



China New Coal Chemical Industry Report, 2011

Sep. 2011

This report

- ◆ **Analyzes development of new coal chemical industry**

- ◆ **Focuses on the market segments, such as coal-to-olefins Industry, coal-to-gas industry, coal-to-glycol industry, and coal-to-oil industry**

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Abstract

China is poor in oil and gas but relatively rich in coal. At the end of 2010, China's coal reserves were 114.5 billion tons, accounting for 93.3% of its total energy reserves. Therefore, while oil prices hover high, the development of coal chemical industry to reduce dependence on crude oil imports is becoming a strategic choice of China.

During the "Twelfth Five-Year" period (2011-2015), China will launch major demonstration projects in seven areas, namely, coal liquefaction, coal-to-gas, coal-to-olefins, coal-to-ammonia/urea, coal-to-glycol, low-rank coal upgrading, and coal-to-aromatics. Stimulated by national policies and favorable market conditions, there have been many projects under construction or planning in the new coal chemical industry represented by coal-to-oil, coal-to-olefins, coal-to-glycol, and coal-to-gas in recent years, presenting overheated development at present or perhaps the risk of overcapacity in the future.

Development Plan of New Coal Chemical Industry in China as of Aug.2011

Project	Capacity and Investment
Coal-to-olefins	There are 29 projects under construction or planning, with total annual capacity of over 20 million tons and total investment of more than RMB630 billion.
Coal-to-gas	The total capacity is over 150 billion m3. During the "Twelfth Five-Year" period (2011-2015), the projects will mainly be distributed in Shanxi, Shaanxi, western Inner Mongolia, Xinjiang, eastern Inner Mongolia, Yunnan and Guizhou.
Coal-to-glycol	The capacity exceeds 3 million tons and the total investment surpasses RMB50 billion.
Coal-to-oil	There is expected to be nine projects, with annual capacity of 38.2 million tons and total investment of about RMB380 billion.

Source: ResearchInChina

The application of coal gasification technology and syngas-to-methanol technology has been mature at present, and the methanol-to-olefins technology has been improved in both theory and experimental equipment after years of development. Shenhua Group has started the commercial operation of its Baotou Coal-to-olefins Project and Shenning Coal-based Olefin Project. As of August 2011, there are 29 coal-to-olefins projects under construction or planning in China, with total olefin capacity of over 20 million tons per year and total investment of over RMB 630 billion.

The coal-to-gas technology is quite mature and promising in China. At present, the cost of coal-made natural gas is about RMB1.0-1.5 per m³ in Inner Mongolia and Xinjiang, and plus the filling and transmission cost, the price is about RMB2.0-2.5, while the average price in the second-tier cities covered by the West-East natural gas transmission project is RMB3.28. During 2011-2015, China's coal-to-gas projects will be mainly located in Shanxi, Shaanxi, western Inner Mongolia, Xinjiang, eastern Inner Mongolia, Yunnan and Guizhou. The coal-to-gas projects under construction or planning have a total capacity of above 150 billion m³, including the Ordos 2 billion m³ coal-to-gas project of Shenhua Group and the 4+4 billion m³ coal-to-gas project of Datang International Power Generation Co., Ltd.

Coal-to-glycol hasn't achieved complete industrialization in China. Danhua Chemical Technology Co., Ltd. is the first Chinese enterprise engaged in coal-to-glycol, but fails to solve the catalyst absorption problem, and only maintains an operating rate of about 30%. However, due to high prices of glycol, the profitability of coal-to-glycol will still be good after the technical difficulties are solved. The coal-to-glycol projects under planning have a capacity of over 3 million tons and total investment of over RMB50 billion, including the 5×200,000 tons coal-to-glycol project of Henan Coal Chemical Industry Group and the 800,000 tons coal-to-glycol project of Shaanxi Yanchang Petroleum Group.

Coal-to-oil is booming in China. Pre-construction studies, planning, fundraising and construction of large coal-to-oil projects have been carried out in provinces with coal resources. Shenhua Group has leading advantages in direct coal liquefaction, and the first phase of its Inner Mongolia coal-to-oil project has an annual capacity of 1 million tons and an actual operating rate of 80%. At present, there is expected to be nine coal-to-oil projects in China, with annual capacity of 38.2 million tons and total investment of around RMB380 billion.

1. Overview of New Coal Chemical Industry

- 1.1 Definition
- 1.2 Significance
 - 1.2.1 Ease the Conflicts in Structure of Energy Reserves
 - 1.2.2 Address the Overcapacity of Traditional Coal Chemical Industry
 - 1.2.3 Support the Development of New Coal Chemical Industry
- 1.3 Coal Gasification: Core Technology of Coal Chemical Industry

2. Coal-to-olefins Industry

- 2.1 Olefin Market Overview
 - 2.1.1 Ethylene
 - 2.1.2 Propylene
- 2.2 Coal-to-olefins Technology
- 2.3 Economic Performance of Coal-to-olefins
- 2.4 Related Enterprises and Their Coal-to-olefins Projects
 - 2.4.1 Shenhua Group Corporation Limited
 - 2.4.2 Datang International Power Generation Co., Ltd.
 - 2.4.3 Anhui Huainan Chemical Group Co., Ltd.
 - 2.4.4 Pucheng Clean Energy Chemical Co., Ltd.
 - 2.4.5 Datong Coal Mine Group Co., Ltd.

3. Coal-to-gas Industry

- 3.1 Natural Gas Supply and Demand in China
 - 3.1.1 Supply
 - 3.1.2 Demand
- 3.2 Introduction to Coal-to-Gas
 - 3.2.1 Energy Consumption
 - 3.2.2 Water Consumption
 - 3.2.3 CO₂ Emissions
- 3.3 Development of Coal-to-gas

- 3.4 Related Enterprises and Their Coal-to-gas Projects
 - 3.4.1 Shenhua Group Corporation Limited
 - 3.4.2 Datang International Power Generation Co., Ltd.
 - 3.4.3 Shandong Energy Xinwen Mining Group Co., Ltd.
 - 3.4.4 China Huaneng Group

4. Coal-to-glycol Industry

- 4.1 Overview and Technology of Glycol Industry
- 4.2 Global Glycol Supply and Demand
- 4.3 Glycol Supply and Demand in China
 - 4.3.1 Production
 - 4.3.2 Consumption
- 4.4 Development of Coal-to-glycol in China
- 4.5 Related Enterprises and Their Coal-to-glycol Projects
 - 4.5.1 Danhua Chemical Technology Co., Ltd.
 - 4.5.2 Henan Coal Chemical Industry Group Co., Ltd.
 - 4.5.3 China Huadian Corporation
 - 4.5.4 Shaanxi Yanchang Petroleum (Group) Corp. Ltd.

5. Coal-to-oil Industry

- 5.1 Development of Coal-to-oil Industry in China
 - 5.1.1 Energy Strategy of China
 - 5.1.2 Coal-to-oil Policy of China
- 5.2 Economic Performance of Coal-to-oil in China
- 5.3 Development of Coal-to-oil in China
- 5.4 Related Enterprises and Their Coal-to-oil Projects
 - 5.4.1 Shenhua Group Corporation Limited
 - 5.4.2 Inner Mongolia Yitai Group Co., Ltd.
 - 5.4.3 Shanxi LuAn Group
 - 5.4.4 Yankuang Group

- Energy Consumption and Structure of China, 2001-2010
- Output, Consumption and Import Dependence of Crude Oil in China, 2001-Jun.2011
- Crude Oil Import Dependence of China, 2020E
- Price Comparison among Crude Oil, Natural Gas and Coal with Equivalent Heat Value, 2004-2011
- Capacity Utilization of Traditional Coal Chemicals in China, 2010
- Development Plans of New Coal Chemicals in China by Region
- Technical Parameters of Coal Gasification: China vs. Foreign Countries
- Output of Ethylene in China, 2001-2011H1
- Apparent Consumption of Ethylene in China, 2008-2011H1
- Factory Price of Ethylene in China, 2009-2011
- Factory Price of Propylene in China, 2009-2011
- Propylene Consumption Structure in China by Product, 2010
- Output and Consumption of Polypropylene in China, 2000-2010
- Comparison between Chinese and Foreign Coal-to-olefin Technologies
- Raw Material Prices of Coal-to-Olefin and Oil-to-Olefin in China, 2003-2011
- Waste Discharge Comparison between Coal-to-Olefin (with Annual Output of 600,000 tons) and Oil-to-Olefin (with Annual Output of 1.2 million tons)
- Large-scale Projects of Coal-to-Olefin in China
- Coal-to-Olefin Projects under Construction/Planning in China, 2010-Aug.2011
- Design Capacity of Shenhua Baotou Coal-to-Olefin Project
- Design Capacity of Shenhua Shenning Coal-to-Olefin Project
- Design Capacity of Shenhua-Dow Chemical Yulin Coal-to-Olefin Project
- Design Capacity of Shenhua Shaanxi Methanol Downstream Processing Project
- Operating Revenue and Total Profit of Datang Power Generation, 2006-2010
- Operating Revenue Structure of Datang Power Generation by Product, 2010
- Fund Use Plans of Datang Power Generation by Project, 2011

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- Design Capacity of Datang Duolun Coal Chemical Project
 - Design Capacity of Anhui Huainan Chemical Group Coal-to-Olefin Project
 - Design Capacity of PCEC Coal-to-Olefin Project
 - Ranking of Natural Gas Reserves Worldwide, 2009
 - Five Main Natural Gas Production Areas in China
 - Production and Consumption of Natural Gas in China, 2001-2011H1
 - Demand, Output, Import Volume and Supply Gap of Natural Gas in China, 2020E
 - Primary Energy Structure: China vs. Other Countries, 2010
 - Comparison of Coal Chemicals by Energy Efficiency
 - Comparison of Coal Chemicals by Water Consumption
 - Comparison of Coal Chemicals by CO2 Emission
 - Coal-to-Gas Projects under Construction/Planning in China as of Aug.2011
 - Design Capacity of Shenhua Ordos Coal-to-Natural Gas Project
 - Ownership Structure of Datang International Keshiketeng Coal-to-Natural Gas Co., Ltd.
 - Design Capacity of Xinwen Mining Group Coal-to-Natural Gas Project
 - Output of Glycol in China, 2000-2009
 - Import Volume and Import Dependence of Glycol in China, 2000-2010
 - Consumption Structure of Glycol in China, 2009
 - Consumption of Glycol in China, 2000-2009
 - Coal-to-glycol Projects in China as of Aug.2011
 - Operating Revenue and Total Profit of Danhua Chemical Technology, 2006-2011H1
 - Operating Revenue of China Huadian Corporation, 2002-2009
 - Operating Revenue of Yanchang Petroleum, 2005-2010
 - Petrochemical Reserves-Production Ratio of China, 2010
 - Change in Reserves-Production Ratio of Petroleum in China, 2000-2010

- Comparison between Oil Refinery Oil Making and Coal-to-oil by Unit Product Investment
- Crude Oil Price of Coal-to-oil Project Responding to the Coal Price Fluctuation
- Coal-to-oil Projects in China as of Aug.2011
- Consumption of Coal, Water and Electric Power Per Ton of Coal-to-oil of Inner Mongolia Yitai Group
- Coal-to-oil Project (Phase I) of Inner Mongolia Yitai Group
- Coal-to-oil Demonstration Project of Yankuang Group

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