

MIGA コラム「新・世界診断」

Managing Climate Change and Environmental Issues

川口 順子

武蔵野大学国際総合研究所フェロー



東大・米エール大院卒。通商産業省入省後、世界銀行エコノミスト、在米大使館公使を務める。93年退官。企業役員を経て、2000年、森内閣において環境庁長官に登用される。小泉内閣においても環境大臣、外務大臣を歴任し、退任後は内閣総理大臣補佐官（外交担当）に就任。2005年、参議院神奈川県補欠選挙にて初当選（自民公認）。2013年7月の参院選には出馬せず、政界を引退した。その後、明治大学国際研究所特任教授を経て、2018年度4月1日より現職をとめるほか、国内外で活躍を続ける。

Nature of Climate Change

COP26 takes place in Glasgow at present. Humankind has been experiencing the severe effect of climate change for some time: enormous storms, floods, sea-level rise, wildfires, droughts, desertification, food shortage, migration, to name a few.

Paris Accord says that parties strive to reduce the net emission of greenhouse gases to zero in the second half of this century to limit the temperature rise to 1.5 degrees above the pre-industrial levels. The shared goal based on the scientific findings after Paris Accord is to achieve carbon neutrality by 2050. The UN reported current reduction target of the party countries would entail a 16% increase in 2030 compared to 2010, resulting in a 2.7-degree temperature increase at the end of this century. Countries must deepen the reduction commitment. What we have is not climate change but climate crisis. First and foremost, climate change is the survival of humankind issue.

Climate Crisis is very much an economic growth and competitiveness issue. For a long time, businesses thought environmental protection and economic growth were incompatible because they competed in using money. Now tide turned. Business understands the need to stop climate change and the opportunities it offers for their development. Competitiveness is the key to capturing the opportunities.

Climate Crisis is an energy issue. A large part of Carbon emissions come from the energy sector. Developing countries are growing and increasing their energy consumption. Energy structure must shift

from high-carbon to low-carbon and net-zero. The energy supply and demand structure will need reforming.

It is also a technology issue. Without new technologies, we will not achieve net zero. Some technologies are not even on the horizon. The R&D, deployment, and dissemination of technologies require enormous collaboration and cooperation among nations and public and private sectors.

It is a financial issue as well. An enormous amount of financial resources is needed to overcome the challenge. The investment needs are enormous: mitigation, technologies, renewable energy, hydrogen, adaptation, and relocation of workers out of greenhouse gas-intensive sectors, such as coal, require money. The IEA estimates that about \$4 trillion is needed annually before 2030 to achieve carbon neutrality. This figure is three times the annual average of 2016-2020.

Finally, It is a power issue. As discussed above, a country's overall strength influences its success in emissions reduction. In the international fora, National interests constantly collide In building global architecture. The division of views exists between developed and developing countries, within developed country groups, and developing country groups. The phrase "common but differentiated responsibilities" is in the Framework Convention on Climate Change. Its concrete meaning in terms of reduction obligation and a capital flow to developing countries has been a significant confrontation theme in every COP.

Ultimately, humans have no other choice but to achieve a tall order challenge for all the countries. Humankind must use all the wisdom to cooperate and compete with others to use the global carbon budget equitably and efficiently. The process will provide us with opportunities for humankind to further progress in economic, technological, and other fields. Humankind could open a new frontier in its history of evolution.

Large Emitters' Reduction Responsibility

All the countries must reduce emissions, as every country is responsible for the climate crisis. The three largest emitters, China, the U.S., and India, account for half the global emissions. Whether

large emitters like them can strengthen and achieve their commitment is critical in reaching the 1.5 degrees Celsius target, and thus, the fate of the future generations.

China is the largest emitter, emitting about 1/3 of global carbon emissions. According to the IEA, its per capita emission is higher than that of the EU countries or Japan. Its total emissions increased from 2000 to 2020.

President Xi reiterated at the Leaders Summit on Climate in Washington in April 2021 to peak out before 2030, become carbon-neutral before 2060, and reduce coal-fired power generation by 2030. The international community welcomes China's intention and willingness to assume a leadership role and responsibility.

China has taken steps to move forward. China is the largest producer of renewable energy, with its solar photovoltaics (PV) capacity increasing faster than any other country. It is the most competitive supplier of solar photovoltaic cells and wind turbines. Its share of electric vehicle batteries is 70%. It has established a national carbon market.

High carbon intensity reflects China's industrial structure. China produces about half of the world's steel and cement, which are carbon-intensive. China has an enormous task to transform its industrial structure much less carbon-intensive. When it achieves its reduction goal, its competitiveness in renewable and other technology will increase. China's future success in the transformation and reduction endeavor could be a model for other developing countries to achieve carbon-free high economic growth.

China depends on coal for 60% of power generation and continues to build new plants. Half of the global new coal-fired power generation plants are in China. These plants will be in durable life for another 15 to 20 years. How China could close them or build decarbonizing facilities like CCUS (carbon capture, utilization, and storage) will be a key for China in reaching the commitment. China has announced that it would cease to export coal-fired power plants to other countries. At the G20 Summit, preceding COP26, leaders agreed to stop providing official financial assistance to overseas coal-fired power plants by the end of this year. They could not reach a consensus to reduce or abolish domestic ones. The subject is a significant confrontation subject at COP26.

There is not enough information as to how the national emissions market is working as of now. It seems China is on its way to capping the emissions. Cap must reflect the reduction path China intends to take. Otherwise, it sends wrong messages to the market about carbon prices, resulting in over-or under-investment to achieve carbon peak and neutrality.

The U.S. is the second-largest emitter, emitting about 15% of global carbon emissions. For the U.S. to meet the emission reduction target is also crucial for global well-being. The international community welcomes the decision of the Biden Administration to return to the Paris Accord. Reduction of coal-fired power generation has been in progress. It also has been reducing per capita emissions while achieving per capita economic growth. The U.S. is committed to reducing carbon emissions by 50-52% by 2030 and becoming carbon neutral by 2050. The Biden Administration plans to make the utility sector, which accounts for a quarter of total national emissions, carbon-neutral by 2035. Partisan discussion is taking place over the investment law for this purpose. We hope the two parties can accommodate their positions and move the bill forward.

Japan's emission is less than 3% of the global carbon emission. Japan has committed to reducing GHG emissions by 46% in 2030 relative to 2013 and achieving net-zero emission by 2050. Japan plans to increase renewable energy to 36-38% and reduce coal-fired power generation to 19 % of total electricity supply by 2030.

Competition and Cooperation

The solution to climate change resembles across countries: improving energy efficiency, increasing renewable energy, electrification, and CCUS (carbon capture, utilization, and storage.) Because countries are undertaking similar work, competition comes in to accelerate progress. Collaboration and cooperation will bring better results. The successful reduction can take place when competition and cooperation function harmoniously domestically and internationally.

Businesses are the ones who decide to invest in R&D, equipment, and plants. They have the ownership of technologies, know-how, expertise, and finance. For businesses to make a good decision, they need the right price signals where market failure exists, information to remove uncertainties, financial resources to implement decisions, and risk-reducing measures. As climate change's nature is market failure, uncertainties, and massive R&D and investment costs, the government must play a

more prominent role in providing businesses with these. It does not always mean that the government has better foresight and knowledge than businesses. Close communication domestically and internationally will prevent excessive intervention on the part of the government from skewing international competition.

Emissions trading and carbon taxes are measures to put a price on the emissions. If the emission is free, there is no incentive to reduce emissions. Carbon pricing is essential, and it is more efficient if one price prevails globally.

There is a proposal to introduce border adjustment measures. While border measures have the disadvantage of reducing the flow of goods and services across borders, possibly reducing growth potentiality, they could substitute domestic rules for the countries without them. One might be able to design the measures to correct for the shortcomings. It is another disputed subject at COP26. The international community needs to continue the discussions.

An agreement on financial flow increase to developing countries is another controversial subject. Developed countries have agreed to transfer \$100billion per year, which they could not follow through in 2020. Sixty percent of global emissions come from developing countries now, and they will grow going forward as economic growth takes place. Many developing countries are vulnerable: they suffer from the damages caused by climate change. The international community should increase assistance to the developing countries in technology, finance, infrastructure, expertise, and policy planning and implementation to achieve emission reduction.

International cooperation is a critical element to combat the climate crisis. The successful fight against climate crisis hinges on successful international cooperation.

All the countries must cooperate in all fields. First and foremost, cooperation must take place at COP26 to agree on strengthening national reduction commitment. Putting national interest over human survival is not a choice in front of us.

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