China’s Natural Gas Industrial Policy and Reform

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15th November 2017
I. The Status Quo of Natural Gas Industry in China

II. The Prospects of natural gas industry development in China

III. Issues and suggestions
I. The Status Quo of Natural Gas Industry in China

Natural Gas Production in 2016

- U.S. 7492
- Russia 5794
- Iran, 2024
- Qatar 1812
- Canada 1520
- China 1369
- Others 15489
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Natural Gas consumption in 2016

- U.S.: 22%
- Russia: 11%
- Iran: 6%
- Japan: 3%
- Saudi Arabia: 3%
- Others: 49%
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Proportions of primary energy consumption in 2016

- 18.3% Natural Gas
- 13.3% Non-fossil energy
- 6.4% Petroleum
- 62% Coal
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Proportions of Natural Gas Consumption in 2016
(in billion Cubic meter)

- Domgas: 73.5
- Fuel for industry: 72.6
- For chemical: 25.4
- For thermal power plant: 37.1

- 城镇燃气: Domgas
- 工业燃料: Fuel for industry
- 化工用气: For chemical
- 发电用气: For thermal power plant
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Growth of Natural Gas Consumption

Consumption (0.1b/yr)  Growth rate(%)
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Development of Natural Gas infrastructure
Summary

1. China is the sixth largest producer of natural gas and the third largest consumer in the world.

2. China's natural gas consumption accounts for a low proportion of primary energy.

3. China has built a more complete system of natural gas industry.

4. China's natural gas consumption will continue to grow rapidly.
II. The Prospects of natural gas industry development in China

Natural gas plan in *13th Five-Year development goals*

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<th>Index</th>
<th>2015</th>
<th>2020</th>
<th>Average annual growth rate</th>
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<tbody>
<tr>
<td>Total proved reserves (Tcm)</td>
<td>13.0</td>
<td>16</td>
<td>4.3%</td>
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<tr>
<td>Production (bcm/yr)</td>
<td>135</td>
<td>207</td>
<td>8.9%</td>
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<td>Natural gas accounts for the proportion of primary energy consumption (%)</td>
<td>5.9</td>
<td>8.3～10</td>
<td>-</td>
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<td>Usage percentage of natural gas in urban population (%)</td>
<td>42.8</td>
<td>57</td>
<td>-</td>
</tr>
<tr>
<td>Pipeline mileage (ten thousand km)</td>
<td>6.4</td>
<td>10.4</td>
<td>10.2%</td>
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<tr>
<td>Primary capacity of pipeline transmission (bcm)</td>
<td>280</td>
<td>400</td>
<td>7.4%</td>
</tr>
<tr>
<td>Working capacity of underground gas storage (bcm)</td>
<td>5.5</td>
<td>14.8</td>
<td>21.9%</td>
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Implement the utilization of natural gas

13 ministries issued *Opinions about accelerating the implement of natural gas utilization* in June 2017.

**Urban gas**
- To promote clean heating in winter in northern China
- To improve the utilization of natural gas of urban residents rapidly
- Break through the use of natural gas in "the last kilometer"

**Fuel for industry**
- To transfer industrial boilers from coal to gas in “the high polluting fuel combustion forbidden zone”
- Substitution and utilization of natural gas in key industries such as glass, ceramics, building materials, mechanical and electrical, textile, etc.

**Thermal power plant**
- Vigorously develop natural gas distributed energy
- To encourage the development of natural gas peak shaving power station
- To develop natural gas cogeneration orderly

**Transportation**
- To speed up the development of natural gas vehicles and vessels
- To speed up the construction of gas filling stations

Clean heating in northern China

The prevention of air pollution

Integration and development of renewable energy

Vehicle and vessel

**II. The Prospects of natural gas industry development in China**
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Reform in the field of oil and gas

Goals of reform:

More——Diversification and interconnection
Faster——To speed up construction
Better——Survival of the fittest
Saving——To improve the efficiency and reduce cost

Methods:
Open Cooperation interconnection
II. The Prospects of natural gas industry development in China

The practice of reform

1. Exploration and development of shale gas and coal-bed methane: mining rights bidding

2. The conventional oil and gas exploration and development pilot in Xinjiang area

3. To encourage international cooperation in oil and gas industry: The guidance of foreign investment in industry

4. Market reform of natural gas pricing

5. To open and encourage natural gas trade, and to set up trading center
III. Issues and suggestions

Issues of concern in all respects

1. Growth of natural gas consumption is too fast: Supply security

2. Growth of natural gas consumption is much lower than expected: Industrial benefits

3. Whether environmental policy can continue to be implemented: The steady growth of natural gas consumption

4. Changes in policies of pricing: Investment benefits of infrastructure

5. Fluctuations in global natural gas market: Options between long term contracts and spot market

6. Global activities of natural gas exploration and development: Balance between supply and demand
III. Issues and suggestions

Learning Experiences from U.S.

1. Integrity in the industry chain of upstream, midstream and downstream

2. Transparency of market information

3. Open access and competition system

4. Unified infrastructure

5. Flexible and efficient consumption system

6. Relatively low cost and price

7. Mature system and framework of regulation
III. Issues and suggestions

Advices for cooperation

1. The communication mechanism between governments

2. Platform for cooperation among enterprises: The alliance of natural gas

3. Communications in thematic meetings
Conclusion:
China's natural gas industry has a strong momentum of development, and the desire for natural gas cooperation between China and the U.S. is strong. I believe that the future results will be good. The quality of the process depends on our learning ability and efforts to find win-win cooperation.
Thank you!