

Refining and Chemicals

In 2015, we reorganized production arrangement and optimized product portfolio of refining and chemical business in response to market changes, and allocated resources and workload to installations with higher profit and closed marginal ones. We also improved the efficiency of our facilities and ensured their safe and smooth operation through well-organized overhauls. A total of 21 major technical and economic indicators improved compared to 2014.

Domestically, we processed 151.32 million tons of crude, and produced 103.69 million tons of refined products. Production of profitable products increased, with the yield of refined products growing by 0.7% and the percentage of black products decreasing by 0.5%. Outputs of jet fuel, -35# diesel, and aromatic hydrocarbons increased by 14.5%, 15.4%, and 12.4%, respectively. The production of green products, such as high-grade gasoline and National V standard diesel increased by 1.6% and 7%, respectively.

We improved the profitability of our chemical business by increasing the output of high value-added chemicals and enhancing terminal marketing. In 2015, we produced 5.03 million tons of ethylene and 1.85 million tons of synthetic ammonia, and sold 25.22 million tons of chemicals, up 3% year-on-year. In particular, we increased production of synthetic resins by 3.1%, and boosted sales of 15 high value-added products by 21%.

Crude runs
(Domestic)



151.32
mmt

Refined products
output (Domestic)



103.69
mmt

Refining and chemicals operating data (Domestic)

	2013	2014	2015
Crude runs (mmt)	146.02	150.16	151.32
Utilization rate of refining units (%)	86.9	82.6	84.5
Refine products output (mmt)	97.90	101.84	103.69
Gasoline	32.97	34.10	36.47
Kerosene	6.06	7.14	8.34
Diesel	58.87	60.60	58.88
Lubricating oil output (mmt)	1.89	1.58	1.21
Ethylene output (mmt)	3.98	4.98	5.03
Synthetic resin output (mmt)	6.64	8.07	8.32
Synthetic fiber output (mmt)	0.07	0.07	0.07
Synthetic rubber output (mmt)	0.67	0.75	0.71
Urea output (mmt)	3.77	2.66	2.57
Synthetic ammonia output (mmt)	2.58	1.89	1.85



Construction and Operation of Large Refining & Petrochemical Bases

Our major petrochemical facilities in China operated smoothly in 2015. Urumqi Petrochemical optimized process parameters and processing flows, strengthened process control, and maintained the safe and smooth operation under high workload. Ningxia Petrochemical's 5Mt/a refining unit ran for 500 days in its second long period operation, with all of its economic and technical indicators continuously optimized.

Construction of major refining and petrochemical projects proceeded smoothly. Yunnan Petrochemical's 10Mt/a Refinery was completed, with the equipment and process piping installed and the mechanical works of atmospheric-vacuum distillation unit, gas fractionation unit, and another six units finished. In addition, steady progress was made in the refinery upgrading and HSE system renovation at Guangdong Petrochemical and Huabei Petrochemical, and the efficiency improvement renovation at Liaoyang Petrochemical.

Upgrading of Refined Products and Development of New Products

Vehicle emission is a source of pollutants for haze in China's medium and large-sized cities. CNPC has accelerated the pace of its upgrading of gasoline and diesel quality to help mitigate air pollution aligned with the government's intensified environmental concerns. In 2015, we made progress in 10 projects for upgrading to the National V standard, including the units at Dalian Petrochemical, Guangxi Petrochemical, and Karamay Petrochemical. These units have started to produce National V products which were supplied to 11 eastern provinces and cities. Moreover, preliminary work commenced on 47 National V standard upgrading projects. By the end of 2015, we had 19 refining and chemical enterprises capable of producing National V standard motor gasoline, and all our enterprises were ready to deliver National V standard motor diesel. In addition, we enhanced top-down design and conducted research programs on technologies for clean-burning oil products upgrading, and developed technical solutions for the production of clean-burning gasoline and diesel, which were applied extensively at Dagang Petrochemical and Urumqi Petrochemical.

In 2015, we launched 75 new chemical products with a total output of 1.12 million tons, including PE pipes, hollow materials, and PP impact materials. Sichuan Petrochemical, Fushun Petrochemical and Daqing Petrochemical were enabled to produce more types of ethylene products. Achievements were made in the promotion of 20 new products, including Jilin Petrochemical's ABS, Fushun Petrochemical's PP fiber, Sichuan Petrochemical's PE100 pipe material, and Lanzhou Petrochemical's SBR feedstock.