

Proposal for Japan's long-term strategy under the Paris Agreement

26 November 2018

The Institute for Global Environmental Strategies

The Institute for Global Environmental Strategies (IGES) has been conducting practical research aiming to realise sustainable development in the Asia-Pacific region since 1998. In the area of climate change, it has been advancing studies and research on an international framework and on international and domestic trends for building a decarbonised society. The Paris Agreement is an international framework on climate change countermeasures, and under this agreement, the formulation of a long-term low greenhouse gas emission development strategy (hereinafter, long-term strategy) is required. Consideration is currently underway in Japan to formulate such a strategy. This recommendation sets out what is required for Japan's long-term strategy, based on IGES's research activities and outcomes.

1. Requirements for Japan's long-term strategy

1) Conveying a message that “climate change is a threat to society and response is unavoidable”

We are already seeing the adverse effects of climate change and security agencies and experts have pointed out that climate change amplifies social unrest. If we do not take actions now, there is a risk that the stability of society and economic activities will be undermined in the future, due to an increase in disasters and further impacts on health, food, and ecosystems, etc.¹ For companies, the risk of physical damage to their business and assets is increasing. Based on this, it is vital for the long-term strategy to convey the message that “climate change is a threat to the foundation of the nation and regional society, as well as corporate management, and response is unavoidable”.

2) Formulating national development strategy reflecting the concept of “Sustainable Development Goals (SDGs)”

The majority of countries that have already submitted their long-term strategies view this as an opportunity to present long-term national development and growth strategies.² For example, Germany, France and the UK have all emphasised that the shift to a decarbonised society is an opportunity for growth. By showing long-term perspective, Germany aims to secure the competitiveness of its economy while avoiding stranded investments and structural breaks as the world moves towards decarbonisation. In a similar vein, France is claiming to secure

¹ For example, in “The 2015 National Security Strategy” of the US, climate change is listed as one of the eight top strategic risks. <https://www.whitehouse.gov/the-press-office/2015/02/06/fact-sheet-2015-national-security-strategy>

² At present, ten countries including the US, Mexico, Canada, Benin, Germany, France, the Czech Republic, the UK, Ukraine and the Marshall Islands have submitted long-term strategies to the UNFCCC Secretariat. However, Benin's strategy is not subject to our analysis here since it covers up until 2025.

its position as a global leader in alternative technology to fossil fuel. The UK also emphasises building a position as a global leader in finance and investment for green growth. Having already been adopted in Japan's long-term strategy formulation³, it is an important starting point to recognise unavoidable climate change countermeasures as a source to strengthen the competitiveness of companies, and to position a long-term strategy as a growth strategy. When aiming for a decarbonised society accompanied by a major economic and social transformation, it is also necessary to reflect the concept of SDGs which aims at an integrated solution to other important multiple challenges, as well as climate change mitigation / adaptation measures,.

3) Presenting a clear 2050 reduction target and decarbonisation target

Currently, the 80% reduction target by 2050 set by the government of Japan does not specify a base year and target emission levels are not necessarily clear. On the other hand, the reduction targets for 2050 or emission levels by 2050 are clearly stated in all long-term strategies that have already been submitted, with the base year also clearly stated. It can be said that clear 2050 reduction target setting and quantitative clarification of the long-term direction by the government will help companies to conduct management and investment decisions from a long-term perspective, as well as avoid the risk of a lock-in for fossil fuel use facilities, and thus reduce the risk of stranded assets. Therefore, Japan's long-term strategy should clearly state the 80% reduction target by 2050 with a clearly-stated base year. However, IPCC's Special Report on Global Warming of 1.5°C states that to limit global temperature rise to 1.5°C, it is necessary to reach "net zero" for CO₂ emissions between 2045 and 2055 (for 2 °C this would be between 2065 and 2080)⁴. Therefore, further consideration should be made on appropriate targets to achieve net zero emissions by the middle of this century, and it is necessary to clearly state that those targets are to be reviewed as necessary.

4) Creating co-innovation on a global scale through domestic decarbonisation

Climate change is a challenge not just for Japan, rather a global solution must be found. In positioning climate change countermeasures as a growth strategy, its strategy should have a global focus. One important point is that decarbonisation on a worldwide scale will also lead to air pollution control and, in turn, health protection particularly in developing countries.⁵ The government of Japan already has stated in "Japan's Assistance Initiatives to Address Climate Change 2017"⁶ that "Japan will collaborate with developing countries by utilising its advanced technology and know-how, create "co-innovation" reflecting on their challenges and needs", and this concept should be positioned as part of the long-term strategy. However, to achieve this co-innovation, it is necessary to take the lead in decarbonisation in Japan. What is required is for not only developing countries but

³ Meeting on a Long-term Strategy under the Paris Agreement as Growth Strategy
https://japan.kantei.go.jp/98_abe/actions/201808/_00011.html

⁴ In model pathways with no or limited overshoot of 1.5 °C, global net anthropogenic CO₂ emissions are expected to reach net zero in 2045–2055 (interquartile range).

⁵ "Air Pollution in Asia and the Pacific: Science-based Solutions"
<http://ccacoalition.org/en/resources/air-pollution-asia-and-pacific-science-based-solutions>

⁶ <https://www.env.go.jp/en/headline/2345.html>

also developed nations to look at what Japan is doing and take an approach to coordinate on actions. Accordingly, we could say that only when Japan takes aim on its own decarbonisation, will we envisage a growth strategy that contributes to reductions worldwide.

5) Addressing carbon pricing

Carbon pricing is an effective policy for decarbonisation. In fact, many of the countries that have already submitted their long-term strategies have stated the effectiveness of carbon pricing. In the long-term strategies submitted by the US, Canada, Germany, France and Mexico, carbon pricing is clearly stated as an important policy to encourage investment promotion and technological innovation. This could be the evidence that this is a policy method consistent with long-term strategy as a growth strategy. In Japan, a government council is holding discussions on introducing carbon pricing.⁷ While the outcome of these discussions cannot be prejudged at present, the importance of carbon pricing as policy method should be addressed.

6) Specifying the roles of companies and local governments

What is obvious is that actual actions for decarbonisation are mainly taken by non-government entities such as companies, citizens, and local governments. Japan's long-term strategy should clarify the roles expected from each of these entities. Investors who have decision-making power on corporate behavior, and financial industry with substantial influence are also important non-governmental entities in promoting decarbonisation and when clarifying the role played by non-governmental entities in its long-term strategy, the importance of the role of the financial industry should be presented. The long-term strategies of Canada, Germany and France refer to the Taskforce on Climate related Financial Disclosures (TCFD) as a concrete example of an essential initiative towards decarbonisation. By combining initiatives by the financial industry with, for example, carbon pricing policies as mentioned above, it could be effective in further enhancing the competitiveness of non-governmental entities that are progressively tackling decarbonisation.

7) Suggesting a method to achieve the mid-term target from the viewpoint of fossil free, especially alternatives to coal

There is a risk that policies to achieve short and mid-term reduction targets are incompatible with the long-term perspective of substantial reductions. In particular, there is a marked risk for power generation facilities and urban infrastructure systems that have long-term impact once constructed. As the further expansion of coal and gas thermal power plants currently planned becomes a reality, even if we achieve efficiency standards and adjust capacity factors to realise the energy mix in 2030, there will be a noticeable lock-in effect of the new expansion from 2030 to 2050.⁸ In order to avoid this lock-in effect, we need to ensure that infrastructure cycles and

⁷ Subcommittee on Carbon Pricing, Global Environment Committee, Central Environment Council
<http://www.env.go.jp/council/06earth/yoshi06-19.html> (in Japanese)

⁸ Currently, there are plans for new expansion in total of 16.88GW of coal thermal power plants and 16.22GW of gas thermal power

investment cycles are consistent with long-term target. As an important role of the long-term strategy, it is necessary to show what kind of actions and policies are needed in the short and mid-term from the long-term perspective of decarbonisation and clarify the consistency required between how to achieve mid-term target and long-term target.

8) Presenting multiple options based on scenario analysis

There is no single answer to achieve a decarbonised industrial structure and social system, thus the long-term strategy should present multiple clear and quantitative scenarios. The long-term strategies of all countries apart from Germany, indicate different emissions scenarios for emissions standards and reduction targets for 2050.⁹ Even in Germany, stakeholder dialogues were taking place through presentation of multiple scenarios.¹⁰ By bringing to the discussion multiple scenarios assuming the introduction of different technologies, it is possible to encourage stakeholders with diverse opinions to participate in the review process. Furthermore, using scenario analysis, it will be possible to identify areas which require strengthening of countermeasures common to all scenarios, meaning those areas in which actions must be strengthened even with future uncertainties taken into consideration. It is crucial to create a “forum” where experts and stakeholders can conduct such scenario analysis.

9) Importance of viewpoint of “transition management”

To achieve an 80% reduction by 2050 and furthermore for a smooth transition of a major social, economic and energy system for decarbonisation, measures are required to deal with challenges brought about by this transition (for example, a shift in employment). While there are some companies and regions that will steer towards decarbonisation as soon as possible, there will be companies and regions that are left behind unless specific policies are taken. Germany’s long-term strategy indicates the establishment of a “Commission for Growth, Structural Change and Regional Development” that discussed how to secure employment and economic growth in areas affected by changes in the industrial structure. The US introduces measures aimed at coalminers and local communities of former mining areas, as it is also vital to respond to low-income groups and people who depend on high-carbon economies. In Japan, too, it is necessary to clarify the challenges in

plants. Without the installation of Carbon Capture and Storage (CCS), the emissions from coal thermal power plants will be 130 million to 150 million tCO₂, occupying about a half of emissions throughout Japan (247 million to 270 million tCO₂) as estimated in 80% reduction target by 2050. If the emissions from gas thermal power plants are included, the rate increases up to 80%. The lock-in effect associated with new expansion from 2030 to 2050 will be noticeable even if efficiency standards are achieved or capacity factors are adjusted to meet the mid-term target. For details, please refer to IGES Issue Brief “Assessing the Emission Impacts of Current Plans for Constructing and Retrofitting Thermal Power Plants in Japan: A Study on the Effectiveness of the Policy Mix in the Electricity Sector on Mid- and Long-term CO₂ Emissions” at <https://pub.iges.or.jp/pub/assessing-emission-impacts-current-plans>

⁹ For example, in France, national dialogue was conducted at the time of formulation of Energy Transition Law to narrow 16 scenarios down to 4 thereby sharing the vision of decarbonisation among citizens. The Law sets the national target to reduce emissions by 75% by 2050 (compared to 1990). For details, please refer to IGES Issue Brief (in Japanese) at https://pub.iges.or.jp/pub/G7_long-term-strategies

¹⁰ At COP22 side event where the long-term strategy of Germany was announced (14 November 2016), Jochen Flasbarth, State Secretary, German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety emphasised the importance of stakeholder engagement.

associated with the shift to decarbonisation and the necessity of responses. To this end, as described later, it is essential to have a participatory process that ensures the engagement and acceptability of a wide range of stakeholders.

10) Necessity of adaptation

In the Paris Agreement, the long-term low greenhouse gas emission development strategy is requested in Article 4 paragraph 19 which is the article pertaining to mitigation, and so this could be taken to mean that adaptation need not necessarily be included in the strategy. However, even if the long-term target is met, it is expected that certain adverse effects of climate change are unavoidable, and if we are to look at the long-term strategy over an extended time span up to 2050, it is absolutely imperative that we touch upon the aspects of climate change adaptation and strengthening resilience. Furthermore, there are many cases where adaptation and mitigation can be promoted in an integral way, thereby achieving both objectives more efficiently and effectively. Indeed, Mexico's long-term strategy devotes one chapter to adaptation measures, and Germany sets out the importance of integration and collaboration between its long-term strategy and its national adaptation strategy. Based on the fact that the long-term strategy will be regularly updated in the future (described later), we should make reference to the need for adaptation.

2. Desirable process for formulating Japan's long-term strategy

✓ Presenting an ideal form and backcasting from that

“If we are to lead the way towards decarbonisation by 2050¹¹”, rather than assuming bottom up compilation of feasible measures, we must present an ideal, desirable form and then consider backcasting from that. By sharing the long-term goal of decarbonisation, and backcasting with several scenarios to achieve this showing by when and how actions and policies are necessary, we need to formulate and implement short-term and mid-term policies that are highly cost effective from a long-term perspective.

✓ Regular updates

Based on the reality that it is difficult to be certain what the future will look like 30 years from now, the all long-term strategies submitted by Parties so far will be regularly or continuously updated. The frequency of these updates will be, for example, every five years for France and Germany, at least every five years for the US and Ukraine, every seven years for the Czech Republic, and then for Mexico, at least every 10 years for its mitigation policy and at least every seven years for its adaptation policy, as set out in its long-term strategy. Japan's long-term strategy should be updated as appropriate, and keeping in mind updates of its nationally determined

¹¹ Council on Investments for the Future
https://japan.kantei.go.jp/98_abe/actions/201806/_00013.html

contribution (NDC) and the global stocktake, as well as domestic processes (for example, the Strategic Energy Plan, and the Basic Environment Plan etc), the strategy should include these update cycles. Further, using the results of the scenario analysis mentioned above, there is a need to confirm the progress of domestic actions and monitor whether policy direction is consistent with the long-term target. There is also a need to appropriately modify the policy direction to align with the update cycle of the long-term strategy.

- ✓ Implementing participatory process such as national dialogues etc.

Implementing long-term strategy formulation through a participatory process such as a national dialogue is important in calling for actions while enhancing common understanding toward realisation of decarbonised industrial structure and social system.¹² In the Climate Protection Plan drafted by North Rhine-Westphalia , Germany (80% reduction in emissions by 2050 compared to 1990 levels), which includes the Ruhr Industrial Zone, a stakeholder participation-oriented formulation process increased understanding and awareness of industry, and a political base was formed to continue the Plan even after a change of government.¹³ Moreover, it is also expected that transition management will be promoted. In the long-term strategy formulation process in Mexico, Germany, France and the UK, it was noted that a participatory process was implemented. It might be too late for Japan to implement a participatory process for its long-term strategy formulation this time, but we very much hope that a national dialogue can be held at the time of the next update.

¹² For details, please refer to IGES Issue Brief (in Japanese) at https://pub.iges.or.jp/pub/G7_long-term-strategies

¹³ Interview with Ministry of Economic Affairs, Innovation, Digitalization and Energy of North Rhine-Westphalia and the Ministry of the Environment, Japan (24 October 2018)