

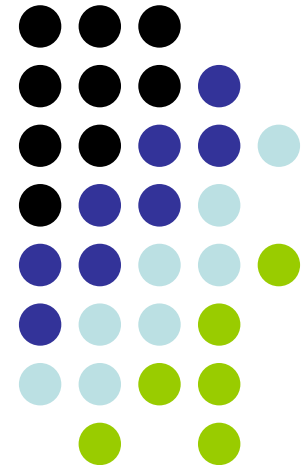


# *Innovations* for Sustainable Society

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\* NEDO, the New Energy and Industrial Technology Development Organization, is an affiliate institute of Ministry of Economy, Trade and Industry (METI) of Japan, dedicated to Innovation.

# What is NEDO?

- New Energy and Industrial Technology  
Development Organization -



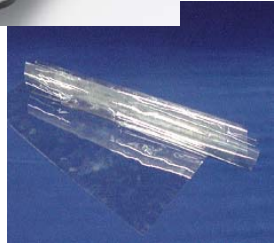
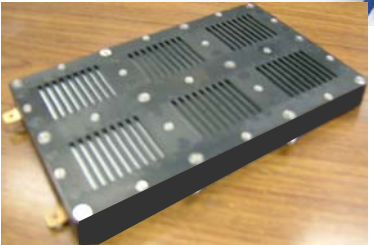
- Japan's biggest R&D support organization
  - Annual budget size = JPY 230B (EUR 1.5B)
- Established in 1980
  - Initial mission to encourage development of new energy and energy efficiency technology
  - Industrial technology development function added in 1988
- Hitachi is one of the biggest contributors



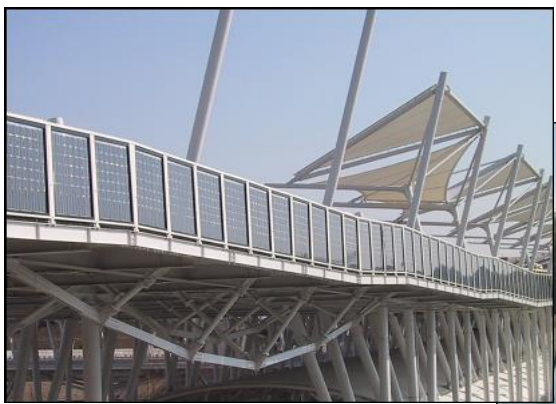
# Hitachi with NEDO



ハイブリッド自動車用マンガン系リチウムイオン電池  
Mn type lithium ion battery for HEV



EXPO Aichi Mobile Device Using Direct-Methanol FC Module



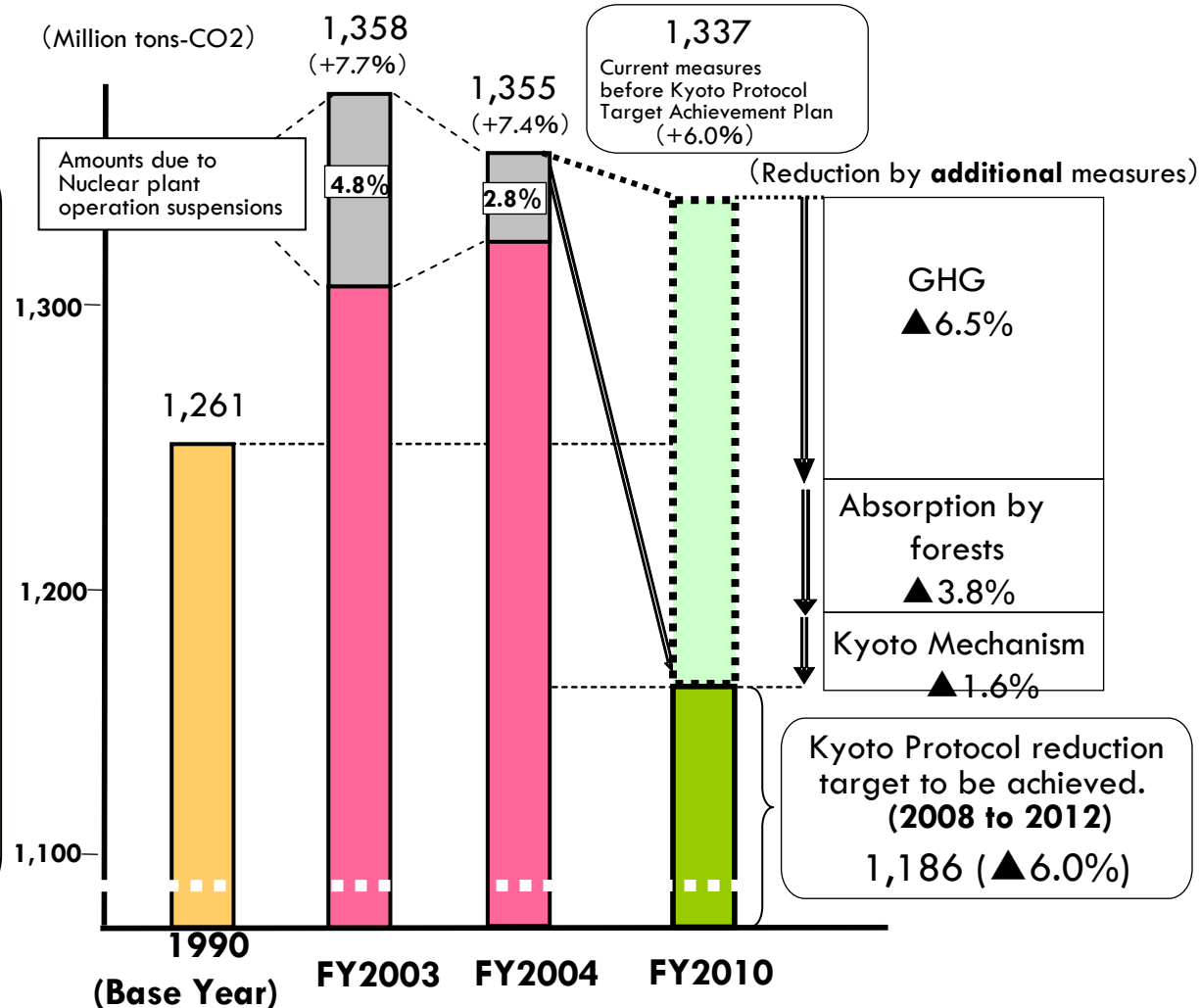
Double-Glass Photovoltaic Modules at EXPO Aichi





## Kyoto Protocol Target Achievement Plan by Japanese Govt (2005)

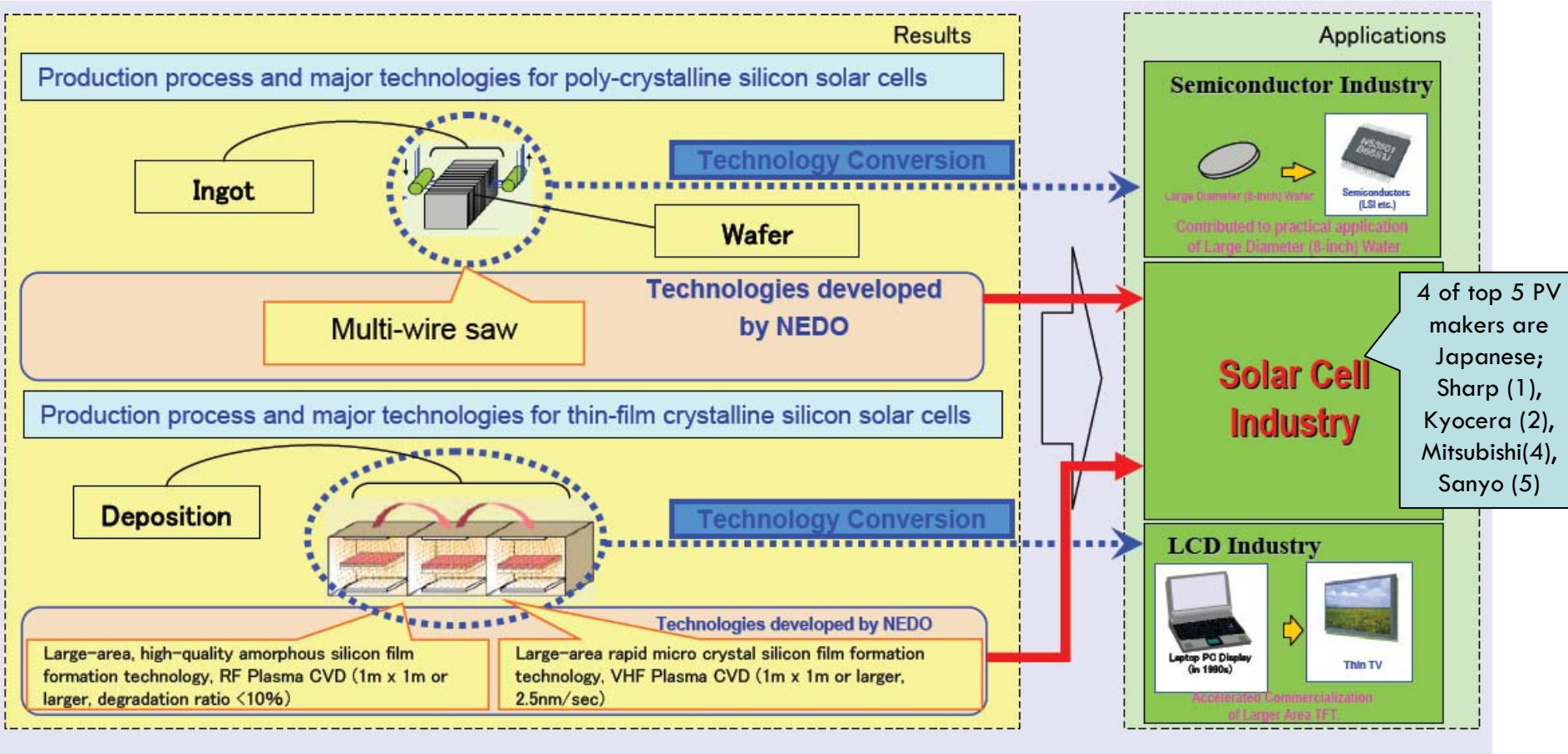
- The Kyoto Protocol's 6% reduction target for GHG
- Reduction of GHG
  - ▲ 6.5%
  - Absorption by forests
  - ▲ 3.8%
  - Kyoto Mechanism
  - ▲ 1.6%





- Renewables
  - MITI/NEDO Sunshine Program since 1974
    - Many competitive PV panel makers established in Japan
  - Renewable Energy\* – still only 0.7 % of energy supply
    - \* aggregation of geothermal, wind, solar, tide; excluding hydro (2.0%) and renewables combustible and waste (3.1%) OECD countries (source IEA Renewable Information 2006)
  - Technological breakthrough, innovation much needed
    - Solar, Wind, Geothermal, Tidal, Hydro, Biofuels, Biomass etc.
    - Nuclear Energy

# Photovoltaic Power Generation Program



Reference: Study of Outcome Concerning the Photovoltaic Power Generation System and Related Technologies (March 2006), etc.

Source: NEDO

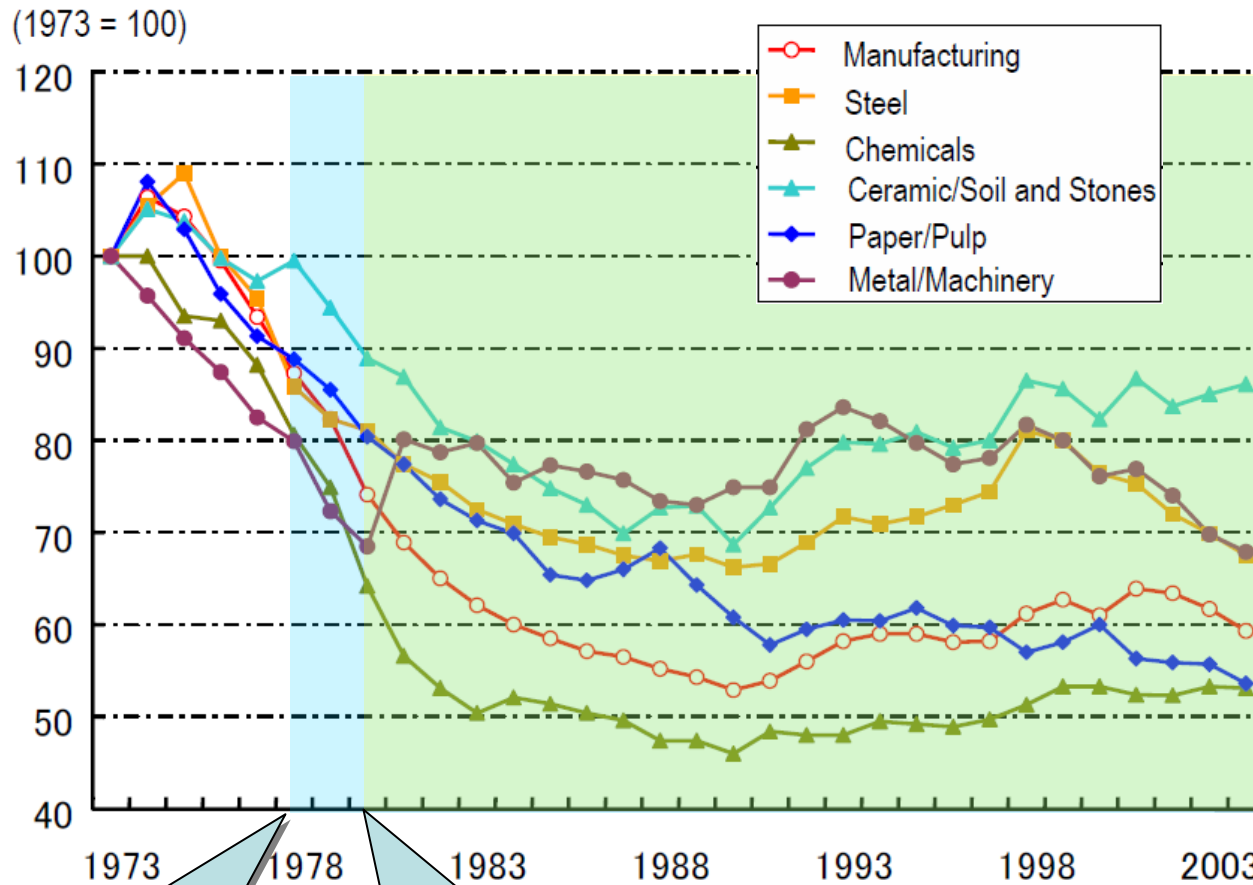


- Energy Efficiency
  - MITI/NEDO Moonlight Program since 1978
    - Industrial Energy Savings among top countries in the world
  - 58% of CO<sub>2</sub> reduction through 2004-2030 expected from End-use efficiency gains (IEA)
  - Technological breakthrough, innovation much needed
    - Transportation, household, industry etc.



# Industrial Energy Efficiency - Achievement in Japan -

Changes in Basic Energy Consumption Unit of Industrial Sector in Japan



Moonlight Program by MITI (1978)

Establishment of NEDO (1980)

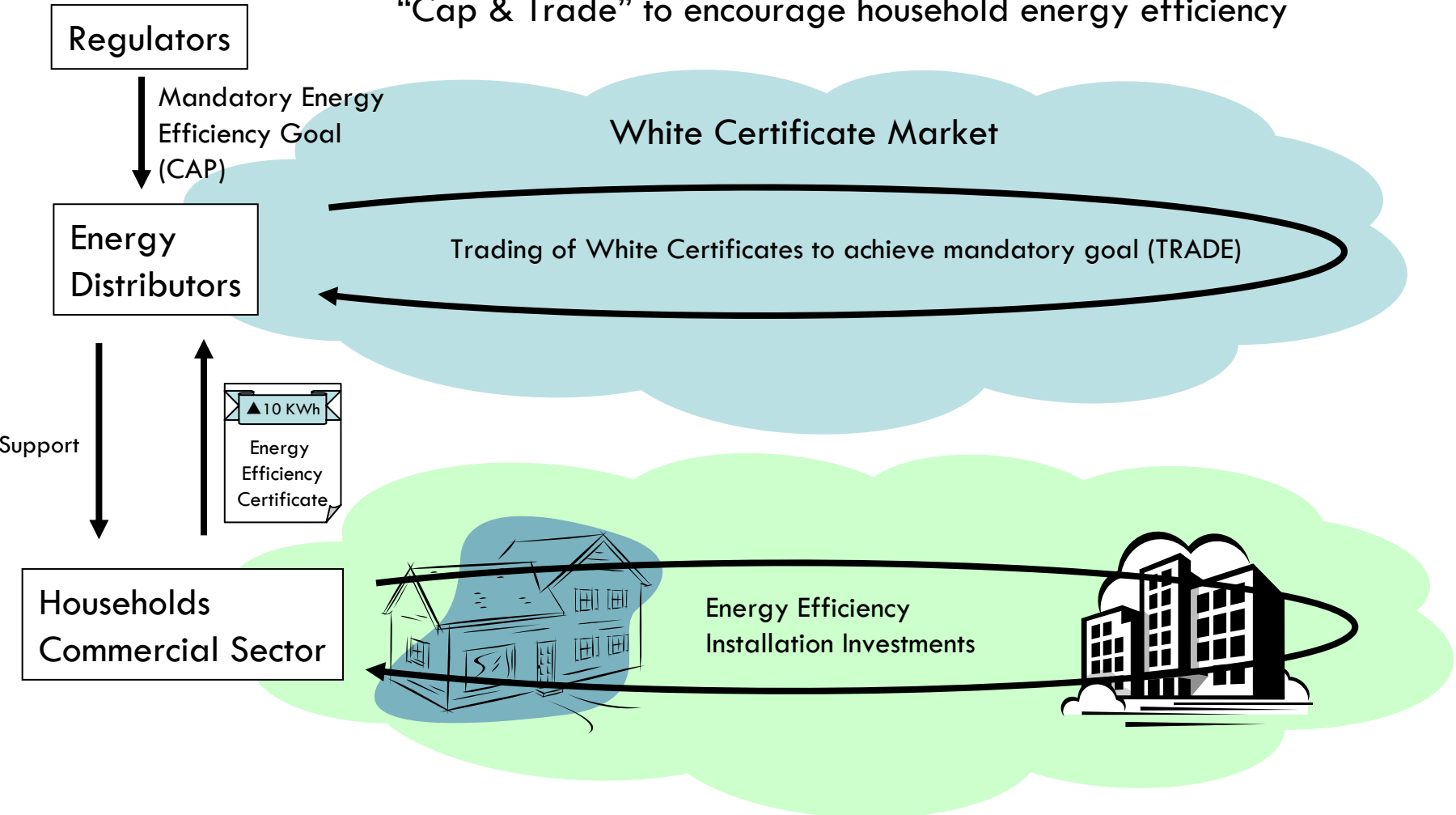
Source: Energy and Economic Survey Digest, Energy Conservation Center

# Need for Social Innovation

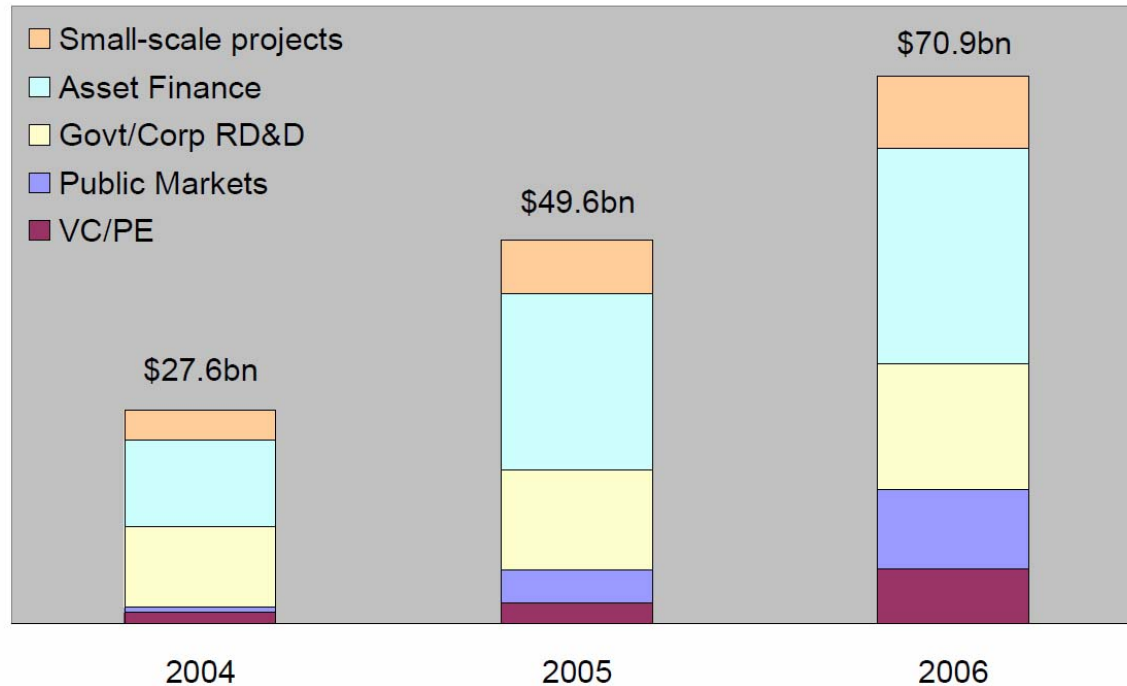
- Need for Social, Policy Innovation
  - While current pace of technology progress unsatisfactory, making best use of existing technology should also be pursued.
- New wave of policy frameworks
  - Market mechanism through internalization of externality
    - CO<sub>2</sub> emissions (CDM, EU-ETS)
    - Green certificate scheme and feed-in-tariff scheme for renewables
    - White certificate to involve household in energy efficiency effort
- Financial market involved
- Is Japan innovative enough ?

# White Certificate Scheme

“Cap & Trade” to encourage household energy efficiency



## Global Investment in Clean Energy



Notes: VC/PE = venture capital and private equity. Figures are grossed-up based on disclosed deals.

Source: New Energy Finance

# Our Continued Commitment



- Help energy innovation to achieve sustainable society
- Not only for technological innovation but social, policy innovation as well
  - Much to be learned from the world (IEA) and EU
- Global Cooperation is the key
  - From “Support for Asia” to “global knowledge sharing”

## At your Disposal in Europe

- Existing programs for grant for Japan-Europe research projects
  - very limited so far, though
- Networking Hub
  - Connect the need and demand between research community, industry and policy in both Europe and Japan
  - International cooperation with IEA, OECD, EU, ADEME (France), TEKES (Fin), Vinnova (Swe), SenterNovem (NL), DTI (UK) etc.



# Thank you for your attention

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