Japan's emissions reduction target is needed to be raised significantly

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Summary

- Extreme weather events are increasing across Japan and all over the world.
- If the climate change continues at the current pace, it could exceed "adaptation limits for people, economies, and ecosystems".
- IPCC Special Report on Global Warming of 1.5°C revealed the difference between the impacts of a 2°C and a 1.5°C rise of global average temperature is tremendous.
- Furthermore, the report highlights that global net anthropogenic CO_2 emissions need to be reduced by about 45% from 2010 levels by 2030 to reach 'net zero' around 2050, in order to make the emission pathways consistent with limiting global warming to 1.5°C.
- COP24 needs to agree on the "rule book" of the Paris Agreement and also needs to fully utilize the Talanoa Dialogue in a proper manner in order to raise the mitigation target of each Party which is planned to take place in 2020. In order to make them possible, COP24 must acknowledge the IPCC Special Report on Global Warming of 1.5°C in earnest.
- The 5th Strategic Energy Plan of the Japanese government runs counter to the Paris Agreement. Japan's energy policy needs to be revised fundamentally as soon as possible.
- Japan's current mitigation target are far too low, and as such, a sharp increase of the target is strongly demanded. Our "CASA 2030 Model" shows the feasibility of about 40% reduction of CO_2 by 2030 from the level of 1990.

1. Extreme Weather Events Increasing Across Japan and all over the world

Japan started 2018 with a brutal cold wave between January and February, and then was hit by not only the record-breaking heat wave but also severe rainstorms. According to the summary report by Japan Meteorological Agency (JMA), the average monthly temperature hit new record highs at the 47 monitoring posts in July. Regarding the rainfall in July, the amount of rainfall in a 72-hour period hit a record high at the 138 rainfall monitoring posts, which amounts to over one tenth of all the monitoring posts across Japan. The death toll from heavy rains that hit western Japan in July was more than 220 people. In addition, in September the typhoon Jebi grew to the strongest in 25 years and caused the death of 14 people and the blackout over 2.25 million households in western Japan. JMA describes the increase in temperature and water vapor induced by climate change as the major players behind those extreme weather events.

This trend is not only for Japan but everywhere on earth. The Arctic experienced record high temperatures during February, whereas Europe faced a death toll of over 50 people due to the severe cold wave. In summer, record high temperatures were observed throughout the Northern Hemisphere, while Death Valley National Park in California, US, broke the record for hottest average monthly temperature anywhere in the world, at 42.3°C in July. Wildfires have been spreading around the world because of the increase in temperatures and drier weather.

IPCC AR5 reported "...In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans," and "Greater rates and magnitude of climate change increase the likelihood of exceeding adaptation limits." The report thus cites climate change as a major influence on these extreme weather events around the world. Now, the day of surpassing the "adaptation limits" seems not that far off.

2. Warning from IPCC Special Report on Global Warming of 1.5° C

IPCC Special Report on Global Warming of 1.5°C clarified the following:

- Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels
- Extreme weather events, sea level rise, and loss in arctic sea ice have already been observed

- Global warming is likely to reach 1.5°C from the pre-industrial levels between 2030 and 2052 if it continues to increase at the current rate

Limiting global warming to 1.5°C compared to 2°C is projected to:

- reduce the extreme phenomena of heat wave and rainstorm
- make the global mean sea level rise around 0.1 metre lower by 2100, which implies that up to 10 million fewer people would be exposed to related risks. However, sea level rise will continue beyond 2100 even if global warming is limited to 1.5°C in the 21st century
- result in smaller net reductions in yields of maize, rice, wheat, and potentially other cereal crops, particularly in sub-Saharan Africa, Southeast Asia, and Central and South America
- reduce the proportion of the world population exposed to a climate change-induced increase in water stress by up to 50%
- reduce the number of people both exposed to climate-related risks and susceptible to poverty by up to several hundred million by 2050

It also indicates that the emission pathways consistent with 1.5°C of global warming require:

- reduction of global net anthropogenic CO_2 emissions by about 45% from 2010 levels by 2030, reaching net zero around 2050 (decline by about 25% by 2030 and reach net zero around 2070 in case of 2°C)

Overall, the special report makes it clear that the target for global mean temperature rise needs to be below 1.5°C. A target below 2°C will be inadequate, and it is indispensable to enhance countermeasures over the world until 2030. It also emphasizes that the mitigation options consistent with 1.5°C are associated with multiple synergies and tradeoffs across the Sustainable Development Goals.

3. Mission and Task of COP24

The first mission for COP24 is indeed to agree on the “rule book” of the Paris Agreement to enable its launch from 2020. The focus could then converge into the differentiation of responsibility between Developed and Developing country Parties as well as financial support.

To overcome differentiation issue, the Developed country Parties should recall the principle of “Common but Differentiated Responsibilities” stipulated under the UNFCCC and the Developing country Parties should reaffirm dynamic differentiation concept under the Paris Agreement, for example, “Developing country Parties … encouraged to move over time

towards economy-wide emission reduction targets in the light of different national circumstances." (Article4.4). Regarding climate finance issue, the Developed country Parties are not allowed to violate or renege on the promise of providing financial support agreed in COP15. The COP21 decision clearly states "…a new collective quantified goal from a floor of USD 100 billion per year" (dec.1/CP21, para.53) should be kept in mind.

The second mission is to make a success of the Talanoa Dialogue. The dialogue is expected to be the first opportunity to assess the collective progress compared to the long term goal and the objectives of the Paris Agreement. The COP21 decision declared that (para.20) the Talanoa Dialogue is to take stock of the collective efforts of Parties in relation to inform the preparation of Nationally Determined Contributions (NDCs) which are expected to be submitted by 2020. However, the current contributions pledged by Parties are still insufficient to reach the goal of "well below 2°C." IPCC Special Report on Global Warming of 1.5°C articulated that the pathways that limit global warming to 1.5°C with no or limited overshoot show clear emission reductions by 2030. In this regard, the Talanoa Dialogue is a critical place to further raise the existing contributions under the Paris Agreement, given the fact that the succeeded NDCs are expected to be submitted by 2025, after 2020. Based on the results of the dialogue, all Parties are requested to prepare without delay for more ambitious contributions expected to be submitted by 2020.

4. Japan's Energy Policy Contradicts the Paris Agreement

The Government of Japan formulated the 5th Strategic Energy Plan in July this year. The plan set out the country's energy mix with 20 to 22% by nuclear power, 22 to 24% by renewable energy, and 26% by coal-fired power—which was originally 24% before the Fukushima Daiichi nuclear plant accident. In fact, currently active proposal 35 units of coal fired power plants (18.795GW) are ongoing in Japan, according to Kiko Network, Japan Coal Plant Tracker. Moreover, this target for the energy mix remains exactly the same as the 4th Strategic Energy Plan which was formulated in 2014. Even though the Paris Agreement came into force in 2016, the Government of Japan has it's the targeted share for the coal-fired power without any change. This clearly shows that Japan's energy policy runs counter to the Paris Agreement. The target of 22 to 24% share for renewable energy by 2030 is far too small. Japan's GHG emissions in FY2016 of 1.307GtCO_2eq. is increased from the level of 1990 (1.272 GtCO_2eq.), which is an astonishing fact. This was not even due to the operations of coal-fired plants necessary due to the halts of the nuclear plants after the Fukushima Daiichi nuclear plant accident. Before the accident, Japan's GHG emissions of FY2010 (1.303 GtCO_2eq.), had already increased from the 1990 level. This happened simply because Japan

has increased the number of coal-fired power plants over the years. Japan stands out as a country that has been increasing the coal power and not promoting renewable energy.

Furthermore, Fukushima rated at INES “level 7”, the maximum level of the scale for a nuclear accident which is the same as Chernobyl, however the accident is not yet terminated at all nor has the cause of the accident been clarified in the seven years since it occurred. Considering such circumstances, the targeted share of 20 to 22% for nuclear power by 2030 seems quite insane. It should be underlined that restarts as well as replacements of the existing nuclear reactors by extending the regulated life time of reactors to twenty more years, making it sixty years in total, are required to achieve the target of 20 to 22% of nuclear share. However, it is hard to imagine that public opinion will be swayed in favor of such replacements. In that case, the replacement plans will be delayed while allowing coal-fired power in operation instead, which will lead to further CO_2 emission in Japan.

5. Japan’s “Ambitious” Target is Way Too Low

Japan’s mitigation target in 2030 calls for a 26% cut from the level of 2013 (which is 25% cut from 2005 level), but it actually represents only an 18% reduction from 1990 level. This target is too small compared to others submitted from major economics like the EU. Japan’s target itself contradicts the Paris Agreement. What the government has to do now is to acknowledge and take seriously the updated scientific facts accumulated in the IPCC’s special report, and promise to raise the level of the Japan’s 2030 target, which is supposed to be submitted by 2020, at the floor of the Talanoa Dialogue in this COP. Japan is also urged to indicate its will toward the shutdown of the coal fired plants through executing fundamental reviews on its latest energy policy allowing a 26% share for coal. The government keeps indicating its 2050 target with 80% reduction, but hasn’t clarified the reference year for that. If the reference year is set as 2013, then 54% (ranged 80 - 26%) of reduction will be needed within the 20-year period from 2030 to 2050. It is apparent that such a reduction target will impose burden on future generations.

6. CASA’s Model Clarifies 40% Cut by 2030 is Feasible in Japan

CASA developed the “CASA 2030 Model” by integrating the bottom-up method and the macro-economic method model. The bottom-up method model is built upon scenarios using energy efficiency measures and technology measures such as the deployment of renewable energy. This simulation model makes it possible to showcase the detailed countermeasures that need to be deployed by 2030 while analyzing the economic impact expected from taking

those measures.

As a result, the model showed clear feasibility for a 40% reduction of CO_2 emissions by 2030—from the level of 1990—even in the case of immediate shutdowns of all the nuclear power reactors in Japan, without causing a negative impact on its economy.

CASA is also developing a protocol making it possible to set out a carbon budget by type of city and region, in order to further support Japan's decisions for ambitious mitigation targets.

7. Japan Must Take Responsibility to tackle with the issue of Climate Change

The monthly average CO_2 concentration in the entire atmosphere in 2016 increased by 3.3 ppm from 2015, and reached 403.3 ppm. The global average temperature had been breaking the records in the last three years in a row, and 2017 marked the third highest temperature ever. It is apparent that climate change is rapidly advancing. The IPCC's special report of 1.5°C revealed that the difference between the impacts of 2°C and 1.5°C is earth-shaking, and the worst affected will be the Developing country Parties, children and the future generations.

Now, Japan is the fifth largest emitter on earth and the sixth largest in terms of past cumulative emissions. The special report of the IPCC says that accelerating the reduction of CO_2 increases the possibility of attaining a scenario below 1.5°C. The Japanese government must take responsibility to tackle with the issue of Climate Change by raising the 2030 mitigation target as well as making fundamental revisions to its current energy policy, which presently goes against the Paris Agreement, and determine its pathway toward a decarbonized society.