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

<table>
<thead>
<tr>
<th>Project</th>
<th>Capacity and Investment</th>
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<tbody>
<tr>
<td>Coal-to-olefins</td>
<td>There are 29 projects under construction or planning, with total annual capacity of over 20 million tons and total investment of more than RMB 630 billion.</td>
</tr>
<tr>
<td>Coal-to-gas</td>
<td>The total capacity is over 150 billion m³. During the &quot;Twelfth Five-Year&quot; period (2011-2015), the projects will mainly be distributed in Shanxi, Shaanxi, western Inner Mongolia, Xinjiang, eastern Inner Mongolia, Yunnan and Guizhou.</td>
</tr>
<tr>
<td>Coal-to-glycol</td>
<td>The capacity exceeds 3 million tons and the total investment surpasses RMB 550 billion.</td>
</tr>
<tr>
<td>Coal-to-oil</td>
<td>There is expected to be nine projects, with annual capacity of 38.2 million tons and total investment of about RMB 380 billion.</td>
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Source: ResearchInChina
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.

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-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.
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