附件 6：火电结构优化和技术升级研究的回顾与展望

作者：赵杰 赵锦洋

单位：中国电力工程顾问集团有限公司

背景

电源结构优化和技术升级是一个受到业界乃至社会各界普遍关注的问题。2001年，中国电力工程顾问集团公司（电力规划设计总院）在国家电力公司的指导下，联合有关方面共同努力，历时一年完成了《火电结构优化和技术升级研究》课题报告。

……

I. "报告"中提出的目标、途径和实施计划的简要回顾

……

II. 2004 年火电机组现状

……

III. 近 4 年火电结构优化和技术升级的进程

……

IV. 加快结构调整和技术升级的分析和展望

1. 社会环境
2. 政策环境
3. 在建项目基本情况

2004国家批准开工电站项目61100MW。预计2005年-2007年，年度开工规模与2004年相当，3年总的开工规模约18500-19000MW。经初步分析，纳入3年开工计划的项目有以下特点：

- 1000MW 级机组合计容量约占 8%，600MW 级机组合计容量约占 58%，300MW 级机组合计容量约占 26%，200MW 级机组合计容量约占 2%，135MW 机组合计容量约占 2.5%。大机组比例明显上升。
- 燃煤机组中超超临界机组约占 8%，超临界机组约占 30%，亚临界机组约占 55%。机组参数水平在提高，对节能降耗必将产生积极影响。
- 燃机机组合计容量约占3.5%，按规划预测到2020年，我国燃气蒸汽联合循环机组装机规模将达到60000MW。燃机的装机规模发展走势，将受到其电价水平较高等因素的限制。

……

V. 结论

Annex 6: Retrospect and Prospects for the Research on the Thermal Power Structural Optimization and Technology Upgrading

By Ms Zhao Jie, Mr. Zhao Jin-Yang

From China Power Engineering Consulting Corporation

Background

The thermal power structural optimization and technology upgrading has been concern of the industries and the society for a long time. In 2001, under the guidance of the State Power Corporation, China Power Engineering Consulting Corporation (China Electric Power Design Institute, CEPDI) made a joint effort with other relevant parties to conduct a one-year research project, the Thermal Power Structural Optimization and Technology Upgrading, and the result is summarized in this paper (the Paper).

……

I. Summary of the targets, approaches and plans stated in the Paper

……

II. Current Status of thermal power units in 2004

……

III. Progress of the thermal power structural optimization and technology upgrading in the past four years

……

IV. Assessment and forecasts for acceleration of the optimization of thermal power structures and technology upgrading

1. Social environment
2. Policies environment
3. Status of the projects under construction

The total capacity of the power investment projects approved by the national authorities for ground opening in 2004 is about 61.1GW. It's expected that the annual capacity of ground opening for the 2005-2007 will remain the same as that of 2004, and the total capacity of the ground opening for the 2005-2007 is about 18.5-19GW. The investment projects to be constructed in 2005-2007 can be characterized as follows:

- The proportion of large capacity units has significantly increased. The 1000MW units accounted for about 8% of the total capacity and

600MW unites accounted for about 58%, while 300MW units and 200MW units and 135MW units accounted for about 26%; 2%, and 2.5% of total capacity respectively.

- Unit Parameters have been steadily improved, which will bring positive effect on reducing the energy-consumption. Among the thermal power investment projects, the ultra-supercritical coal-fired units accounted for about 8% and the supercritical unites accounted for about 30%, while the sub-critical unites accounted for about 55%.

- The development of gas turbine unites in terms of the installed capacity will be restricted by the factors of self-demanding for a relatively higher-level of tariff. The gas turbine unites accounted for about 3.5%, and it's expected that by the year 2020, the total installed capacity of China's gas turbine combined cycle units will be about 60 GW.

……

V. Conclusions

……