

Review and Prospect of China's Energy and Petrochemical Industry



2019

Report series of China energy and petrochemical industry

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The release of 2019 Annual Report of China Energy and Petrochemical Industry



SINOPEC



3 Modules

- Economy Forecast
- Market Analysis
- Insights on Hot Events



6 Industrial Chains

Refinery 、 C2 、 C3
C4 、 PX 、 C6



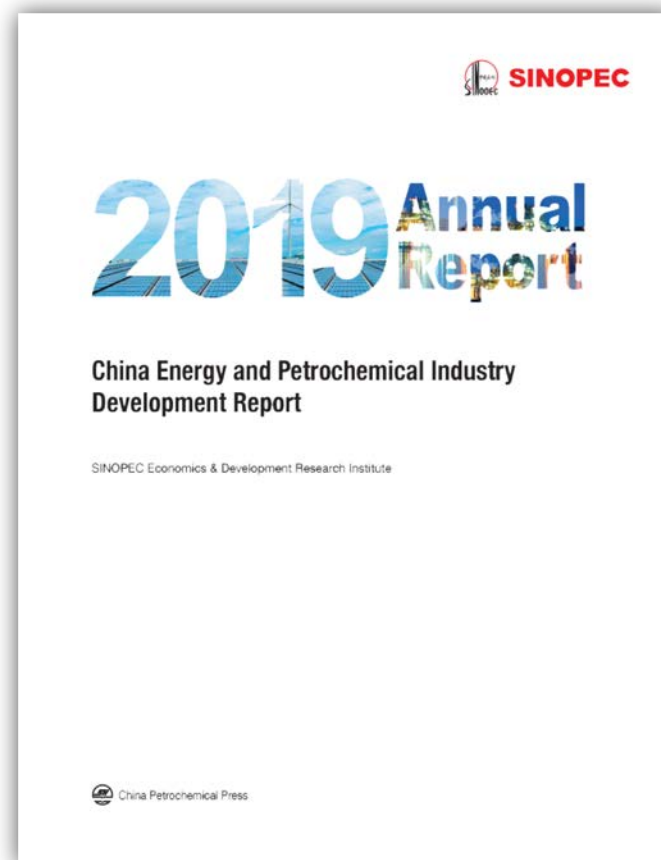
3 Parts

- Energy
- Refinery Industry
- Chemical Industry



Over 40 Products

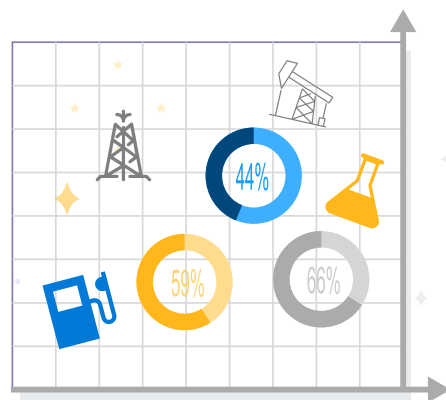
Crude oil, natural gas, refined oil,
ethylene, propylene, ethylene glycol,
butadiene rubber, acrylic



Main content of the 2019 report



Review 2018



International Market



China Market

Prospect 2019

How many ?

How much ?

Demand & Supply & Price

How to change ?

Pattern of Supply and Demand
&
Trend of Price

How to impact ?

Impacts of Hot Events

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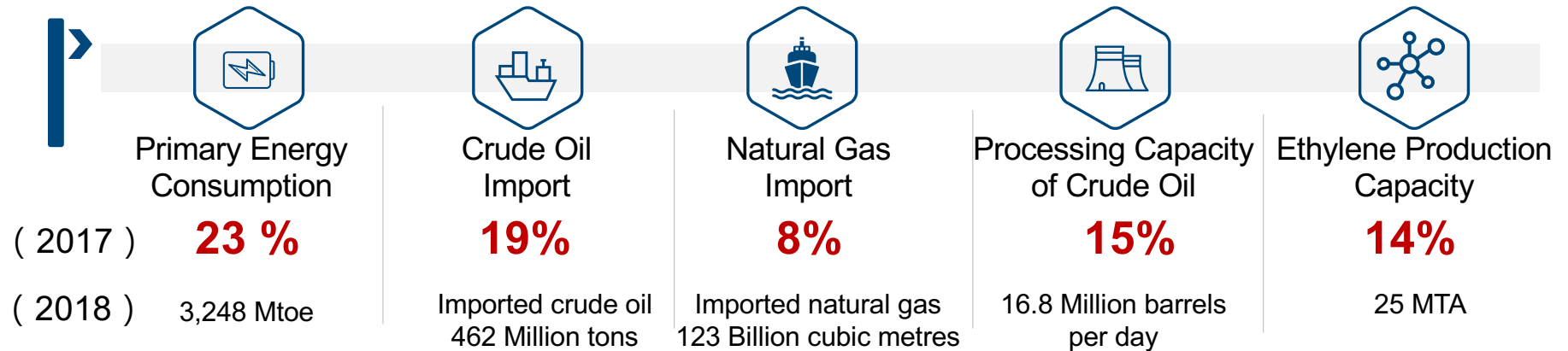


1

The Development of China Energy and Petrochemical Industry in the Past 40 Years

1. Has been the vital component of China's and even the world economy

An important role in global energy and petrochemical system



A vital position in the development of national economy

1978-2017年

11.6%

of national industrial assets

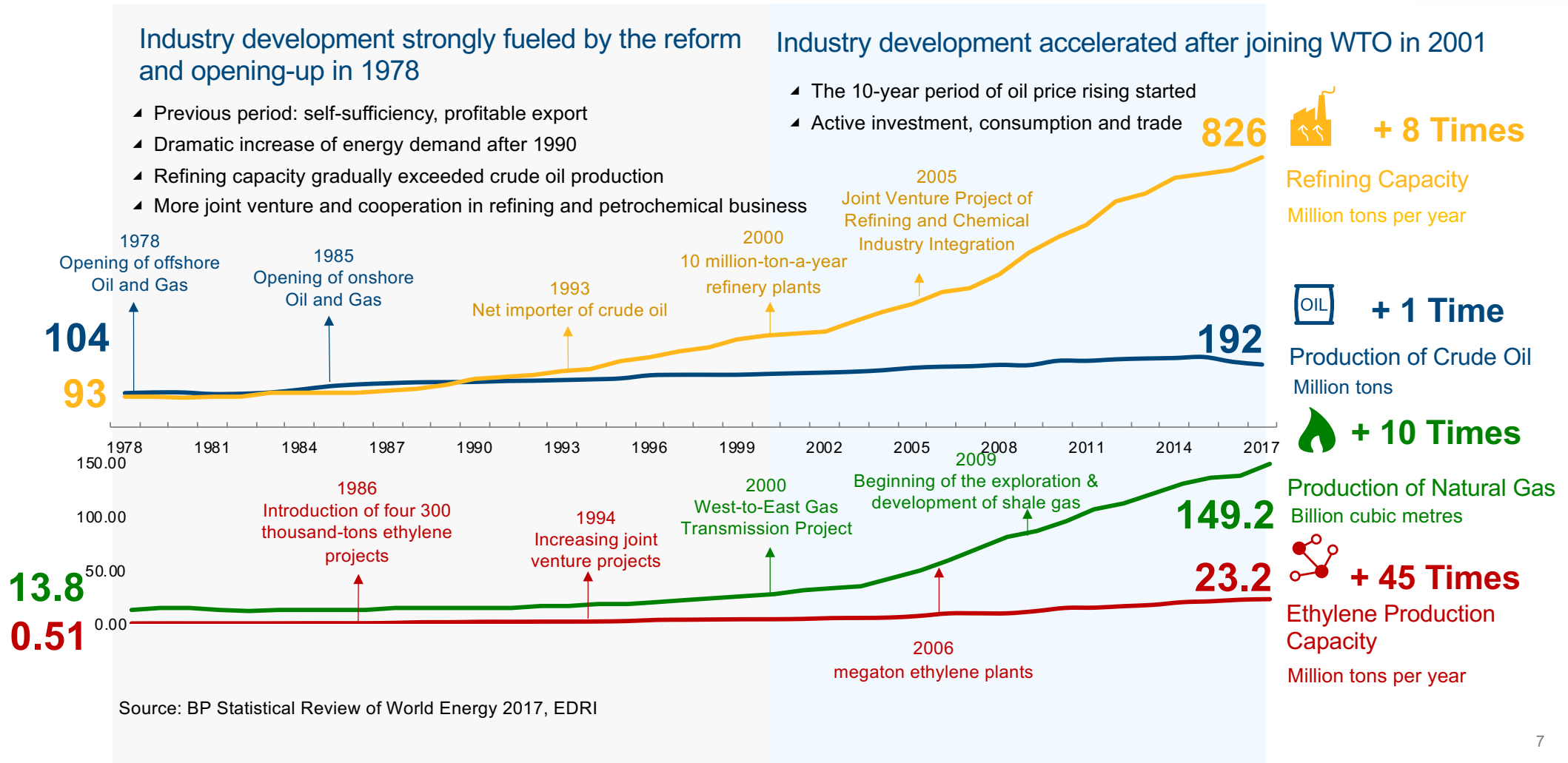


The main business income of the industry is **2.0** trillion US dollars · increased by **182** times.

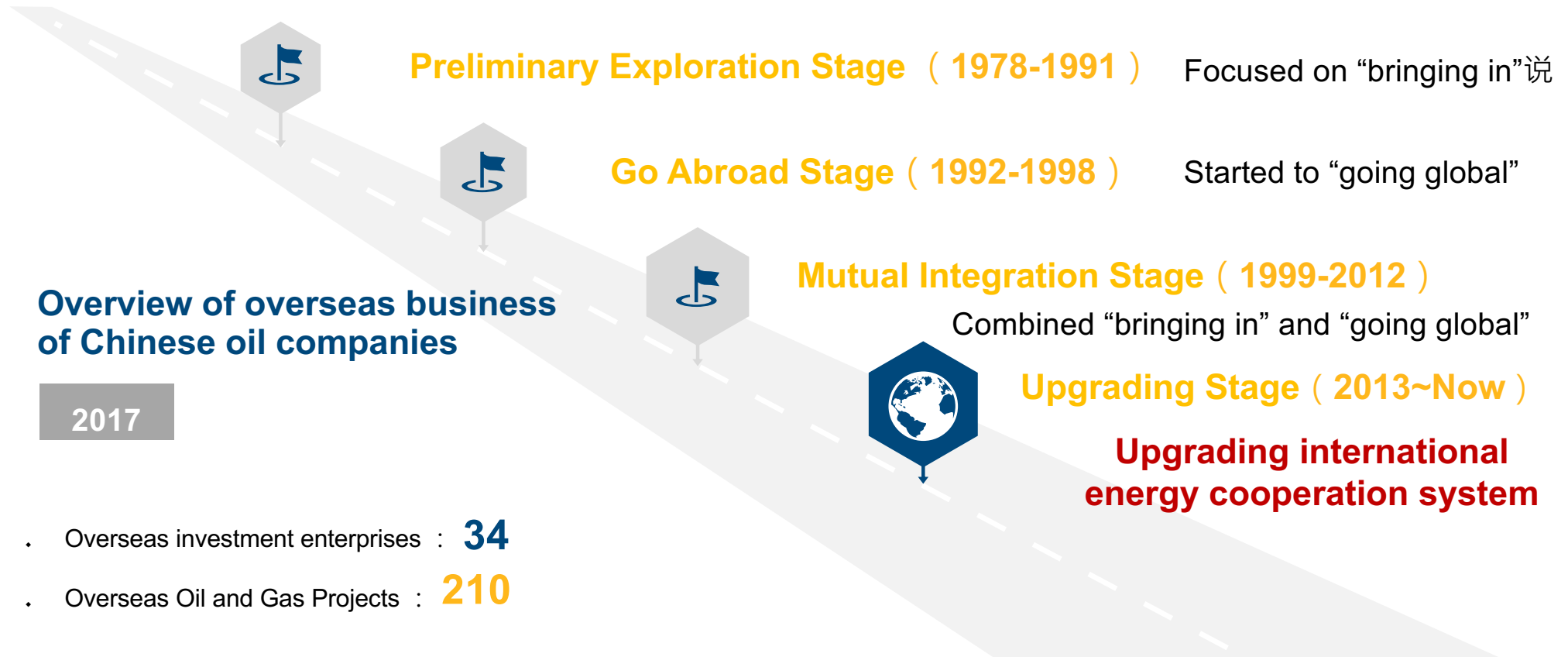
The number of large and medium-sized enterprises is **10** times more, and large ones is more than **30000**.

Source: BP Statistical Review of World Energy 2017, National Bureau of Statistics of China, EDRI

2. Has Achieved “Leapfrog Development”



3. Opening and cooperation helps be in line with the global industry system




4. A number of petroleum and petrochemical international enterprises have emerged



2018

2013

2003

4	3	87		5	8	28	33	9
5	4	93		1	6	10	11	3
69	70	>500		4	5	14	15	3

5. The level of some energy and petrochemical technologies has entered advanced ranks in the world



Oil & Gas exploration and development theory as well as technology highlights characteristics



Conventional → Unconventional



Marine Facies → Continental Facies



Onshore → Offshore



(Exploration of Shale Gas at Fuling)



(offshore drilling)

Refining Technology
Overall advanced, some leading



(Yanbu Aramco Sinopec Refining Company Ltd.)

Technology with independent intellectual property



Capacity to design and build ten-million-tons oil refinery



Complete technology series of clean petroleum products production

Petrochemical Technology
Reaches or approaches the world's advanced level



Complete technology series of megaton ethylene project



Complete technology series of highly efficient and environmentally friendly aromatic hydrocarbons



Complete technology series of modern coal chemical industry



(Sinopec technology series of highly efficient and environmentally friendly aromatic hydrocarbons)



Independent Innovation

Cooperation With External Partners



2

The New Pattern of long-term Development of Energy and Petrochemical Industry in China

Past——Meet the Demand of Basic Necessities of Life

In the past 40 years, petroleum and petrochemical industry emphasized on satisfying
quantity and speed requirement



Clothing



Food



Housing

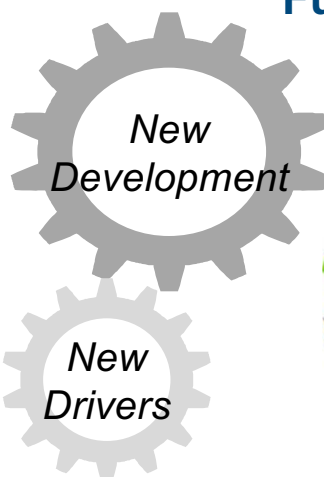


Transportation

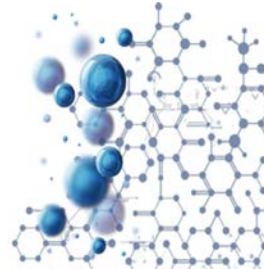
Future——Meet the Requirement of High-quality Development

In the future, petroleum and petrochemical industry emphasized on satisfying

quality and efficiency requirement



Cleaner



Higher-end



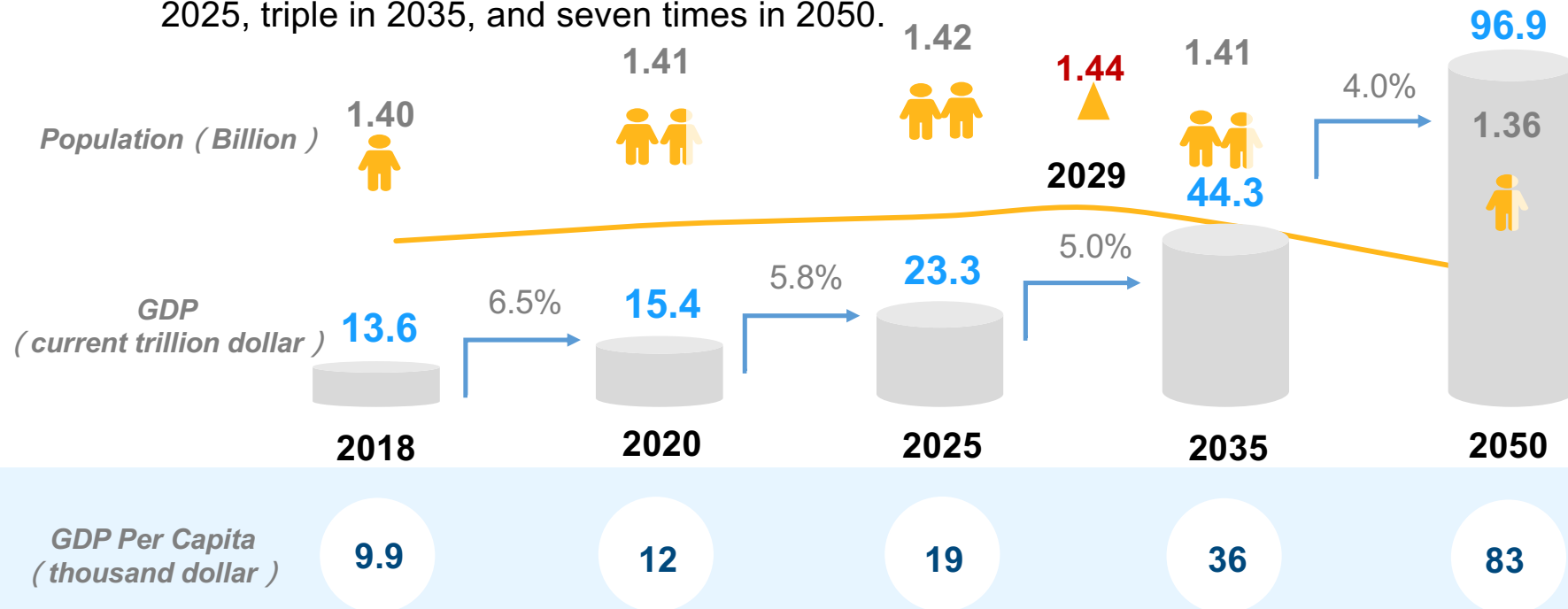
More Intelligent



More Sustainable

1. Steadily growing economy in China will constantly provide a sustained impetus for industrial growth

- China will be able to maintain GDP growth rate at 6-6.5% by 2025. Also, the population will continue to grow and is expected to reach peak at 1.44 billion in 2029.
- China's Per Capita GDP will increase significantly. Compared to 2018, it will double in 2025, triple in 2035, and seven times in 2050.

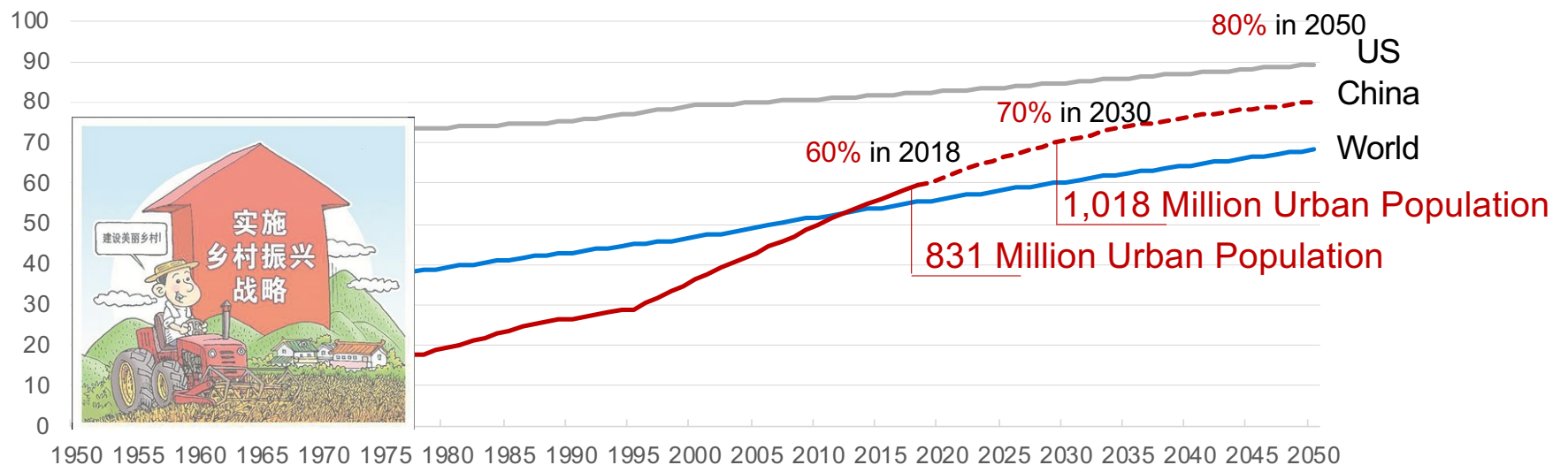


Source : The State Information Center · Development Research Center of the State Council · EDRI

The 1st New Driver: New urbanization and the rural vitalization strategy will inspire the potential of China's economic and industrial development



- The rural vitalization strategy will break the urban-rural dual structure and drive economic growth strongly.
- By the free flow of factors , the integration of urban and rural industries could be promoted, level of urbanization could be raised, the synergy of urban development and rural revitalization could be achieved.



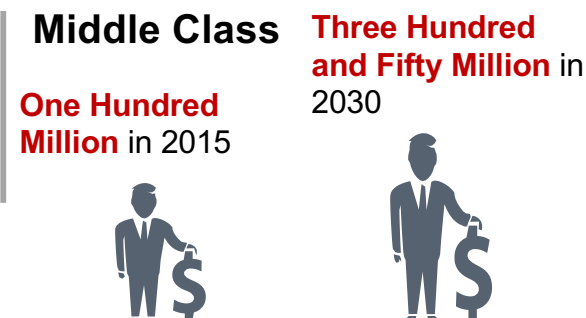
The gap between China's urbanization rate and that of developed countries has narrowed rapidly (%)

Source : UN, National Bureau of Statistics of China, EDRI

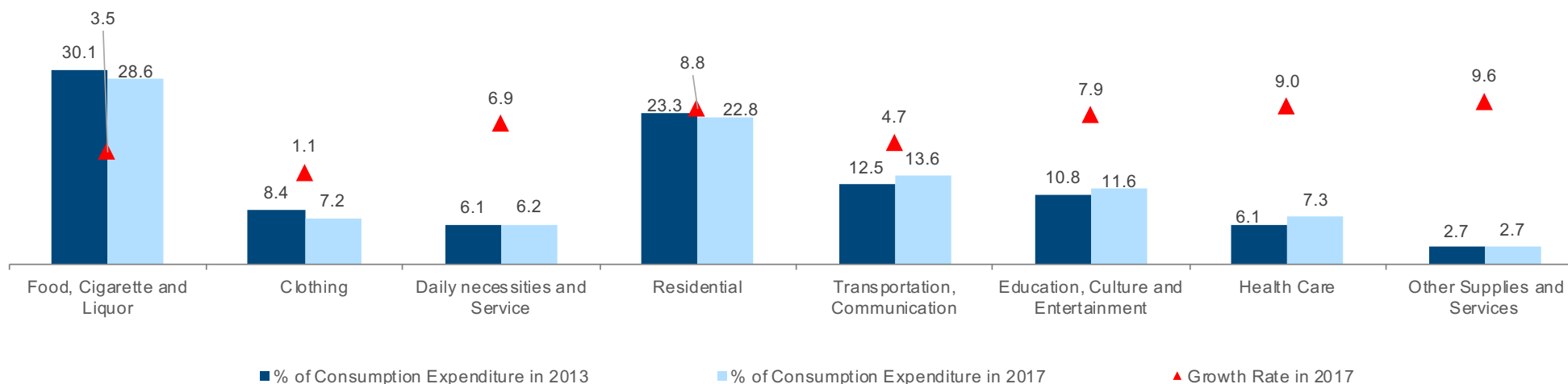
The 2nd New Driver: The rising middle class has become a strong driver of consumption growth and industrial upgrading



- Urban residents' consumption is upgrading along the path from necessary consumption to **improved consumption** to high-end consumption.



Consumption Expenditure Structure of Urban Residents (%)



Consumption Upgrade

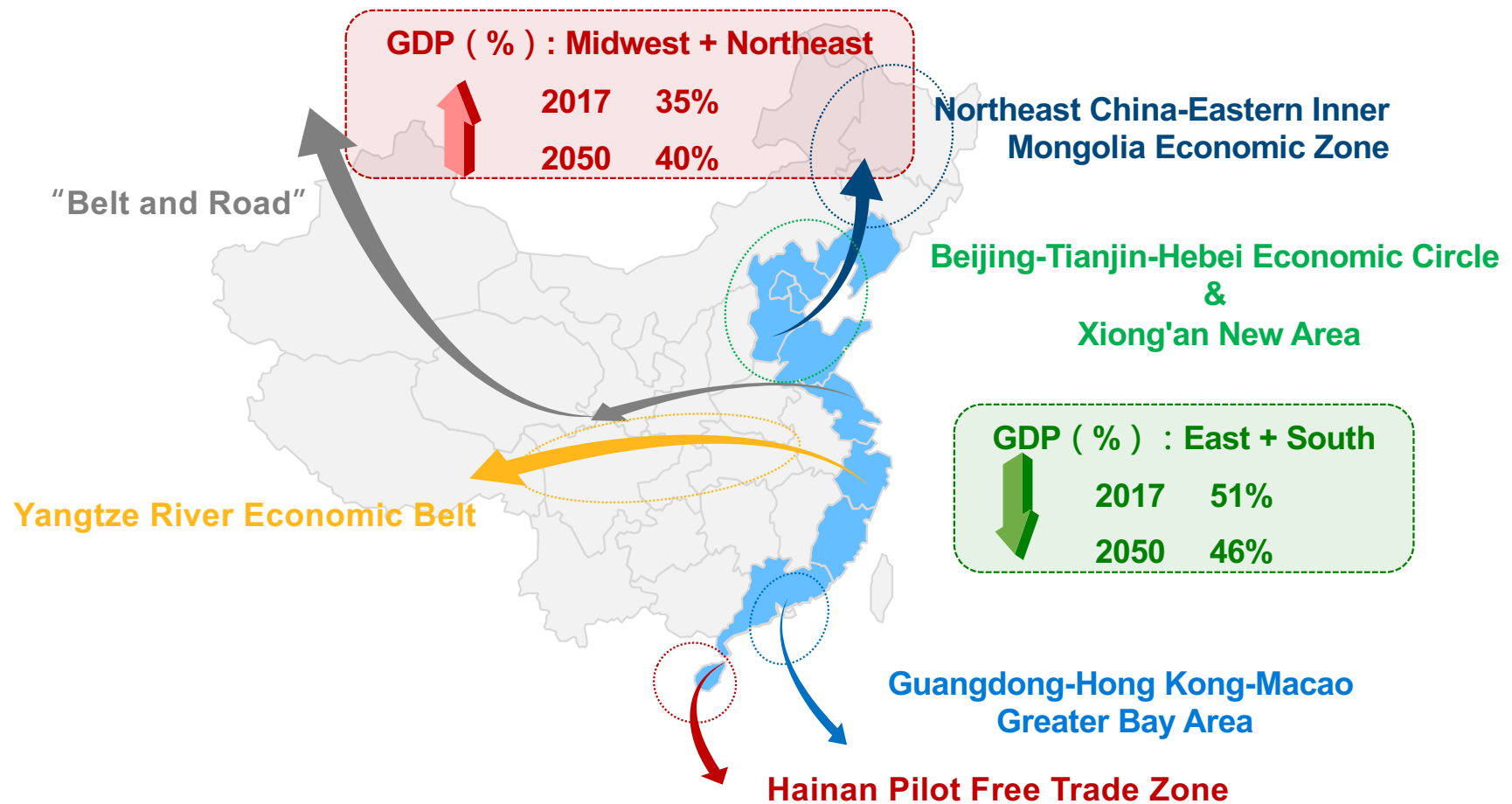
Necessary Consumption

Improved Consumption

High-end Consumption

Source : National Bureau of Statistics of China

The 3rd New Driver: The coordinated regional development strategy will provide a broader space for industrial further expansion



The 4th New Driver: Technological revolution will foster new growth and promote the upgrading of traditional petroleum and petrochemical industries



Emerging Industry Developing and Growing



Boosted GDP by
more than **\$7.5**
trillion

Traditional Industry Transforming and Upgrading



New Business Model

"Internet Plus" , Block chain , Sharing Economy, Modern Supply Chain, etc.



A New Generation of Information and Technology Industry

Big Data, Cloud Computing, High-end Software, etc



New Energy, New Materials

Clean Energy, Advanced Polymer Materials, High Performance Materials, etc



New Energy Vehicle

Electric Vehicles, Fuel Cell Vehicle, etc



Traditional Manufacturing

Promoting the In-depth Integration of the Internet, Big Data, Artificial Intelligence with the Real Economy



Energy Industry

Building a clean, low-carbon, safe and efficient modern energy system



Chemical Industry

Product Upgrading, Resource Conservation and Clean Production

The 5th New Driver: More comprehensive opening-up in China will create a more favorable industrial investment environment

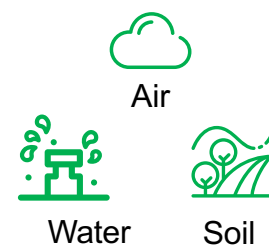
- China will substantially ease market access, strengthen intellectual property rights protection, and take the initiative to expand imports.

China will never close but open its door even wider.



The 6th New Driver: The requirement of green development will lead traditional industries to explore new development paths

Environmental Protection Policy



Long-term Mechanism



Environmental Protection Tax



Pollutant Discharge Permits



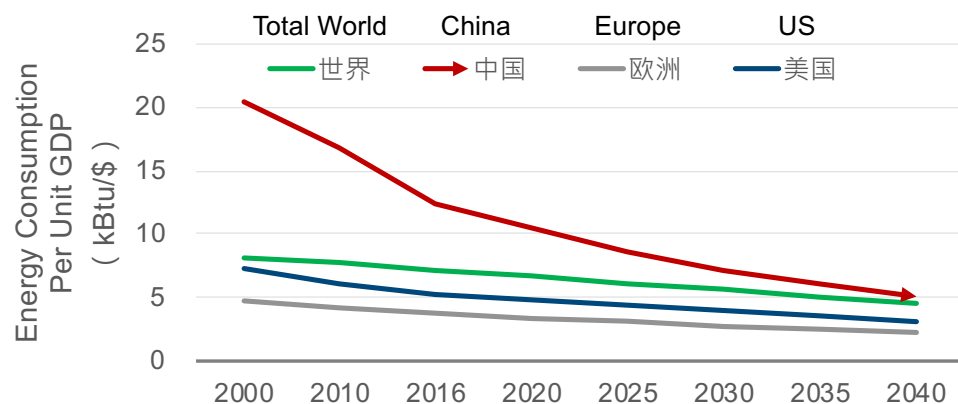
Environmental protection costs have accelerated the industry reshuffle, further enhanced the industry concentration.

- ↳ Outdated production capacity will be largely eliminated to make room for the development of advanced clean production capacity and green production.
- ↳ Environmental costs of companies will be increased significantly.
- ↳ The development space of urban enterprises will be limited.

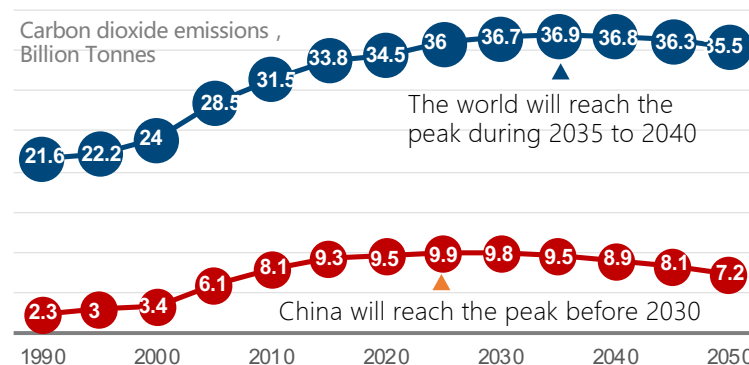
2. China's energy transition will move faster than the world, and energy efficiency will be greatly improved



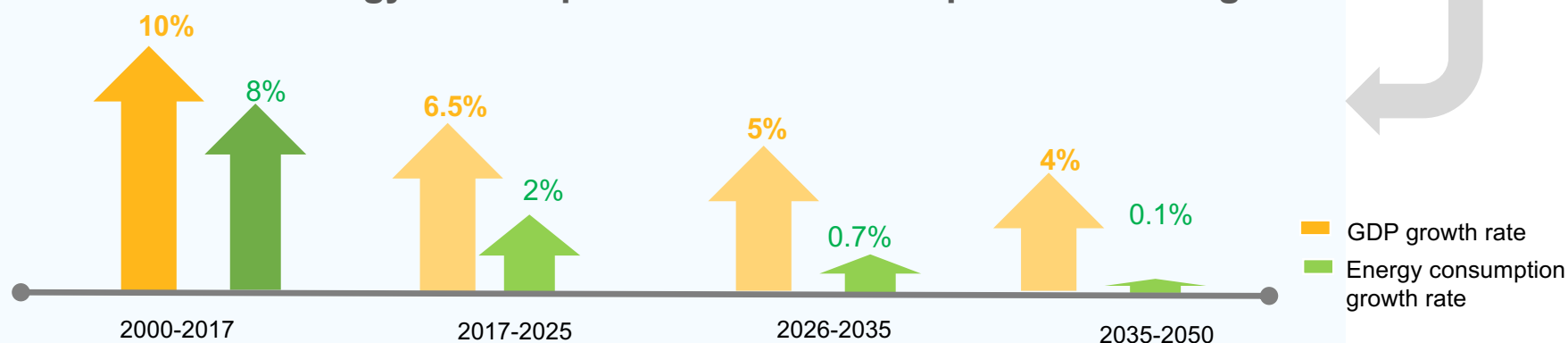
China's energy intensity descends most quickly



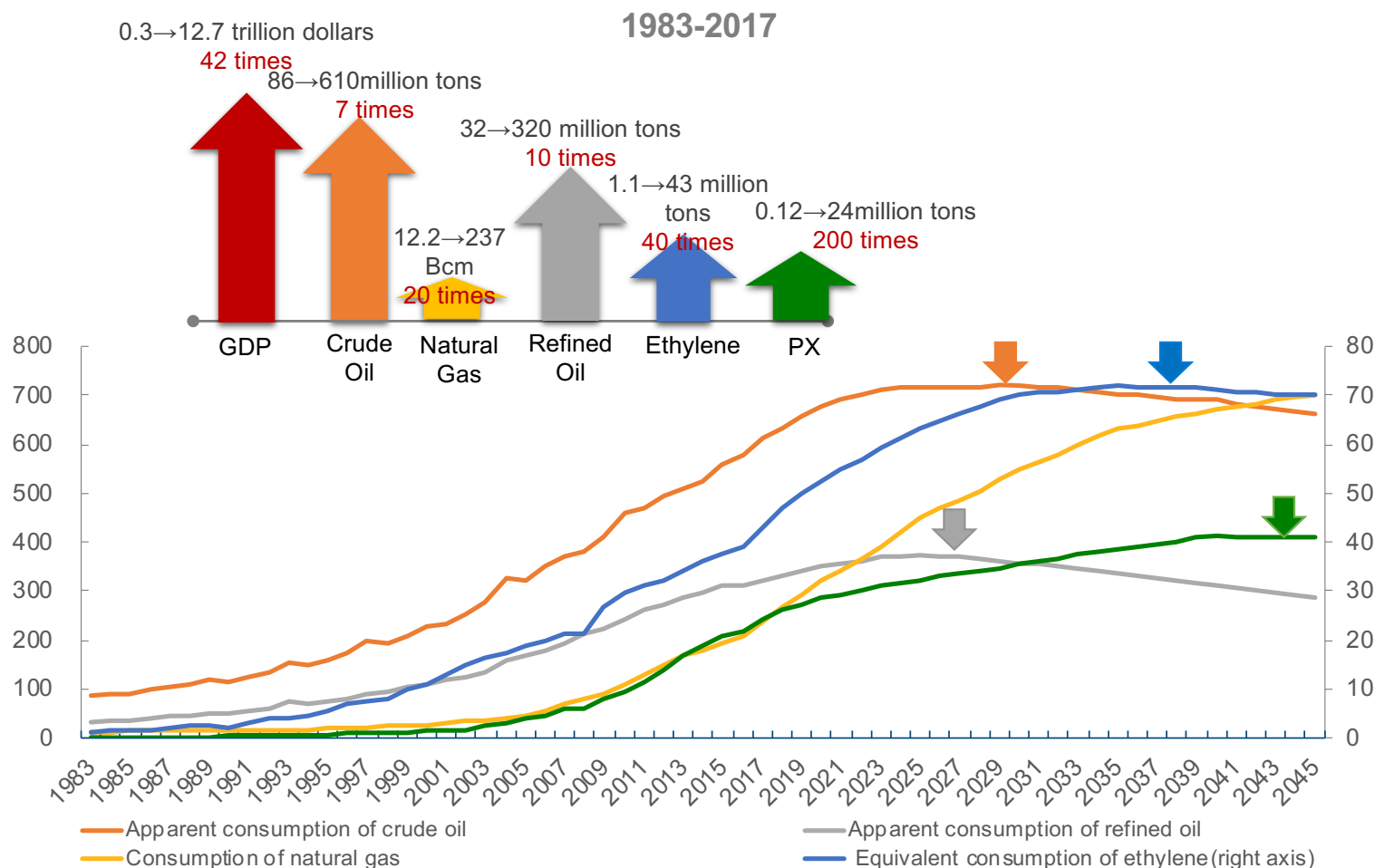
Will reach the peak of carbon emissions before the world does



China's energy consumption has been decoupled from GDP growth



3. The market for petroleum and petrochemicals remains huge, especially in natural gas, chemicals and new materials



Crude Oil

Peak Time≈ around 2030
Peak Value≈**720 million tons**



Natural Gas

Peak Time : before 2050↑
Demand in 2050 : about **700 Bcm**



Refined Oil

Peak Time≈2027
Peak Value≈**370 million tons**



Ethylene

Peak Time≈2035-2040年
Peak Value≈**72 million tons**



PX

Peak Time≈2040-2045
Peak Value≈ **41 million tons**

4. China's market will be more competitive, with the gradual formation of a pluralistic supply system



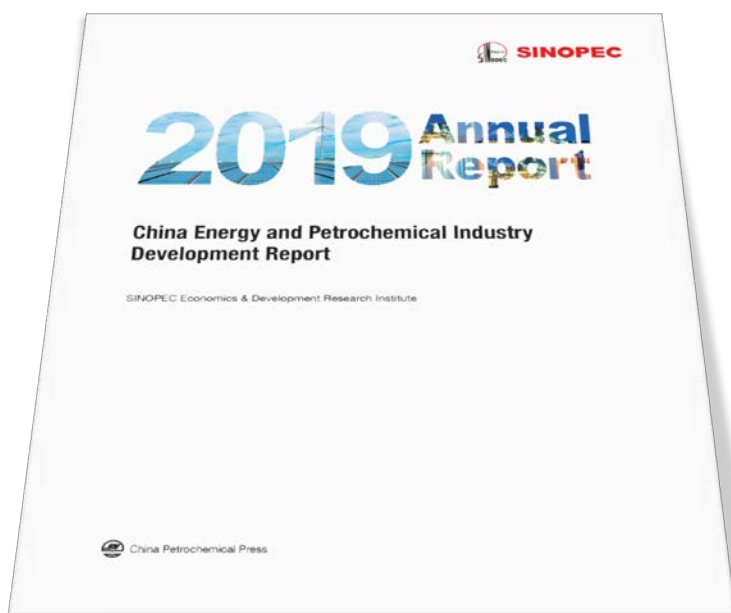


3

Market Prediction for 2019

2019 Annual Report of China Energy and Petrochemical Industry

Focuses on **6** Questions



- 1 What Are the Roads Ahead for World and China Economy ?
- 2 How Do We Evaluate Forces that Influence the Sustainable Development of Energy?
- 3 Will Gas Supply be very tight in 2019?
- 4 How Will the New Expansion of Refinery and Petrochemical Capacity Influence the Market ?
- 5 How Will the Market Demand Be in 2019 ?
- 6 Will Business Cycle of Refining and Petrochemical Industry Continue in 2019?

1. What Are the Roads Ahead of World and China's Economy ?

Higher Risks

2018 : 3.2%
2019 : 3.1%

I. Shrinking Trade

Trade friction
Unilateral sanctions

II. Contracting Real Economy

The manufacturing PMI has decreased by 3.8% since the beginning of 2018

Stability First

2018 : 6.6%
2019 : 6.0-6.5%

Employment

Stable

Finance

Stable

Foreign Trade

Stable

Stable

Foreign Investment

Stable

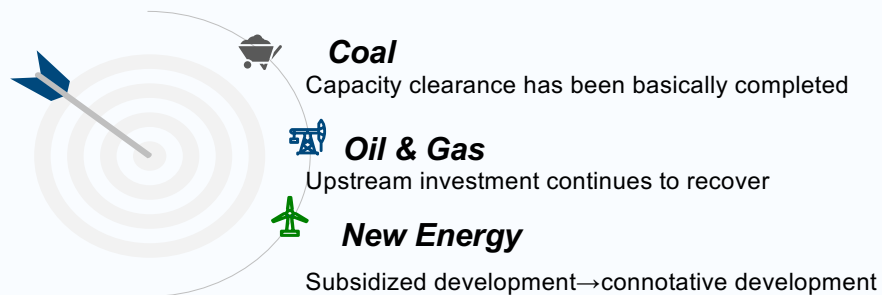
Investment

Stable

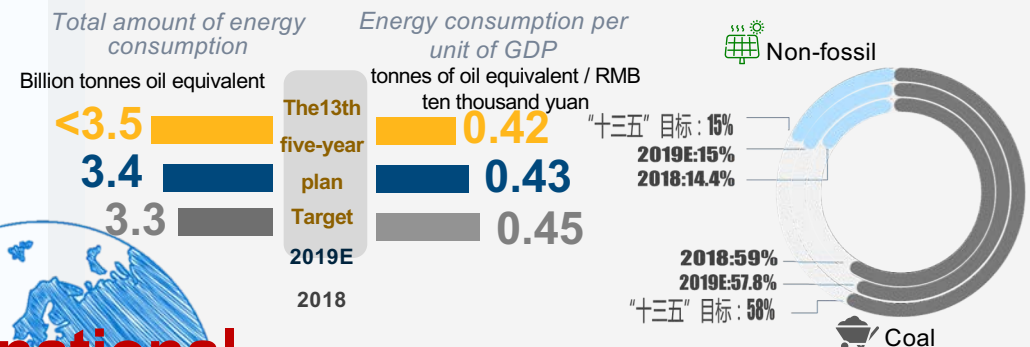
Expectation

2. Whether the Energy Industry Can Achieve Sustainable Development?

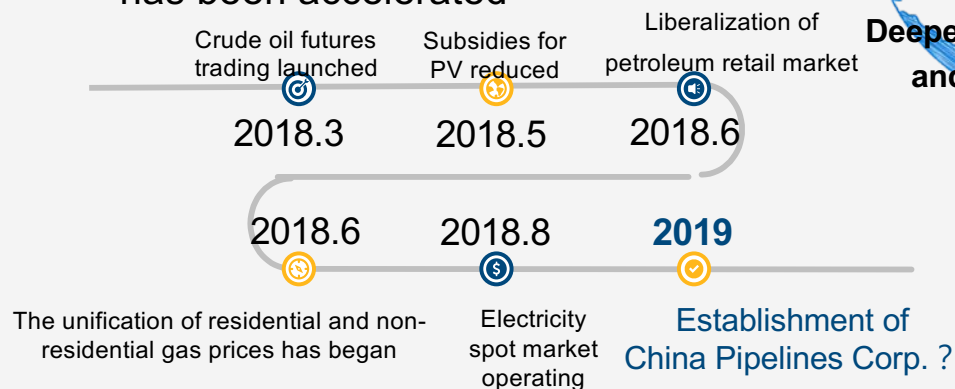
Production: A clean, efficient and diversified energy supply system is forming



Consumption: The goal of optimizing energy structure was achieved ahead of schedule

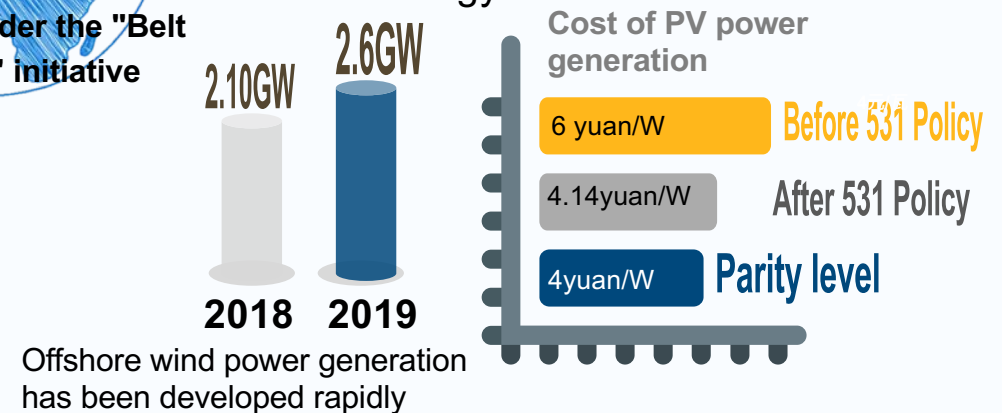


Reform: The process of marketization has been accelerated



International Cooperation
Deepened under the "Belt and Road" initiative

Technology Development: The cost of non-fossil energy continues to fall

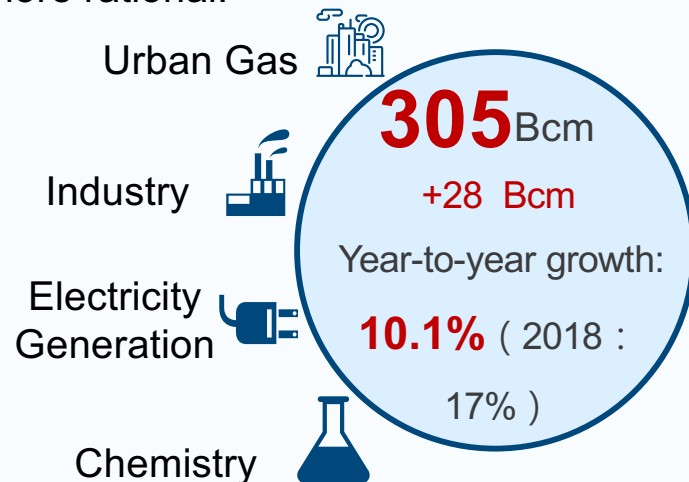


3. Will Gas Supply be very tight in 2019?



More rational demand

Fuel conversion from coal-to-gas will be more rational.



More sufficient supply

The establishment of production, distribution, storage and sales systems has been stepped up.



Production: Domestic gas production will be increased by over **7%**

Supply: Global LNG production **+76%**
 LNG terminal: **+6.40Mt/Y**

Storage : Gas storage **+3 Bcm**

Sales :

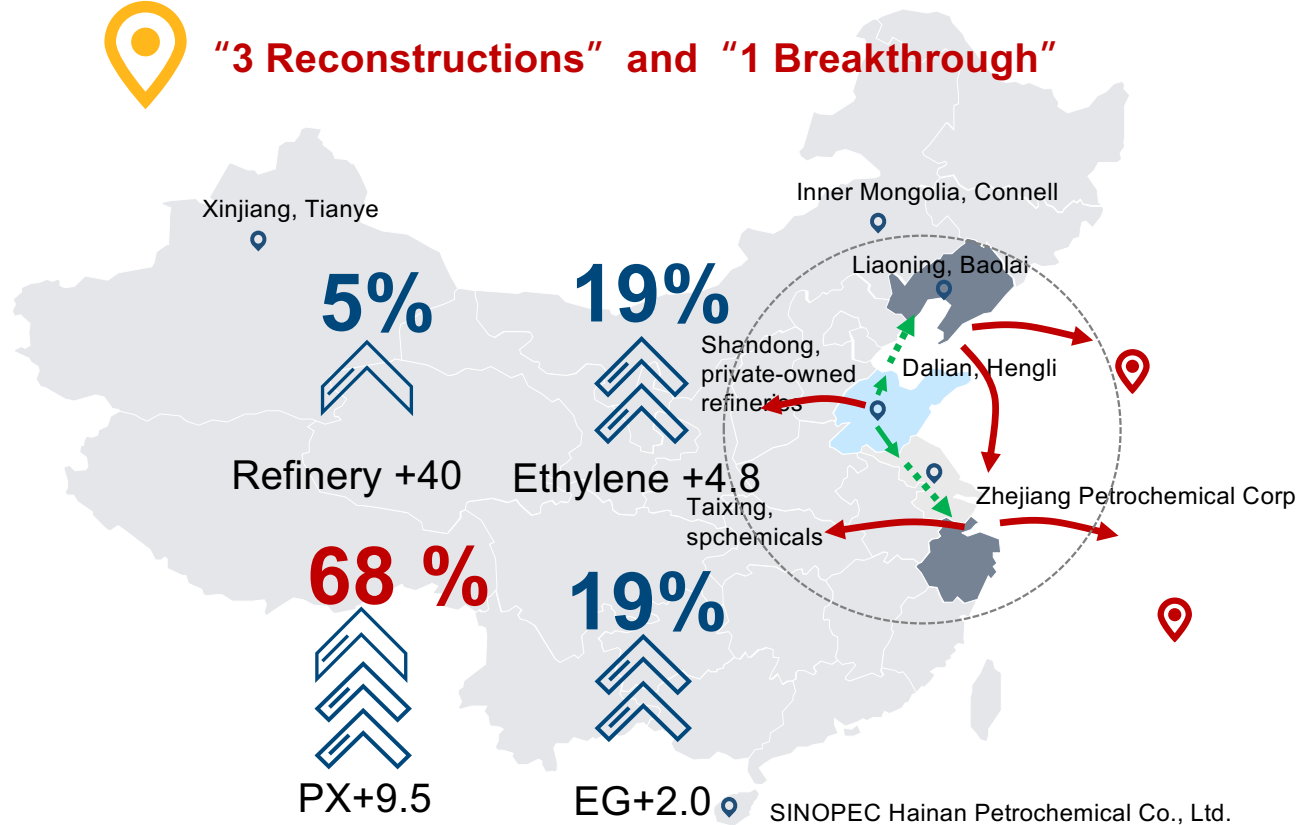
Pipeline network interconnection has been accelerated

- "Gas supply from South to North": **30 Mcm/d**
- Supply increase in Beijing-Tianjin-Hebei surrounding areas: **60 Mcm/d**

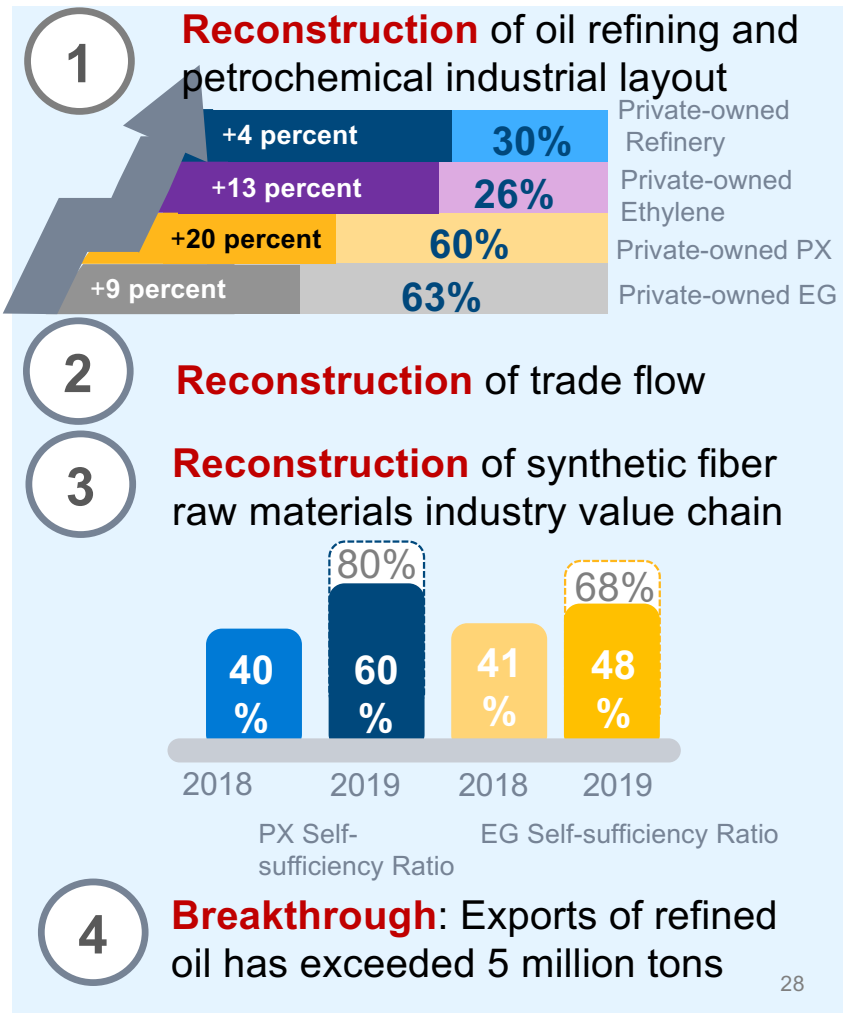
4. How Will the Operation of Private-owned Refinery and Petrochemical Capacity Influence the Market ?



"3 Reconstructions" and "1 Breakthrough"

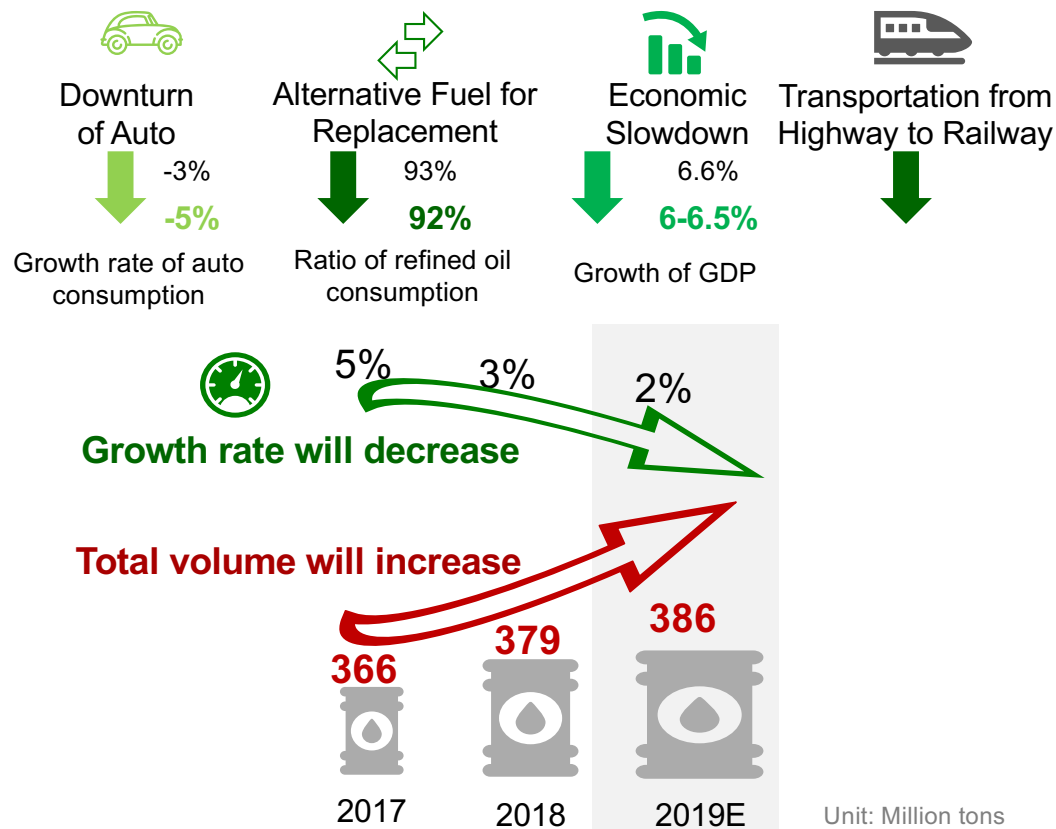


Production capacity increase of ethylene and PX are equivalent to the amount of new capacity added **in the past 4-7 years** combined



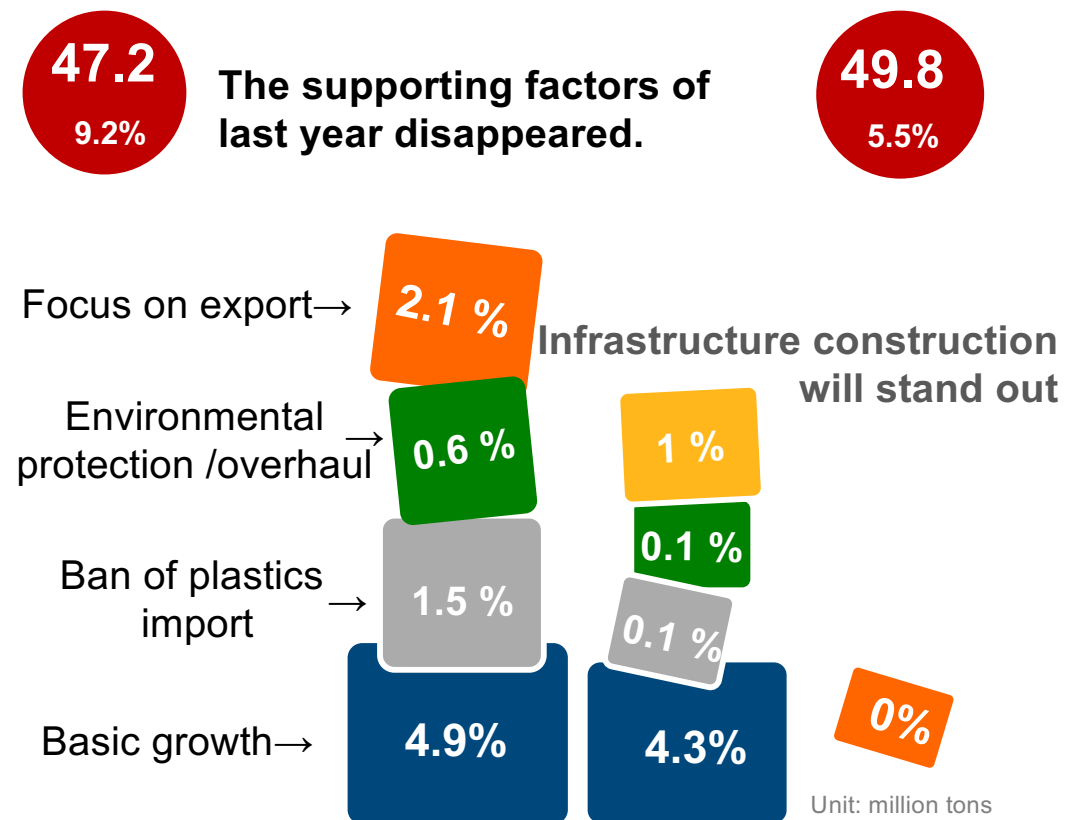
5. How Will the Market Demand Be in 2019 ?

Demand of refined oil will **weaken**



* end-use consumption

Demand of petrochemicals will **slow down**



6. Will Business Cycle of Refining and Petrochemical Industry Continue to Sustain in 2019?



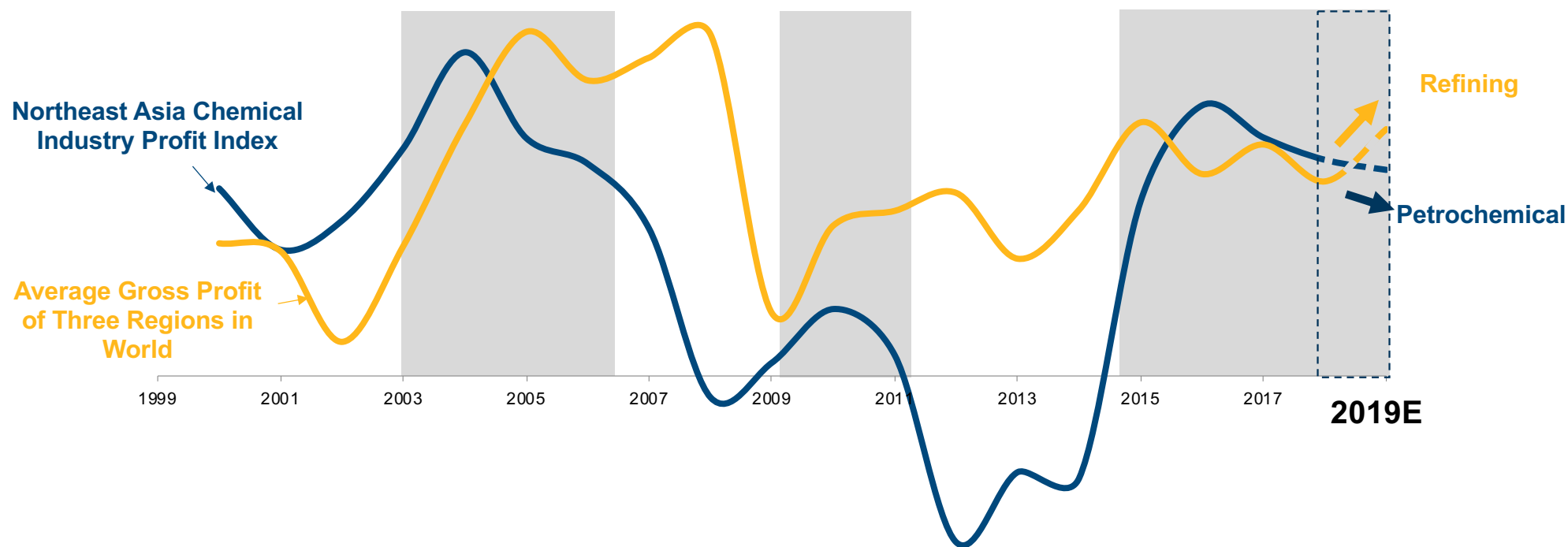
Refining

The low-sulfur requirement of bunker fuel will extend the refinery margin, but China's margin will be lower than world average level for the reason of significant new capacity.



Petrochemical

Under strongly increasing supply but decreasing demand, China's Petrochemical profitability will decline from high level.



Thank you

