Review:** Re-examining policies and measures flexibly every about 6 years with reference to situations, and improving the Long-term strategy if necessary
 - **Implementation:** Analysing relevant factors responding to future changes in the situations / collaborating and having dialogues with stakeholders including the youth