

# Chinese Energy Efficiency Obligation Scheme managed by State Grid

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# Chinese Efficiency Policy

- Why
  - Climate change; serious air quality problem, especially haze; energy resource per capita is lower than world average; help to force industry transformation.
- What
  - **1. The central government set an Energy intensity target (energy consumption per GDP), which should decline by 16% from 2010 to 2015, equivalent to 670 million tce of energy saving.**
    - **Energy intensity target decomposition at provincial level.** The national target is decomposed to 31 provinces, and further to cities. The performance assessment is the core that making local government implement the energy-saving policy strictly.
    - **Energy Efficiency Obligation of Ten thousand of Enterprises.** About 16,078 big enterprises consume more than 60% of total energy consumption in China. The energy saving target of each enterprise is given according to the advanced technological level, which add up to 250 million tce of energy saving in the 12th Five-Years.
  - **2. Elimination Policy of Backward Production Capacity.** 19 industries have specific target to remove backward production capacity. The energy saving estimated was 51.4million tce in the 12th Five-Years.
  - **3. Energy Efficiency Obligation of grid companies.** State Grid have made 14.6 million tce of energy saving in the 12<sup>th</sup> five years, exceed the target year.



# Energy Efficiency Obligation Scheme of Grid Companies

- The central government (NDRC and other 5 Ministries) issued “**Electric Demand Side Management Regulation**” in November 2010,
  - Requires that State Grid Corporation and Southern Power Grid Company to achieve **load saving and electricity saving** every year. The amount should be **not less than 0.3%** of the peak load and the electricity sold last year. The government makes evaluation every year.
  - About 65% was from energy saving of grid companies themselves, such as transmission line, distribution line and buildings. About 35% was from energy saving of end-users helped by grid companies with energy service contracts.
- What did State Grid do?
  - The energy saving target is **decomposed to each provincial grid company**. The results influence the performance assessment of top leader of provincial grid company.
  - State Grid has **found 27 provincial ESCOs**, each of them belongs to one of provincial grid company. The provincial grid company decompose more than 35% target of energy saving to ESCO.
  - In the 12th five years, the cumulative load saving is 10.01 GW and the cumulative electricity saving is **46.3 billion kWh**. State grid exceed target for the past four years successively.
  - State Grid has established 6 energy efficiency evaluation organizations granted energy audit qualifications.



# Critical Success Factors and Challenges

- Critical success factors
  - **Scheme of Target Decomposition and performance evaluation.** Target is decomposed to each provincial grid company. And the performance evaluation and promotion of top leader is influenced by the accomplishment of energy saving target.
  - **ESCO and M&V.** The ESCO sign energy saving service contracts with end-users so as to finish the 35% of 0.3% reduction target, some of which have third party monitoring and verification. In order to encourage M&V, the energy saving volume without M&V have lower evaluation (80% of energy saving is counted).
  - **Marketing Advantage.** State Grid's marketing network spreads 26 provinces with hundreds of thousands of marketing staff(meter reading, charging, etc), who know well the energy consumption and credits status of end-users. These marketing staff help ESCO to find potential customer of energy saving service and to reduce the investment risk.
  - **Capital Advantage.** State Grid is national held, which has high financial credit and good financing capability.
- Challenges
  - Because of short-time development, some ESCOs are lack of senior engineers, practical experience and independent intellectual technol



# Changes in the near future

- The power industrial regulations is being reformed in China. After the reforming, the grid companies revenue will most depend on transmission and distribution investment. So the electricity saving of end-users will not have negative impact on the revenue significantly any more. Grid companies will have more interests and positivity on energy saving service.
- State grid require ESCO to do more energy service projects for end-users, and to make energy saving as an important contributor of company development. In next five years, more than 40% of saving target is required to be accomplished from energy saving projects of end-users.
- Data mining and APP service will play more important role, to provide real-time and individual service for end-users, so as accelerate energy saving.
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