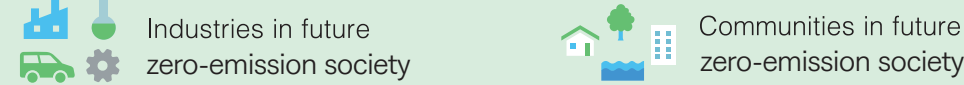


LCS's areas of research

Aiming at bright and affluent zero-emission society

Visions of bright and affluent zero-emission society



Social scenario for realizing bright and affluent zero-emission society

CO₂ emissions of different sectors in Japan (2019)

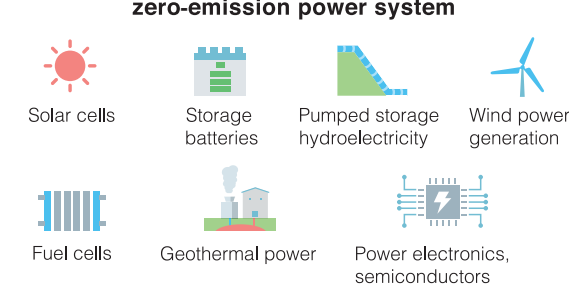
Based on preliminary estimates of greenhouse gas emissions (National Institute for Environmental Studies, December 2020)



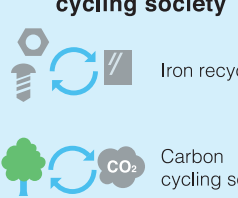
Power supply systems aimed at zero-emissions



Energy technologies constitute zero-emission power system



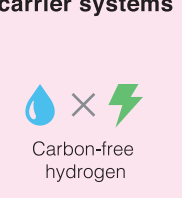
Visions of resource cycling society



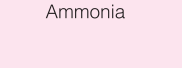
Biomass utilizing systems



Energy carrier systems



Ammonia



Expanded quantitative analysis methods of LCS



Analyses by the "Platform of Low Carbon Technologies for Process Design and Evaluation of Manufacturing Cost and CO₂ Emissions"

LCS's output

LCS publicizes "Proposal Papers for Policy Making and Government Action toward Low Carbon Societies." The proposal papers cover the results of LCS's research on visions of bright and affluent zero-emission society; social scenarios for realizing the vision; evaluation of present status and prospects of science and technology and R&D strategies aiming at zero-emission; and LCS's analysis methods. Please visit LCS's website for more information.



<https://www.jst.go.jp/lcs/en/proposals/index.html>



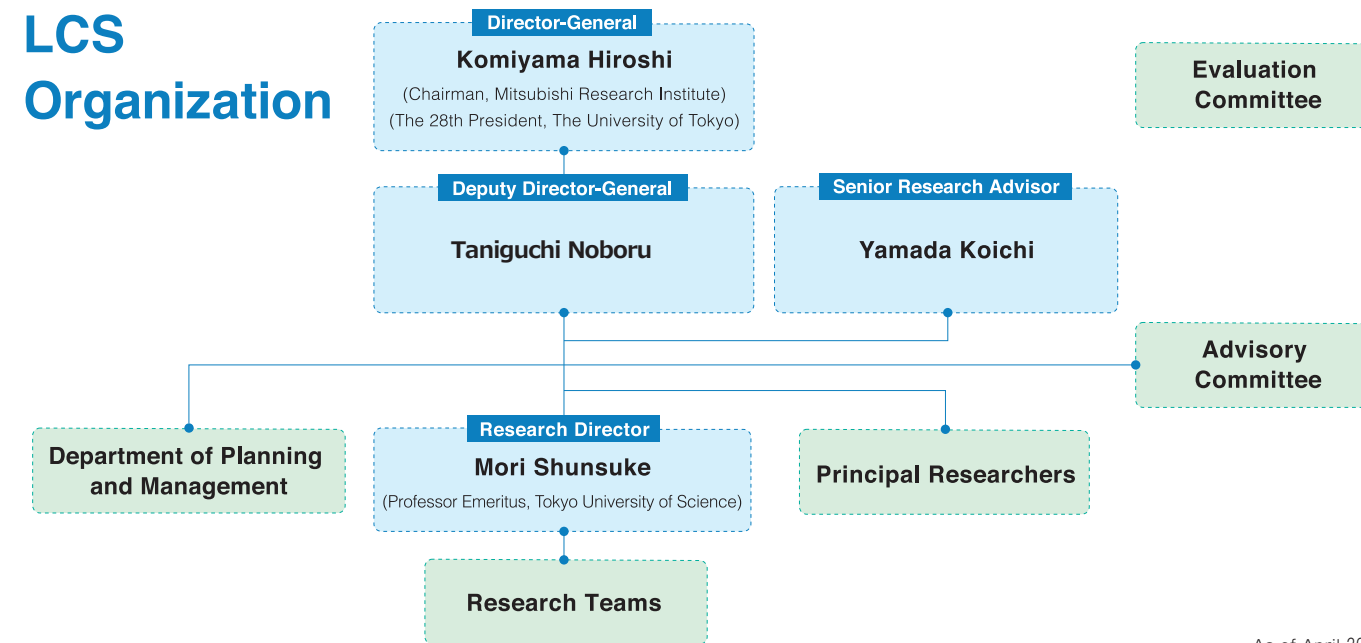
STI for SDGs and LCS

JST drives forward "STI for SDGs," an initiative to promote contribution of science, technology and innovation to the achievement of Sustainable Development Goals, in Japan. JST is also actively engaged in establishing innovation ecosystems in Japan and abroad aiming at co-creation of the future with society. Its efforts include programs for creating an environment where diverse stakeholders have dialogues, co-design and work together, resolve issues and respond to social expectations. Activities of LCS are positioned as one of these "STI for SDGs" programs of JST

SUSTAINABLE DEVELOPMENT GOALS



LCS Organization

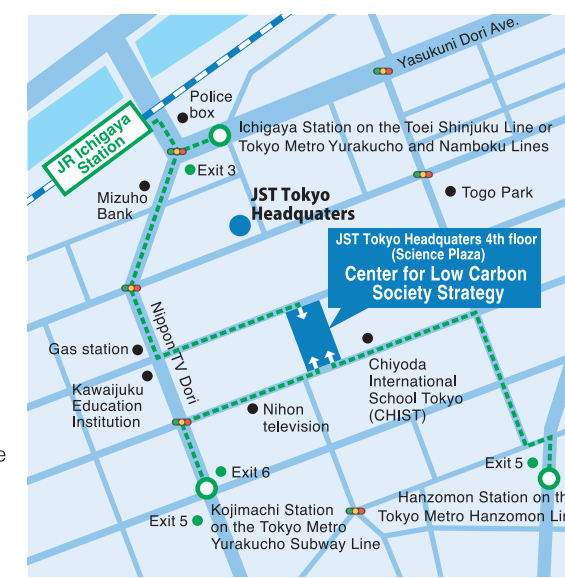


As of April 2022

Center for Low Carbon Society Strategy (LCS) Japan Science and Technology Agency (JST)

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- A 5-minute walk from Kojimachi Station (Exit 6) on the Tokyo Metro Yurakucho Subway Line
- A 10-minute walk from JR Ichigaya Station
- A 10-minute walk from Ichigaya Station (Exit 3) on the Toei Shinjuku Line or Tokyo Metro Yurakucho and Namboku Lines
- A 10-minute walk from Hanzomon Station (Exit 5) on the Tokyo Metro Hanzomon Line



2022.04



ENVISIONING THE SOCIETY BASED ON SCIENCE AND TECHNOLOGY

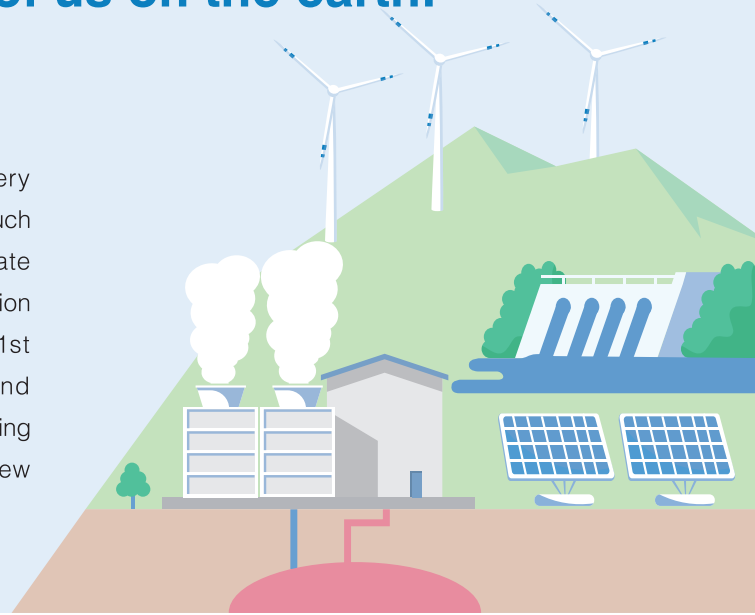
CENTER FOR LOW CARBON SOCIETY STRATEGY



The challenge that faces all of us on the earth:

Achieving GHGs zero-emissions during the early second half of the 21st Century

Recently, disasters caused by extreme weathers have hit every corner of the world more frequently than ever. A major cause of such weathers is considered climate change. To cope with the climate change, it is widely agreed that we should realize the zero-emission society as early as possible during the second half of the 21st Century. Such society cannot be created without science and technology innovation. Nations and businesses have been competing more and more fiercely for dominance in the development of new energy technologies, especially renewable energies.



Aiming at bright and affluent zero-emission society

There is, however, a concern that reducing GHG emissions to net zero simply by suppressing energy consumption might slow down our economy, which has grown by expanding energy consumption. We need to build a vibrant "bright and affluent zero-emission society" where reduction of GHGs emissions from consumption of fossil fuels and economic growth are simultaneously achieved.

The Center for Low Carbon Society Strategy (LCS), established in December 2009, is one of the think-tank centers of the Japan Science and Technology Agency (JST), the national research and development agency which engages in the co-creation of the science and technology-based future with society. The mission of LCS is to formulate and propose strategies to develop technologies for more efficient energy use, to increase the use of renewable energies systematically, and to build "bright and affluent zero-emission society based on science and technology."



Proposing scenarios for building GHGs zero-emission society

Initiatives by LCS

"How will we consume energies in zero-emission society?" "How will industrial structures change towards zero-emission society?" "How do we realize sustainable affluence?" "Which decarbonization technologies should we apply to achieve zero-emission society, and how?" To find solutions to these questions, LCS endeavors to envision a "bright and affluent zero-emission society" and to develop scenarios and strategies to realize such a society.



Developing scenarios and strategies to realize future society

How can we realize an ideal future society through science and technology innovation?

Total greenhouse gas emissions in 2019:
1,213 million t-CO₂

Year 2030

Year 2050:
a bright and affluent
zero-emission future

When and what kind of decarbonization technologies should be introduced to realize GHGs zero-emission society?



Evidence based quantitative analyses

The methodologies of LCS

LCS deploys unique evidence-based quantitative analysis to plan a "bright and affluent zero-emission society." Applying its original "Platform of low carbon technologies for process design and evaluation of manufacturing cost and CO₂ emissions" and "Input-output table," LCS takes the following steps:

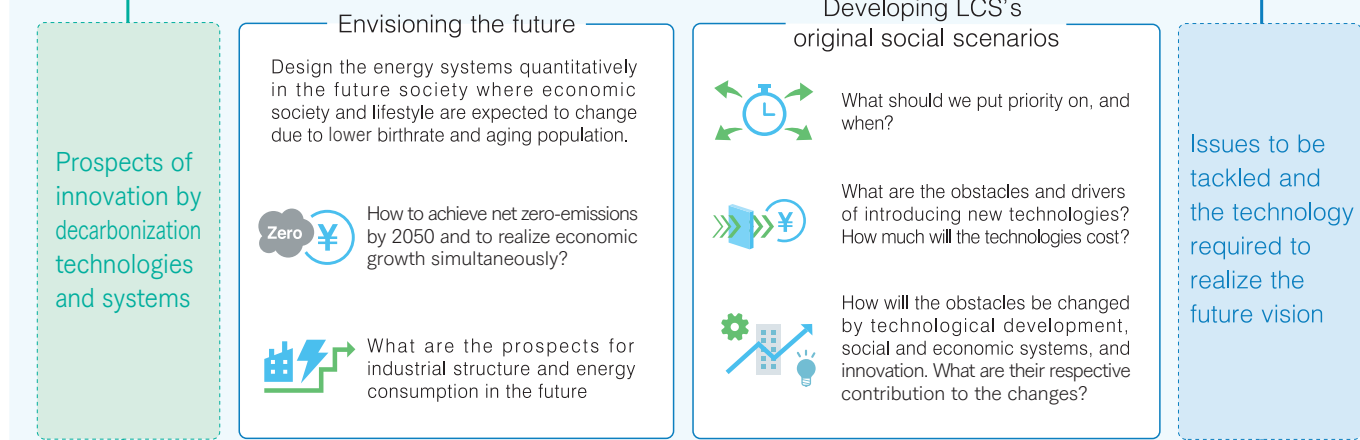
Envisioning "bright and affluent zero-emission society" in the second half of the 21st Century

Identifying bottlenecks to be tackled in realizing zero-emission society through back casting from the vision of the future

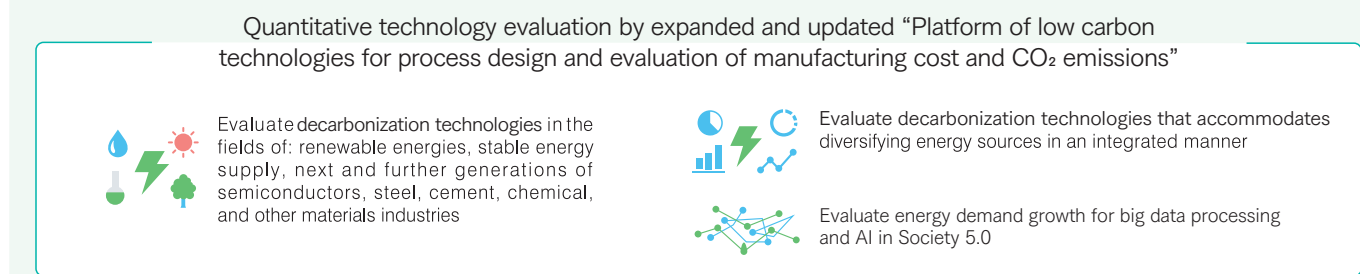
Evaluating the cost of science and technology for zero-emissions and their applicability to our society

Proposing social scenarios for realizing "bright and affluent zero-emission society"

Developing options of bright and affluent zero-emission society/energy systems



Developing options of future society and energy systems foreseen from the present



Proposals for policies and industries

- Science and technology policies
- Basic energy policy
- Climate change countermeasures

Cooperation with research and development initiatives

- Center for Research and Development Strategy (CRDS)
- JST-Mirai Program
- Research Institute of Science and Technology for Society (RISTEX)

Collaboration with International Society

- T20
- acatech (Germany)
- EPFL (Switzerland)

LCS's outreach activities

- LCS symposium
- Science Agora