

Heating/cooling methods

Due to its diverse climate, differences in heating needs of different regions are stark. Currently, China's northern areas place the most emphasis on heat provision with the majority of areas utilising independent heat supply. The period for which the Yangtze river basin requires heating is relatively short, and mainly relies on electric heating, electric air conditioning and ground source heat pumps. With respect to cooling, the whole country currently relies on air conditioning, with the majority of areas beginning to adopt new energy saving air conditioning and ground source heat pumps as cooling technologies.

Heating methods

Trajectory 1

In this scenario, approximately 70% of heating in the North comes from the residual heat of combined heat and power generation and this

is the most important heat supply.

Approximately 30% of heating comes from independent heat supplies such as solid fuel boilers, gas fuel boilers, and electrical heaters etc., which are the dominant forms of independent household heat provision.

Trajectory 2

In this scenario, standalone heat provision rises to 70% in the North, with gas boilers as the predominant source of heat supply. The Yangtze River basin predominantly relies on electrical air conditioning (50%), ground source heat pumps and electrical heaters, with geothermal heating as a complementary form of independent household heating.

Trajectory 3

In this scenario, centralised heat provision in the North of China rises to 80%, and residual heat of combined heat and power generation is used as the dominant heat supply. Independent heat provision uses gas boilers as a primary heat source. The Yangtze River basin adopts

electrical air conditioning and ground source heat pumps as dominant standalone heat supply methods.

Trajectory 4

In this scenario, centralised heat provision in northern areas of China falls to 40%, and the residual heat from combined heat and power generation is used as a dominant heat supply. Standalone heat provision plays a leading role, principally through the use of ground source heat pumps. The Yangtze River basin utilises ground source heat pumps as the most important heat provision method.

Cooling methods

Trajectory 1

In this scenario, cooling technology remains at the current level of development. Usage of ordinary air conditioning is 85%, and the usage of new energy-saving air conditioning is 15%.

Trajectory 2

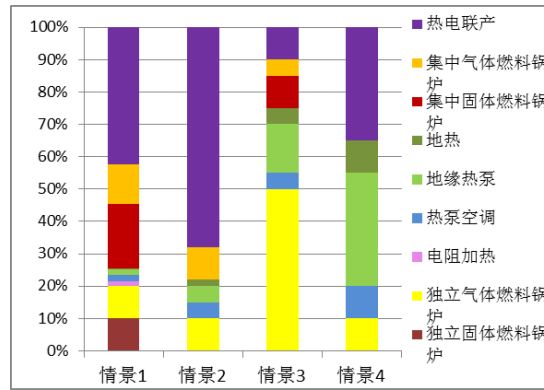
In this scenario, all newly installed air conditioning will be energy-saving air conditioning, making up 40% of total air conditioning usage. However new energy-saving air conditioning will still rely on electricity.

Trajectory 3

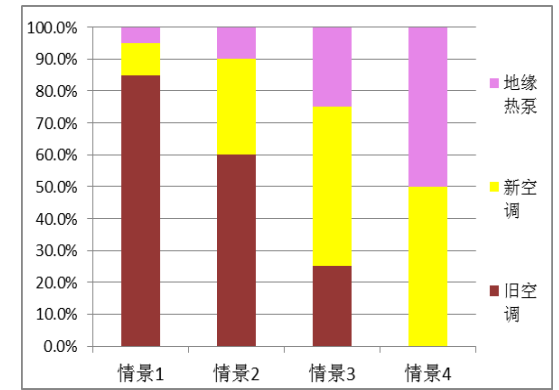
In this scenario, all newly installed air conditioning will be energy-saving air conditioning, and also some areas will change all of their ordinary air conditioning to these new technologies.

Trajectory 4

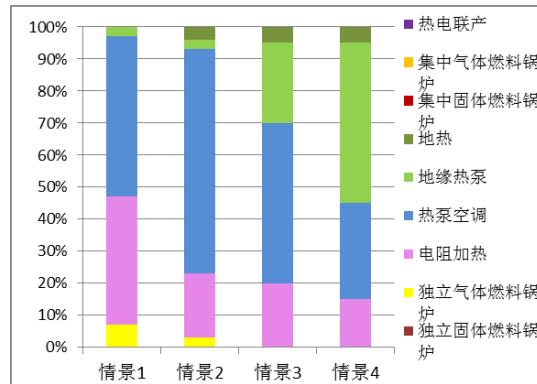
In this scenario, all newly installed air conditioning will be energy-saving air conditioning. Of energy-saving air conditioning, the proportion powered by non-electrical means such as by ground source heat pumps rises to 50%.



Heating methods in the north of China



Cooling methods



Heating methods in the Yangtze river delta