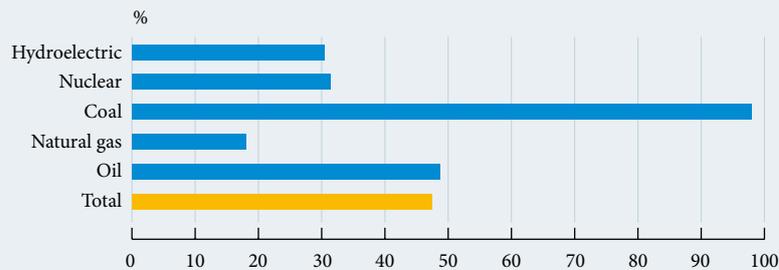


The energy of China

Of the large economies, China is the one with the greatest growth at present. This growth is very much biased towards heavy industry, involving a high consumption of raw materials and energy. While China's gross domestic product (GDP) accounted for 11.7% of the world's total in 2008, expressed in purchasing power parity, its energy consumption reached 17.1% of the total. The forecasts for 2015 by the US Energy Information Administration (EIA) increases these percentages to 15.9% and 21.7%, respectively, with an energy consumption that already exceeds that of the United States. The relative weight in growth terms is even greater. China will contribute 31.5% to the world's economic growth and 55.2% to the increase in the world's energy requirements between 2008 and 2015. These figures mean that any changes occurring in the Chinese energy map have a huge impact on the global energy panorama.

CHINA: AN ALMOST LIMITLESS APPETITE FOR ENERGY

China's contribution to the world's growth in energy consumption 2008-2020 (*)



NOTE: (*) Percentage of world growth expected for the period.

SOURCES: US Energy Information Administration and own calculations.

The present

The three most notable features of China's energy structure at present are its high energy intensity, extensive coal dependence and growing oil imports. The preponderance of heavy industry means that the Chinese economy is very energy intensive. To generate one dollar of GDP in 2008, in purchasing power parity terms, China had to consume 11.2 Btu (British thermal units), much higher than the global figure of 7.7, the United States' figure of 7.6 and the figure of 5.5 in Western Europe. The comparison with the figure of 7.1 Btu in Brazil and 6.6 in India is particularly significant. On the other hand, this high energy intensity helps to make China the planet's worst polluter. In 2008, China was responsible for 22.5% of the world's carbon dioxide emissions, higher than the United States' figure of 19.3%, the other great polluter, and very far from Russia's 5.5%, India's 4.8% and Brazil's 1.4%. In addition to its high energy intensity, it is also dependent on a relatively high polluting energy source, namely coal. For each Btu consumed, China emits 30% more carbon dioxide than the world average. Its comparison with Brazil, which emits 60% less per Btu consumed, is significant. 47.2% of the energy consumed by Brazil is hydroelectric in origin, thanks to an advantageous geography with large bodies of water inland.

Regarding its coal dependence, in 2008 this energy source met 70% of China's energy requirements, whereas oil supplied 19%, hydroelectric energy 6%, natural gas 3% and nuclear energy less than 1%. In comparison, coal only accounts for 42% of the energy consumption of India, the other large emerging economy in Asia, and 22% in the United States. And, at a distance, comes Brazil's figure of 5%. China consumes almost half the world's coal. Up to 2000, China was capable of producing almost all the coal it consumed but the fast growth of its economy, particularly its heavy industry, has revealed limitations in its domestic coal industry, which is highly fragmented into small mines. Coal imports have therefore rocketed since 2000, reaching 183 million metric tonnes in 2011, 5% of China's total consumption.

The growing consumption of oil is particularly of note. In 2009, China consumed 8.3 million barrels a day (10% of the world's total), of which 4.3 million were imported. Estimates for 2011 point to a minimal growth in production that will go from 4.0 to 4.2 million barrels a day, while consumption will reach 9.6 million, an increase that will mean China will contribute 37.0% to the increased global demand for oil between 2009 and 2011. Projections of oil consumption for 2015 indicate that the rise in China's demand could be higher than the increase expected for the rest of the world between 2008 and 2015, according to the EIA.

Changes

China's excessive dependence on oil imports, together with its high energy intensity and coal dependence, which lead to problems of efficiency and pollution, are forcing changes to be made. Modern Chinese development usually means starting from way back in the pack to go much further ahead. The Chinese authorities are aware of the deficiencies in the current situation. The two large pillars for its energy policy are a reduction in coal dependence and also in oil imports. To this end, the country is investing heavily in infrastructures and is also freeing up energy prices. The Three Gorges hydroelectric power plant on the Yangtze should start to produce results in 2012. It is also investing heavily in promoting natural gas and improving coal mining. Coal's contribution to the country's energy consumption should fall to 60% by 2020, gradually being replaced by hydroelectric energy and natural gas which, combined, would supply close to 20% of China's primary energy consumption.

With regard to oil, the aim is not so much to alter its relative weight in the country's consumption, which should remain at around 20% of the total up to 2020, but to prioritize domestic production over imports. While old onshore infrastructures such as those at Daqing and Shengli will decline, investment will be concentrated on offshore oilfields such as those at Bohai Bay and in the South China Sea. Fields discovered in Xinjiang, Sichuan, Gansu and Inner Mongolia will also be supported.

Such investment and the liberalization of prices, together with the tertiarization of manufacturing, with the relative expansion of services, should reduce China's energy intensity and bring it close to the world average by 2020, according to estimates by the EIA. This, combined with a lower relative weight of coal, should result in a 10% reduction of carbon dioxide emissions per Btu consumed. However, this greater efficiency will not stop China's carbon dioxide emissions from approaching 30% of the world's total by 2020, due to the greater growth of its economy.

Influence on the global market

Forecasts are always revised by reality but China's influence will be huge in any scenario that occurs in the energy panorama. According to the EIA, the world's energy consumption will grow at an average annual rate of 1.7% up to 2020. In the case of China, this rate is expected to reach 4.2%. The extent to which China's increasing energy requirements are met by itself will have a great impact on the world's energy prices and particularly on the price of oil.

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