## *Data Sources*

The data used in this study are from publicly available information from various official agencies. The data sources as well as the base year data are shown in the table below. Among them, the 2017 input-output table is from the national economic accounting section in China Statistical Yearbook 2019; other sources of energy consumption data for each industry in previous years such as BP World Energy Statistical Yearbook are biased to underestimate the actual consumption value; other sources of carbon emissions for each industry in previous years such as BP are biased to underestimate the actual emission value and Emission Database for Global Atmospheric Research (EDGAR) are biased to overestimate the actual value.

Table 1 Data Sources

|  |  |  |  |
| --- | --- | --- | --- |
| **Demand** | **Data Categories** | **Time(Year)** | **Sources** |
| Economy | Input-Output Table | 2017 | China Statistical Yearbook 20191 |
| GDP, Industry Added- Value | 2000-2019 | China Statistical Yearbook 20202 |
| Energy | Energy consumption in total and by industry | 2000-2019 | China Energy Statistics Yearbook 20203 |
| Energy consumption per capita | 2000-2019 | BP Statistics review of world energy 20214 |
| Populations | 2020-2060 | United Nations Population Division5 |
| Carbon | Carbon Emissions in Total and by Industry | 2000-2019 | China Carbon Emission Accounting Database (CEADs)6 |
| Electricity | Basic data of different electricity generation technologies: electricity generation capacity, installed capacity | 2000-2019 | China Electric Power Yearbook 20207 |
| Electricity generation capacity of the different electricity generation technologies | 2020-2050 | International Energy Agency (IEA)：World Energy Outlook 20218 |

Table 2. Key data for China of economic, energy and carbon emissions

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Industry** | **Added value**  **(billion CNY)** | | | **Energy consumption**  **(Mtce)** | | | **Carbon emission**  **(Mt CO2)** | | |
| 2000 | 2010 | 2019 | 2000 | 2010 | 2019 | 2000 | 2010 | 2019 |
| Primary industry | 1472 | 3843 | 7047 | 42.33 | 72.66 | 9018 | 43.5 | 79.1 | 87.12 |
| Secondary industry | 4566 | 19162 | 38067 | 1052.21 | 2669.11 | 331646 | 2472.7 | 6921.2 | 8260.8 |
| Tertiary industry | 3990 | 18206 | 53537 | 208.16 | 500.01 | 85115 | 314 | 682.7 | 980 |
| Residential | - | - | - | 166.95 | 364.70 | 61709 | 173.2 | 221.5 | 478 |
| Total | 10028 | 41212 | 98651 | 1469.64 | 3606.48 | 487488 | 3003.4 | 7904.5 | 9806 |

# References

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4. *Statistical Review of World Energy 2021* (British Petroleum,2021).
5. United Nations Population Division. *World Polpulation Prospects 2019* http://creativecommons.org/licenses/by/3.0/igo/.
6. China Carbon Emission Accounting Database (CEADs). *Carbon Emission Inventory for China by Sector 1997 – 2019;* https://www.ceads.net.cn/data/nation/.
7. National Bureau of Statistics of China (NBSC) *China Electric Power Yearbook 2020*; (China Electric Power Press: Beijing, 2021).
8. IEA *World Energy Outlook 2021* (International Energy Agency, 2021).