Towards a Greener Society

10th December 2012

Mamoru Shinohara

Director for Special Missions, Department of International Affairs

Japan Science and Technology Agency (JST)

Before the Great East Japan Earthquake on 11th March 2011

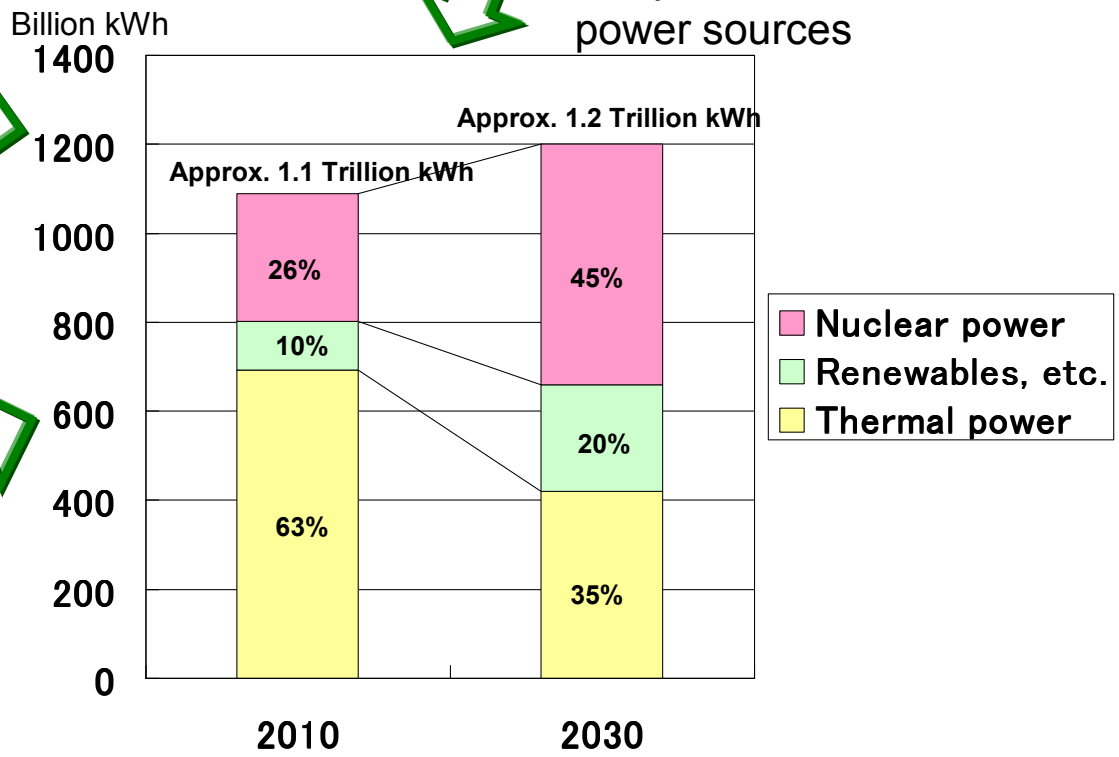
Strategic Energy Plan of Japan (June 2010)

Global Warming

Energy Security

Hollowing-out of Industry

Composition of power sources



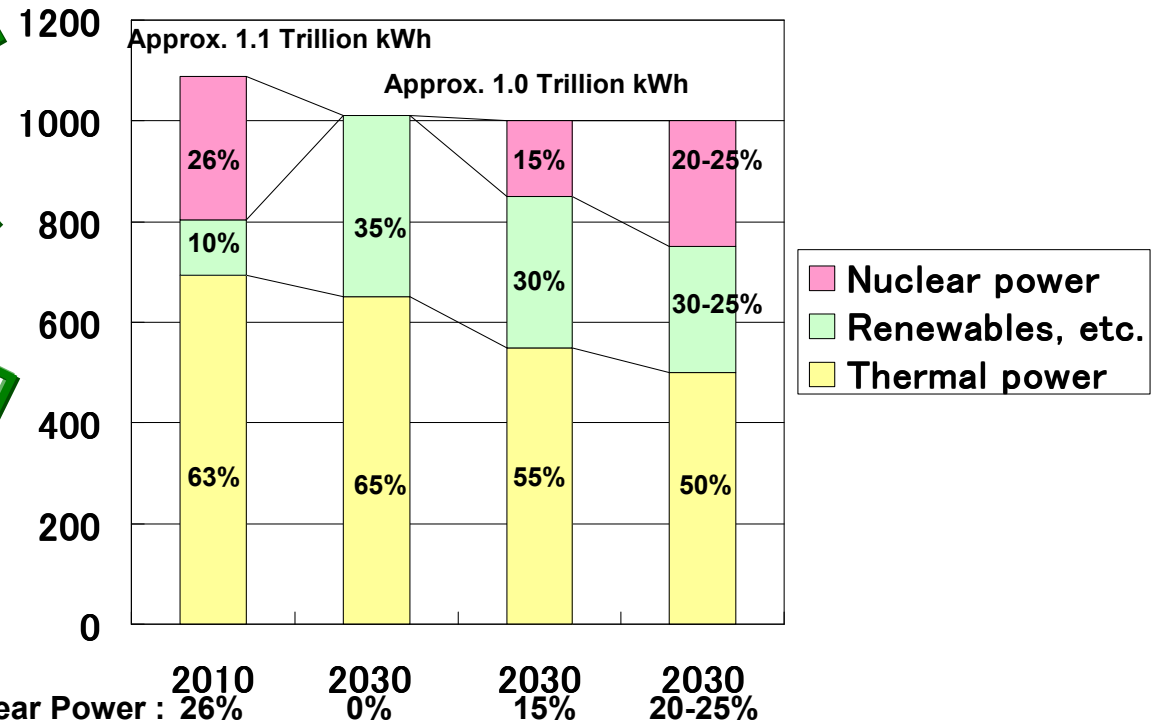
Note: All percentages are rounded off.

After the Great East Japan Earthquake on 11th March 2011

National Debate on Energy Strategy

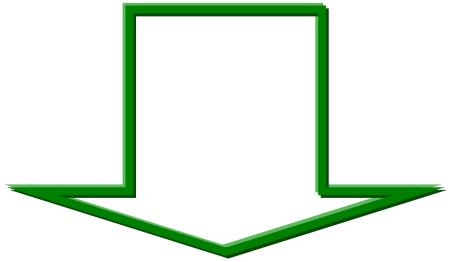
- Nuclear risk and safety
- Energy Security
- Hollowing-out of Industry
- Global Warming

Composition of power sources



Note: All percentages are rounded off.

- Renewable sources of energy are becoming critically important. Their share needs to increase from 10% in 2010 to 25 - 35% in 2030.
- Efficient use of energy remains very important. Further reduction of about 10% in energy consumption is needed from 2010 to 2030.



Innovation in all aspects of energy generation, storage, distribution and consumption.

4th Science and Technology Basic Plan for FY2011-2015

- Policy Shift from discipline-oriented promotion to issue-driven promotion of science and technology.
- Emphasis on innovation, and integral promotion of science and technology (S&T) and innovation.
- Priority issues are 1) Restoration and Reconstruction after the Great East Japan Earthquake; 2) Green innovation; and 3) Life Innovation.

JST's New Mid-Term Plan for FY2012-2016

- Advancement of S&T and innovation by promoting creative research and development.
- Priority R&D fields for promotion are 1) Green Innovation; 2) Life Innovation; 3) Nano-Technology/Materials: 4) Information and Communication Technology; and 5) Science and Technology for Society.

Action Plan for Green Innovation (FY2012)
Government of Japan

Goals	Policy Challenge	Initiatives
Building an advanced society with a sustainable balance between the environment and energy security	**Innovation in securing a stable supply of clean energy**	**Enormous expansion in the development of renewable energy**
	Innovation in expanding decentralized energy systems	**R&D on innovative technologies for energy production and storage**
		Smart energy management
	Innovation in energy utilization	**Significant decrease of energy consumption by technological innovation**
	Innovation for greener social infrastructure	**Development of towns that co-exist with nature and fit in with the specific characteristics of their respective regions**

Green Innovation in JST's Mid-Term Plan

Develop the Frontier of Natural Energy

1. Stable and Low-Carbon Energy Supply/Demand Systems
2. Sustainable Resource Use
3. Sustainable Coexistence with Nature and the Environment

Global Warming | **Limited Resource Availability** | **Global Food Shortage**

Unstable Energy Supply | **Water/Ground Pollution**

Needs

Package of Strategic Programs

Creation of Game-changing technologies

Stable and Low Carbon Energy Supply/Demand Systems

More Sustainable Energy Consumption

Energy Management
Storage Devices, Use of Exhaust Heat, Systems for Energy Storage/Transportation/Supply, Systems for Energy Saving

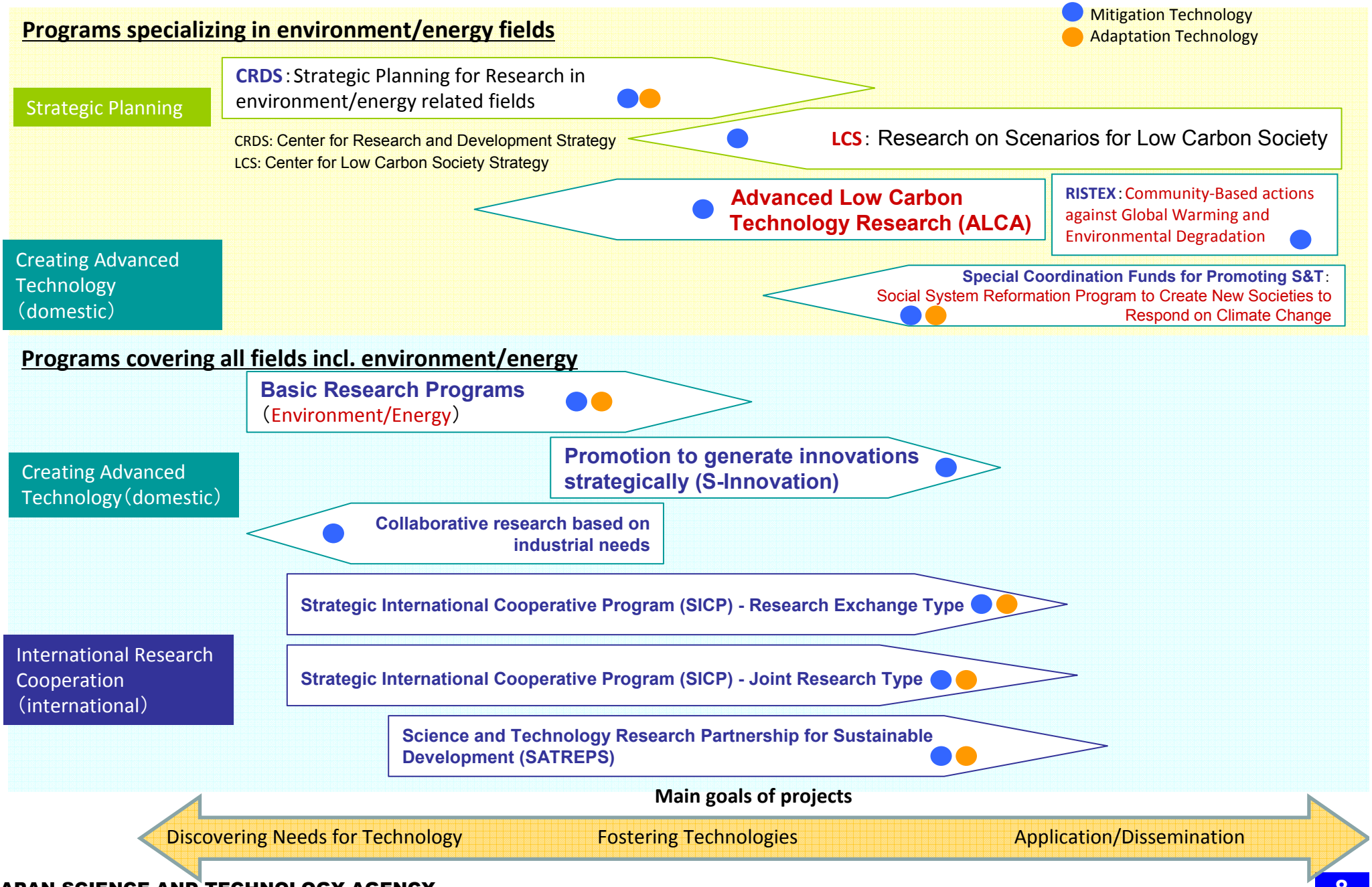
Sustainable Resource Use

Resource Cycle Systems for Stable Supply of Rare Materials

Sustainable Coexistence with Nature and the Environment

Systems of Food Production and Water Use with Environment Adaptability and Low Environmental Load

JST's Activities related to Green Innovation



Advanced Low Carbon Technology Research and Development Program (ALCA)

Purpose:

The "ALCA" program aims to develop Research & Development which can create technologies* leading to the mitigation of Greenhouse gases such as CO2, especially "Game changing Technologies" which can achieve breakthroughs or enable us to break out of the current paradigm (*except for technologies related to nuclear power).

Outline:

- ALCA was launched in FY2010 with a total budget of 25million Euros
- 100K - 1M Euros/Year for 2-5 years (available for up to 10 years if considered necessary)
- 54 projects were selected for funding in FY2010 and 39 projects in FY2011.

NOTE: The exchange rate : 1 Euro = 100 JPY

Research Areas:

1. Specified Areas

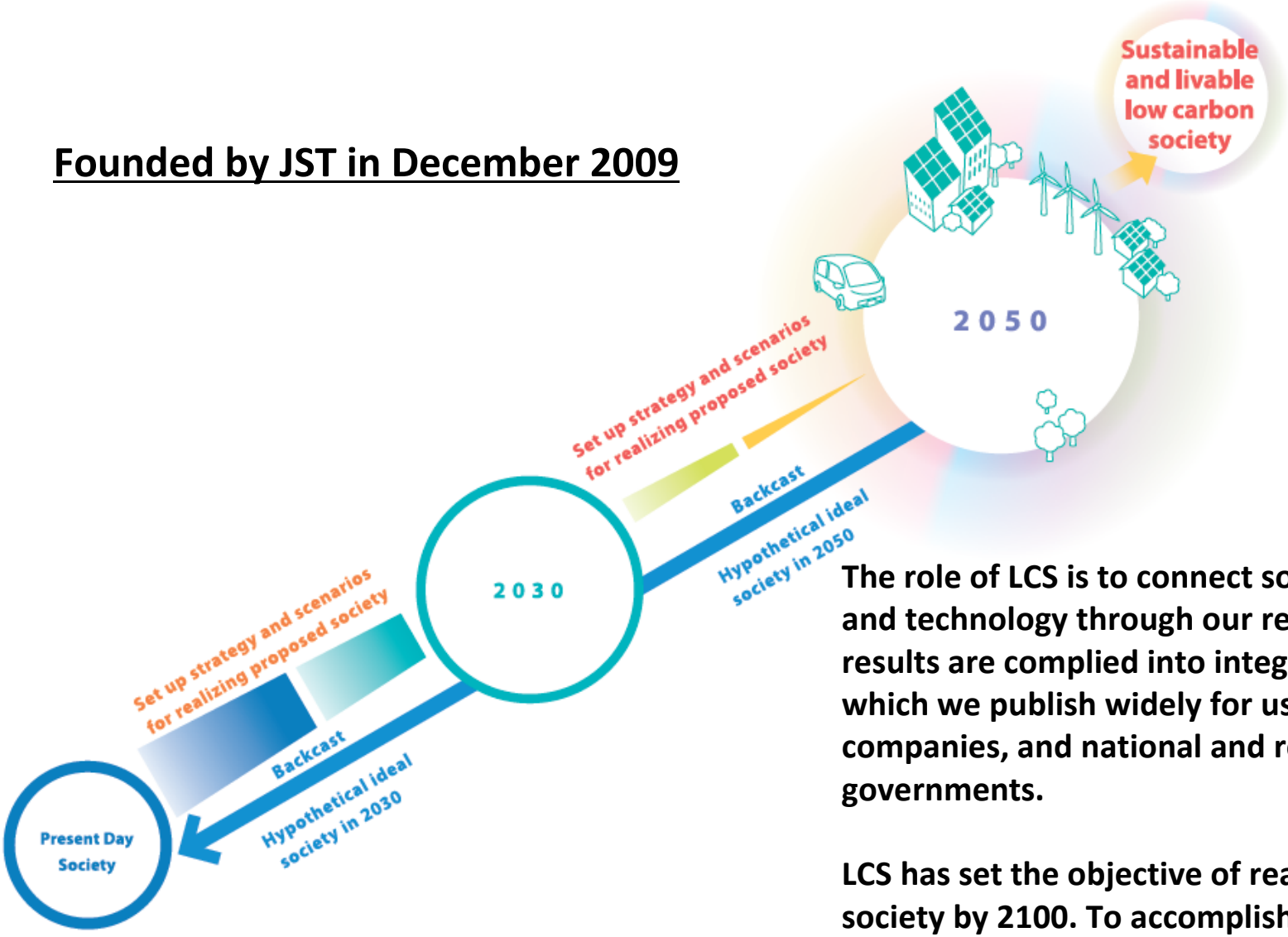
a. Photovoltaic Cells and Solar Power Utilization Systems
b. Superconducting Systems
c. Storage Cell Devices
d. Heat-Resistant Materials and High-Performance Recycled Materials
(Especially, Iron and Steel)

2. Non Specified Areas

Research areas other than those specified above, which are expected to yield technologies that will greatly contribute to the mitigation of CO2 emissions

Center for Low Carbon Society Strategy (LCS)

Founded by JST in December 2009



The role of LCS is to connect society with science and technology through our research efforts. Our results are complied into integrated scenarios which we publish widely for use by households, companies, and national and regional governments.

LCS has set the objective of realizing a low carbon society by 2100. To accomplish this objective, we will create scenarios and strategies for achieving milestones by 2030 and 2050.