

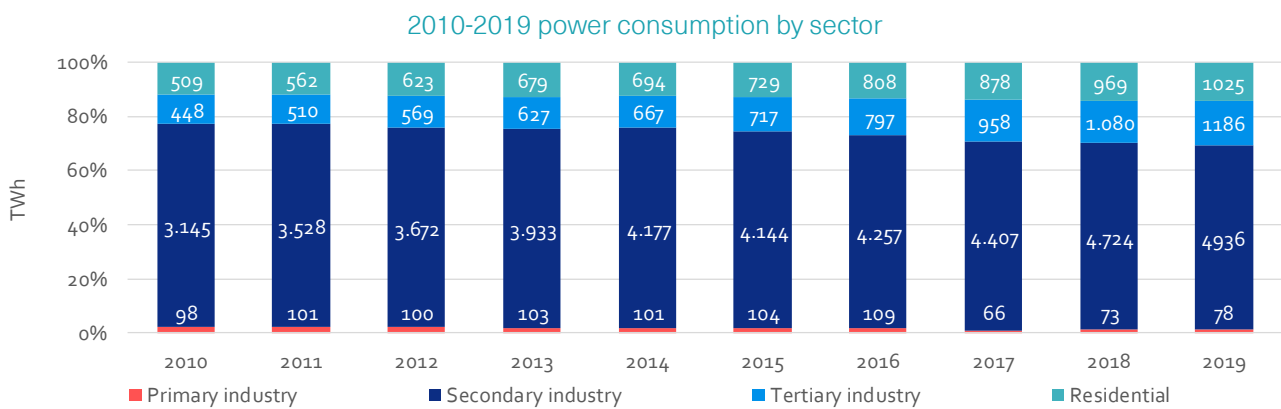
3. 2019 China energy statistic data

Fossil fuel consumption continues to grow

The use of fossil fuels in China continued to grow in 2019. The annual production of raw coal reached 3,750 million tons, a 4.2% year-on-year increase, and the import of raw coal increased to 300 million tons, a 6.3% increase compared to 2018. Natural gas production increased by 9.8% and the import of natural gas increased by 6.9%. The domestic oil production increased by 0.8% in 2019 to 190 million tons, while the import of oil grew by 9.5% to 510 million tons.⁸

Slowdown in the electricity consumption growth

After a significant increase of 8.5% in China's electricity consumption in 2018, the growth slowed in 2019. China's total electricity consumption grew 4.5% in 2019 and reached 7,225 TWh. The electricity consumption grew 4.5% in the primary industry sector, 3.1% in the secondary industry sector, 9.5% in the tertiary industry sector and 5.7% in the residential sector. It reflects the general economic transformation, where the growth rate of the secondary sector is slower than in the tertiary industry and residential sectors. Telecom, software and IT industries continued to show strong growth. Geographically, West China had the highest growth rate in the country, with a year-on-year growth rate of 6.2%.⁹



Source: China Electricity Council (CEC), accessed in January 2020

Renewable energy took up more than half of incremental power capacity

By the end of 2019, China had a total installed capacity of 2,011 GW, a 5.8% year-on-year increase, of which 40.8% is non-fossil fuel. The country added 111 GW of new capacity, with 92% connected to the grid.¹⁰ Wind power increased by 26 GW up to 210 GW (in 2018 new installations amounted to 20 GW). Solar power capacity increased by 30 GW up to 200 GW in total (in 2018 new installations amounted to 45 GW).¹¹ The decrease in new solar power installations is mainly due to the uncertainty of the new PV auction mechanism, so the time left for new projects to be completed in 2019 was short.¹² Nevertheless, renewable energy took up 54.0% of this newly added capacity.¹³ Incremental biomass power capacity was 4.73 GW, a 56% year-on-year increase; the biggest growth in absolute value in its history.¹⁴ The new installations of coal power capacity in 2018 amounted to 29 GW, the same level as in 2018, while new gas power capacity was 6 GW, 2.5 GW less than in 2018.

⁸ "国家统计局发布12月份能源生产情况," National Bureau of Statistics, 17 January 2020, accessed at http://www.gov.cn/xinwen/2020-01/17/content_5470101.htm.

⁹ "中电联发布2019-2020年度全国电力供需形势分析预测报告," China Electricity Council, 21 January 2020, accessed at <http://www.cec.org.cn/guihuayutongji/gongxufenxi/dianligongxufenxi/2020-01-21/197090.html>.

¹⁰ "国家能源局发布2019年全国电力工业统计数据," National Energy Administration, 20 January 2020, accessed at http://www.nea.gov.cn/2020-01/20/c_138720881.htm; "国家能源局发布2019年全社会用电量," National Energy Administration, 20 January 2020, accessed at http://www.nea.gov.cn/2020-01/20/c_138720877.htm.

¹¹ "中电联发布2019-2020年度全国电力供需形势分析预测报告," China Electricity Council, 21 January 2020, accessed at <http://www.cec.org.cn/guihuayutongji/gongxufenxi/dianligongxufenxi/2020-01-21/197090.html>.

¹² "大咖声音 | 时璟丽: 2020年光伏政策机制总体思路和框架将保持不变," 2 December 2019, accessed at <http://www.energynews.com.cn/show-55-18057-1.html>.

¹³ "中电联发布2019-2020年度全国电力供需形势分析预测报告," China Electricity Council, 21 January 2020, accessed at <http://www.cec.org.cn/guihuayutongji/gongxufenxi/dianligongxufenxi/2020-01-21/197090.html>.

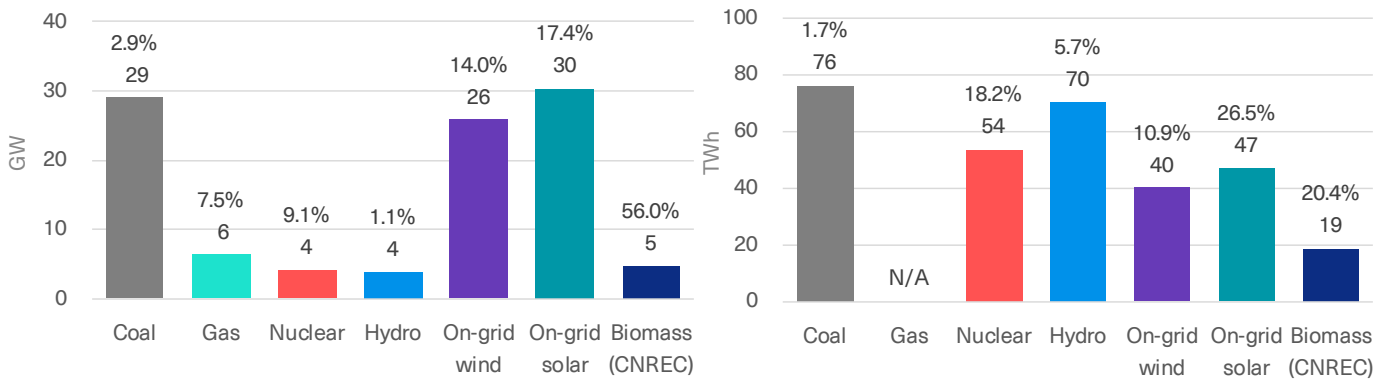
¹⁴ China National Renewable Energy Centre, February 2020.

Increased share of non-fossil fuels in the electricity production

In 2019, the power sector in China generated 7,330 TWh, up 4.7% compared to 2018 (this figure includes own consumption at the power plants). The share of non-fossil fuel power reached 32.6%, a year-on-year increase of 1.7 percentage points. The nuclear and non-hydro renewable power grew more rapidly compared to coal, gas, and hydro power, and this is the key to achieve the 2020 non-fossil fuel target. Solar power production increased by 26.5%, biomass power by 20.4% and wind power by 10.9%. The utilization hours of solar power increased by 55 hours to 1,285 hours, while they dropped for coal, gas, nuclear and wind, which brought the national average down by 54 hours to 3,825 hours.¹⁵

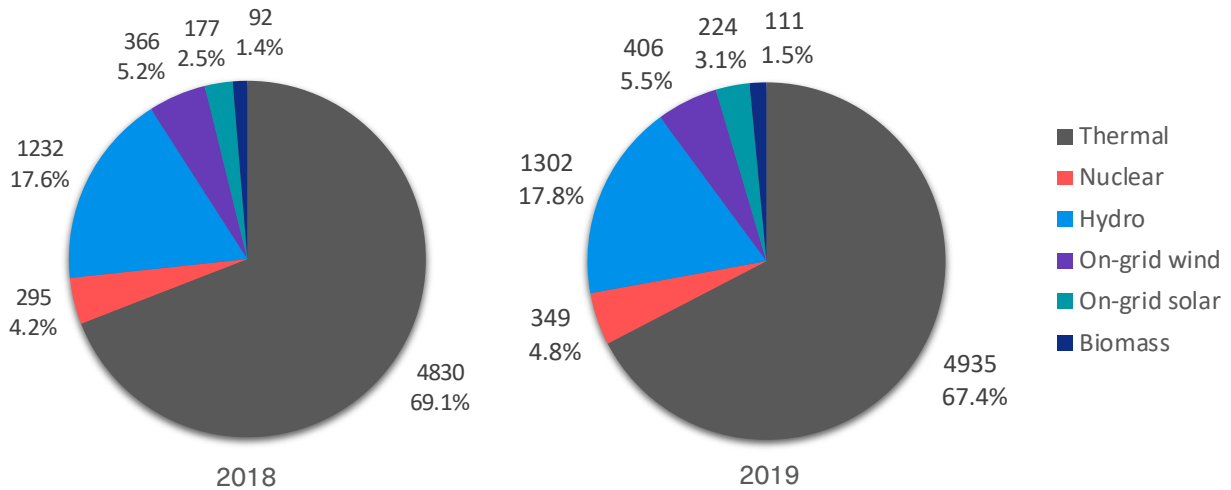
For the complete datasheet, please see the Appendix at the end of this newsletter.

2019 Incremental installed capacity (left) and incremental power generation (right)



Source: Biomass data from China National Renewable Energy Centre (CNREC), January 2020; other data from CEC, January 2020

2018 (left) and 2019 (right) power generation by fuel type in TWh and share



Source: Biomass data from CNREC, January 2020; the rest data from CEC, January 2020

¹⁵ Biomass: China National Renewable Energy Centre, January 2020; other data: "中电联发布2019-2020年度全国电力供需形势分析预测报告," China Electricity Council, 21 January 2020, accessed at <http://www.cec.org.cn/guihuayutongji/gongxufenxi/dianligongxufenxi/2020-01-21/197090.html>.

Appendix - 2019 China Energy and Power Datasheet

	Amount	Year-on-year	Amount	Year-on-year
	Data		Reference	
Energy production				
Crude oil (million tons)	190	0,8%	[1]	[1]
Crude oil processing (million tons)	650	7,6%	[1]	[1]
Natural gas (billion m3)	174	9,8%	[1]	[1]
Raw coal (billion tons)	4	4,2%	[1]	[1]
Energy import (million tons)				
Crude oil	510	9,5%	[1]	[1]
Natural gas	97	6,9%	[1]	[1]
Coal	300	6,3%	[1]	[1]
Electricity consumption (TWh)				
Total	7226	4,5%	[2]	[2]
Primary Industry	78	4,5%	[2]	[2]
Secondary Industry	4936	3,1%	[2]	[2]
Tertiary Industry	1186	9,5%	[2]	[2]
Residential	1025	5,7%	[2]	[2]
Installed capacity (GW)				
Total	2011	5,8%	[2]	[2]
Thermal *	1171	4,1%	[2][4]calculated	[2][4]calculated
of which coal	1040	2,9%	[4]	[4] calculated
of which gas	90	7,5%	[4]	[4] calculated
Non-fossil	840	8,7%	[4]	[4]
Nuclear	49	9,1%	[2]	[2]
Hydro	356	1,1%	[2]	[2]
Grid connected wind	210	14,0%	[2]	[2]
Grid connected solar	205	17,4%	[2]	[2]
Biomass - calculated from CEC data	20	18,6%	[2][4]calculated	[2][4]calculated
Biomass - CNREC data	13	56,0%	[5]calculated	[5]
Electricity generation (TWh)				
Total	7325	4,7%	[2]	[2]
Thermal *	4935	2,2%	[2][4]calculated	[2][4]calculated
of which coal	4560	1,7%	[2]	[2]
of which gas	-	-	-	-
Non-fossil	2390	10,4%	[4]	[4]
Nuclear	349	18,2%	[2]	[2]
Hydro	1302	5,7%	[2]	[2]
Grid connected wind	406	10,9%	[2]	[2]
Grid connected solar	224	26,5%	[2]	[2]
Biomass - calculated from CEC data	110	15,2%	[2][4]calculated	[2][4]calculated
Biomass - CNREC data	111	20,4%	[5]	[5]
Utilization hours (hours)				
National	3825	-54	[2]	[2]
Thermal	4293	-85	[2]	[2]
of which coal	4416	-79	[4]	[4]
of which gas	2646	-121	[4]	[4]
Non-fossil	-	-	-	-
Nuclear	7394	-149	[4]	[4]
Hydro	3726	119	[2]	[2]
Grid connected wind	2082	-21	[2]	[2]
Grid connected solar	1285	55	[4]	[4]

*The figure of thermal power is re-calculated based on CEC's data because the original data includes biomass.

References

- [1] "国家统计局发布12月份能源生产情况," National Statistic Bureau, 17 January 2020, accessed at http://www.gov.cn/xinwen/2020-01/17/content_5470101.htm.
- [2] "2019年电力统计年快报基本数据一览表," China Electricity Council, 21 January 2020, accessed at <http://www.cec.org.cn/guihuayutongjiti/tongjixinxi/niandushuju/2020-01-21/197077.html>.
- [3] "国家能源局发布2019年全社会用电量," National Energy Administration, 20 January 2020, accessed at http://www.nea.gov.cn/2020-01/20/c_138720877.htm.
- [4] "中电联发布2019-2020年度全国电力供需形势分析预测报告," China Electricity Council, 21 January 2020, accessed at <http://www.cec.org.cn/guihuayutongjiti/gongxufenxi/dianligongxufenxi/2020-01-21/197090.html>.
- [5] China National Renewable Energy Centre, January 2020.