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*Proposal***Formulate a Long-term Reduction Strategy
that Leads the World in the Decarbonization Process**

The meeting on a Long-Term Strategy under the Paris Agreement as Growth Strategy, which was established under the leadership of Prime Minister Shinzo Abe, has been discussing a long-term strategy for emissions reduction since August this year. The outcomes of the discussions at this meeting will serve as a basis for formulating a long-term strategy aimed at creating a decarbonized society that the Japanese government has pledged to submit soon globally. The reference materials for and the summary minutes of the meetings that have been opened to the public suggest that animated discussions are being made toward de-carbonation, as highlighted by calls for ambitious goals by many appointed members.

Renewable Energy Institute plans to release its recommendations on such a national long-term strategy next spring. For now, the Institute submits the following recommendations on basic issues in the hope that the meeting will come with conclusions that will lead the global decarbonization process.

1. Reinforcing Domestic Emissions Reduction Measures to Make Japan a Leading Decarbonized Economy

In the discussion in Japan on how the country should combat climate change, some argue that helping other countries reduce emissions is more important than reducing emissions in Japan. They cite the fact that Japan accounts for around 4% of global CO₂ emissions. Japan, however, is the fifth largest emitter of CO₂ in the world. Without working hard to reduce its own emissions, Japan cannot possibly call on smaller emitters to reduce their emissions. What Japan should do is to take the lead in reinforcing emissions reduction measures in Japan to set an example for the world.

As Prime Minister Abe stated at the first meeting, “Measures against global warming are no longer a cost for companies. They are a source of competitiveness.” Forging ahead with domestic emissions reduction will make it easy for Japanese companies to promptly set up their business models for a de-carbonized economy, which in turn will broaden business opportunities for them.

2. Achieving Electric Decarbonization with Renewables before 2050

The Global Warming of 1.5°C report, released by the Intergovernmental Panel on Climate Change (IPCC) in October this year, indicated that the 2.0°C goal is insufficient. It calls on the world to aim for a 1.5°C goal in order to avoid serious consequences such as heatwave hazards, rises in sea level, and ecological destruction. In its Plan for Global Warming Countermeasures, endorsed by the Cabinet in May 2016, the Japanese government set the target of reducing GHG emissions by 80% by 2050. As the seriousness of the climate change crisis becomes more severe, each country is required to accelerate its decarbonization efforts. The European Commission has decided to work toward a carbon-neutral Europe by 2050.¹

¹ European Commission “2050 long-term strategy” (Nov 2018) https://ec.europa.eu/clima/policies/strategies/2050_en

It has been increasingly becoming a global standard strategy to achieve electric decarbonization with the expansion of renewables toward a wider goal of net greenhouse gas emissions down to zero. Behind this move is the latest trend in electric power supply; Solar PV and wind power now constitute the cheapest power source in all the major countries except Japan. This trend has been observed in recent studies by several private institutions with an internationally established reputation.

Nuclear power generation faces increasing costs as well as safety concerns. The construction of nuclear power plants by Japanese companies are now almost unfeasible both in Japan and abroad. Carbon dioxide capture and storage or CCS, a technology to capture CO₂ gas and store it underground, is also not economically feasible; in fact, there is no prospect at all that it will become so in the future. Although efforts have been made to apply CCS since the 1970s, its application to thermal power plants has been limited to only a few small projects globally.

The revised Basic Energy Plan, which was released in July this year, maintains the conventional stance of sticking to nuclear power generation and CCS plant in the name of adopting an “ambitious multiple-track scenario” approach. The linchpin of the strategy, however, must be an immediate realization of the mass supply of renewables, which are becoming increasingly affordable in the world, in Japan, instead of distributing efforts to de-carbonize energy supply. Achieving a decarbonized society soon requires attaining the goal of meeting 100% of power demand with renewables before 2050.

3. Announcing it from Japan to Phase Out Coal-fired Power Plants

What stance to take on coal-fired power plants constitutes important part of the message Japan should send to the world with regard to long-term emissions reduction. Many developed countries such as the UK, France, and Canada have already decided to completely abandon coal-fired power plants including the existing plants by 2030. By contrast, Japan is adhering to the Basic Energy Plan, which states that Japan will continue to depend on coal-fired power plants for more than one quarter of its power supply. New coal-fired power plant projects with a total installed capacity of 16.8 GWh are underway in Japan. Of these plants, those with a total installed capacity of 8.8 GWh, more than half of that capacity, are already under construction. Moreover, Japan continues to support the construction of such plants abroad.

Although the Japanese government says it will restrict the construction of inefficient coal-fired power plants, the fact remains that the “high-efficiency” coal-fired power plants it promotes emit more than twice as much CO₂ as existing LNG thermal plants.

Announcing a long-term strategy toward a decarbonized society while leaving such state of affairs as it is will not succeed in winning the trust of the international community. We strongly hope that the long-term strategy meeting will send a clear message that Japan will discontinue the export support for coal-fired power plants using public funds and start to phase out such plants in Japan soon.

4. Decarbonizing Materials Industries

Clearly, decarbonization requires efforts by all sectors of society. For the sectors that emit GHGs significantly more than others, should strengthened decarbonization efforts accordingly. Steel, chemical, and other materials industries account for 25 % of Japan's total CO₂ emissions.²

The steel industry tops the list with 15 %. Steel is largely produced in a blast or electric furnace. Japan's steel industry is characterized by the fact that some 80 % of crude steel production is made in blast furnaces, which emit three or four times the amount of CO₂ per ton produced than electric furnaces. This percentage is much higher than the figure for the US (33 %) and that for Europe (60 %).³

The Japanese steel industry recently set out decarbonization targets to be achieved by the end of 21st Century. This super long-term process should be accelerated as the efforts are being pursued to achieve the decarbonization by 2050.

5. Early Implementation of Basic Rules for a Decarbonized Society

Proceeding with the decarbonization process as soon as possible and in a smooth and efficient manner, require incorporating an emissions reduction facilitation mechanism into the basic rules of economic activity. One of the major instruments is carbon pricing. The global warming tax (Tax for Climate Change Mitigation) exists in Japan, however, the rate is extremely low as 289 yen per ton of CO₂. It is roughly one thirtieth of the rates in the European countries that have introduced such taxes ahead of others producing positive results.⁴

In Japan, the cost of using coal is less than one-fifth of the cost of using LNG in terms of the price of the fuel per itself, plus all the energy-related taxes.⁵ The current Japanese tax system does not have carbon pricing aimed at curbing CO₂ emissions; moreover, it has a built-in incentive that promotes the use of coal and thus increases CO₂ emissions.

On top of carbon pricing, Japan should promptly implement other basic rules toward decarbonization, including mandatory disclosure of climate-related financial information by businesses and financial institutions. It is important to introduce a set of rules that allows businesses that take the lead in reducing their dependence on fossil fuel to gain economic advantages and social appreciation. This will pave the way for a transition to a de-carbonized society.

² Calculated based on Ministry of the Environment, Japan, "Final report on greenhouse gas emissions for FY2016" [in Japanese], released in April 2018, revised in July 2018 ("Overview" and "Factor analysis 2-4: Energy-derived CO₂ in industrial sectors")

https://www.env.go.jp/earth/ondanka/ghg-mrv/emissions/youin_1_2016.pdf
https://www.env.go.jp/earth/ondanka/ghg-mrv/emissions/youin_2_4_2016.pdf

³ Calculated based on Non-Integrated Steel Producers' Association, "Shares of electric furnace steel by country" [in Japanese] at http://www.fudenkou.jp/about_03.html

⁴ World Bank Group "State and Trends of Carbon Pricing 2018" (May 2018)
P.11 Figure 3 Prices in implemented carbon pricing initiatives

<https://openknowledge.worldbank.org/bitstream/handle/10986/29687/9781464812927.pdf>

⁵ Subcommittee on the use of carbon pricing, Reference No. 2: Significance and effectiveness of carbon pricing and issues therewith [in Japanese] (<http://www.env.go.jp/meeting/06earth/cp04mat02.pdf>) for the 4th meeting on November 22, 2018 (Reference: Tax rates per ton of CO₂ emissions by type of fuel, including the price of fuel per se, on page 31).