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Efforts for a sustainable development in China's power sector
and
TPRI's involvement in R&D on clean coal technologies

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Abstract

After a brief introduction of the present situation of China's power sector, a projection of future demand and installations will be briefed. The resulting environmental issues and regulations will be discussed. Since China's energy consumption relies mainly on coal as primary energy source, with the decades long successively rapid increase in fossil based generating capacities in China, environmental issues are of more and more concerns. It is essential to implement clean coal technologies in China's power plants for sustainable development of the electric power industry. Small and old units which deserve no environmental retrofit are being shut down. Supercritical or ultra supercritical parameters with environmental protection equipment are of first priority for new constructions of power plant units. Also CFB technologies find a widespread application for medium capacity boilers. Natural gas combined cycle units are being planned or built. These are the effective solutions to minimize environmental impacts and will be discussed in the paper.

Apart from up-to-date environmentally friendly hardware technologies, optimization of power plant operation is another important contributor to sustainable development of power sector. As the highest level research and consulting organization in China's power sector, TPRI has been devoted to consulting to power plant operators for improvement of plant economy, reliability and environmental compatibility. Its R&D on clean coal technologies covers a widespread spectrum including CFB, low NO_x combustion, FGD, ultra supercritical units, IGCC etc. This paper will provide an overview of activities in CCT and some of the application cases.