2024 Industry Review

In 2024, the global economy demonstrated remarkable resilience amid steady growth in energy consumption and continued progress in energy transition toward cleaner sources. The oil market maintained basic supply-demand balance, though with slightly-weaker demand, while the natural gas market saw ample supply that drove international gas prices even lower. Global hydrocarbon production registered modest growth despite the first dip in exploration and development investments since 2021. While worldwide refining capacity continued its expansion, refinery margins experienced significant contraction. International oil companies witnessed notable declines in operational performance, albeit remaining at historically favorable levels. Against the backdrop of ongoing profound transformations in the global geopolitical landscape, collaborative efforts in carbon emission reduction emerged as a bright spot in international cooperation.

Guided by China's New Energy Security Strategy, the energy industry stepped up its efforts to secure energy supply and build a clean, low-carbon, safe, and efficient energy mix in line with the goals for carbon peaking and carbon neutrality. The energy industry exhibited signs of sufficient supply, accelerated transformation, and price stability, providing momentum for economic recovery. Oil consumption remained at high levels, with its role as a feedstock becoming increasingly prominent. Natural gas consumption grew beyond expectations, with robust growth in transportation gas. Remarkable results were achieved in boosting oil and gas reserves and production. Crude oil production increased for the sixth consecutive year with a year-on-year decrease in purchases of foreign oil; natural gas production increased for the eighth consecutive year, exceeding 10 bcm. Domestic oil refining capacity and petrochemical production capacity continued to grow, as the self-sufficiency ratio of new materials increased. China's top three oil companies continued to stabilize oil production and boost gas output, bringing oil and gas production to a new high.

2024 Global Oil and Gas Industry

The global energy landscape continued to change, as the transition to green and low-carbon energy advanced steadily.

Affected by geopolitical conflicts, the trend of "regionalization" and "bloc formation" in global energy flows became more pronounced, which coupled with frequent extreme weather events, led to a stronger emphasis on energy security worldwide. European countries toned down their previously aggressive energy transition goals and adopted a more pragmatic approach to security-centered energy transition. Global energy consumption saw steady growth as a cleaner energy mix continued to emerge. Fossil energy consumption rose slightly by 1.1%, with the share of fossil fuels in primary energy demand continued to inch down; Non-fossil energy consumption increased by 6% year-on-year as a result of the expansion of wind and solar power, accounting for 19.1% of the primary energy demand, an increase of 0.5 percentage points from the previous year. Green electricity generated from non-fossil energy is becoming a key driver of global energy decarbonization.

Demand remained weak as oil prices tumbled.

Economic slowdown and accelerated new energy substitution led to weak demand and a year-on-year decline in international oil prices. Brent crude oil futures averaged $79.86 per barrel for the year, a year-on-year decrease of 2.8%. Throughout the year, oil prices exhibited a range-bound, M-shaped trend, with a high peak followed by a low trough. The world oil market generally returned to balance as global oil consumption increased by 900,000 barrels per day year-on-year to 102.9 million barrels per day, and global oil supply increased by 600,000 barrels per day to 102.8 million barrels per day.

Natural gas prices declined amid a supply glut.

Global natural gas consumption recovered, with a year-on-year increase of 2.0% at 4.09 tcm. Global natural gas inventories were at a high level in nearly five years. The market supply and demand remained loose. The risks of geopolitical conflicts weakened, and international gas prices further declined. Globally, LNG capacity growth remained low. The estimated full-year capacity increase was 2.5 million tons, with total capacity at 470 million tons per year. The shift in global LNG trade structure continued, highlighting "a decline in Europe and an increase in Asia."

E&P spending fell as oil and gas production slightly increased.

Due to escalating geopolitical conflicts, energy transition, and market expectations, estimated global E&P spending decreased by 2.5% compared to the previous year, with the sharpest decline in North America and the biggest increase in Latin America. Estimated global crude oil production was 4.51 billion tons, a slight increase of 0.8% year-on-year. Crude oil production growth mainly came from Latin America and North America. Estimated global natural gas production was 4.39 tcm, an increase of 120 bcm or 2.8%.

Refining capacity was near the end of expansion as ethylene capacity continued to increase.

Global refining capacity continued to increase but showed signs of slowing. Estimated global refining capacity increased by a net 76.2 million tons per year to 5.255 billion tons per year. The capacity growth was faster compared to the previous year, with new capacity concentrated in China, Nigeria, and Mexico. Global crude runs increased by approximately 20 million tons to 4.14 billion tons per year. Demand growth significantly slowed down for refined products with a decline in refinery margins. Global ethylene capacity continued to increase by 6.5 million tons to 239 million tons per year as the average run rate rose from 83.8% to 84.5%. Ethylene production reached 191 million tons, a year-on-year increase of 1.1%.

2024 China's Oil and Gas Industry

The New Energy Security Strategy was thoroughly implemented, and the energy policy framework was further improved.

Guided by the New Energy Security Strategy, China's energy industry continuously optimized its supply and consumption structure, brought the green and low-carbon development to the next level, bolstered opening-up and international cooperation, and improved its energy security capabilities. Based on the strategy, China's energy policy framework is centered on securing energy supply in line with the "dual carbon" goals. A series of laws, regulations, and policy measures were introduced, covering focus areas such as energy security, the transition to green and low-carbon energy, the new power system, and the "dual control" mechanism for carbon emissions, to provide strong policy support for achieving the goals of the 14th Five-Year Plan and building a new, clean, low-carbon, safe, and efficient energy system.

A dynamic supply-demand balance was achieved, and new breakthroughs were made in the green and low-carbon transition.

Domestic energy security capabilities continued to improve as the energy self-sufficiency rate remained at a high level of over 80% in 2024. Electricity generation exceeded 10 trillion kilowatt-hours, an increase of 6.7% year-on-year, including 3.4 trillion kilowatt-hours from renewables, a rise of 19%. Renewables accounted for a substantial part of installed capacity which exceeded 1.8 billion kilowatts, an increase of 25% year-on-year. Energy consumption grew rapidly as national primary energy consumption totaled 5.96 billion tons of standard coal equivalent, an increase of 4.3% year-on-year. The shift towards low-carbon energy consumption continued as the proportion of coal and oil consumption decreased by 1.6 and 0.5 percentage points respectively from the previous year.

Oil demand remained at high levels as refined products consumption saw a downturn.

Total refined products consumption was 390 million tons, a decrease of 2.4% year-on-year. Refined products output was 424 million tons, a decrease of 4.6%. Apparent oil consumption was 753 million tons, flat from a year earlier. The oil consumption structure showed a drop in refined products and a rise in petrochemical feedstock. Crude oil imports were 553 million tons, a decrease of 1.9%. The ratio of purchased foreign oil was 71.7%, down by 0.7 percentage points.

Natural gas consumption exceeded expectations with accelerated import growth.

China's natural gas demand expanded at a historically significant pace, fueled by stable macroeconomic conditions, declining gas prices, and extreme weather events. Annual consumption reached 422.2 bcm, marking 7.8% year-on-year growth—1.2 percentage points higher than the previous year. Import volumes grew robustly to 184.1 bcm, representing an 11.2% increase. Notably, LNG imports accounted for 107.9 bcm, up 9.7% year-on-year.

China achieved significant progress in expanding hydrocarbon reserves and production, with deep-layer, deepwater, and unconventional resources ("two deeps and one unconventional") remaining crucial replacement frontiers.

Energy companies intensified exploration and development efforts, maintaining substantial upstream investment levels. Newly proven geological reserves demonstrated steady growth, reaching approximately 1.5 billion tons for oil and 1.6 tcm for natural gas. Domestic crude output was 213 million tons, marking six consecutive years of production growth. Natural gas production reached 246.4 bcm, an increase of above 10 bcm for eight consecutive years. Pioneering discoveries were made across strategic exploration frontiers: Multiple giant fields were identified, including 100-million-ton oil fields and 100-bcm gas fields in the Bohai Bay, Tarim, Sichuan, and Ordos basins; major hydrocarbon discoveries in the Bohai Bay (100-million-ton) and Pearl River Mouth basins (100-bcm); 336.6 bcm of newly proven geological reserves of coalbed methane in Ordos Basin, confirming China's first trillion-cubic-meter deep coalbed methane play; 10,000-meter drilling depth achieved at the Shenditake 1 Well in deep-earth scientific exploration.

China's refining capacity experienced modest growth while petrochemical production capacity continued its expansion.

Domestic refining capacity increased by 10 million tons per year (Mt/a) to reach 933 Mt/a. Ethylene capacity grew to 54.55 Mt/a, with the self-sufficiency rate improving to 72%. Propylene capacity additions reached 11.41 Mt/a, bringing total capacity to 74.75 Mt/a. Paraxylene run rates hit multi-year highs, reducing the ratio of foreign purchases to 19%. Synthetic resin capacity expanded rapidly by 9.07 Mt/a to 122 Mt/a. Synthetic rubber capacity increased by 1.13 Mt/a to 8.552 Mt/a. Synthetic fiber grew by 1.35 Mt/a, representing a notable slowdown in expansion. The petrochemical new materials sector demonstrated progress in both technological sophistication and market scale, with self-sufficiency rates continuing their upward trajectory.

Overseas equity production maintained steady growth as the “bringing in” and “going global” efforts continued to deepen.

Chinese companies continued to optimize asset portfolios and pursued pragmatic international oil and gas cooperation, driving sustained growth in overseas equity production. Chinese companies' overseas equity oil and gas output was approximately 190 million tonnes of oil equivalent (toe) in the year, marking a 1.9% year-on-year increase—including about 150 million tonnes of crude oil and about 50 bcm of natural gas. While ensuring stable operations of existing projects, Chinese enterprises actively expanded new developments, securing resources across the Middle East, Central Asia-Russia, and Latin America. They deepened conventional energy cooperation with Belt and Road partner countries, signing oil and gas agreements with nations such as the UAE and Kazakhstan. Simultaneously, Chinese enterprises demonstrated growing momentum in new energy collaboration, inking multiple integrated oil, gas, and renewable energy projects in Central Asia, the Middle East, and Africa. Meanwhile, international oil companies expanded their presence in the Chinese market, strengthening partnerships in energy and petrochemical sectors while exploring into carbon reduction, advanced materials, and technological innovation.

Source: *Global Oil and Gas Industry Development Report:2024*, CNPC ETRI