

Coal chemical industry

Trajectory 1

In this scenario, over the next 40 years, China's coal to oil and coal to gas technologies do not mature, and large scale coal liquefaction and coal gasification projects cannot be commercialised. China's coal to oil and coal to gas industries will see no growth, and will remain at 1.5 million tons and 4 billion m3 respectively.

Trajectory 2

In this scenario, in 2020 direct and indirect coal liquefaction prototype projects are successful, and can be commercially utilised. In 2020, liquefied coal predominantly comes from prototype projects and totals 6.5 million tons. In 2050, this expands to 26 million tons. In 2025, coal

gasification prototype projects are successful. In 2020, coal to gas totals 6 billion m3, and grows to a total of 18 billion m3 in 2050.

Trajectory 3

In this scenario, in 2020 China concludes the research and development of liquefied coal technology, with a 1 million ton prototype project and a 100,000 ton prototype project in operation. Coal to oil is economically competitive. In 2020, coal to oil production reaches 9.5 million tons; in 2030 this grows to 28.5 million tons. Following this, there is an annual increase in capacity of 2 million tons, reaching 36.5 million tons in 2050. Coal to gas technology becomes highly developed by 2020 using natural gas pipelines and with a pilot scheme up and running. In 2020, coal to gas production reaches 8 billion m3, in

2020 it reaches 18 billion m3 and in 2050 it reaches 26 billion m3.

Trajectory 4

In this scenario, 2015 will see the end of the testing and improvement phase for coal liquefaction and gasification technology. Coal direct and indirect liquefaction prototype projects are completed, production lines are constructed and testing is concluded; all with independent intellectual property rights. In 2020, coal liquefaction production reaches 16 million tons and coal to gas production reaches 11 billion m3, rising to 54 million tons and 37 billion m3 respectively in 2050.