

Effective Utilization of Natural Energy

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Our Goals

- Apply Japan's technical capabilities to overcome natural energy utilization issues and make Japan an exporter of energy technology
- Develop energy supply systems using the natural power of solar and biomass energy (renewable energy) as key energy sources for the low-carbon society of the future

■ Expected Achievements:

□ Utilization of Natural Energy with High Energy Conversion Efficiency

□ Balance Between Reducing Greenhouse Gas Emission and Securing Energy Supply in the World

International Schemes

- An **international taskforce** for discussing technology, systems, and joint projects, to promote the spread of natural energy technology and supply systems using such technology throughout the world, including developing countries
- A **Japanese natural energy laboratory** for establishing a research alliance/integration mechanism with a view to focused investment in development of groundbreaking technologies for solar energy, non-edible biomass, and utilization of aquatic and marine organisms (and microbes) as energy resources
- Designation of **eco-model cities** in each country through unique local cultures and lifestyles, and creation of a network of such cities providing a springboard for international projects led by Japan

Key Technologies 1/2

■ Solar Cells

- Silicon Solar Cells
- Compound Semiconductor Solar Cells
- Organic-type Solar Cells
- Next-generation high-efficiency Solar Cells

■ Solar Hydrogen Production

- Fundamental R&D of Novel Catalysts for Achieving High Energy Conversion Efficiency
- R&D for Commercialization and Cost-Effective Manufacturing Process

Key Technologies 2/2

■ Non-Edible Biomass

- ☐ Herbaceous Biomass
- ☐ Woody Biomass
- ☐ Chemical Utilization of Biomass and Other New Technologies

■ Utilization of Aquatic and Marine Organisms (and Microbes)

- ☐ Collection of Basic Data of Aquatic and Marine Organisms (and Microbes), and Screening of Environmental Stress-Resistant Strains or Species
- ☐ Development of New Technologies for Practical Use of Mass Cultivation Plant at Coastal Waters