

Present Status, Main Barriers and Future Development of Distributed Generation (Distributed Energy Resources) in China

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Distributed Generation (DG) or Distributed Energy Resource (DER) is growing fast in some countries in the world. Although it just began to develop, DG (or DER) has aroused more and more concern in China for the following reasons. It often adopts the type of combined heat and power generation and has good economic value, improving the efficiency of energy utilization or making use of renewable energy. This is especially important in the situation of fast growing electric power load and shortage of primary energies in China. Generation with combustion engine using natural gas, fuel cell using hydrogen, photovoltaic power, small size wind power generators and biomass will benefit the environment protection and lower the emission of NO_x or SO_x etc. In the restructuring of deregulation environment of power sector, DG is suitable to meet the need of power market development, and the small scale installed capacity and the short period of construction would lower the risk of investment. Also it has much more advantages.

In this paper, firstly, the importance of developing DG in China is described. The present status of DG development in China is introduced, focusing on the combined heat and power generation with gas turbine, gas engine and micro-turbine using natural gas, biomass generation using marsh gas or gas generated from straw and photovoltaic power generation etc.

Secondly, the main barriers and obstacles in the application of DG technology is analyzed, including grid-interconnection, fuel supply, energy policy, environment protection, power market, economy and utilization efficiency of energy resources.

Finally, the technical focal point of R & D for promoting DG is given and the future development prospect of DG is presented.