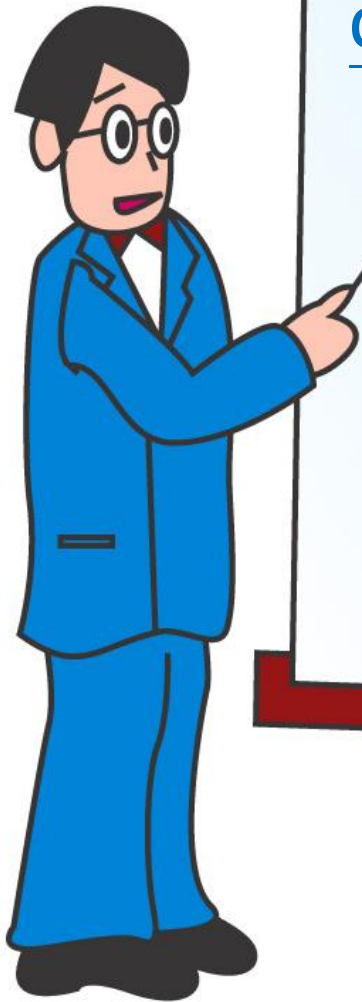


Teacher Version

PowerPoint Series on Geography of China (6) – Energy resources of our country

Personal, Social and
Humanities Education Section,
Curriculum Development
Institute, Education Bureau

Notes to Teachers – The learning & teaching of energy resources of China and its linkages with the junior secondary geography curriculum

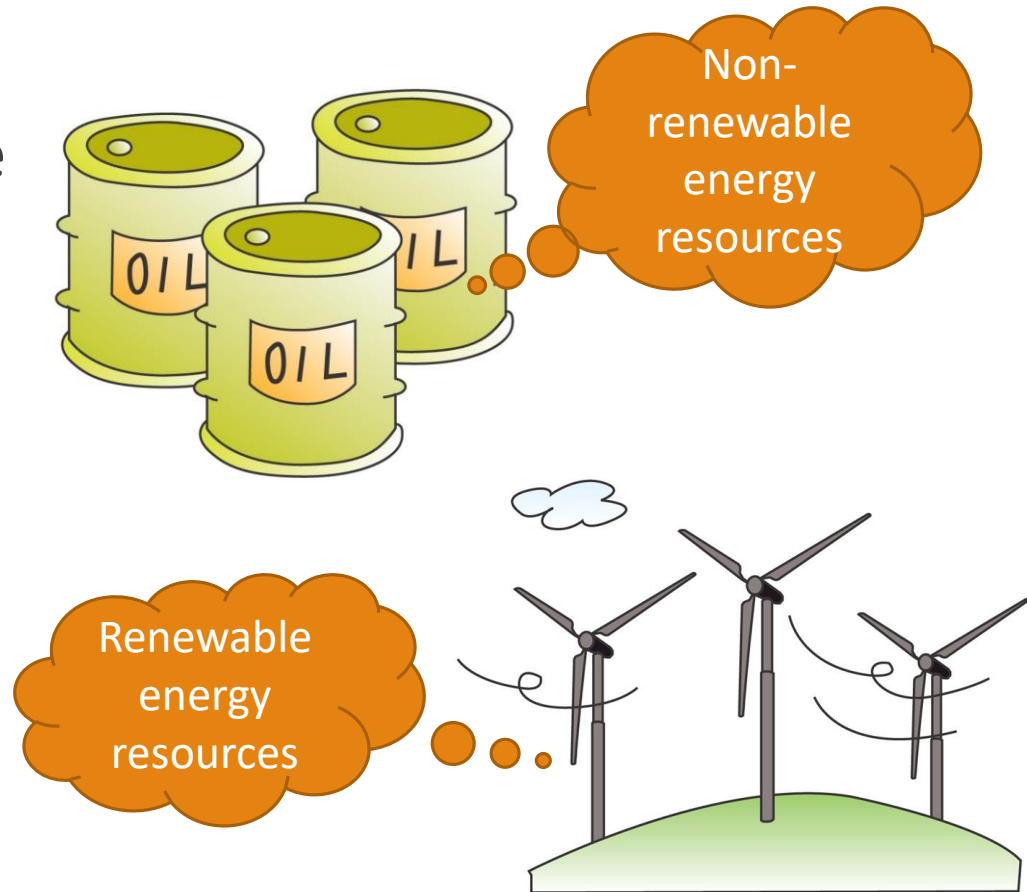


When teaching the module – “**Scramble for Energy**” in the ***Geography Curriculum Guide (Secondary 1-3) (2011)***, teachers can teach the information in this PowerPoint as an example to give students a basic understanding of our country's energy resources.

Types of energy resources in our country

Our country's energy resources are rich and diverse. Examples include

- coal
- oil & natural gas
- oil shale
- geothermal
- hydroelectric power
- wind energy



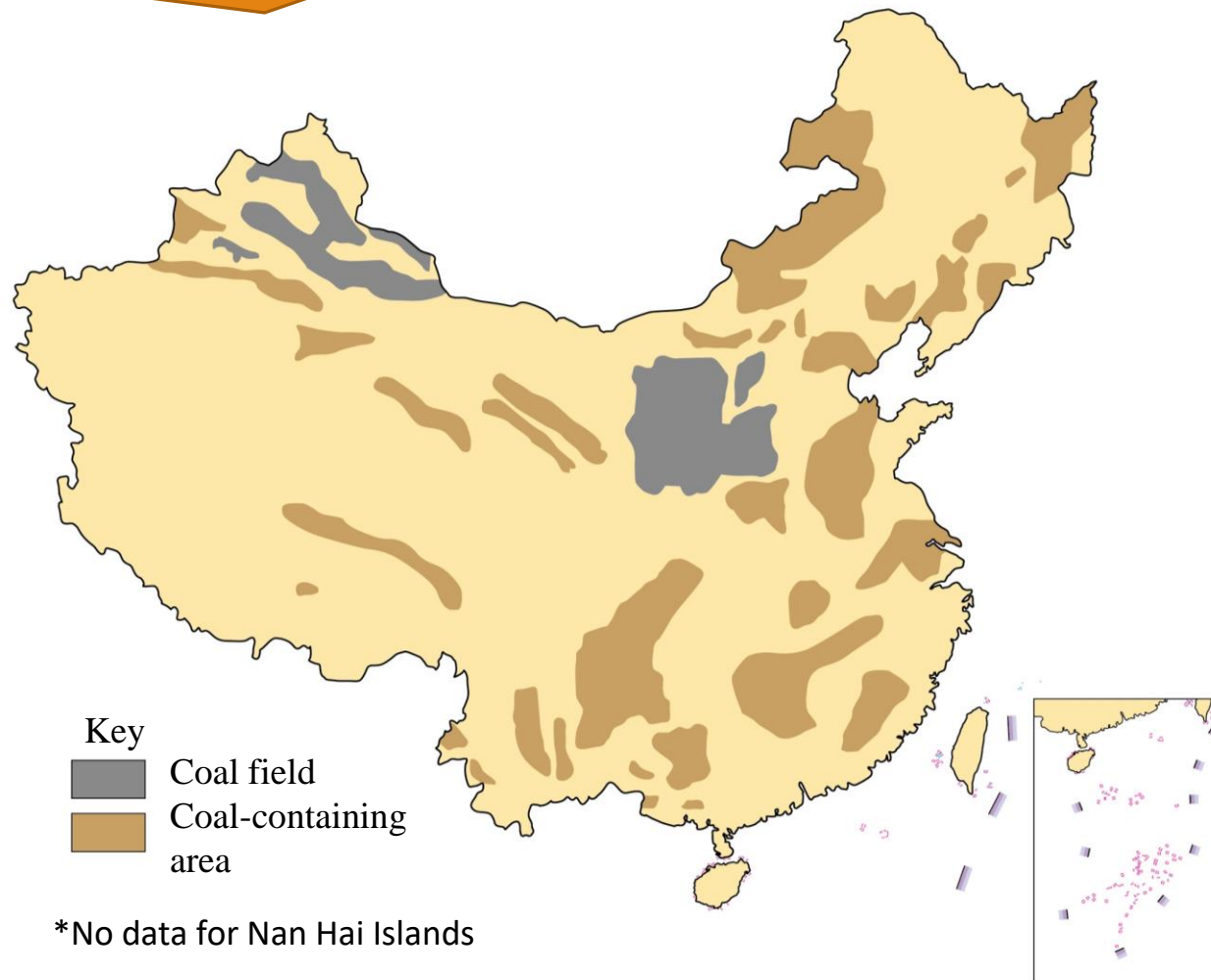
Examples of non-renewable energy resources

❖ 1) Coal :

Our country's known coal-bearing area accounts for about 5.7% of the country's land area. It is estimated that our country's total coal reserves within 2,000 meters of depth rank third in the world after Russia and the United States. Of the proven reserves, bituminous coal accounts for 75%, anthracite coal accounts for 12%, and lignite coal accounts for 13%. According to the current mining speed, coal mining in our country can continue for about 500 years.

Figure 1 The distribution of coal resources in our country

(Source: P.172 of the book “Learning the Geography of China through Reading (Part 1): The physical environment” published by the Education Bureau (Hong Kong) in 2013.)



In terms of the overall distribution of coal in our country, there is more in the north and less in the south (Figure 1). If Chang Jiang is set as the boundary, the area north of Chang Jiang accounts for more than 90% of the reserves, of which Shanxi, Shaanxi and Nei Mongol account for 64%. On the contrary, most provinces in the south are short of coal.

❖ 2) Oil & natural gas :

Although our country's oil and gas resources are abundant, its per capita reserves are only 1/9 of the world's per capita. Our country has changed from a net oil exporter to a net importer since the 1990s.

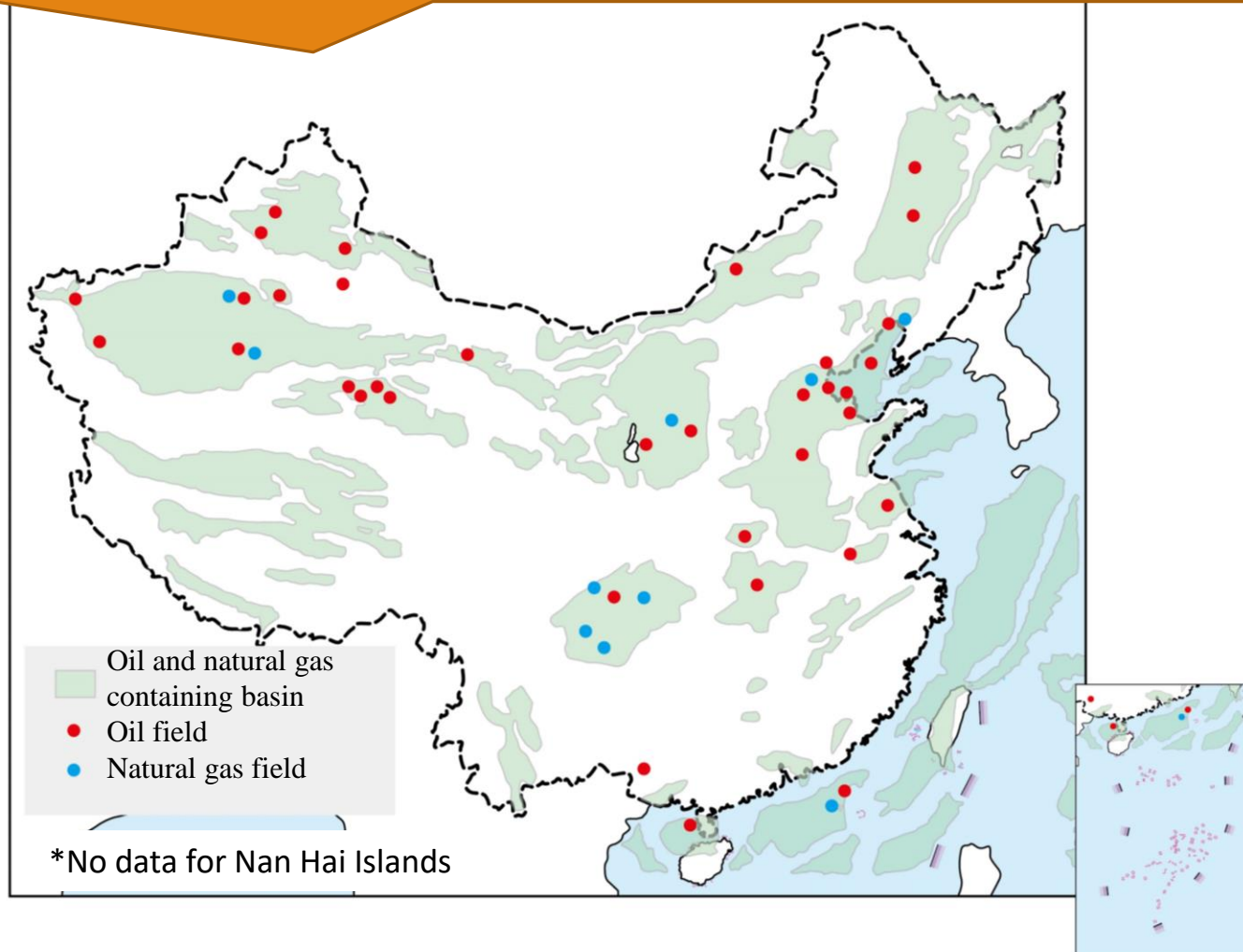
About 340 oil and gas basins have been discovered in our country, and more than 440 oil and gas fields have been discovered in the 145 proven basins. New oil and gas resources are expected to be discovered continuously.

Our country's oil resources are mainly concentrated in the following three regions in North China (“Three-North” regions) (Figure 2):

- Northeastern region (e.g. Daqing Oil Field in Songliao Basin)
- Northern part of our country (e.g. Shengli Oil Field)
- Northwestern part of our country (e.g. Tarim Basin, Qaidam Basin and Zungar Basin)

Figure 2 The distribution of oil & natural gas resources in our country

(Source: P.173 of the book “Learning the Geography of China through Reading (Part 1): The physical environment” published by the Education Bureau (Hong Kong) in 2013.)



Examples of renewable energy resources

- ❖ Examples of renewable energy which have developed relatively mature in our country include hydroelectric power, solar energy and wind energy.
- ❖ **1) Hydroelectric power:**
 - In terms of amount of river flows, our country is one of the countries in the world richest in water resources.
 - The distribution of our country's water energy is the most abundant in rivers of the southwestern regions and Chang Jiang, but the demand for electricity is mainly concentrated in the eastern coastal regions.

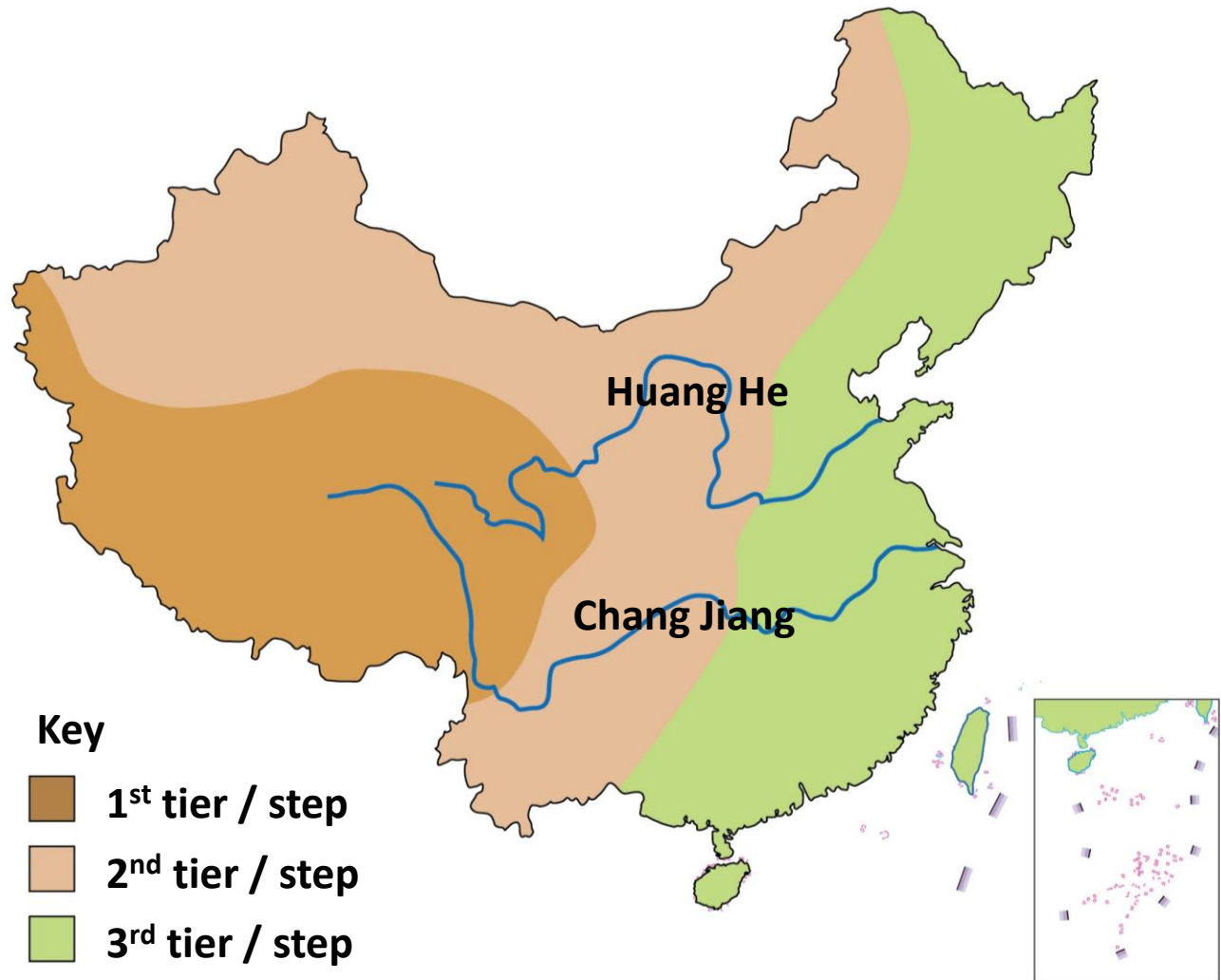
Table 1 Examples of the distribution of hydroelectric power resources in our country

River system	Theoretical annual power generation (billion kWh)	Actual annual power generation (billion kWh)
Rivers in South China	293.3	112.5
Rivers in southwestern part of our country	2,248.2	506.8
Chang Jiang	2,347.8	1,027.5
Huang He	355.2	117.0
Huaihe	12.7	1.9

- The power of generating hydroelectricity of a river depends on two factors: amount of runoff and whether a large drop in elevation is present. The topography of our country is high in the west and low in the east, showing a pattern of tiers. Many rivers in our country have a large drop in elevation when flowing through the junctions of the tiers and turbulent water flows are found at such junctions, so the water power reserves are huge (Figure 3).
- Our country's hydroelectric power reserves reach 680 million kilowatts, ranking first in the world, of which the Chang Jiang river system, and the upper and middle courses of Huang He and Zhujiang are particularly rich.
- Most of the hydroelectric power stations that have been developed in our country are mainly found in the upper courses of Chang Jiang, Huang He and Zhujiang.
- Overall, there are more hydroelectric power resources 1) in South China than North China and 2) in the western part of China than East China.

Figure 3 A map showing the three-tier pattern of relief & major rivers of our country (& related information)

River	Length of the river (Source of data : 《China Statistical Yearbook 2021》)	Annual runoff (Source of data : 《China Statistical Yearbook 2021》)
Huang He	5,464 km	59.2 billion cubic meters
Chang Jiang	6,300 km	985.7 billion cubic meters



❖ 2) Solar energy:

- Our country is one of the countries rich in solar energy resources, and about 2/3 of the country has more than 2,000 hours of sunlight per year.
- The total solar radiation in our country is the highest in Xizang, while regions with relatively high total solar radiation include Qinghai, Xinjiang, Gansu, Ningxia and parts of Sichuan (Figure 4).

Figure 4 The distribution of solar energy resources in our country

(Source: P.176 of the book “Learning the Geography of China through Reading (Part 1):
The physical environment” published by the Education Bureau (Hong Kong) in 2013.)

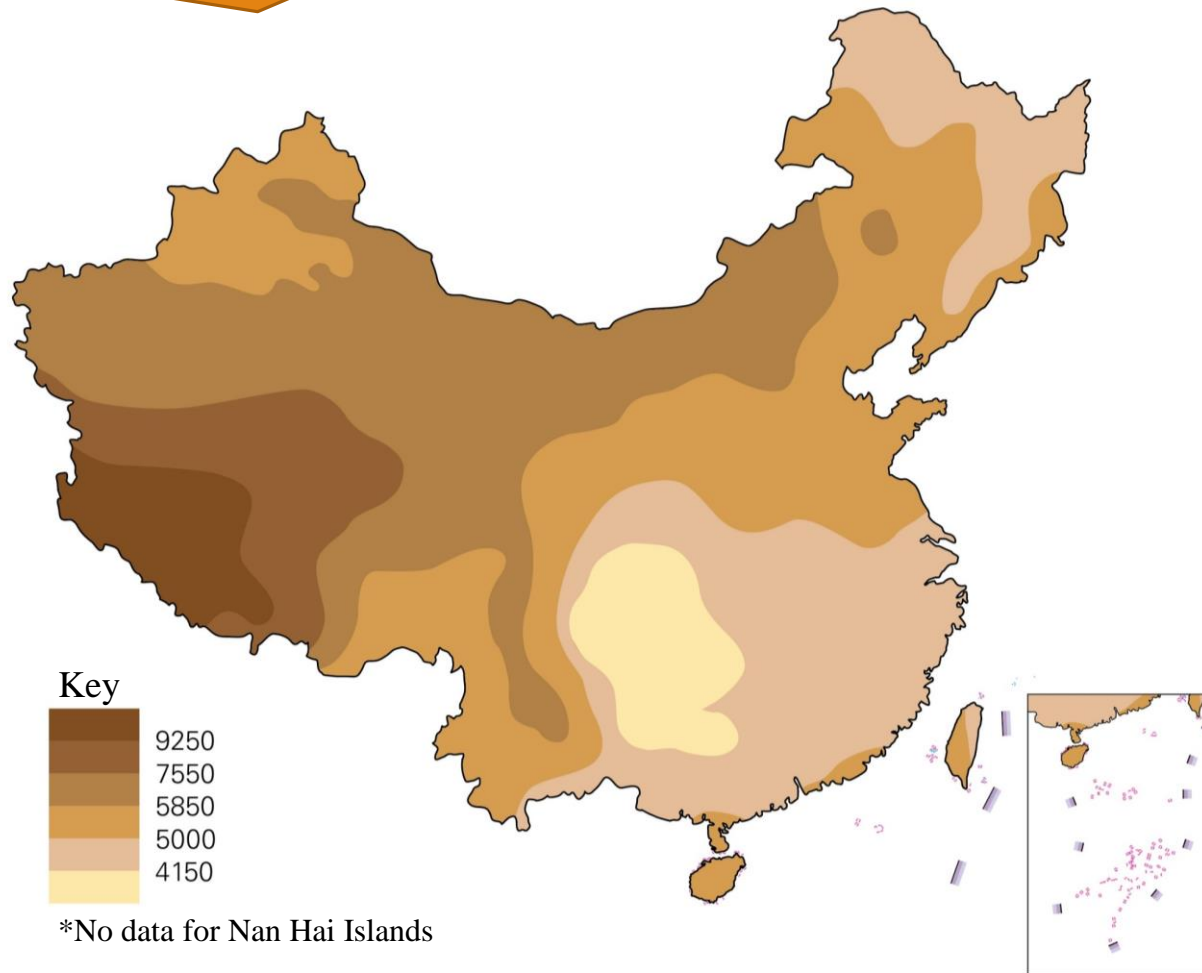
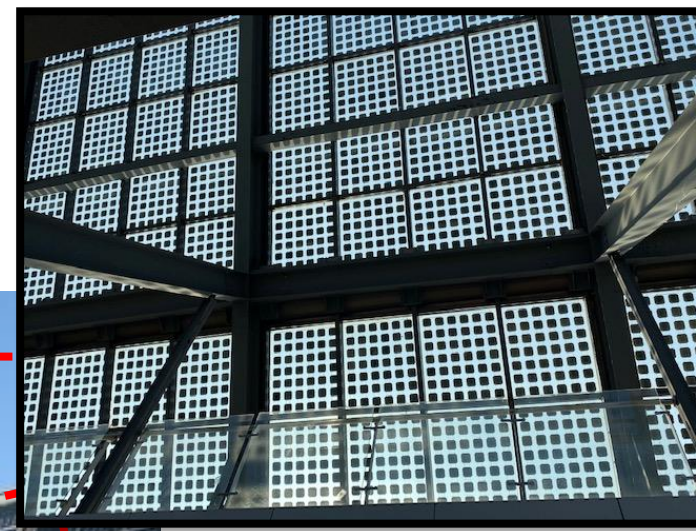


Figure 5 Solar energy facilities on Chongming Island in Shanghai



❖ 3) Wind energy :

- Our country is rich in wind energy resources, including inland and offshore wind energy (Figures 6 and 7) .
- In terms of distribution, the regions with the most abundant wind energy resources in our country are the northeastern, northern and northwestern parts of our country (Figure 8).



Figure 6 Wind power facilities on Chongming Island in Shanghai



Figure 7 Wind power facilities at the sea near Chongming Island in Shanghai



Figure 8 The distribution of wind resources in our country

(Source: P.176 of the book “Learning the Geography of China through Reading (Part 1): The physical environment” published by the Education Bureau (Hong Kong) in 2013.)

