

Energy Efficiency Plan of China and its monitoring and evaluation

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China

National Energy Efficiency target of 11th Five Years' Plan of China

- 20% energy intensity decrease is a binding target of 11th 5 years' national plan
- Suggested by Central Committee of CCP and approved by the Peoples' Congress
- The State Council is in charge of the implementation of the plan, including EE target
- NDRC is the coordinator agency
- Developed National Action Plan of Energy Conservation, and detailed guidance by State Council

Systematic EE action plan

- Energy intensity target as macro and top-down approach of energy conservation
- An integrated portfolio of policy measures developed by the central government, and similarly by local governments
 - Law and regulations
 - Economic measures: pricing, financing, taxation, incentives and penalty, and investment policy
 - Standard, code, labeling
 - Institutional capacity building: governance, statistic
 - Social mobilization
 - Information and guidance

Bottom up approach combined

- 1000 key enterprises energy conservation program: top 1000 energy consuming enterprises signed energy conservation agreement with central government
- More than 20,000 enterprises signed energy conservation agreement with local governments
- Covering about 80% of energy consumption by industry

Sectoral approach paralleled

- 10 national energy conservation programs initiated by central and local governments:
 - Industrial boiler and kiln retrofit;
 - District CHP
 - Utilization of surplus heat and pressure
 - Oil fuel saving and substituting
 - Electric motor system improvement
 - System optimization of industrial processes
 - Energy conservation in buildings
 - Green lights
 - Energy conservation of governmental facility
 - Capacity building of monitoring and technical service
- 240 million tces of energy to be saved through above programs by 2010

EE targets for provinces and cities

- 30 Mainland provinces have been allocated specific targets of energy intensity improvement (except Tibet)
- 4 provinces have higher targets than 20%, 6 have lower targets, others have the same as 20% targets, mainly based on provincial governments' preferences
- Provincial governments signed agreements with State Council for the targets, and responsible of their implementation,
- Provincial governments set up their annual achievement targets, and agreed by NDRC. The targets are reported and reviewed annually.

Responsibility system established

- Provincial governments allocated the EE targets to each of the cities and counties, and local governments are responsible for their target achievement
- City and county report their performance to provincial government , and provincial government report to Central government annually
- National Statistic Bureau review and evaluates the GDP and energy consumption of each provinces annually, based on independent statistic system, and report the results to NDRC and State Council, final results publicized.
- The Department of Energy Statistic has been founded in the NSB for this job
- National energy consumption data and GDP data are collected and released by NSB as well

Review and monitoring

- NDRC collect workshops with provincial governmental officials periodically to review the progress of energy conservation plan
- NDRC officials visit local governments and enterprises frequently as official surveys
- Representing the State Council, NDRC organize formal review and evaluation team composed by officials and experts from ministries, to each of the provinces annually.
- Provincial government will provide formal report and supporting materials on their performance and achievement of EE, these reports and materials reviewed and evaluated by the team carefully, a formal comment released by the team

Indicator system of review and evaluation

- Formal questionnaire issued by NDRC for the review and evaluation
- Composed by 9 subjects and 28 items, each of the items is scored according to their significance, perfect performance for all the items will score as total to 100 points
- Local governments provide necessary materials to verify their performance for each of the items

Index System for Evaluating and Examining Energy Conservation Progress in Provincial Governments

| Index | No. | Measures | Criterion | Score |
|-----------------------------------|---|---|--|---|
| Energy Conservation Target (40) | 1 | Reduce Energy Intensity of GDP | If annual target is 100% achieved, score 40, if 90% achieved, 36, if 80% achieved, 32, if 70% achieved, 28, if 60% achieved, 24, if 50% achieved, 20, under 50%, 0. Overfulfill by 10%, plus 3. This is a No-No Indicator, provinces fails to achieve its annual target will be regarded as uncompleted. | 40 |
| | Energy Conservation Measures (60) | 2 | Lead and Organize Energy Conservation Work | 1. Establish regional statistical, monitoring and evaluating system for energy intensity targets. |
| | | 2. Set up coordination and cooperation schemes among agencies, clarify roles and responsibilities, and hold meetings regularly. | | 1 |
| 3 | | Decompose Energy Intensity Target | 1. Decompose target to municipals, counties and key energy consuming enterprises. | 1 |
| | | | 2. Examine and evaluate local progress on energy conservation. | 1 |
| | | | 3. Publicize energy intensity data regularly. | 1 |
| 4 | | Adjust and Optimize Economic Structure | 1. Increase the ratio of tertiary industry to local GDP. | 4 |
| | | | 2. Increase the ratio of high-tech industries to local value-added of industry. | 4 |
| | | | 3. Enact energy efficiency pre-evaluation for fixed investment projects. | 4 |
| | | | 4. Achieve annual targets for eliminating backward production capacities. | 8 |
| 5 | | Appropriate Funds and Carry Out Key Projects | 1. Appropriate special fund for energy conservation. | 3 |
| | | | 2. Increase the proportion of energy conservation fund to annual fiscal income. | 4 |
| | | | 3. Carry out key energy conservation projects. | 3 |
| 6 | | Research, Develop and Disseminate Energy Conservation Technologies and Products | 1. Compile annual R&D plan for energy conservation. | 2 |
| | | | 2. Increase the proportion of energy conservation R&D fund to annual fiscal income. | 3 |
| | | | 3. Conduct pilot projects of new energy conservation technologies. | 2 |
| | | | 4. Disseminate energy efficient products, technologies and energy service companies. | 2 |
| 7 | | Supervise Energy Conservation Progress in Key Sectors and Enterprises | 1. Achieve annual targets for key energy consuming enterprises (including top-1000 key energy consuming enterprises). | 3 |
| | | | 2. Carry out energy efficiency monitoring regularly. | 1 |
| | | | 3. Achieve annual ratio target of mandatory building energy efficiency codes, 80% achieved, 2, less than 70%, 0. | 4 |
| 8 | | Enforce Energy Conservation Laws and Regulations | 1. Legislate energy conservation laws and regulations. | 1 |
| | 2. Supervise the progress on law enforcement. | | 1 | |
| | 3. Follow the cap standards of energy efficiency for energy intensive products. | | 1 | |
| 9 | Enhance Foundations for Energy Conservation | 1. Reinforce energy supervision teams and strengthen capacity building. | 1 | |
| | | 2. Improve energy statistical systems and increase manpowers. | 1 | |
| | | 3. Install energy metering equipments. | 1 | |
| | | 4. Carry out education, training and outreach. | 1 | |
| | | 5. Establish reward system for energy conservation. | 1 | |

Review and monitor for enterprises

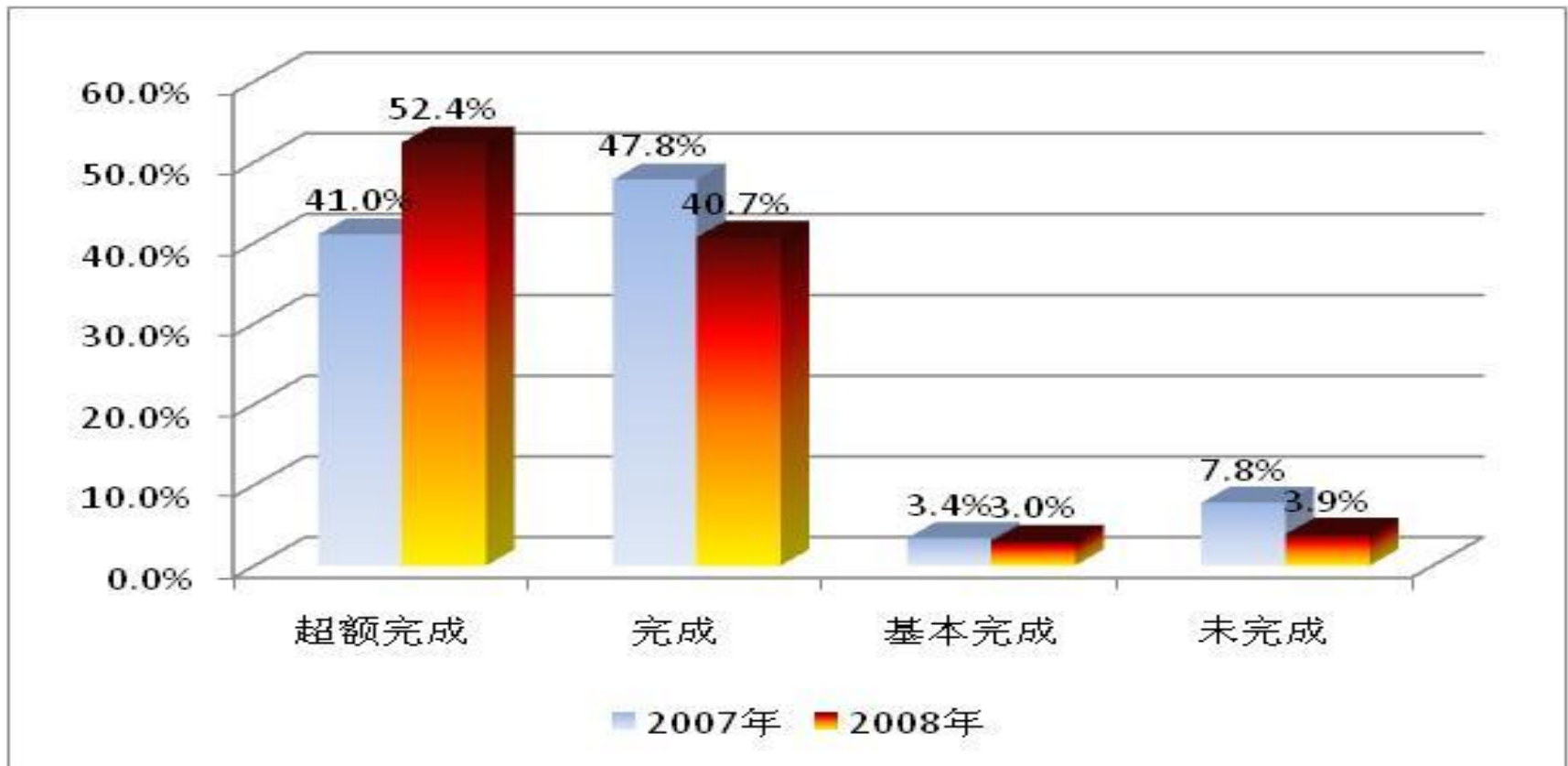
- Provincial and city governments founded energy conservation supervision agencies for EE inspection in enterprises
- All the listed enterprises have to complete energy audit and provide their audit reports
- Benchmarking is a common practice for enterprises
- State Owned Assets Supervision and Administration Commission of the State Council review and evaluate the performance of state owned enterprises for their EE progress
- Local governments review and evaluate the local state owned and other key enterprises for EE progress
- Similar questionnaire and score system established

Index System for Evaluating and Examining Energy Conservation Progress in Key Top 1000 Energy Consuming Enterprises

| Index | No. | Contents | Criterion | Score |
|--|-----|--|---|-------|
| Energy Conservation Target (40) | 1 | Amount of Energy Saving | If annual target is 100% achieved, score 40, if 90% achieved, 35, if 80% achieved, 30, if 70% achieved, 25, if 60% achieved, 20, if 50% achieved, 15, under 50%, 0. Overfulfill by 10%, plus 2. This is a No-No Indicator, enterprise fails to achieve its annual target will be regarded as uncompleted. | 40 |
| Energy Conservation Measures (60) | 2 | Lead and Organize Energy Conservation Work | 1. Establish a energy saving leading group and hold meetings regularly, should chaired by core leaders. | 3 |
| | | | 2. Designate a energy saving management division and entrust responsibilities. | 2 |
| | 3 | Decompose Energy Saving Target | 1. Decompose energy saving targets to each plant, team and person. | 3 |
| | | | 2. Examine and evaluate progress on energy saving. | 3 |
| | | | 3. Establish a reward system for energy saving. | 4 |
| | 4 | Progress in Energy Saving Technologies and Retrofits | 1. If energy consumption per unit of output ranks top 20% within the sector, score 10, top 50%, score 5, others, 0. | 10 |
| | | | 2. Appropriate special fund for energy conservation and increase it year by year. | 4 |
| | | | 3. Conmpile and fulfill its annual energy saving retrofits plans. | 4 |
| | | | 4. Achieve annual targets for eliminating backward production technologies, equipments and products. | 7 |
| | 5 | Enforce Energy Conservation Laws and Regulations | 1. Enforce national and local energy conservation laws, regulations and rules. | 2 |
| | | | 2. Follow the cap standards of energy efficiency for energy intensive products. | 4 |
| | | | 3. Follow the quotas of energy consumption for major equipments. | 2 |
| | | | 4. Follow energy efficiency codes and standards during project design and construction processes. | 2 |
| | 6 | Energy Saving Management within Enterprises | 1. Conduct energy audit and supervision, and take energy efficiency upgrading measures. | 2 |
| | | | 2. Set up energy statistic positions, establish energy statistical ledgers and report accurate energy consuming numbers on schedule. | 3 |
| | | | 3. Install energy metering facilities as laws required, conduct examinations and calibrations regularly. | 3 |
| 4. Carry out energy efficiency campaigns and trainings | | | 2 | |

Top 1000 Enterprises Energy Conservation Action

- High ratio of successful performance of enterprises on EE
- Saved energy 130 Mtce since 2006 to 2009 and advanced meet the five year target.

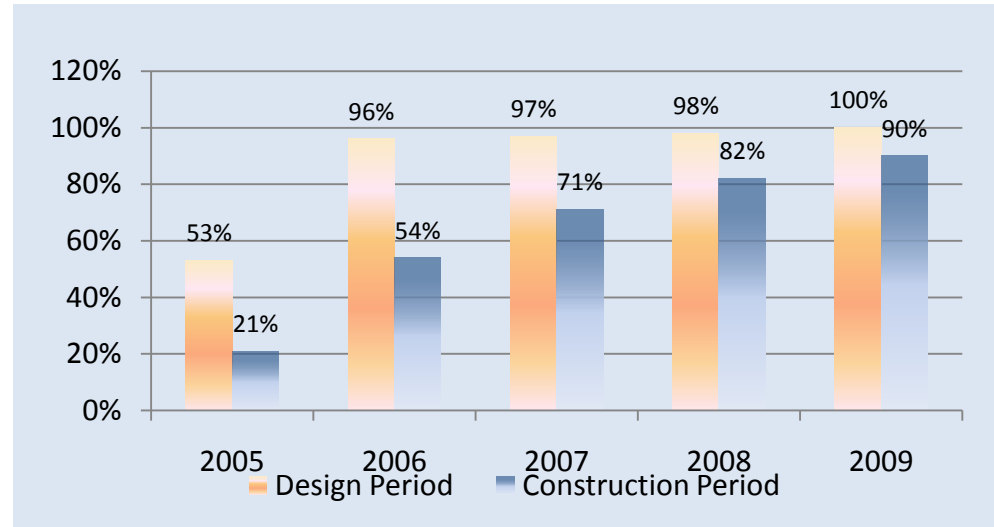


Supplementary monitor and evaluation

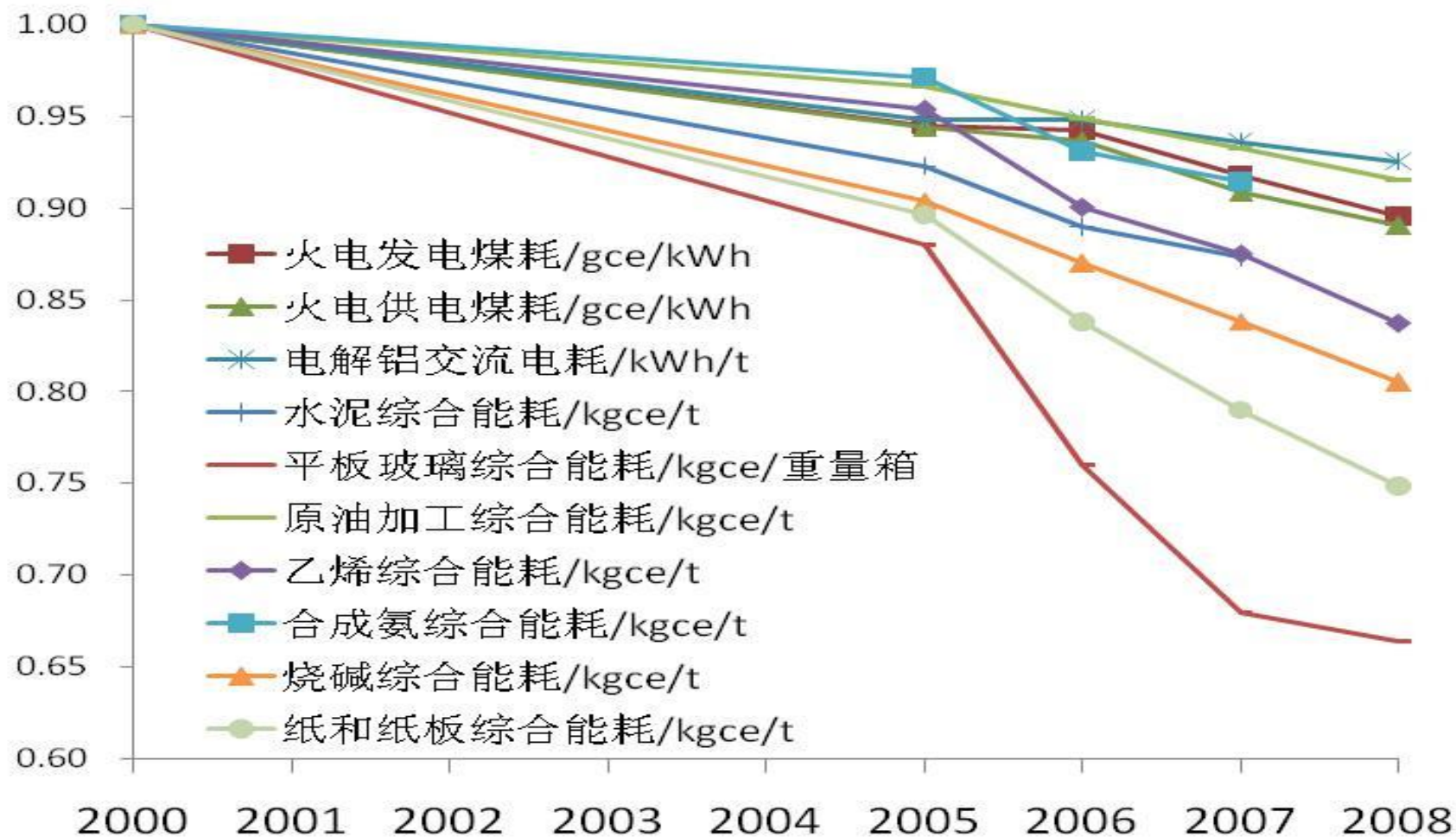
- The Ministry of Housing and Urban-Rural Development takes care of the building EE action plan and enforce the EE codes
 - Supervision is implemented from design, construction and final quality examination, with detailed EE codes and standards for all the new buildings
- Sectoral associations of industries is working on data collection, audit, and benchmarking in their sectors

EE Actions in Building

- Enforcement of EE codes in new buildings improved significantly
- EE Retrofit program for existing buildings in North of China
 - 150 million m² during 2008~2010 as pilot
 - Local governments develop their retrofit programs too
- Public building retrofit program for governments



Significant energy efficiency improvement of Energy Intensive Products



Achievement of EE since 2006

- Accumulated energy intensity (EC/GDP) reduction 14.38% since 2006, comparing to 2005
- Matched 71.9% of total EE target of five years
- Total energy saved 450 Mtce

