

Building insulation

The insulation performance of a building is dependent on the heat preservation of its external walls, the structure and material of its external windows and the ratio of window to wall area, and is measured by heat transfer ratio. If other conditions are constant, a decline in the heat transfer ratio of such structures will lead to a decline in energy intensity. Currently, the average heat transfer ratio of buildings in the north of China is 1.2 watts/m², the ratio of buildings in the Yangtze river basin is 1.7 watts/m², and the ratio of buildings in the south of China is 2 watts/m².

Trajectory 1

In this scenario, China does not raise energy-saving standards for its buildings. The heat insulation performance of buildings does not change. In 2050, the average heat

transfer ratio of buildings in the north of China is 1.2 watts/m², in the Yangtze River basin it is 1.7 watts/m² and in the south of China it is 2 watts/m², the same as in 2010.

Trajectory 2

In this scenario, higher energy-saving standards for buildings are implemented. In 2050, the average heat transfer ratio of buildings in the north of China is 1.0 watts/m², in the Yangtze River basin it is 1.5 watts/m² and in the south of China it is 1.7 watts/m², a 10%-17% reduction on 2010's levels.

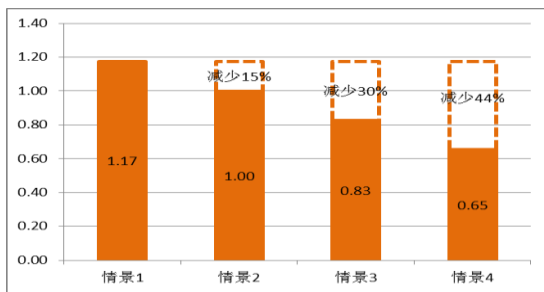
Trajectory 3

In this scenario, the state promotes energy-saving construction and new building materials start to be used. The heat insulation performance of newly constructed buildings sees a substantial improvement. In 2050, the average heat transfer ratio of buildings in the north of China is 0.8 watts/m², in the Yangtze River basin it is 1.3 watts/m² and in

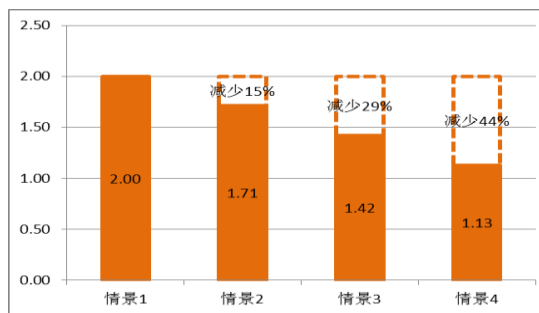
the south of China it is 1.4 watts/m², a 23%-34% reduction on 2010's levels.

Trajectory 4

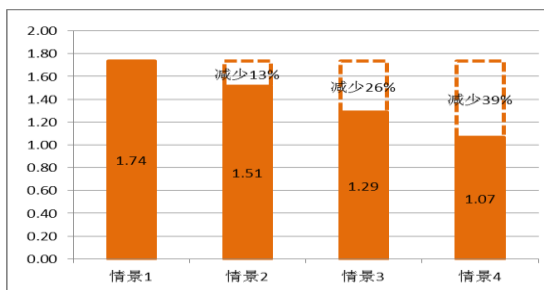
In this scenario, existing buildings undergo energy-saving remodelling and the energy-saving standards for newly constructed buildings are raised. As such, there is a significant increase in the heat insulation performance of buildings. In 2050, the average heat transfer ratio of buildings in the north of China is 0.7 watts/m², in the Yangtze River basin it is 1.0 watts/m² and in the south of China it is 1.1 watts/m², a 35%-45% reduction on 2010's levels.



Scenarios of Building Structure in the North (W/m²•K)



Scenarios of Building Structure in the South (W/m²•K)



Scenarios of Building Structure in the Yangtze River Basin (W/m²•K)