

# Japan's climate change strategy for carbon natural society



March 6 2019

Ministry of the Environment, Japan

## Discussion progress of Japan's long-term low GHG emission development strategy by Ministry of the Environment, Japan

- ❑ Since July 2015, meeting for Long-term Strategy on Climate Change has been established as Minister of the Environment's private consulting group, and have been discussing.
  - In the meeting in February 2016, a proposal was made that the goal should be to simultaneously achieve drastic reduction of GHG emissions and structural economic and social problems.
- ❑ Since July 2016, it was discussed in the Global Environment Committee of the Central Environment Council, Subcommittee on Long-term low-carbon vision.
  - In March 2017, "long-term low-carbon vision" which shows the direction of measures on image of long-term, significant reduction (e.g. low-carbon power source is more than 90%) was summarized at the Global Environment Committee of the Central Environment Council.
- ❑ After the "long-term low-carbon vision" summary, the committee continued to discuss the path for achieving long-term significant reduction, and Ministry of the Environment presented its view based on the result.
  - In March 2018, "Basic concept towards long-term significant reduction" was published based on the "long-term low-carbon vision". It summarizes the importance of "socio economy system" and innovation of "innovative technologies" that are not on the conventional extended line, big chances for private sectors towards decarbonization, etc.

# Background of long-term significant reduction

- The Paris Agreement is a turning point for the construction of decarbonated society throughout the world. All the countries of the world have made a big steering towards decarbonized society, and activities such as ESG investment and divestment have expanded. It is important to take advantage of our strengths to contribute to the drastic reduction of domestic and global GHG emissions and to lead to further economic growth at this turning point.
- It is also important to utilize global warming countermeasures as one of the pillars for measures to support creating affluent future, keeping in mind simultaneous solution of social problems such as declining birth rate / aging society, regional issues, international affairs, and implementation of SDGs.
- Decarbonization is a fundamental issue for the construction of a sustainable society (circular and ecological society that realizes healthy substance/circulation of life, coexistence of nature and human, etc.). It is necessary to utilize global warming countermeasures and lead to simultaneous solution of economic and social problems for a definite direction of a shift toward decarbonized society.

## Transformation of business environment in the world

➤ Management strategy towards climate change will affect participation to global supply chain and assessment of investment decision.

### Investment (Emergence of promising markets)

- Appx 3 trillion USD market for energy saving in buildings, industries, and transportation and appx 9 trillion USD market for decarbonization of electricity sector is expected (IEA, Yr2016-2050 cumulative)
- 5-7 trillion USD market is expected to achieve SDGs (UNCTAD, untilbYr2030)

### Production and consumption (Intention towards sustainability)

- Production/consumption intention towards globally large scale sustainability such as renewable energy and EV evolved. The number of companies engaged in SBT to set corporate reduction targets aiming at 2°C, and those declaring "RE 100" supplying with 100% renewable energy are increasing.

### Finance (System supporting the market)

The size of ESG investment is 22.9 trillion USD. Japan was 473.6 billion USD (2016), and has potential.

## Simultaneous solution of economic and social problems, driven by climate change countermeasures

**Society where everyone shines**  
in declining birthrate / aging society

**Future designing by measures against climate change** (e.g.)

- With realization of a super smart society, housekeeping became more efficient, and working styles have diversified.
- A safe life with insulated housing and ICT health management /watch over.

**Bustling region**  
on the future of locality

**Future designing by measures against climate change** (e.g.)

- Collaboration between production and consumption by utilizing regional resources.
- Increasing value of cities with biomass resources and functional buildings.

**Reliable country**

against unstable international affairs

**Future designing by measures against climate change** (e.g.)

- Fuel shift with no insecurity about the price increase of petroleum fuel.
- Improvement of self-sufficiency rate and outflow of national wealth through resource circulation.

## 1. Acquire business opportunities with solid direction of decarbonization and various strengths

- It is important to ensure "resilience" against future uncertainty by having "solid direction" of decarbonization and Japan's "strength of various technologies" towards this direction. This will be the source of international competitiveness, leading to win decarbonization market.
- It is a big business opportunity in the process of achieving significant reduction by upgrading the stage of Japan's strengths from individual technology to "demonstrating the collective strength" including cooperation between different industries = taking opportunities and facing challenges = necessity to overcome problems.

## 2. Create innovation through measures to make maximum use of private vigor

- Innovation of "socio economic system" to disseminate innovation of "technology" is important to make use of our technology. To that end, policies are necessary to take full advantage of private vigor.

## 3. Take measures "now" and establish the basis for significant reduction by around 2040

- While widely sharing public awareness that the climate change problem is a theme to deal with a sense of danger (danger of losing this beautiful earth to future generations, danger of being left out of the global supply chain, etc.), we will take measures "now" to create  
(For example, to consistently support Japan's unblurred policy of decarbonization, to encourage popularization through internalization of environmental values, and to consistently support research, development, demonstration and dissemination of promising technologies)
- This will enable a society in which supply and demand of decarbonized / low-carbon products and services are established, and basis of significant reduction is established by 2040 at latest, along with infrastructure of decarbonization.

Formulate a long-term strategy as a development strategy for the future that will drive decarbonization, based on this basic concept

## VISION

Improving RE to main power and sophistication of systems supporting it

### Realization of flexible energy system

#### Background

- Flexible system is important for improving RE to main power

#### Opportunity

- Low-voltage trading and optimization operation for Renewable energy, EV and battery at regional and home(Aggregation business and platform)
- Possibility of new value (capacity) of industrial / BCP power supply applications such as gas cogeneration based on high-temperature heat and emergency power generation as well as power supply that compensates for down time of variable renewable energy

### Reducing carbon heat

#### Background

- Not only electrification of heat demand but also low-carbon heat supply itself is indispensable
- The heat supply that is not direct combustion of fossil fuel is extremely important to broaden the range of Japan's energy choices consistent with the decarbonized society

#### Opportunity

- Various possibilities for low-carbon fuels. Carbon-free hydrogen is also a candidate. In addition to the option of importing, the point is to manufacture and procure hydrogen from domestic renewable energy. Low-carbon fuel services suppliers are the promoters of a RE society
- Supply and demand for biomass fuel expands as a heat source for living and power source for movement

### Low-carbon electricity

- Widespread use of distributed power supply is an opportunity for transition of regional employment to low carbon industry (maintenance and of floating offshore wind power generation)
- From the viewpoint of energy security, in addition to decentralized main power supply, we also maintain fossil fuel power as capacity
- CCS business technology and know-how will make it possible to drastically reduce and respond to world demand



# Meeting summary

- It has been held four times since August 2018.
- Future agenda (plan) is the discussion of draft proposal for the recommendation.

## Meeting summary

- 1st meeting (March 3, 2018)
  - Agenda: Admin of the meeting, remarks from the committee
  - Attendees: Committee members, Prime Minister, Chief Cabinet Secretary, Minister of the Environment, etc.
- 2nd meeting (September 4, 2018)
  - Agenda: Explanation from each ministry minister, External experts hearing No.1 ("Innovation"), exchange of opinions
  - Attendees: Committee members, external experts, Minister of the Environment, Minister of Economy, Trade and Industry, etc.
- 3rd meeting (November 19, 2018)
  - Agenda: Expert hearing No.2 ("Green finance", "Green business / overseas development" and "Region"), exchange of opinions
  - Attendees: Committee members, external experts, Minister of the Environment, Minister of Economy, Trade and Industry, etc.
- 4th meeting (December 21, 2018)
  - Agenda: Free discussion for draft proposal for the recommendations.
  - Attendees: Committee members, Chief Cabinet Secretary, Minister of the Environment, Minister of Foreign Affairs, Minister of Economy, Trade and Industry



(1<sup>st</sup> Meeting)

## Future agenda (plan)

- the discussion of draft proposal for the recommendation.

# Discussion in the meeting so far

- Perspectives of committee members' feedback

- ✂ Extracted from the free discussion paper submitted to the 4th meeting and the opinion of the members at the meeting

## 1. Recent situation surrounding global warming countermeasures

## 2. Point of view in planning long-term strategy

- Necessity of long-term vision and goal
- Direction of long-term strategy (virtuous cycle of environment and growth, SDGs, speed)

## 3. Our country's overall long-term vision

## 4. Long-term vision and measure/scheme of each sector

- Energy (electric power, hydrogen, renewable energy, distributed energy system, Coal-fired power, CCUS)
- Industrials
- Transportation
- Local community/Livelihood

## 5. Cross sectoral measures/schemes

- Innovation (importance of cross sectoral innovation, innovation for social implementation / dissemination, direction of policies, scientific review)
- Green Finance (importance of green finance, direction of policies)
- Business-led international development (importance of Business-led international development, direction of policies)
- Others

# Discussion in the meeting so far

- Perspectives of committee members' feedback

## 4. Long-term vision and measure/scheme of each sector

### 4. Renewable Energy

- (1) To further promote renewable energy among local community and houses towards main power supply, it is important to dramatically reduce cost for international competitiveness, secure flexibility, promote and invest in terms of technology / system that would lead to maximum usage of distributed electric power.
- (2) Renewable energy has almost no issue in terms of technology, however has systematic or intercarrier issues. It is necessary to overcome such barriers one by one towards main power supply. etc.

### 5. Decentralized Energy System

- (1) Utilization of distributed energy by leveraging renewable energy such as biomass and hydropower in regions is vital. the Japanese government should aim for local community led distributed zero emission society. Society to support new demand such as smart mobility should be created, by locals owning and structuring renewable energy and distributed grid, thus have electric as their local production.
- (2) It is therefore important for the government to support construction of local production/consumption energy system, to construct so by inducing high versatility technologies through ESG investment, enabling high efficiency of renewable energy, and producing new business model linking renewable energy with EV or storage battery through VPP technology. etc.