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“新常态”下的中国天然气市场

The Chinese Natural Gas Market in “New Normal”

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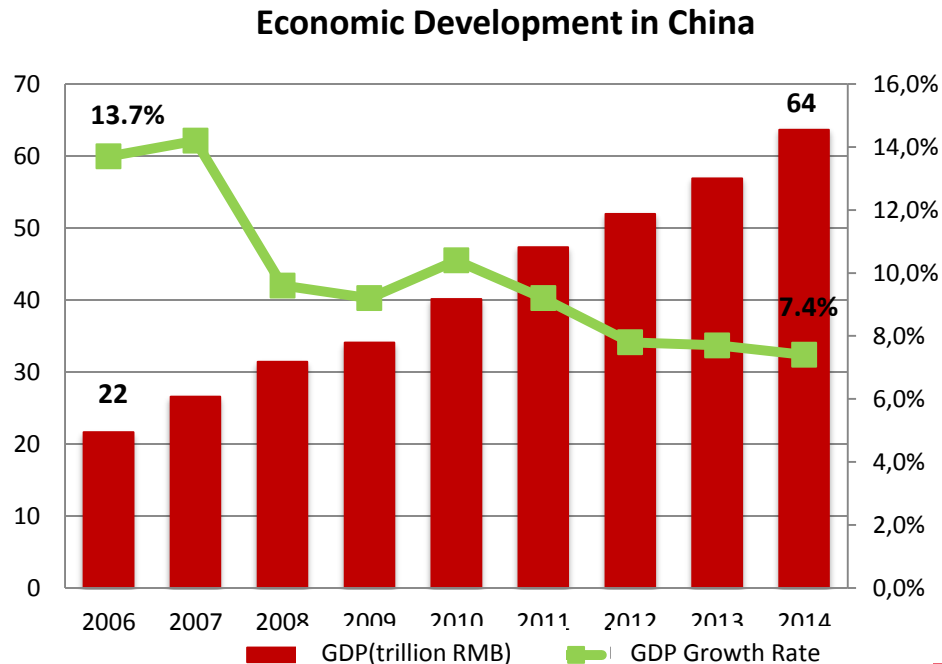


1. 中国能源发展现状：经济发展情况

1. Current Situation of China's Energy: Economic Development

■ 作为世界第二大经济体，2014年，中国GDP突破10万亿美元。经济增速放缓，GDP增速7.4%，经济发展进入新常态

■ China has become the 2nd largest economy in the world. In 2014, its GDP has exceeded 10 trillion USD. However, the economic growth rate slowed down. The GDP growth rate is 7.4%. China's economy has shifted to "New Normal".



1. 中国能源发展现状：经济发展情况

1. Current Situation of China's Energy: Economic Development

■ “新常态”下的中国经济具备以下显著特征

- ✓ **速度**——从高速增长转为中高速增长，增速6%-7%将成为常态
- ✓ **结构**——经济结构不断优化升级，服务业占比逐步上升，消费拉动将承担更多作用
- ✓ **动力**——从要素驱动、投资驱动转向创新驱动，从规模增长转向质量和效益增长
- ✓ **The Chinese economy under New Normal condition has the following features:**
- ✓ **Speed** – the economy has shifted gear from the previous high speed to a medium-to-high-speed growth.
- ✓ **Structure** – the economic structure is constantly improved and upgraded, which relies more on the tertiary industry and consumption demand.
- ✓ **Transition from factor- and investment-driving growth to innovation driving growth, from scale-driving growth to quality- and efficiency driving growth.**



中国能源消费增速进入“换挡”期，能源结构向清洁低碳转型

- 2014年，中国能源消费总量38.4亿吨标准煤，增速仅为2.7%，远低于前十年8%的年均增速水平。中国能源消费开始呈现增速放缓、从高碳到低碳、从化石燃料向非化石燃料转换的特征。

China's energy consumption is shifting gear to clean, low carbon energy structure

- In 2014, the total energy consumption in China has reached 3.84 billion tons of standards coal, increasing by 2.7% year-on-year, far slower than the 8% annual growth rate in the previous decade. The energy consumption growth has slowed down. The consumption is shifting from high-carbon to low carbon from fossil fuel to non-fossil fuel.



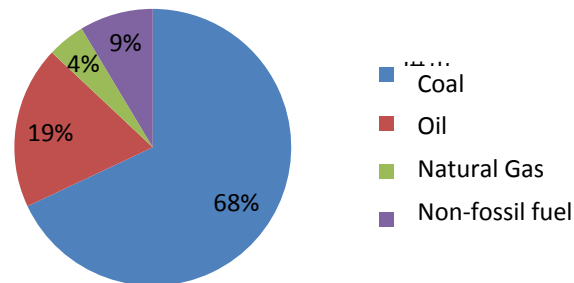
1.中国能源发展现状

1. Current Situation of China's Energy

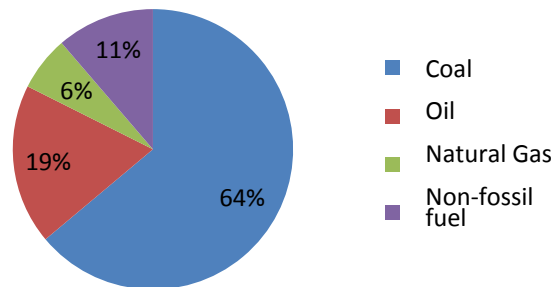
■ **能源消费结构逐步优化**：呈现“双增、一降、一平”的特点。天然气消费占比从2010年的4%增至2014年的6%，非化石能源消费占比从9%增至11%，煤炭消费占比从68%降至64%，石油消费占比仍为19%

■ **Energy consumption structure continue to improve**: from 2010 to 2014, natural gas consumption ratio in the total energy mix has increased from 4% to 6%, non-fossil fuel has increased from 9% to 11%; while coal consumption has decreased from 68% to 64%; oil remains 19%.

Energy Structure in 2010



Energy Structure in 2014



1. Current Situation of China's Energy :Natural Gas Development Situation

■ 上游资源

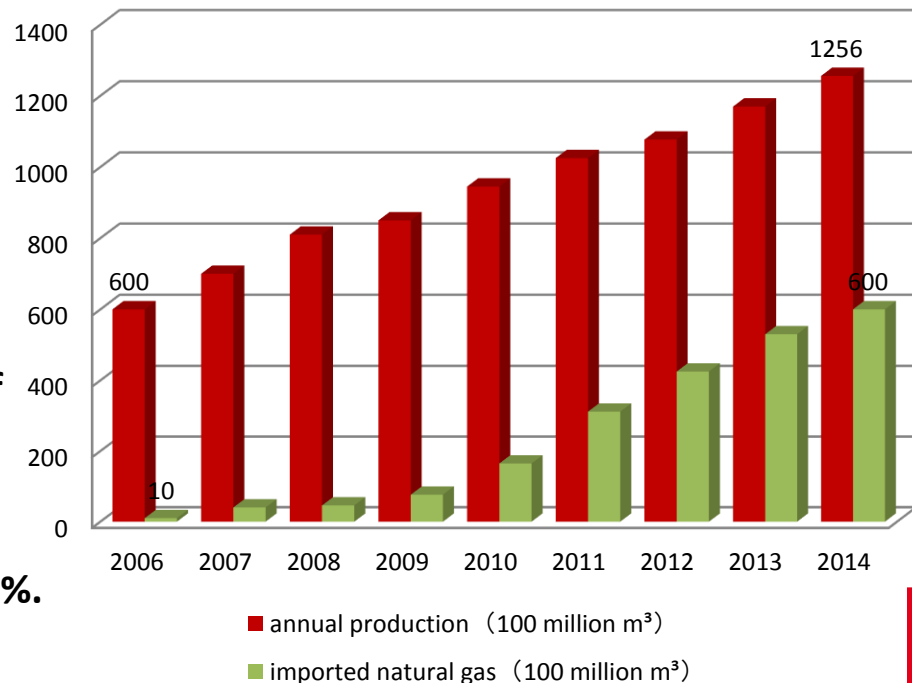
✓ **国内生产**：从2006年的600亿立方米增长到2014年的1256亿立方米，年均复合增长10%

✓ **国外进口**：从2006年的10亿立方米增长到2014年的600亿立方米，年均复合增长60%

■ Upstream

✓ **Domestic production** has increased from 60 bcm in 2006 to 125.6 bcm in 2014 with CAGR of 10%.

✓ **Import from overseas** has increased from 1 bcm in 2006 to 60 bcm in 2014 with CAGR of 60%.



1. 中国能源发展现状：天然气发展情况

1. Current Situation of China's Energy : Natural Gas Development Situation

■ 中游管网

✓ **全国性天然气管网**：已经形成进口管道气、进口LNG、国产气多气源供气格局

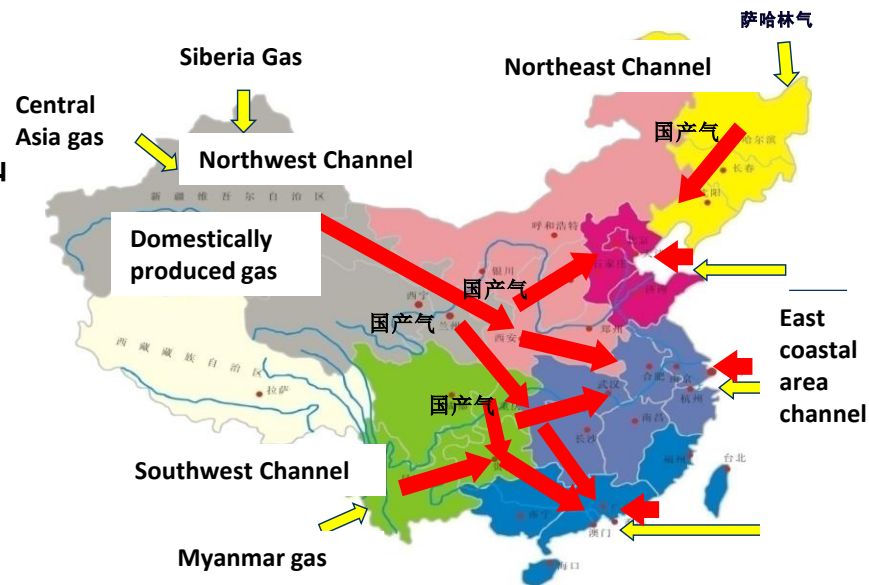
✓ **管线长度**：管道长度逾6万公里，输气能力超过2000亿立方米/年

■ Midstream – Pipeline

✓ **Nationwide natural gas pipeline coverage:**

multiple gas resources including pipeline gas, imported LNG, domestically produced gas

✓ **Pipeline length:** over 60,000 km with transmission capacity of over 200 bcm/year



■ 中游管网

✓ **LNG接收站**：已经投运LNG接收站11座，接收能力达到4100万吨/年，目前在建及规划12座

✓ **储气库**：地下储气库储备能力接近40亿立方米

✓ **城市燃气管网**：城市配气管网总长度超过50万公里，年均增速达到10%

■ Midstream – Pipeline

✓ **LNG receiving terminal**: 11 LNG operating terminals, with a total receiving capacity of 41 million tons/year, another 12 is under construction.

✓ **Underground Storage**: nearly 4 bcm in capacity

✓ **Distribution pipeline**: over 500,000 km, with an annual growth rate of 10%



1. 中国能源发展现状：天然气发展情况

1. Current Situation of China's Energy :Natural Gas Development Situation

■ 下游消费

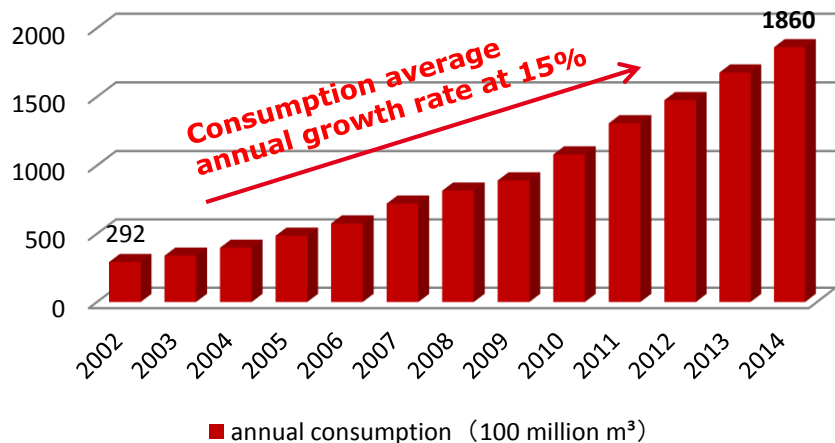
✓ **消费量**：从2002年的292亿立方米快速增长到2014年的1860亿立方米，年均复合增长达到15%

✓ **用气人口**：中国城市燃气用气人口达到5.17亿人，天然气用气人口超过3亿人

■ Downstream - Consumption

✓ **Consumption** has increased from 29.2 bcm in 2002 to 186 bcm in 2014 with a CAGR of 15%

✓ **Number of town gas users** has reached 517 million, in which over 300 million are natural gas users.



1. 中国能源发展现状：天然气发展情况

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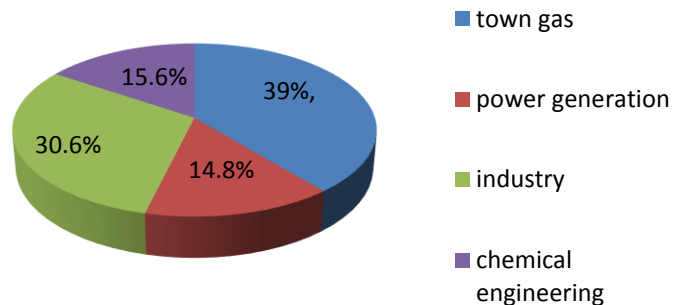
■ 下游消费

✓ **消费结构**：天然气在中国一次能源消费中占比6%，就消费结构来说，城市燃气、工业、化工和发电分别为39%、30.6%、15.6%和14.8%

■ Downstream - Consumption

✓ **Consumption structure**: natural gas accounts for 6% in the primary energy consumption in China. Town gas, industry, chemical industry and power generation account for 39%, 30.6%, 15.6% and 14.8% of the total consumption respectively.

Natural gas consumption by sector in China



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2. 中国天然气发展面临的机遇

2. Opportunities for the Chinese Natural Gas Industry

新常态下，实现中国经济平稳、有质量增长，完成能源革命和转型任务，天然气行业面临以下发展机遇

Under the New Normal, natural gas industry could seek opportunities by contributing to the steady economic development, quality growth and actively facilitating energy reform and transition.

- 国家要求加快天然气发展，能源政策中提出明确目标：《能源发展战略行动计划（2014-2020）》要求，一是提高天然气消费占比，扩大天然气进口，促进天然气资源渠道多样化；二是实施气化城市民生工程，稳步发展天然气交通运输使用，适度发展天然气发电

The authority identified clear targets for the industry to accelerate its development: The Energy Development Strategy Action Plan (2014-2020) clearly identifies the targets to (1) increase natural gas consumption proportional in the energy mix; expand natural gas import and enhance natural gas resources channel diversification; (2) enhance natural gas application in urban area to benefit the people, develop natural gas transportation in a steady manner and develop power generation by natural gas to appropriate level.



2. 中国天然气发展面临的机遇

2. Opportunities for the Chinese Natural Gas Industry

- “一带一路”的构想为天然气加强国际区域合作提供机遇：
一带一路是指建设丝绸之路经济带和21世纪海上丝绸之路。主要任务是政策沟通，设施联通，贸易互通，资金融通和民心相通。一带一路为天然气行业加强区域合作，基础设施建设、融资和融合发展等提供了良好的机遇。
- **“One Belt and One Road” initiative encourage the Chinese gas industry to go global:** The initiative is composed of the Silk Road Economic Belt and the 21st Century Maritime Silk Road. The main task is to promote policy communication, infrastructure connectivity, trade link, capital flow, and understanding among peoples. The initiative will enhance natural gas industry in regional cooperation, infrastructure connectivity, financing and industrial convergence.



2. 中国天然气发展面临的机遇

2. Opportunities for the Chinese Natural Gas Industry

- 天然气政策加快出台，促进天然气产业健康发展
- ✓ 环保立法进程加快：出台大气污染防治相关法规，强化污染排放总量和浓度控制，突出天然气作为替代煤炭的清洁能源的重要战略地位
- **New industrial policies are launched to facilitate the sound development of the industry**
- ✓ **Environmental Laws and regulations:** Air pollution prevention and control laws and regulations are launched to tighten control over total emission volume and pollutant concentration, putting natural gas in a prominent position as a clean energy to replace coal.



2. 中国天然气发展面临的机遇

2. Opportunities for the Chinese Natural Gas Industry

- ✓ **构建有效竞争的市场结构**：引入社会其他资本，开发国内非常规天然气
- ✓ **放开天然气进口限制**：扩大LNG进口渠道，减少审批，允许符合条件的企业从事LNG进口贸易业务
- ✓ **建立完善的天然气价格机制**：实现天然气价格并轨，积极建设上海天然气交易中心，推进天然气价格市场化进程
- ✓ **To form effective market system and competition**: allowing participation from private sector and encouraging unconventional gas exploration and production domestically.
- ✓ **Removing restriction on natural gas import**: cutting red tape and expanding LNG importing channel and allowing qualified companies to participate in LNG trade
- ✓ **Establishing a market-oriented natural gas pricing mechanism**: accelerating the process of integrating natural gas price with the international gas price; accelerating the building of Shanghai gas trading center.



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3. 中国天然气产业发展前景

3. Outlook on China's Natural Gas Industry

■ 上游：陆地与海域并举、常规与非常规并重，提升天然气资源供应保障水平

✓ 2020年天然气供应总量将达到3700-4000亿立方米，其中：

➤ 国产天然气产量为2300-2500亿立方米

➤ 进口天然气量为1400-1500亿立方米

■ **Upstream: in-land gas and offshore gas, conventional and unconventional gas will all be developed to improve supply security.**

✓ By 2020, natural gas supply volume is expected to reach 370 bcm to 400 bcm, in which:

➤ 230 bcm -250 bcm are domestically produced gas

➤ 140 bcm -150 bcm are imported natural gas.



3. 中国天然气产业发展前景

3. Outlook on China's Natural Gas Industry

- **中游**：管网通道全面建成，储备体系基本建立，管道基础设施保障体系基本形成
 - ✓ 2020年天然气主干管道长度达到12万公里以上
 - ✓ 力争2020年储气库工作气量力争达到天然气消费总量的10%
- **Mid-stream: infrastructure system is initially in place with a comprehensive pipeline network and basic storage capacity.**
 - ✓ By 2020, natural gas trunk line is expected to reach over 120,000 km
 - ✓ The target is set to expand storage capacity up to 10% of the total natural gas consumption



3. 中国天然气产业发展前景

3. Outlook on China's Natural Gas Industry

■ 下游：采取燃煤替代和扩大应用双轮驱动方式

- ✓ **加快推进天然气替代燃煤**：有序推进重点用煤领域“煤改气”工程，基本完成重点地区燃煤锅炉、工业窑炉等天然气替代改造任务
- ✓ **不断拓展用气领域**：稳步发展天然气交通运输，适度发展天然气发电，积极推进天然气分布式能源
- ✓ **Accelerating the process of replacing coal with natural gas**: projects of converting coals to natural gas in key areas have been successfully accomplished, including the conversion of the coal boilers and industrial coke furnace.
- ✓ **Expanding gas applications**: we will promote gas application in transportation and develop natural gas for power generation to appropriate level, and actively develop distributed

energy.



3. 中国天然气产业发展前景

3. Outlook on China's Natural Gas Industry

- 到2020年，天然气在一次能源消费中的比重要提高到10%以上，中国仍将是全球天然气行业发展的主要驱动者之一，继续扮演亚洲乃至世界天然气需求稳定增长的“压舱石”和“增长极”
- **Natural gas consumption is expected to account for 10% of the primary energy consumption by the year 2020. China will be a main driver of the development of global natural gas industry, playing the role of a growth pole for sustained natural gas demand growth for Asia and even the world.**



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4. 对全球天然气市场发展的积极作用：创新合作

4. Positive Influence on the Global Gas Market : Innovation and Cooperation

■ 资源方面：促进天然气供应多元化

✓ 提高国内常规天然气的勘探开采水平，增储上产

✓ 持续推动煤层气、煤制气、页岩气等非常规天然气在国内的开采，增加国内天然气供应能力

✓ 积极推进全球天然气勘探开发和LNG贸易，扩大进口

■ Resource: China will diversify natural gas supply.

✓ Building up the domestic conventional gas exploitation and production capacity to enhance domestic production and storage

✓ Continue to encourage domestic exploration of unconventional gas including CBM, SNG and shale gas to strengthen domestic supply capacity.

✓ increasing import by actively engaging in global gas exploration and production and developing LNG trading



4. 对全球天然气市场发展的积极作用：创新合作

4. Positive Influence on the Global Gas Market : Innovation and Cooperation

■ **基础设施方面**: 推动区域基础设施互联互通，全面提升天然气行业的供应、储存和输配能力

✓ 积极参与全球能源通道的规划和建设以及跨境天然气长输管线建设与投资

✓ 努力推动各方在天然气进口接收站、出口终端和液化天然气工厂的

建设

■ **Infrastructure**: accelerating the infrastructure connectivity and improving natural gas supplying, storage and distributing capacity

✓ Actively participating in global energy corridor's planning and construction, investing and participating in the construction of cross-broader transmission pipeline

✓ Actively engaging parties in the construction of natural gas receiving and exporting terminals, and LNG plants.



4. 对全球天然气市场发展的积极作用：创新合作

4. Positive Influence on the Global Gas Market : Innovation and Cooperation

■ **技术方面**：中国将围绕提高天然气资源勘探开发水平、提升天然气储备及管道建设能力、扩大天然气应用范畴和实现能效提高等方面加强与全球各方的技术合作

■ **投资方面**：中国将创造良好的投资环境，不断提高开放程度，使全球伙伴分享增长机会，促进全球天然气行业的融合发展

■ **Technology**: China will strengthen technology cooperation with courtiers around the world, focusing on:

- ✓ Improving natural gas resource exploration and exploitation;
- ✓ Improving natural gas storage and pipeline capacity
- ✓ Expanding natural gas application areas
- ✓ Improving energy efficiency

■ **Investment**

- ✓ China will create favorable investment environment, continue to open up, share growth opportunity with global partners and promote the convergence of the world gas industry.



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5. 北京燃气集团发展现状及前景

5. Beijing Gas Group – Introduction and Prospects : Achievements

受惠于中国天然气产业的高速发展和天然气市场化改革不断深入，北京燃气集团呈现快速发展态势

■ **中国最大的单体城市燃气企业，在中国同行业中居于领先地位**

✓ 2014年，北京市天然气消费量达到105亿立方米，是中国第一个、世界第四个燃气消费过百亿立方米的国际化都市

✓ 用户数量超过800万户，管线长度2万公里，员工数量1.3万人

✓ 天然气在北京市能源消费结构占比接近20%

Beijing Gas Group benefits from the rapid development and in-depth reform of the Chinese natural gas market and enjoys steady rapid development.

■ **The largest town gas company in terms of operating scale in a single city in China, leading the industry development.**

✓ In 2014, natural gas supply volume in Beijing has reached 10.5 bcm. Beijing became the 1st city in China and the world's 4th city enjoying over 10 bcm natural gas supply in the world.

✓ 8 million users, over 20,000 km of operating pipeline, 13,000 employees.

✓ Natural gas takes over 20% of the primary energy consumption in Beijing.



5. 北京燃气集团发展现状及前景：前景

5. Beijing Gas Group – Introduction and Prospects : Prospects

■ 到2020年

- ✓ 天然气购入量超过**200亿**立方米
- ✓ 天然气在北京市能源消费结构占比超过**25%**

■ 未来

- ✓ 北京燃气将加快向一体化清洁能源运营商的转变，为用户供应优质的清洁能源并提供多元化的服务
- ✓ 积极参与全球天然气市场活动，与全球天然气产业同仁广泛开展各类合作

■ By 2020

- ✓ Natural gas purchase volume exceeds **20 bcm**
- ✓ Natural gas accounts for over **25%** in energy consumption in Beijing

■ Future Prospects

- ✓ Beijing Gas Group will accelerate the transformation towards an integrated clean energy operator, providing quality, clean energy and value added service to users
- ✓ Actively participating in global gas market and join world gas colleagues in various cooperation.



合作·共赢

Cooperation and Win-Win



北京燃气
BEIJING GAS

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