

2022 Industry Review

In 2022, due to the serious impact of geopolitical tensions, energy security became a key global issue. The price volatility in the international oil and gas markets had a significant impact on inflation rates around the globe, hindering economic recovery, resulting in a marked slowdown in global oil and gas consumption and prompting profound readjustment in the supply-and-demand outlook as well as the global landscape of oil and gas trading. The energy crisis in Europe turned governments' attention to energy security and led to a new high in coal consumption and a boost in renewable energy investment, leading to twists and turns in the transition to clean and low-carbon energy.

2022 Global Oil and Gas Industry

The global energy landscape was reshaped as the transition to green and low-carbon energy accelerated. International geopolitical tensions and conflicts caused profound changes in the global energy landscape, major supply and demand adjustments in the global market and drastic fluctuations in international oil and gas prices, making energy security the primary goal of energy policies for all governments. Global energy consumption witnessed rising demand for coal and rapid growth of renewable energy. Global investment in clean energy reported record growth and energy transition gathered pace after a brief hiccup.

International oil prices fell after rise, with an average annual price close to \$100 per barrel. Given black swans and gray rhinoceros in the international oil markets, international crude oil prices experienced wide swings, with the average annual price rising sharply year-on-year. Due to the slowdown of the global economy and the repeated waves of the pandemic, demand growth slowed and oil supply rose sharply as competition intensified on the supply side. However, global oil inventories remained at a low level, resulting in the tight balance between supply and demand and supporting the oil price.

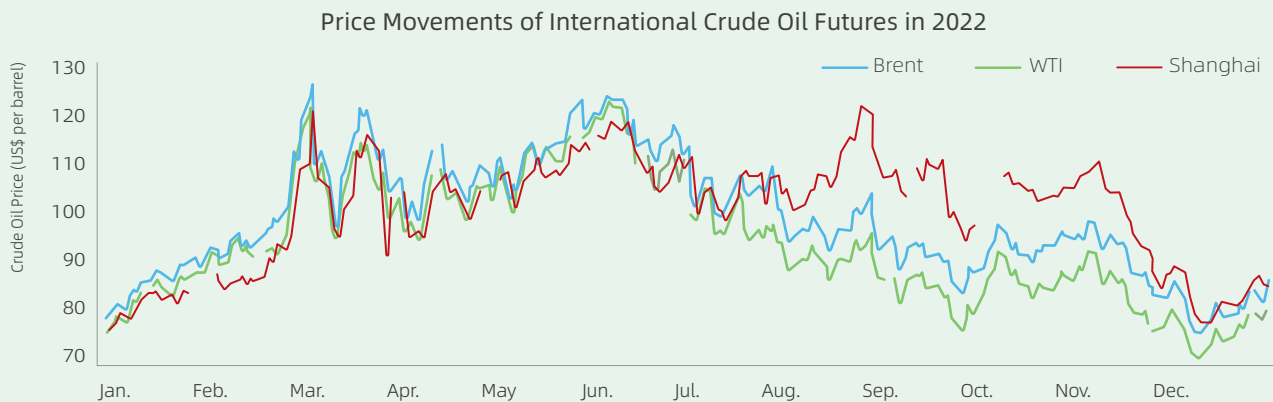
Gas prices hit new highs as market turmoil worsened. International geopolitical conflicts had a huge impact on global natural gas demand and supply. Global natural gas consumption saw a historic decline as natural gas production slowed down and natural gas trade decreased for three consecutive years. Natural gas prices fluctuated dramatically as a result of geopolitical tensions and once again hit a record high.

E&P investment increased remarkably as oil and gas production and reserves continued to recover. Global investments in E&P rose by 39% year on year, with above-average growth in the Americas and Asia Pacific. Global oil and natural gas reserves increased thanks to large-scale oil and gas discoveries on average, in which oil discoveries accounted for a bigger share and major discoveries mainly coming from West Africa and the northern offshore areas of South America. Both oil production and natural gas production increased worldwide as oil production outpaced natural gas.

Refining and chemicals capacity grew as fuels saw stronger demand and profits than chemicals. Global refining capacity reached 5.12 billion tons per year, with a net increase of 62.1 million tons; ethylene capacity reached 220 million tons, up 3.9%. The demand for petroleum products grew as the transportation sector continued to recover. Meanwhile, the demand for petrochemicals decreased significantly due to the global economic slowdown. Refining margins hit a record high as the petrochemical industry was headed towards a trough.

2022 China's Oil and Gas Industry

Energy supply and demand remained stable on the whole as the shifts in the energy mix speeded up. Given the global backdrop and the mounting pressure of energy supply in the domestic market, the energy sector managed to ensure supply and stabilize prices as renewable energy installations rose rapidly. Total domestic energy consumption increased steadily. The share of non-fossil fuel sources in China's primary energy consumption increased by 0.8 percentage points over the previous year. Renewable energy grew rapidly on a large scale, with the total installed capacity of renewable electricity exceeding 1.2 billion kW.



The oil market witnessed a slow recovery as the market order continued to improve. The repeated waves of the pandemic, in combination with the explosive growth in the new-energy vehicle sector, led to a decline in oil demand. Crude oil output rose for the fourth year in a row and exceeded 200 million tons again after six years as oil dependency on external supply declined for two consecutive years. Demand for refined products fell more than expected, leading to periodic excess supply. The central government took action to straighten out the refined products market for the continuous improvement in market order.

Natural gas consumption grew at a slower rate and domestic natural gas production played a significant role in keeping supply and price stable. Domestic natural gas demand was dampened by high prices of imported gas, complexities relating to pandemic control, weaker-than-expected economic growth and availability of alternative energy sources. The year saw a big slowdown in natural gas consumption. Domestic natural gas production played a significant role in keeping supply and price stable. Natural gas imports fell for the first time, with LNG imports down by 19.6%.

Oil and natural gas outputs and reserves continued to grow as the process of energy transition and digital transformation picked up the pace in the oil and gas industry. Oil and gas companies continued to ramp up their E&P efforts. Newly proven recoverable oil and natural gas reserves were 1.46 billion tons and more than 1.2 trillion cubic meters respectively. Crude output rebounded to above 200 million tons; natural gas output achieved an increase of over 10 billion cubic meters for six consecutive years. Energy transition and digital transformation speeded up in the oil and gas industry as the carbon capture, utilization and

storage (CCUS) sector made steady headway. E&P activities in deep, deepwater and unconventional formations made major breakthroughs and the oilfield services sector embraced an upturn.

A variety of production and operational indicators for refineries withered and the petrochemical industry reached the trough in the business cycle. The growth of domestic refining capacity slowed down and key performance indicators for refineries, such as crude runs, utilization rates and industry-wide margins per ton of crude oil etc., withered as a result of higher, volatile oil prices and a plunge in the demand for major petroleum products. The ethylene capacity grew rapidly with a significant increase in ethylene supply. However, due to a significant slowdown in ethylene demand, both margins and utilization rates hit historic lows. Petrochemical companies explored business opportunities in new materials and made headway in the localization of higher-end petrochemicals.

Despite complexities in the investment climate, international oil and gas cooperation was brought to a higher level. Chinese oil companies launched new overseas products and expanded existing operations as overseas equity production reached 185 million tons of oil equivalent, up 2.7% year on year. E&P breakthroughs and major discoveries supported the sustainable development of overseas operations. Measures were taken to optimize existing assets and facilitate participation in key tenders and renewal/increase of stakes in high-quality assets. The countries along the Belt & Road Initiative routes became the main destinations for overseas investment from Chinese oil companies.

Source: 2022 Report on Oil and Gas Industry Development by CNPC ETRI