

Energy Technology RDD&D for substantial CO₂ reduction

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Innovative technology RDD&D

1. RDD&D

- Substantial reduction is impossible without innovative technologies.
- Research, development and demonstration is necessary.
- Deployment and transfer is equally important for early penetration of innovative technologies.

2. International cooperation

- International cooperation is necessary for accelerating RDD&D activities globally.
- Sector-specific actions are effective and efficient ways for cooperation.
- Sector-specific cooperation can smoothly identify the real needs of each country.

Japan's Energy Technology Programs

- Japan has formulated energy technology programs to strengthen RD&D.

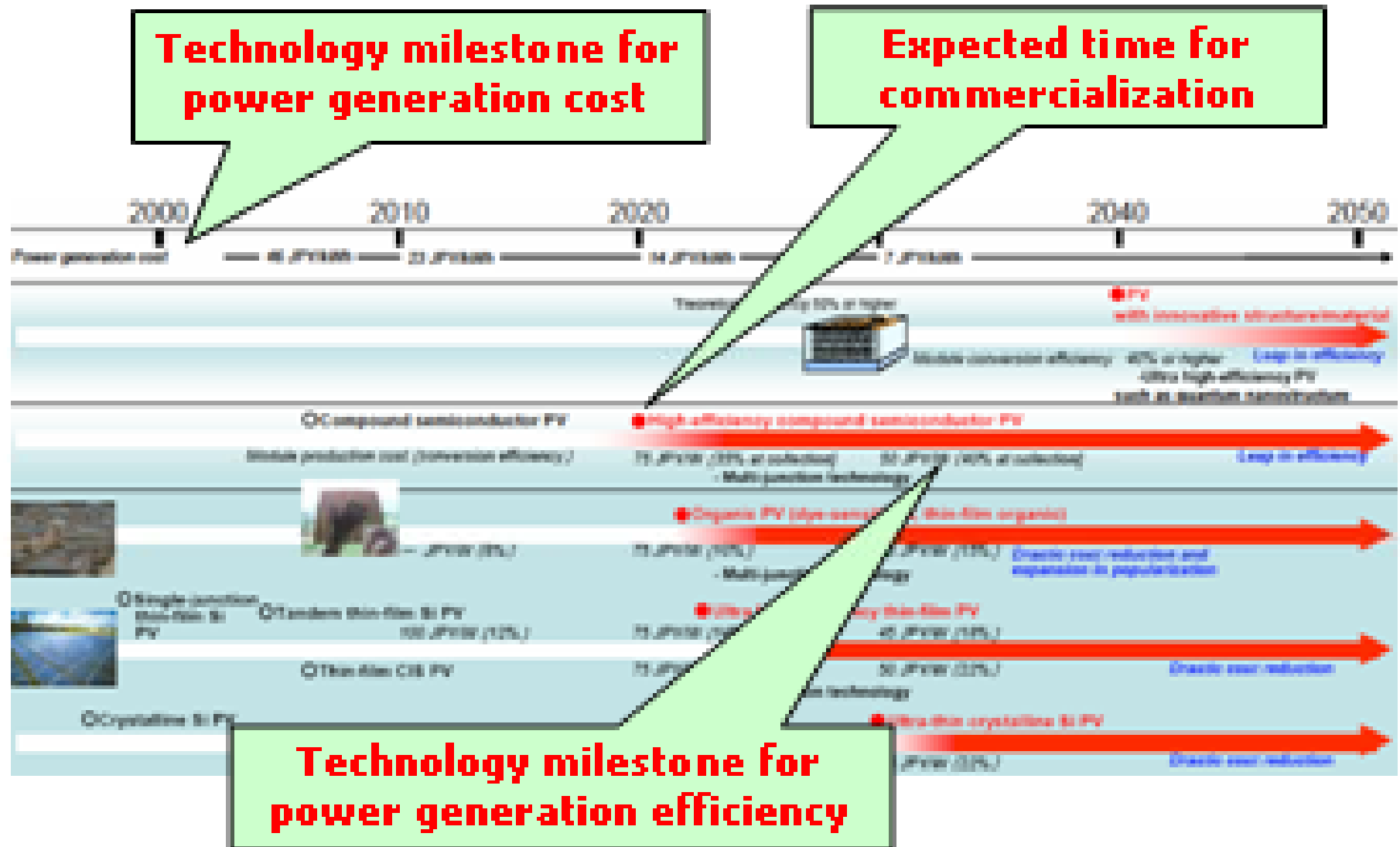
1. Cool Earth - Innovative Energy Technology Program (March 2008)

- METI identified 21 key innovative energy technologies.
- Developed technology roadmaps.
- Emphasized strengthening international cooperation to accelerate innovative technology RD&D

2. Environmental Energy Technology Revolution Plan (May 2008)

- Council for Science and Technology identified 36 key technologies, including non-energy technologies.
- Japan's PM declared \$30B investment for next 5 years in energy and environmental technologies RD&D.

(Example) PV technology roadmap toward 2050



International cooperation on RD & D

- Strengthening international cooperation is necessary to accelerate global RD&D activities.

Example of Japan's international cooperation

1. Bilateral Cooperation

- R&D cooperation conducted both by academia and by industry. (ex. Fuel cells R&D with US)
- Demonstration project for technologies such as CCS. (ex. CCS with China or Australia)

2. Multilateral Cooperation

- Cooperation through IEA CTI, such as information exchange.
- Cooperation through multilateral partnerships such as IPHE, GNEP, and CSLF.

International cooperation on Deployment

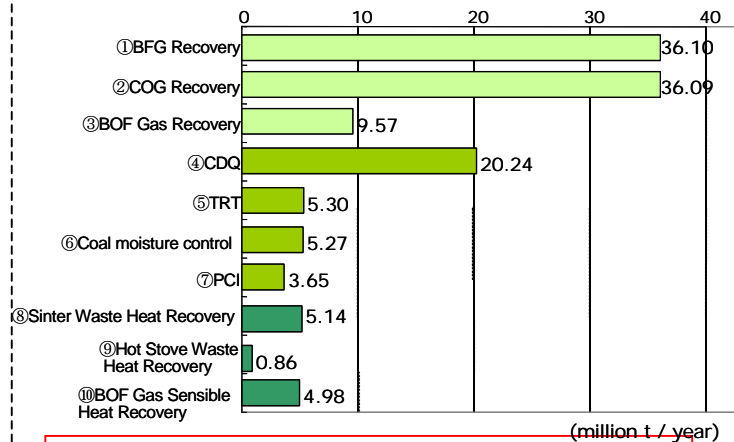
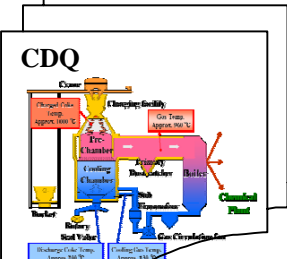
- Strengthening international cooperation is necessary to accelerate deployment and transfer of technologies.
- Sector-specific cooperation under the Asia-Pacific Partnership (APP) is a good example.

Compile state-of-the-art technologies.

Estimate CO2 reduction potential.

Dispatch experts to steel plants for appropriate advice.

Determine the priority of technology for transferring.



Reduction Potential of CO2: 127 M ton/year



Performance diagnosis for 3 steel plants in China and 1 plant in India in FY2007



Successful Example of Tech. Transfer

- Win-win relationship for private sector in both countries was a key to success.

CDQ: Power generation system using residual heat in ironworks, a large scale clean energy tech.

1. CDQ transferred to China in 1990s with government support.
2. Japanese company and Chinese company cooperatively established a new firm in China for manufacturing & selling CDQ.
3. Now, more than 33 plants in operation in China.



Source: Nippon Steel Corporation