

China is turning its head to smart power generation



Will it soon see an end to its curtailment era?

With China curtailing around 15% of its potential wind energy in 2015, a shiny solution is gaining fervent support: smart power generation (SPG).

SPG installations in Southern China could help the efficient absorption of variable wind energy transmitted from the north, argues Xiaoping Chen, GM, energy solutions and vice president at Wartsila, China.

Chen explains that the technology behind SPG is modular power based on internal combustion engines, allowing it to balance variable renewable energy by starting in less than one minute and reaching full load in less than five minutes.

He argues that plants will operate at high efficiency at any load and allow unlimited number of starts and stops with no impact on maintenance.

How will this help China manage its curtailment rate? Whilst variable renewable energy currently accounts for around 6% of total generation in China, experts reckon wind curtailment has become a significant issue. Total curtailed wind volume more than doubled to 33.9TWh in 2015 from 12.6TWh the previous year, notes Liutong Zhang, senior manager at The Lantau Group, Hong Kong.

Total curtailment amount in 2015 for wind and solar is equivalent to Singapore's power consumption. "The causes of curtailment are manifold," says Michael Davidson, a PhD candidate at the Massachusetts Institute of Technology, "High penetrations of wind in provinces far from load centres, inflexibility of the coal-heavy generation mix, and institutional barriers

owing to incomplete power deregulation.”

“China’s transition to a truly reliable and sustainable power system requires a new approach to incentive investment in flexible generation,” Chen says, insisting that SPG will bring increased flexibility in the system and enable integration of larger shares of wind and solar energy.

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