Per unit energy consumption and energy structure

Along with technological progression, there has been an increase in energy exploitation efficiency and improvements to energy consumption structure. For China's light industry energy consumption structure, the use of gaseous fuels and electricity has seen a big increase and the use of solid fuels (most importantly coal) and liquid fuels (most importantly oil) has begun to decline. Heat consumption has remained stable.

Changing energy consumption structure is a vital phase in making progress saving energy and reducing emissions. The emissions produced when solid fuels are burnt are 1.3 times that of liquid fuels and 2.2 times that of gaseous fuels. Along with China employing clean methods of generating electricity, emissions from electricity will become even smaller, having a huge effect on the energy saving and emissions reductions transformation of current energy structure.

Trajectory 1:

In this scenario, the energy consumption structure of China's light industry stays the same as it is currently. Aside from small changes to the use of liquid fuels and electricity in the textile, plastic and rubber industries, energy consumption structure does not change.

Trajectory 2:

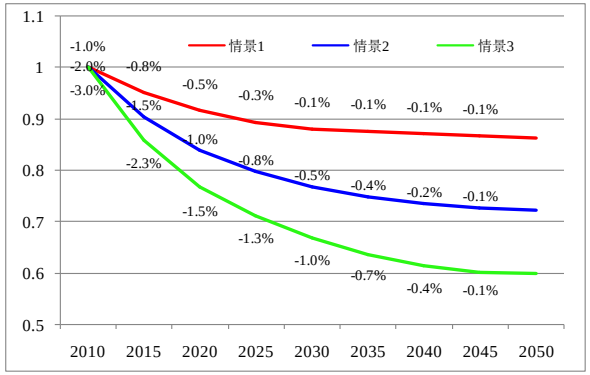
In this scenario, China optimises its industrial structure, and begins to phase out its industries with lagging production, improves safety, improves environmental protection measures, lowers energy consumption, improves quality and land etc. , reducing energy consumption and emissions of light industry energy consumption structure.

In this trajectory, the plastic and rubber industries see their energy consumption from solid and liquid fuels declining fastest, followed next by the textile industry and finally by the paper industry and the food industry. Of these, the plastic and rubber industries' solid fuel consumption declines by 1/4 compared to current consumption by 2020, declines by 3/7 compared to current consumption by 2030 and declines by 6/7 compared to current consumption by 2050. Correspondingly, there is a big increase in the consumption of gaseous fuels and electricity. To use the textile industry as an example, consumption of gaseous fuels grows 2.2 fold on current consumption levels by 2020, grows almost 5.5 fold on current consumption levels by 2030 and grows 13.6 fold on current consumption levels by 2050.

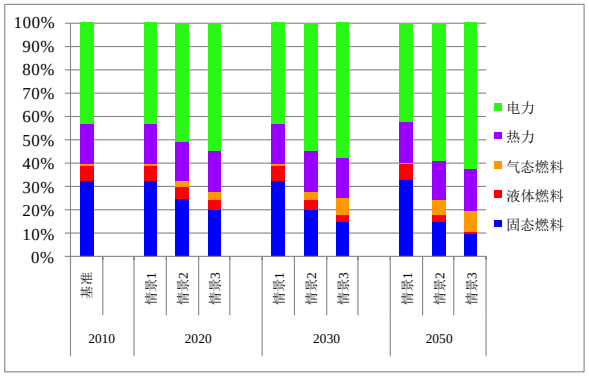
Trajectory 3:

In this scenario, China optimises industry structure and develops industries that are lagging in production. There is a significant upgrade to energy saving technology and there is a breakthrough in the energy-saving and emissions reductions industry. In this trajectory, the energy consumption structure is more reasonable than in trajectory 2 and is the most optimised energy structure possible. There is a rapid decline in the four major sectors of light industry's consumption of solid and liquid fuel, and a significant increase in the consumption of gaseous fuels and electricity. Aside from a proportional decline in the consumption of thermo energy, other industries' consumption of thermo energy do not change. The plastic and rubber industries' solid fuel consumption declines by 3/7 compared to current consumption by 2020, declines by 5/8 compared to current consumption by 2030 and declines by 6/7 compared to current consumption by 2050.

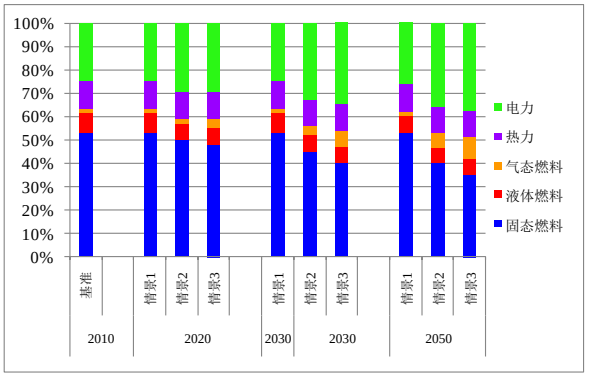
Consumption of gaseous fuels in the textile industry grows extremely fast, growing 5.5 fold on current consumption levels by 2020 and growing almost 10.35 fold on current consumption levels by 2030.



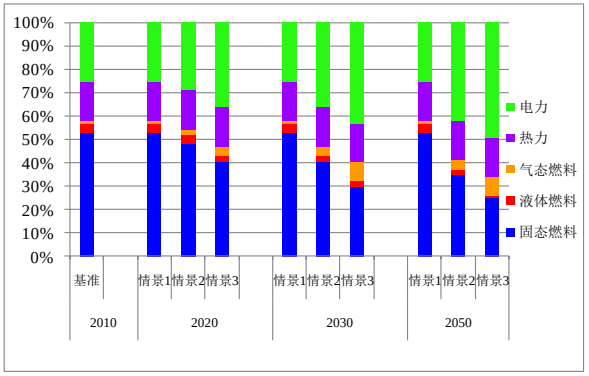
Energy consumption per unit of each light industry



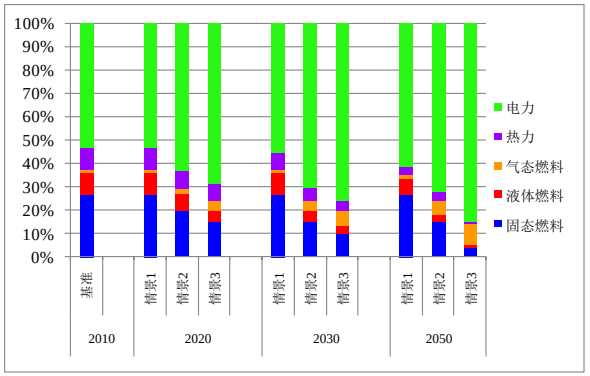
The textile industry’s energy consumption structure



The food industry’s energy consumption structure



The paper manufacturing industry’s energy consumption structure



The plastic and rubber industries’ energy consumption structure