

## Innovation and Climate Change

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In the Paris Agreement, nations agreed to 2 degree C target. Furthermore, nations agreed to invite developed nations to submit a long-term strategy to cut greenhouse gas emissions up to around 2050. Japanese government is considering her long-term strategy now. Innovation was identified as a key element to achieve a deep emission cut.

The Japanese government has many innovation initiatives. Expectation is high for innovation to bring about economic growth and to solve all social issues including global warming. The view widely shared by the innovation initiatives is as follows. 1) Common basic technologies (IOT · AI · robot etc) rapidly develop and drive the entire innovation, and they are applied to all economic sectors such as finance, medical, manufacturing, energy etc. and create new industries. 2) Common basic technologies receive feedbacks from the application and then they further develop. 3) Such development bring about creative destruction beyond the existing economic sectoral boundaries.

Viewed at the space and time scale of global warming, i.e., global scale and up to 2050 and 2100, the condition with which a new technology emerge is that there are enough accumulation of preceding technologies. This condition was found and named as adjacent possibility by Stuart Kaufman, a leading complexity researcher.

This suggests the key importance of the advances in general science and technology to bring about any innovative global warming technologies. Policy intervention to mitigate global warming has to be designed in the way it does not hinder the general science and technology development.