Challenges and Opportunities

Associated With

Natural Gas Reform in China

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An Action Learning Project by
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Who we are?
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- Status Quo of China’s Natural Gas Market
- Natural Gas Development Path in Other Countries
- On-going Natural Gas Reform in China
- Opportunities and Challenges
Status-quo of China’s Natural Gas Market

a) China’s Energy Consumption

b) China’s Natural Gas Consumption

c) Natural Gas Production and Import

d) Pipeline and Receiving Terminal
China’s Energy Consumption

China’s Energy Mix

Source: National Bureau of Statistics of the People’s Republic of China
China’s Natural Gas Consumption

<table>
<thead>
<tr>
<th>Region</th>
<th>2013</th>
<th>2014</th>
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</thead>
<tbody>
<tr>
<td>BeiJing</td>
<td>98.81</td>
<td>↑ 113.7</td>
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<tr>
<td>XinJiang</td>
<td>127.41</td>
<td>↑ 169.8</td>
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<tr>
<td>SiChuan</td>
<td>148.3</td>
<td>↑ 165.1</td>
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<td>GuangDong</td>
<td>124.05</td>
<td>↑ 133.8</td>
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<tr>
<td>JiangSu</td>
<td>124.47</td>
<td>↑ 127.7</td>
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</tbody>
</table>

Source: National bureau of Statistics of the People’s Republic of China
Natural Gas Production and Import

Source: National bureau of Statistics of the People’s Republic of China
Pipeline and Receiving Terminal

Source: Oil Observer Website
LNG Receiving Terminals

At the beginning of 2015:
12 Finished
7 under construction

Source: Wood Mackenzie (Page 3, China LNG Long Term Outlook 2015)
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Gas Industry in Early Days

- Limited numbers of participants
- Dominated by the state owned monopoly gas companies.
- Gas supply service was usually vertically bundled
Reform Roadmap

1. Non-discriminatory Third Party Access
2. Separation of Vertical-Integrated Companies
3. Deregulation of Gas Price
US Path

- Natural Gas Policy Act--FPC (1978)
- Order No. 436--FERC (1985)
- Order No. 636--FERC (1992)
UK Path

1986

- GAS ACT--privatization of British Gas
- Opened the wholesale market
- Contract directly with producers

1989

- 90:10 rules
- Prohibited BG from contracting more than 90% of gas from any field

1997

- Separation of assets
- Gas production, sales, and supply business
- Transportation and storage
Summary and Trend

- Natural gas industries in different countries evolved in a similar way

Monopoly
- Lack of competition

Regulation
- Government regulation

Reform
- US&UK
- Competition in gas supply
Deregulation of Natural Gas Price

NG Producer & Importer

Ex-Plant

Transmission Operator

Transmission

City Gate

Direct User

Distribution Operator

Local Distribution

Industrial

Residential

Transport

Retail Price

Ex-Plant Price

Transmission Tariff

City Gate Price

Distribution Fee

Regulated By NDRC

Regulated By Local Price Bureau
Deregulation of natural gas price

- Old “maximum price” become “base price”
  - Price could be increased by 20%

- New Spot Market
  - Shanghai Petroleum and Natural Gas Exchange (SHPGX)

- Three-tier pricing mechanism applied to residential gas price
Third-party access to gas infrastructure

- Pipeline infrastructures
- Natural gas trunk lines and lateral pipelines
- LNG receiving terminals
- Gas compression facilities
- Gas liquefaction facilities
- Gas storage facilities
Third-party access to gas infrastructure

Preparation of potential Separation of Pipeline

- Easter Pipeline Company
- Northwest United Pipeline Company
- United Pipelines Company Limited
- PetroChina Pipeline Company Limited
Investment from non-NOCs

Non-NOCs
Strengthened Regulation

- Supervision of pipeline tariff
  - The intervals of tariff adjustment have been changed
  - Tariff in several provinces have been decreased
  - Innovating new tariff calculation method

- Prevention of LDC’s Abuse of Market Dominant Position
  - Several local gas companies have been penalized
  - Assure a more fair and legal market environment
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National Oil Companies

Opportunities
- Price flexibility
- Freedom to choose premium market

Challenges
- Competition creates price pressure
- Shrink market share

Proposed Solutions
- Focus on high quality service
- Nurture competitiveness sense
Pipeline Companies

Opportunities
1. Improved pipeline utilization
2. Resource optimization

Challenges
1. Stringent supervision
2. Complicated operation system

Proposed Solutions
1. Adopt best business practice
2. Minimize unnecessary cost
City Gas Companies

Opportunities
• Access to midstream and upstream
• Freedom to choose suppliers

Challenges
• Stringent supervision
• Supply security - new responsibility

Proposed Solutions
• Optimize supply portfolio
• Consider partnership to mitigate risk
New Entrants

- Business Uncertainty
- Huge Investment
- Market Volatility
Executive Summary

**The Aim:** Building a fair and efficient market

**The Theme:** Deregulation of competitive segments

**The Impact:** For the whole industry, it means new dynamics; for the individual participant, it means new opportunities and challenges and a time for change
Thank You!