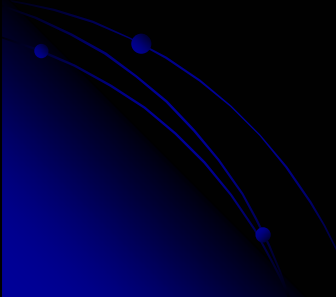


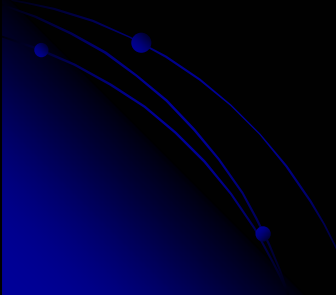
# Natural Gas Market in China

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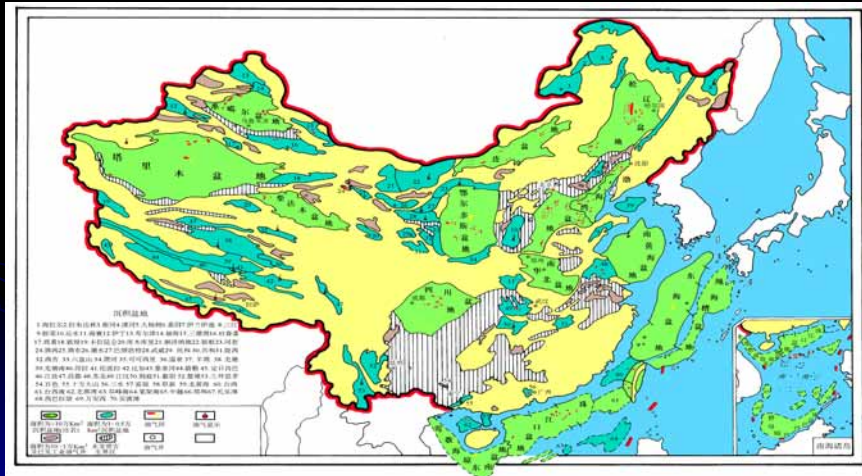


Yang Dengwei  
Guo Baoshen  
Wang Liangguo  
Aug. 30 2005

## Production of Natural Gas in China

- Natural gas production in 2005 is estimated to be  $45-51 \times 10^9 \text{m}^3$ , which account for 5% of energy structure.
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# Petroliferous basins in China



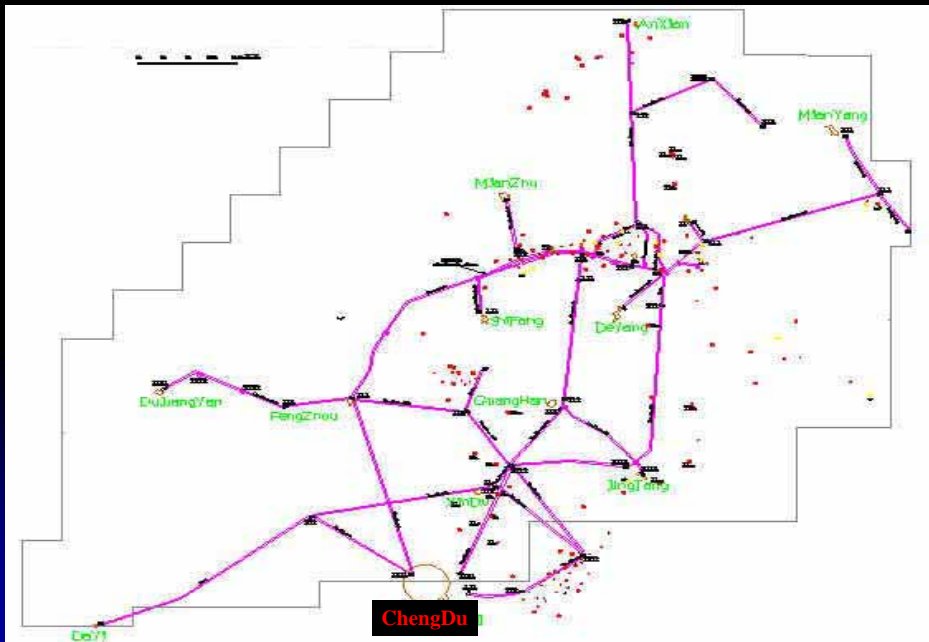
## Natural Gas Market in China

1. Southwest market centered at Chengdu and Chongqing
2. Jing- jin market centered at Beijing and Tianjin
3. East China market centered at Nanjing, Shanghai and Hangzhou
4. Shandong market centered at Qingdao and Jinan
5. Northeast China market centered at Changchun
6. South China market centered at Guanzhou and Konggong
7. Central market centered at Wuhan, Xian and Zhengzhou.

# Natural Gas Pipelines in China



# Pipeline network in the western Sichuan basin



## Supply and demand of natural gas in China

	2000	2005	2010	2015	2020
Production ( $10^8\text{m}^3$ )	260	450-510	700-740	920	1050
Demand ( $10^8\text{m}^3$ )	280	530	950	1350	1600

## Natural gas consumption in China

percentage in gas consumption

Chemical industry	39
Industrial fuel	32
Residential & Commercial	24
Electric power	5

## Natural gas consumption in Sichuan region

	consumption ( $10^8\text{m}^3$ )	percentage
Chemical fertilizer	49.5	49
Other industry	38	37.6
Residential	13	12.5
Commercial	0.5	0.5
Total	101	100

## Prediction of natural gas price in Western Sichuan

Years	2004	2010	2015	2020
Price (RMB/ $\text{m}^3$ )	0.703	0.900	0.981	1.091

### Prediction of exploration well cost in Western Sichuan

Years	2004	2010	2015	2020
Price (RMB/m <sup>3</sup> )	3488	4882	6150	7418

### Government roles in the development of natural gas industry

1. Encouraging the exploration and development of natural gas .
2. Policy support in tax
  - VAT (Value-Added Tax) of natural gas is lower than that of crude oil
3. Encouraging the national oil companies to import LNG

## Natural gas price and pricing mechanism in China

- 1、 The natural gas price in China is obviously lower than that in international market.

The natural gas price in china in 2003 is 0.619 RMB/m<sup>3</sup>, while the natural gas price in international marker in the same period is 1.8 RMB/m<sup>3</sup>

- 2、 There are two pricing mechanism of natural gas in China  
The pricing mechanism under marker competition  
The pricing mechanism under government management

- 3、 The natural gas price in China is basically determined by government.
- 4、 There is no unified price system of natural gas in China due to restriction of gas pipeline networks.  
In general, the natural gas price in economically developed regions is higher, which close to the natural gas price in international market; the natural gas price in economically undeveloped regions is obviously lower.

## Gas Contract in China

Long term TOP contract is essential:

- Pricing elements:
  - Gas quality
  - Contract duration
  - Price competition with other energy
    - ★ oil
    - ★ coal
    - ★ hydroelectric power
    - ★ nuclear energy
    - ★ LNG
  - Transportation distance
  - Regional economy
  - Customer type

## Fiscal Terms

### Royalty – Offshore

Royalty on gas from each field in the contract area is paid on the following incremental sliding scale:

Increments of Annual Gross Production		Royalty Rate
Billion cubic metres (m <sup>3</sup> ) /year	MMCFD*	%
< 2.0	< 200	0
2.0 – 3.5	200 – 350	1
3.5 – 5.0	350 – 500	2
> 5.0	> 500	3

\* assumes 35.3 cubic feet (CF) = 1 m<sup>3</sup> (cubic metre)

**Royalty - Onshore:**

By amendment of the Ministry of Finance on 28 July 1995 royalty scales were established with different scales set for different regions as set out below:

Royalty on Gas Fields - Qinhai Province, Tibet Autonomous Region, Xinjian Vigur Autonomous Region and Shallow Sea Areas		
Increment Gross Production		Royalty Rate
Billion cubic metres (m <sup>3</sup> )/year	MMCFD*	%
< 2.0	< 200	0
2.0 – 3.5	200 – 350	1
3.5 – 5.0	350 – 500	2
> 5.0	> 500	3

\* assumes 35.3 cubic feet (CF) = 1 m<sup>3</sup> (cubic metre)

Royalty on Gas Fields - Other Onshore Areas		
Increments of Annual Gross Production		Royalty Rate
Billion m <sup>3</sup> /year	MMCFD*	%
< 1.0	< 100	0
1.0 – 2.5	100 – 250	1
2.5 – 5.0	250 – 500	2
> 5.0	> 500	3

\* assumes 35.3 cubic feet = 1 cubic metre

## Profit Sharing

Profit Sharing Gas		
Increments of Annual Gross Production		Allocable Remainder Gas (%)
(Million cubic metres/year)	MMCFD*	
< 0.3	< 48.37	98
0.3 – 0.6	48.37 – 96.75	96
0.6 – 1.2	96.75 – 145.13	94
1.2 – 1.8	145.13 – 193.50	90
1.8 – 2.4	193.50 – 290.26	75
2.4 – 3.5	290.26 – 387.01	60
3.5 – 5.0	387.01 – 483.77	50
> 5.0	> 483.77	40
* 1 cubic metre = 35.315 cubic feet		