

China's Efforts to Promote DSM as a Cost-Effective Energy Resource

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Asia Clean Energy Forum

Manila, Philippines — June 19, 2009



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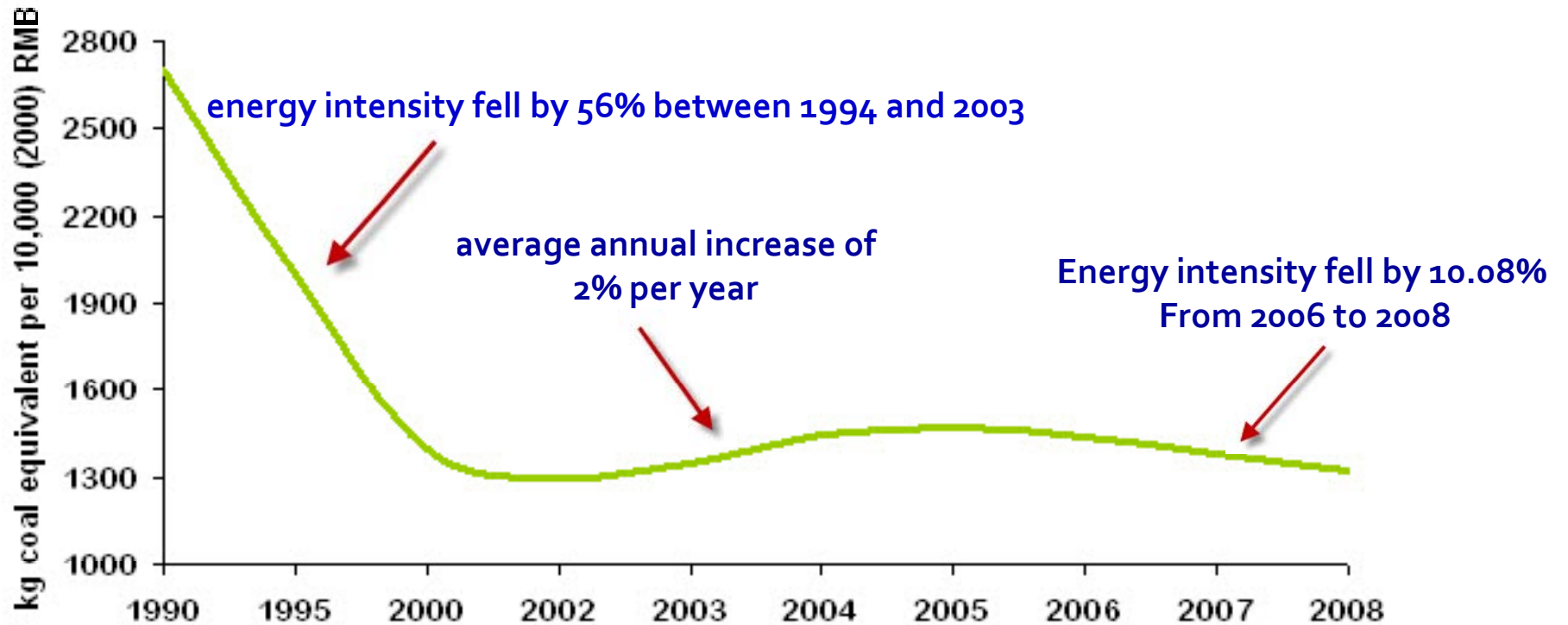
Outline of Presentation

- ✓ Energy efficiency potentials in China
- ✓ China's national efforts in supporting energy efficiency/DSM
- ✓ Energy efficiency/DSM programs and accomplishments
- ✓ DSM Institutional structure and players in China
- ✓ Best practice in promoting demand-side resources in China

Energy Efficiency: Harvests Low-Hanging Fruits

- ✓ China's Investment in cost-effective energy efficiency is only 5% of supply-side investment
- ✓ Energy intensity in China is almost 3, 5, and 8 times higher than that of the U.S., EU, and Japan, respectively
- ✓ High energy consuming sectors account for over 70% of China's industrial energy use, while contributing only 20% to the industrial value-added.
- ✓ Our industrial audits found that energy efficiency projects are very attractive with payback periods ranging from 7 months to 3 years

Energy Intensity in China



China's Efforts in Advancing Energy Efficiency and DSM

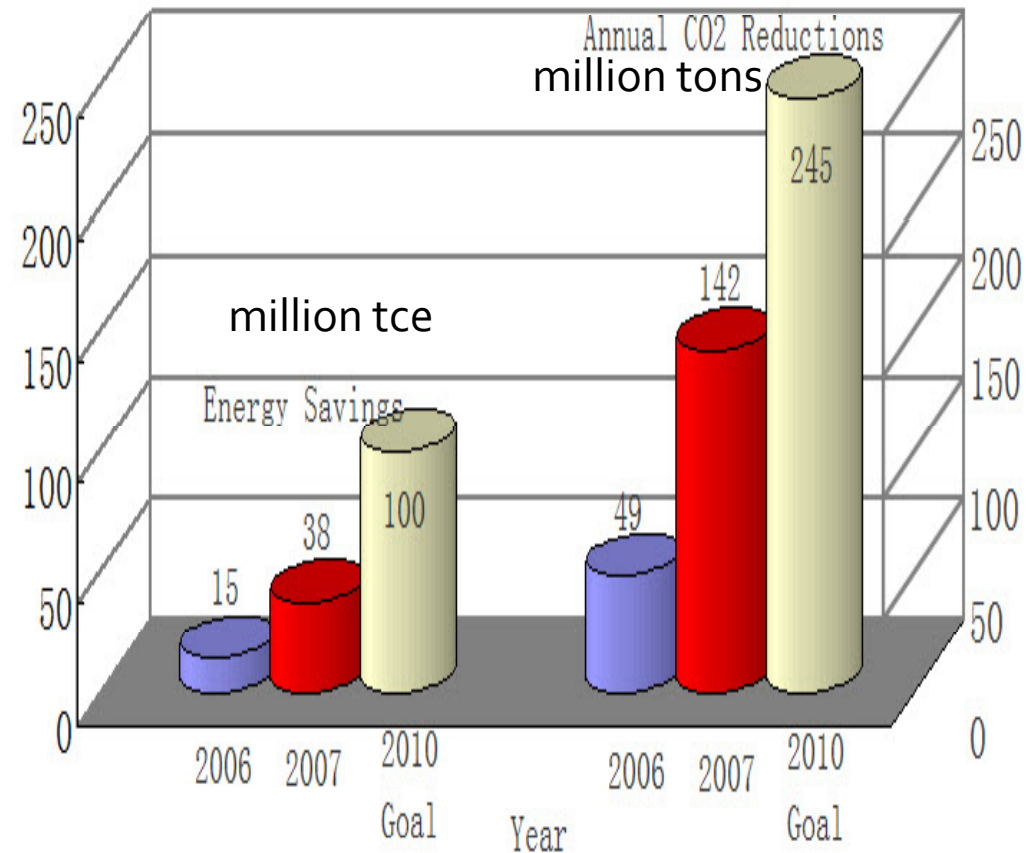
- Set one of the most ambitious energy efficiency goals – reduce energy intensity by 20% between 1996 and 2010
- Revised Energy Conservation Law to make officials' political career prospects dependent in part on their energy-saving performance
- Initiated “Top-1000” program to target the largest 1008 enterprises with the goal of saving 100 million tce of energy by 2010

China's Efforts in Advancing Energy Efficiency and DSM

- Created energy savings rewards, providing large enterprises an incentive of RMB 200~250 per tce of energy saved
- Shutting down 50 GW of small inefficient coal power plants between 2006-2010
- Adopting energy saving power dispatch rules to encourage energy saving (dispatch power based on the coal consumption level)
- Creating level playing field for energy efficiency by initiating “green security,” “green loan,” and “green insurance”

Top-1000 Program

- Launched by central government in April 2006
- Goal: improve industrial energy efficiency of the biggest 998 energy industrial users in 9 industrial sectors
- They jointly consumed 33% of national energy consumption and 47% industrial energy consumption



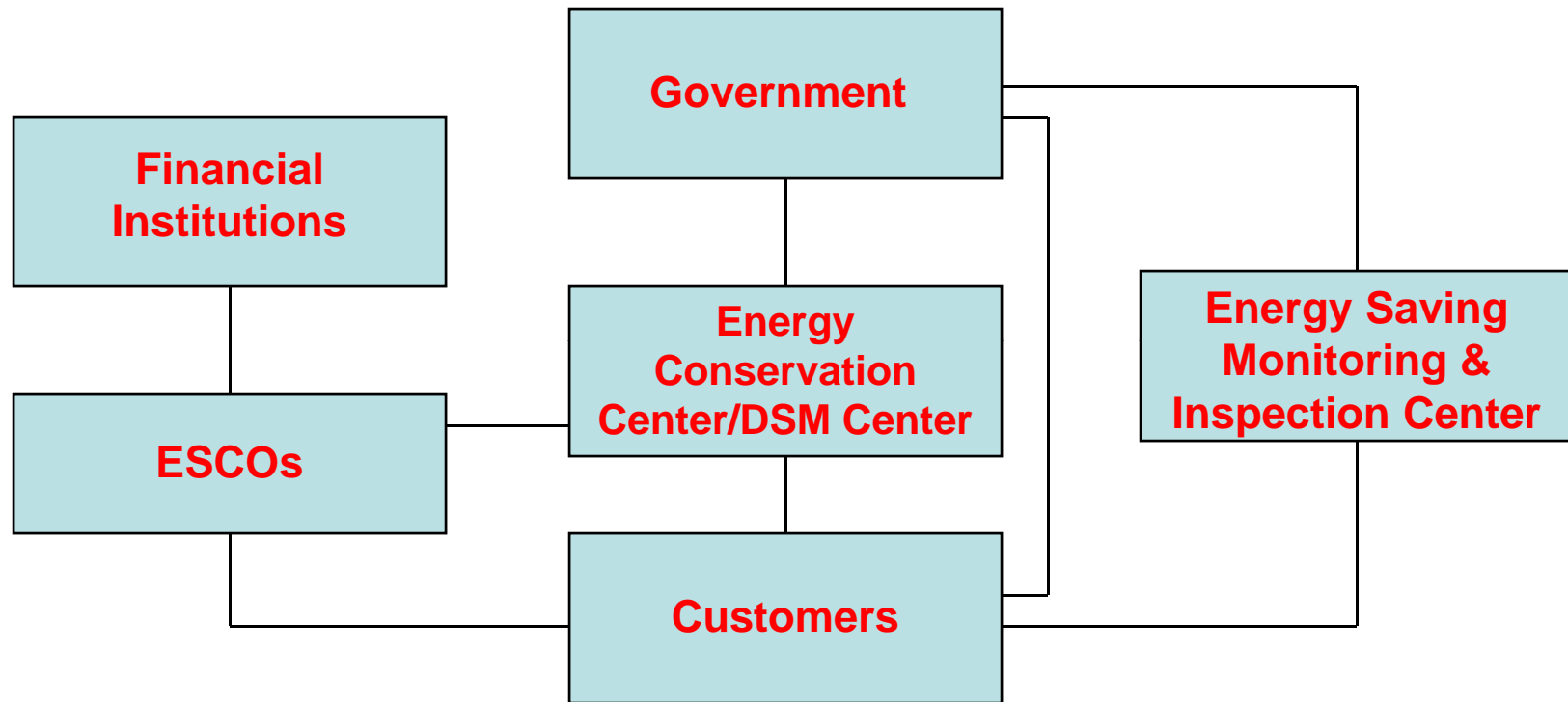
Develop Energy Efficiency Resource through Efficiency Power Plant (EPP)

- There is a growing trend in China that large-scale, cost-effective DSM programs are developed through the implementation of the Efficiency Power Plants (EPPs): only 1/3 - 1/2 of the cost of coal-fire
- EPP is a virtual power plant aggregating a large number of DSM options, producing as predictable and substantial electricity saving as the output from a conventional power plant
- EPPs significantly reduce the financial risks associated with the investment and administrative and transaction costs, helping build a sustainable demand for energy efficiency
- If properly structured, choices about purchasing efficiency versus conventional power could be made in an integrated, least cost fashion when demand-side options and traditional supply technologies are placed on an equal footing

EPP Development in China

- Jiangsu has allocated 100 million RMB each year to support EPP and developed 450MW capacity of EPP over 4 years
- Guangdong is developing its ambitious EPP program by recycling \$100 million of ADB loan
- Hebei collects 90 million RMB yearly through tariff and has set up an implementation entity under the provincial DSM Center
- Shandong is using an innovative energy quota system to fund EPP
- Suzhou has been chosen as a national EPP pilot that aims at creating experience transferable nationwide
- Shanghai is studying the feasibility of creating an EPP program led by utility
- Beijing is developing a cross-sector EPP program that targets all key sectors.

Institutional Structure for DSM Implementation in China



- **Government:** set up goals, allocate funds, oversight
- **DSM Center:** planning, budgeting, coordination, project selection, program administration, incentive disbursement
- **Inspection Center:** conduct and report EM&V
- **Financial Institutions:** loan and loan guarantee
- **ESCOs:** installation and services

Best practice of developing energy efficiency resource in China: NRDC approaches

Central Government



Local Partners

Thank you!

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