

Clean coal power

In 2010, China's installed coal power capacity reached 650 million kilowatts, comprising 92% of all thermal power and 68% of all power generation with about 50% of China's coal used to generate electricity. As coal is China's dominant fuel for electricity generation, it is a critical question for China as to how to efficiently and cleanly utilise coal to generate electricity and which technological path to follow to bring about sustainable development.

Trajectory 1

In this scenario, high-temperature ultra supercritical coal-fired power stations and IGCC remain in the theoretical and experimental phase and are not commercialised. The proportion of China's supercritical and ultra supercritical coal-fired power stations increases slowly, and China continues to rely mainly on subcritical coal-fired power stations. By 2050, the proportion

of subcritical coal-fired power stations is 54% and supercritical and ultra supercritical power stations account for 28% and 18% respectively.

Trajectory 2

In this scenario, high-temperature ultra supercritical technology and IGCC remains in the theoretical and experimental phase, but ultra supercritical technology becomes highly sophisticated, becoming the dominant technology in coal power generation. In 2050 the proportion of China's subcritical coal-fired power stations declines to 5%, with supercritical also accounting for 5% and ultra supercritical accounting for 90%.

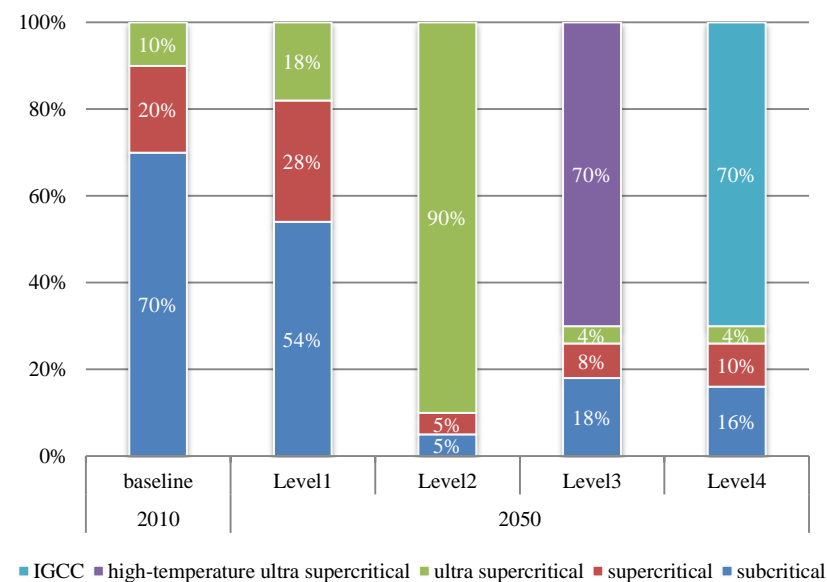
Trajectory 3

In this scenario, China's high temperature ultra supercritical technology sees a significant breakthrough, and from 2020 it begins to operate commercially on a wide scale. High temperature ultra

supercritical technology becomes a dominant technology in future electricity generation, and by 2050 it accounts for 70% of coal power.

Trajectory 4

In this scenario, policy views emissions reductions as a priority, IGCC technology is widely adopted and there is a significant drop in its operating costs. By 2020, it begins to operate commercially on a wide scale. IGCC electricity generators become China's dominant apparatus for electricity generation accounting for 70% of all electricity generation.



China's coal power technology options