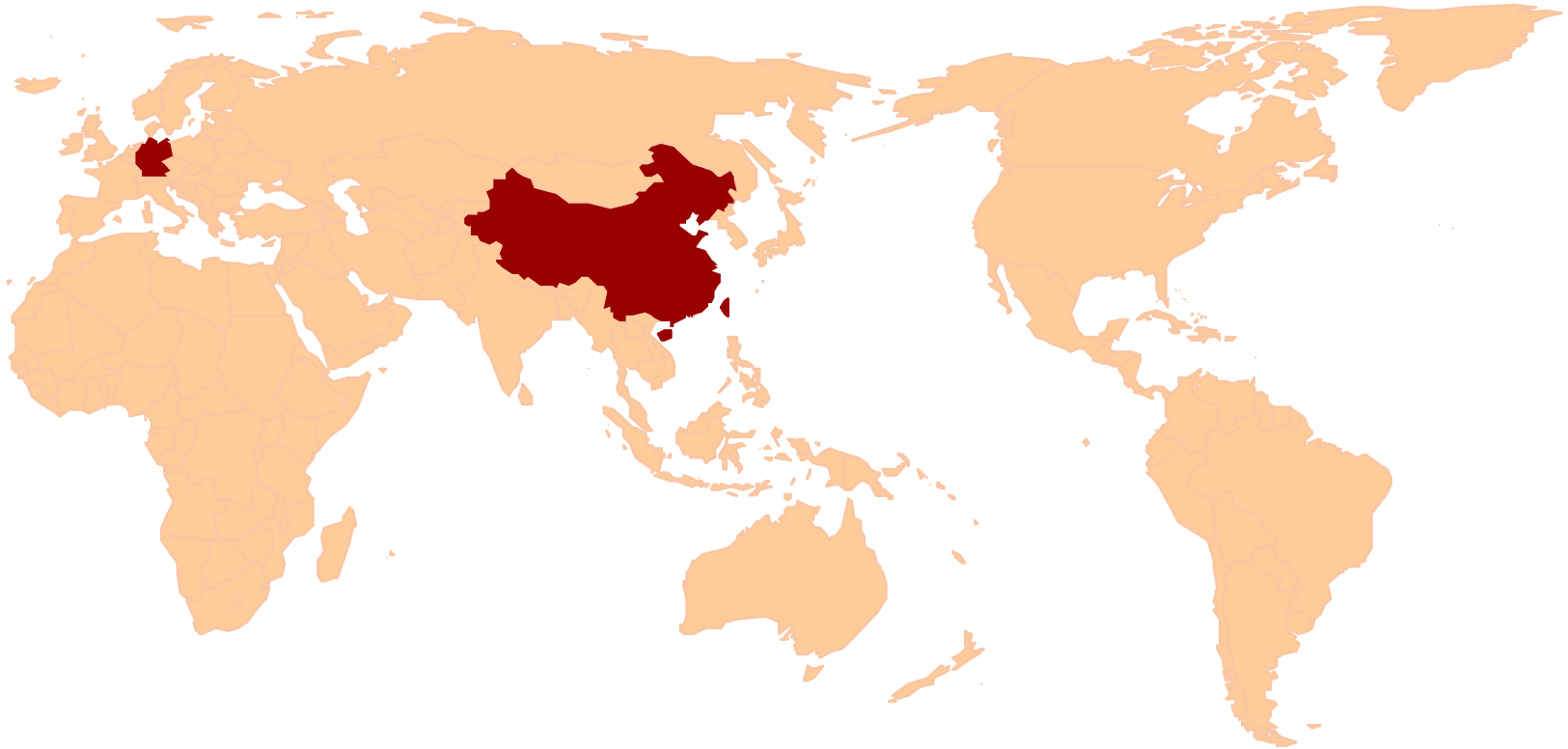


MSM
MANDARIN STRATEGY MANAGEMENT
CONSULTING GMBH



MSM –
YOUR STRATEGIC PARTNER FOR CHINA

Industry Up-date/I. 2008
China's Power & Utilities Industry

1	Overview China's economic development
2	Industry Introduction (Outlook)
	China's Power Industry
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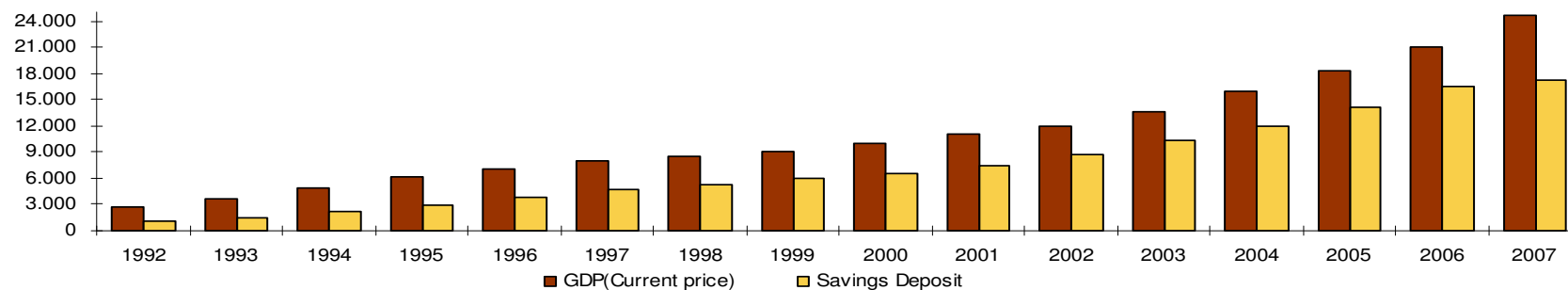
MSM overview of the Chinese economy

GIANT EMERGING ECONOMY	<ul style="list-style-type: none">■ GDP (purchasing power parity) - 6,992 Bln USD (2007 est.) - Rank No. 2■ GDP 2007 (official exchange rate) 3,251 Bln USD■ GDP per Cap.: 2,454 USD ----- With the largest population 1.3Bln
FAST GROWING OUTPUT	<ul style="list-style-type: none">■ GDP real growth: 11.4% ----- Compared to world: 5.2% in 2007 est.■ Real domestic demand growth ----- 9.5% in 2007
STRONGER CURRENCY	<ul style="list-style-type: none">■ Regime: Managed Exchange-Rate System■ RMB has appreciated 15% against U.S. Dollar since July 2005■ Spot Rate: 7.05 RMB/USD 10.99 RMB/Euro (20 Mar. 2008)
MAJOR PLAYER IN GLOBAL TRADE	<ul style="list-style-type: none">■ Trade Surplus: 262 Bln USD■ Export: 1,218 Bln USD -----Share in world 2006: 8.02%, Rank: No.3■ Import: 956 Bln USD ----- Share in world 2006: 6.38%, Rank: No.3■ FDI: 82.7 Bln USD, Total Reserve: 1,530 Bln USD

China's strong economic growth will continue

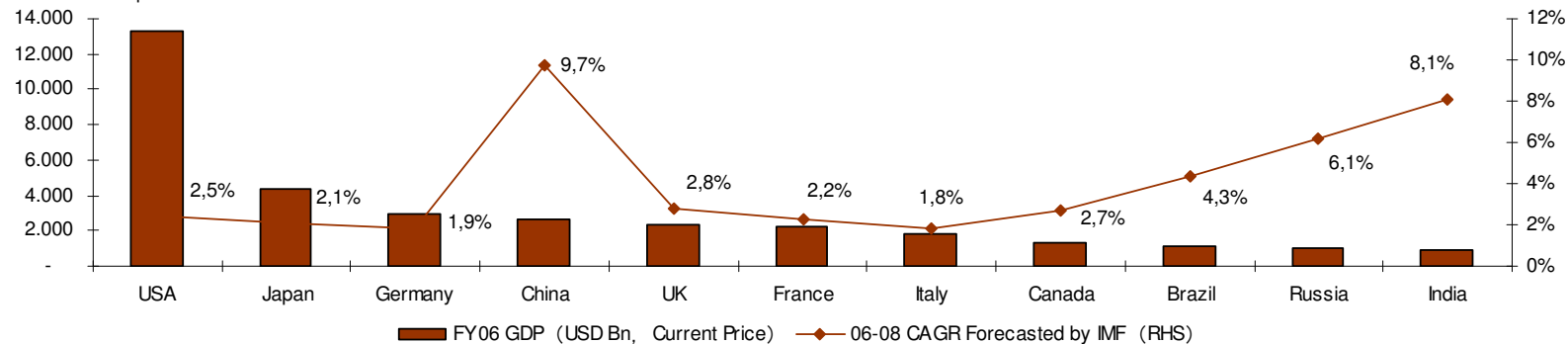
Strong GDP growth and rising household wealth in 1992—2007

Unit: RMB Bln.



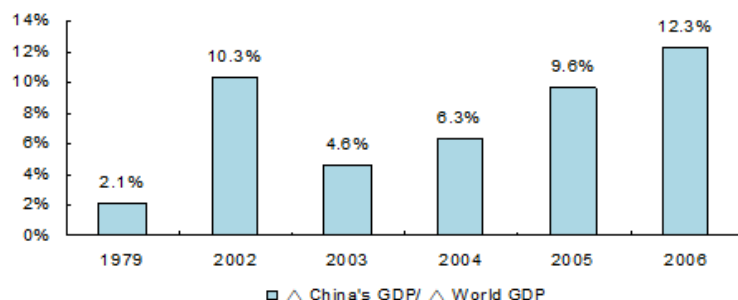
China's growth will continue to outpace other large economies in the next two years

Unit: US \$ Bln.



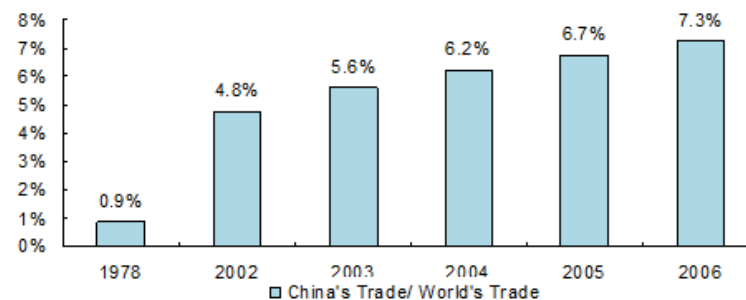
... with increasing influence on the world economy

China Contributes More to the World Economy



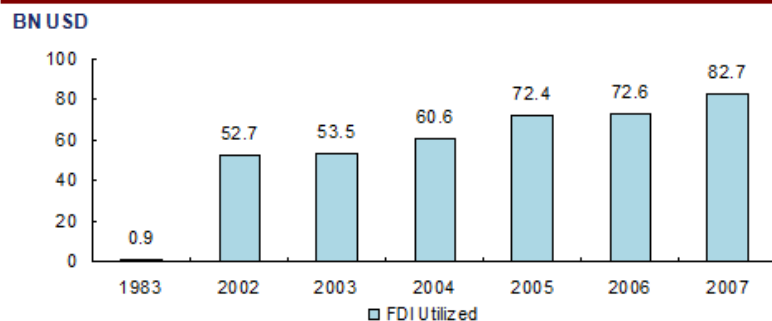
Source: World Bank, CICC Research

China's Trade is Taking Bigger Proportion



Source: IMF, CICC Research

More FDI is Attracted into China



Source: CEIC

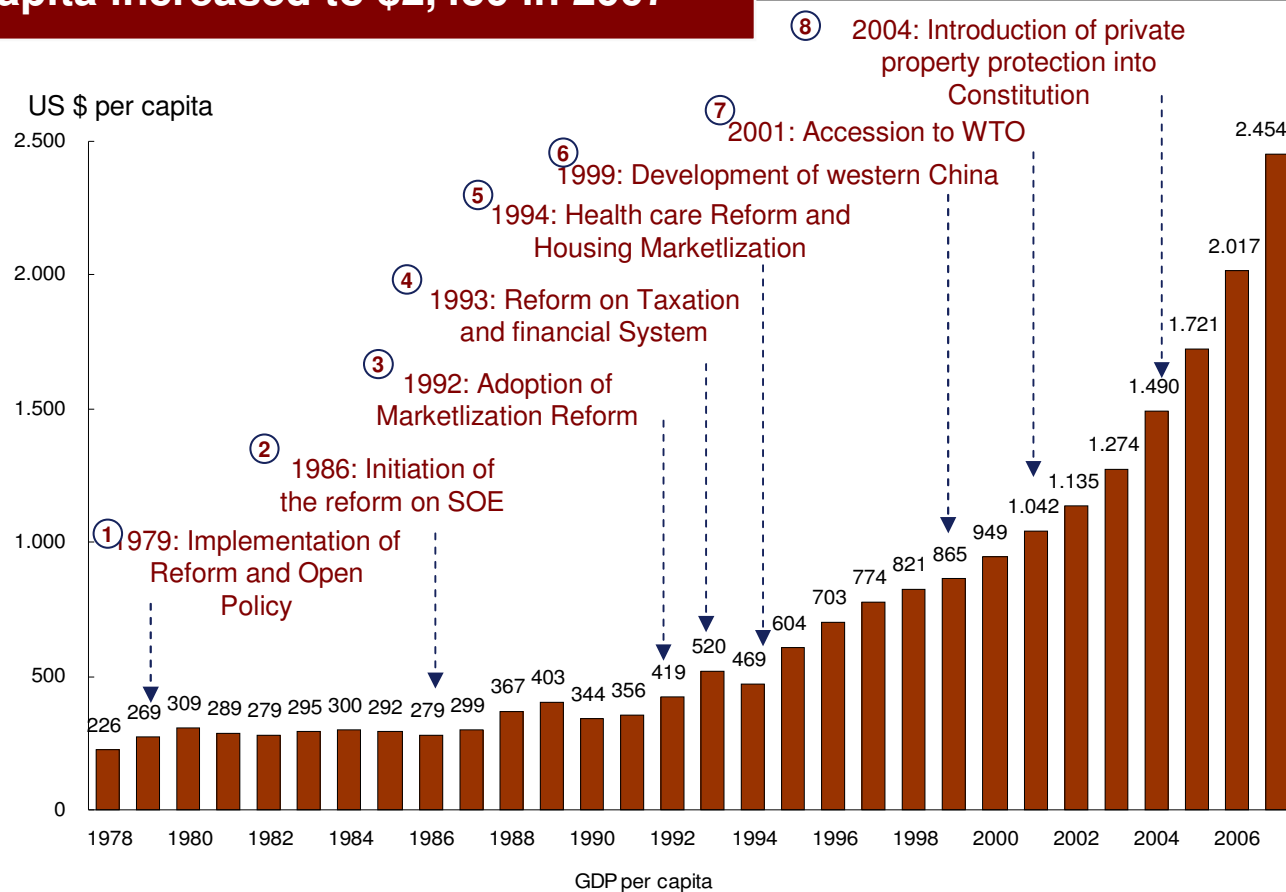
China's Reserve is now the Largest in the World



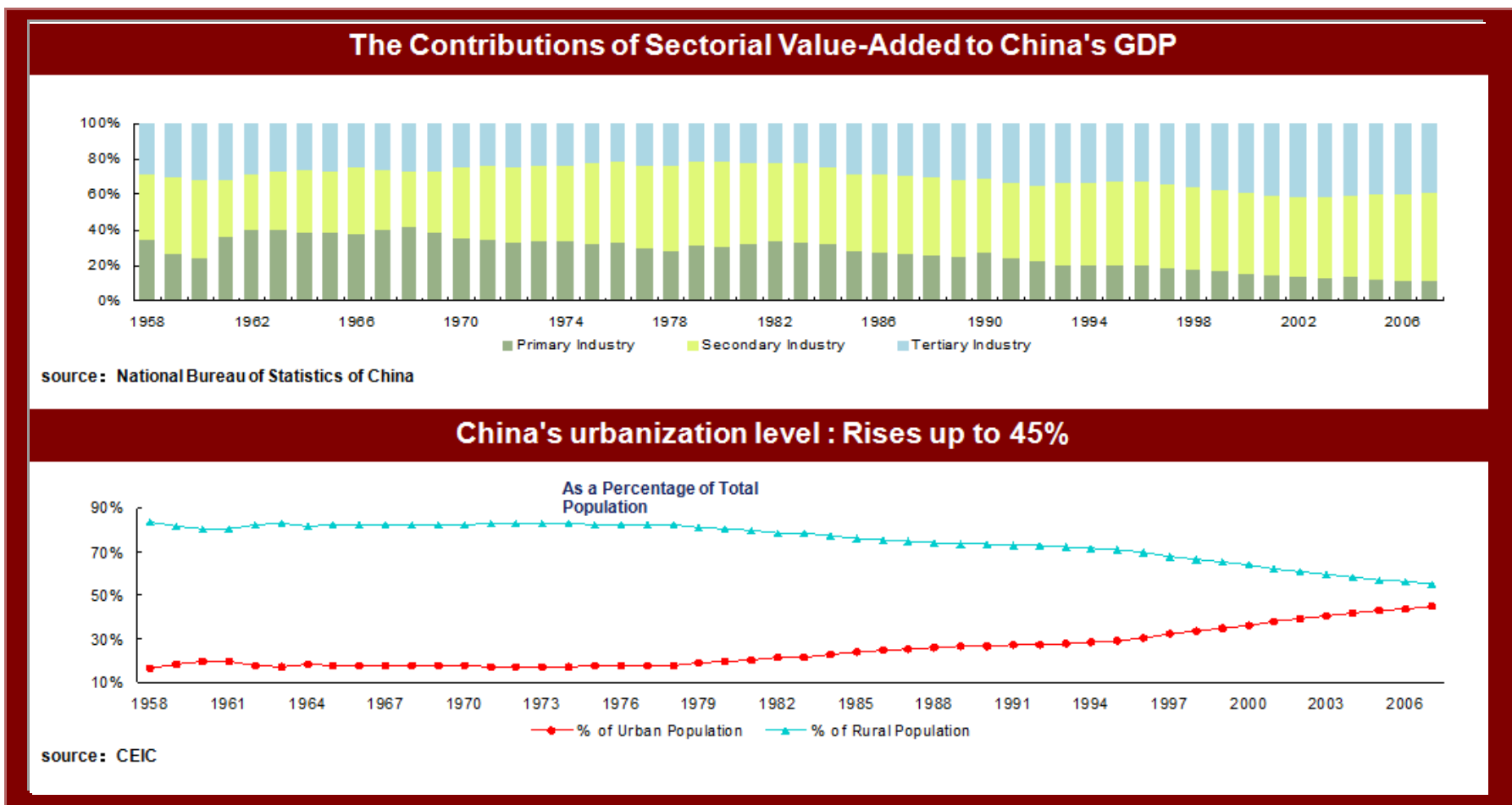
Source: IMF, CICC Research

Market-oriented reform has been progressing steadily

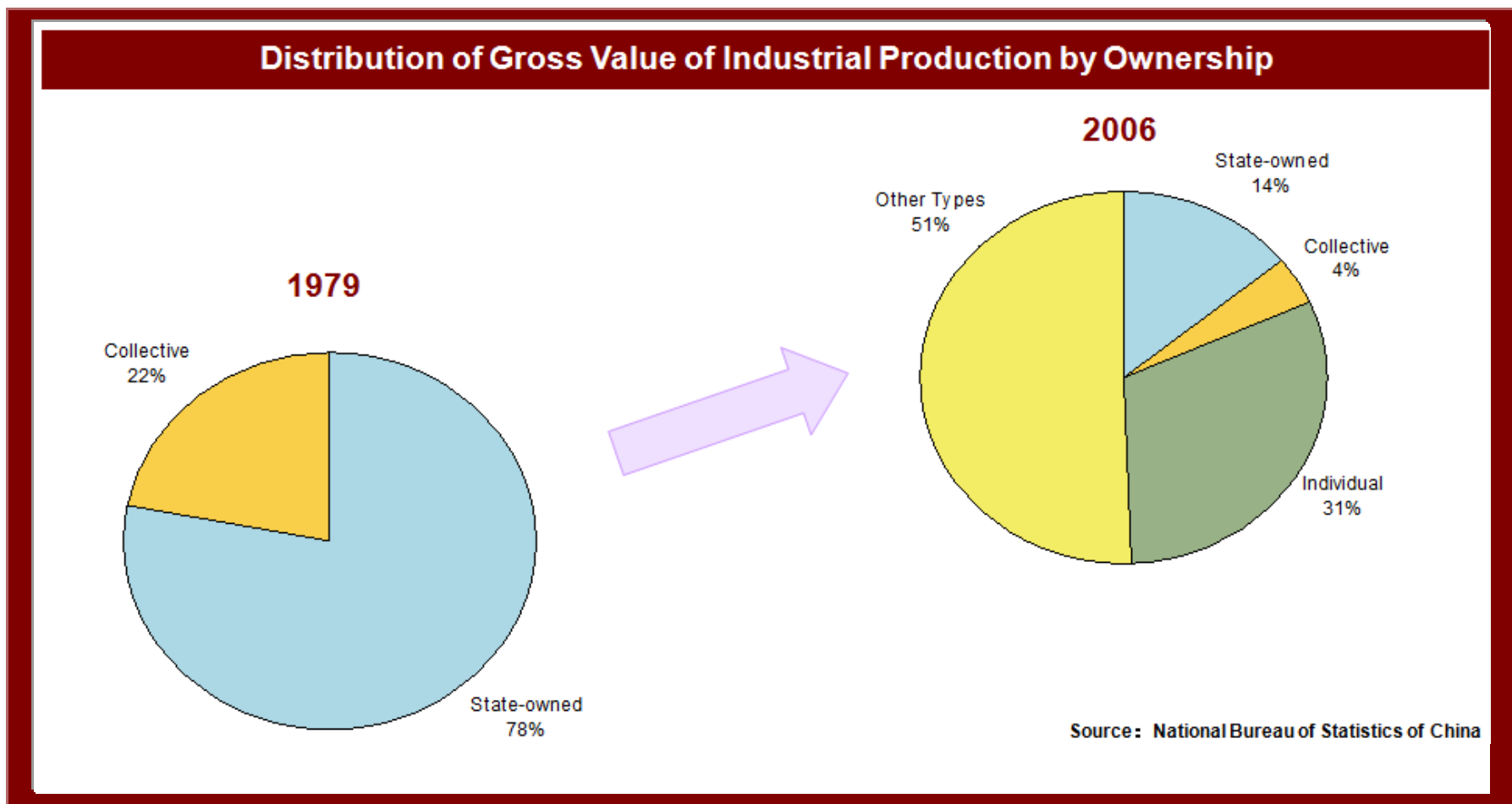
GDP per capita increased to \$2,450 in 2007



... achieving higher level of industrialization and urbanization

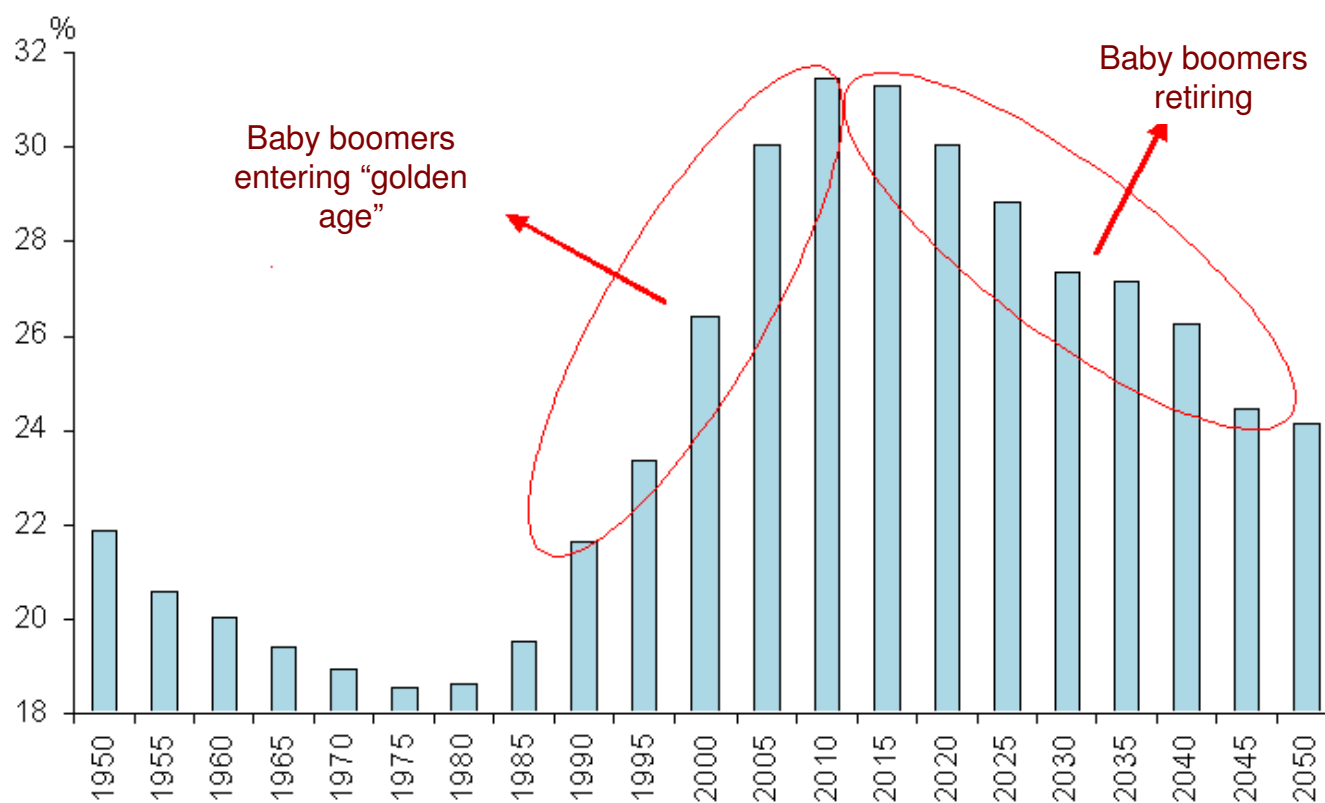


... and profound progress in ownership diversification and SOE reform



China's demographic trend changes and will challenge future growth

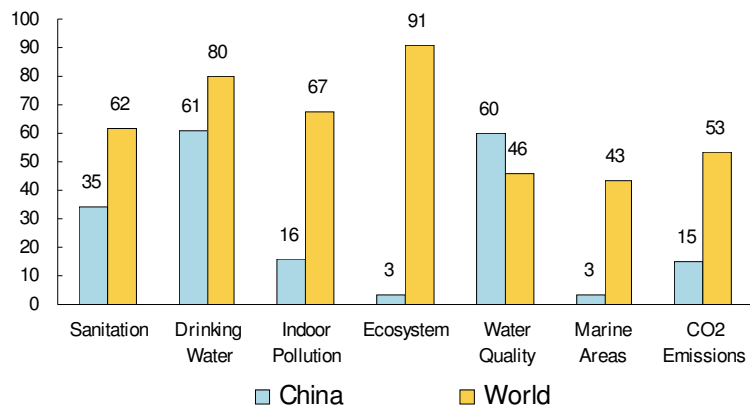
The percentage of Age 35-54 group in population



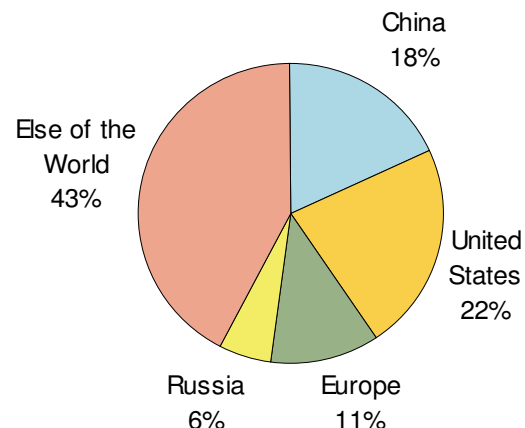
Environmental challenges of China's economic development

China's environmental performance 2007-2008

Environmental Performance Index 2008



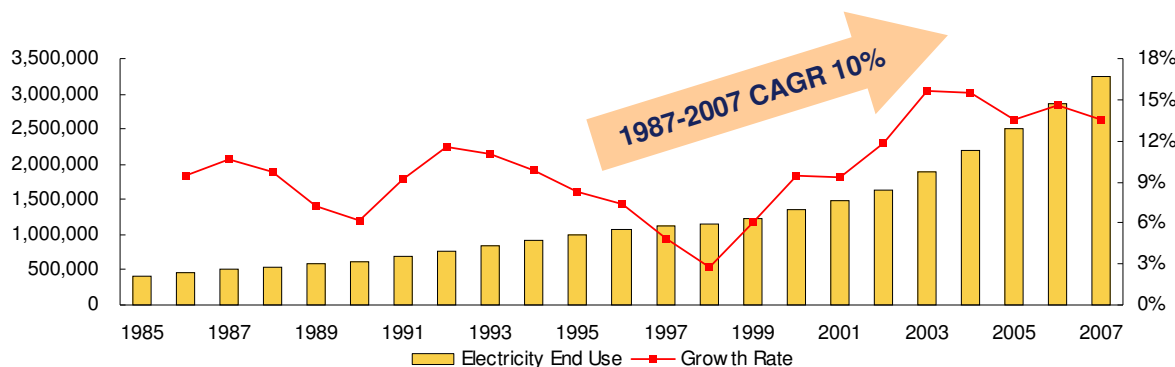
CO2 emission Proportion



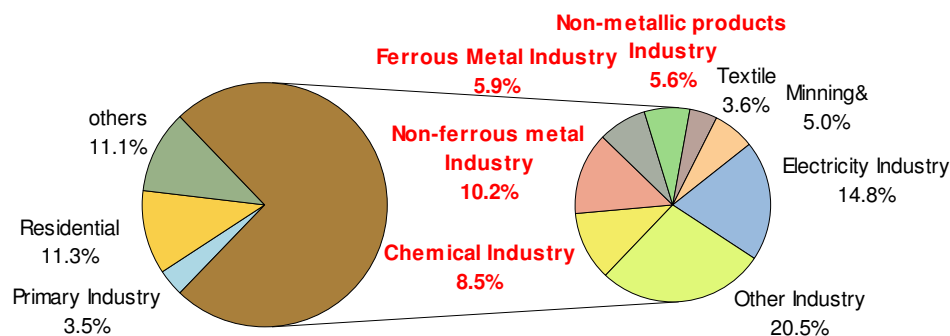
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Electricity demand in China keeps rising rapidly along with accelerating industrialization and strong economic growth

China has become the second largest electricity consumer in the world



Domestic electricity demand mainly comes from industrial sectors, esp. the four power-consuming sectors

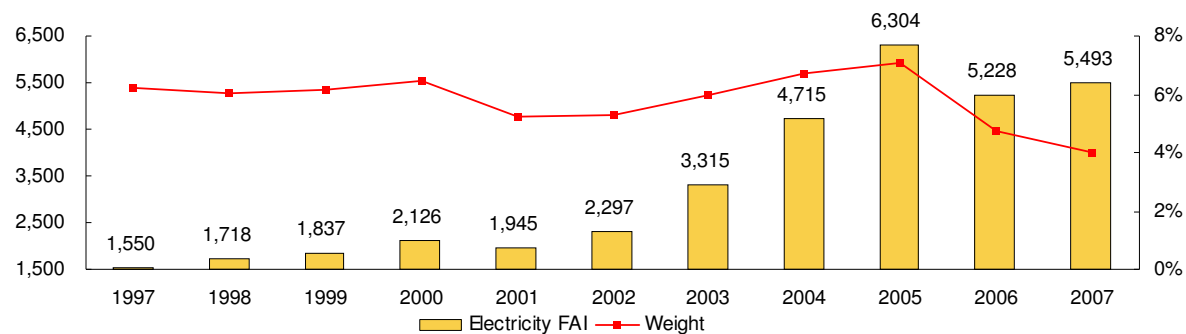


Source: China Statistical Yearbook, CEIC

- In the past two decades China's electricity demand has increased at a 10% CAGR due to more than five decades of economic development, esp. under the accelerating economic growth and industrialization since adoption of the reform and opening policy. Electricity growth has outpaced GDP growth, making China the world's second largest electricity consumer after the US. In 2007, China's total power consumption reached 3.2 trillion KWh, only 400bn less than the US

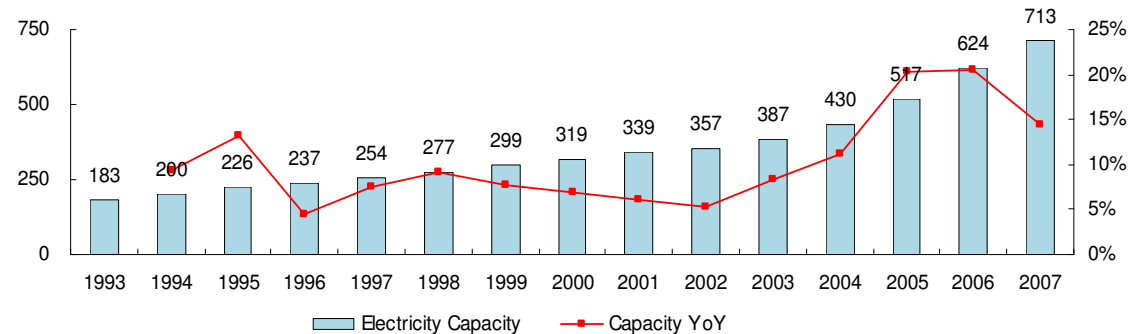
Sustained FAI and capacity growth in the power sector to meet rapid demand growth

Rising FAI in the power sector



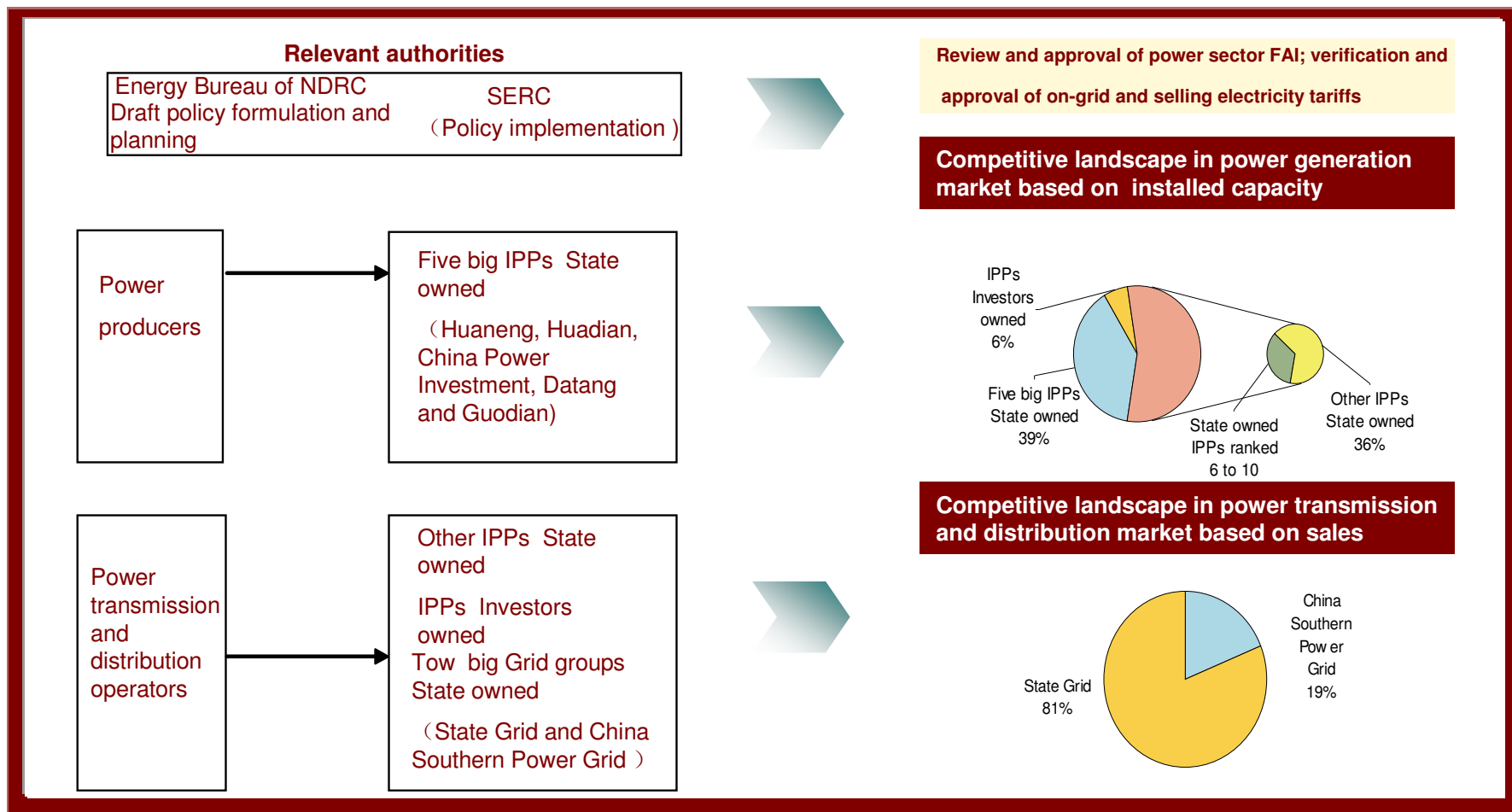
- FAI in the power sector surged in 2005 due to a sharp increase in power generation investment
- Total installed capacity in China's power sector reached 710mnKw in 2007, the second highest in the world after the US

Sustained growth off China's total installed power generation capacity



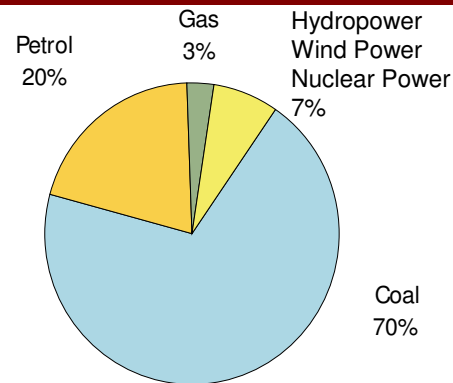
Source: China Statistical Yearbook, CEIC

Major participants and competition in the power sector

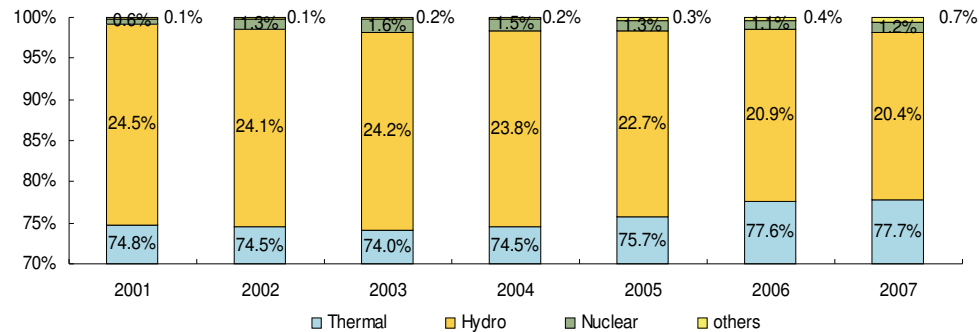


China's installed power generation capacity is mainly thermal plants - diversification efforts are underway

Coal still represents the majority of China's primary energy consumption (2006)



Power generation in China is mainly coal-based; efforts are underway to substitute traditional energy with new energy sources

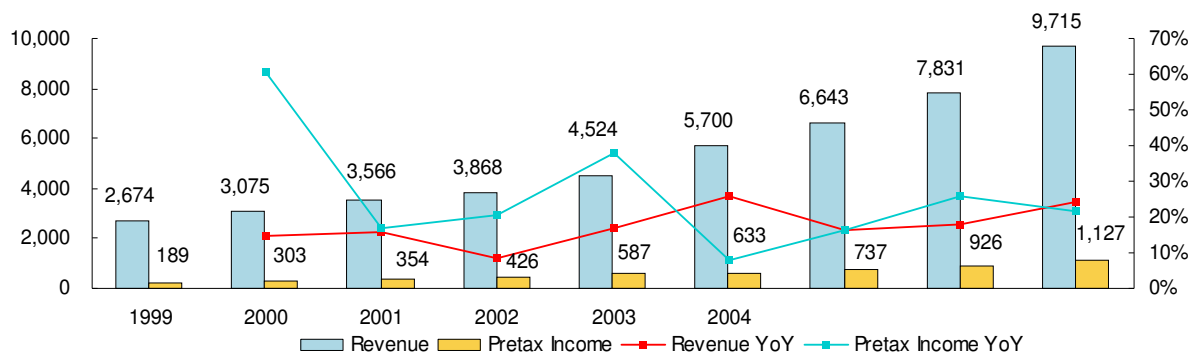


Source: China Statistical Yearbook 2007

- In China's power generation sector, installed capacity of thermal power generation plants is the largest, accounting for about 78% total. Hydropower generation capacity utilization is limited. Hence, more than 80% total power supply comes from thermal power plants
- A key reason for the above situation is that coal represents the majority of energy consumption in China

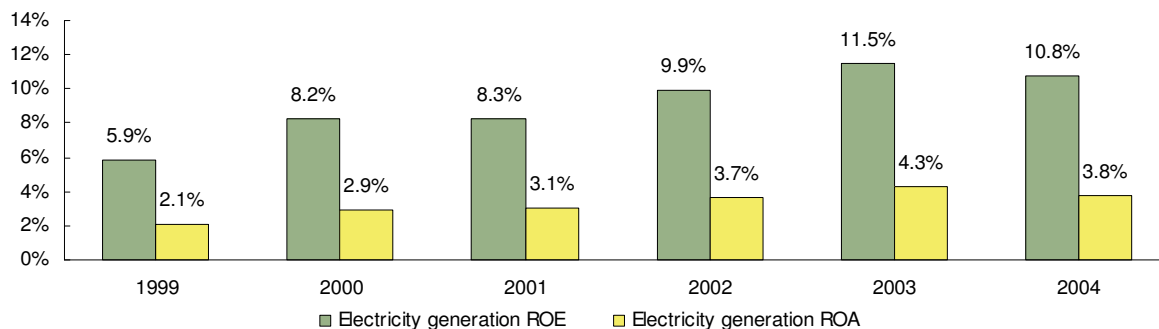
Power sector earnings are improving

Revenue and profits of the power sector keep rising rapidly



- China's power generation industry is growing along with market expansion. Its operating capability has been improving continuously with relatively stable ROA

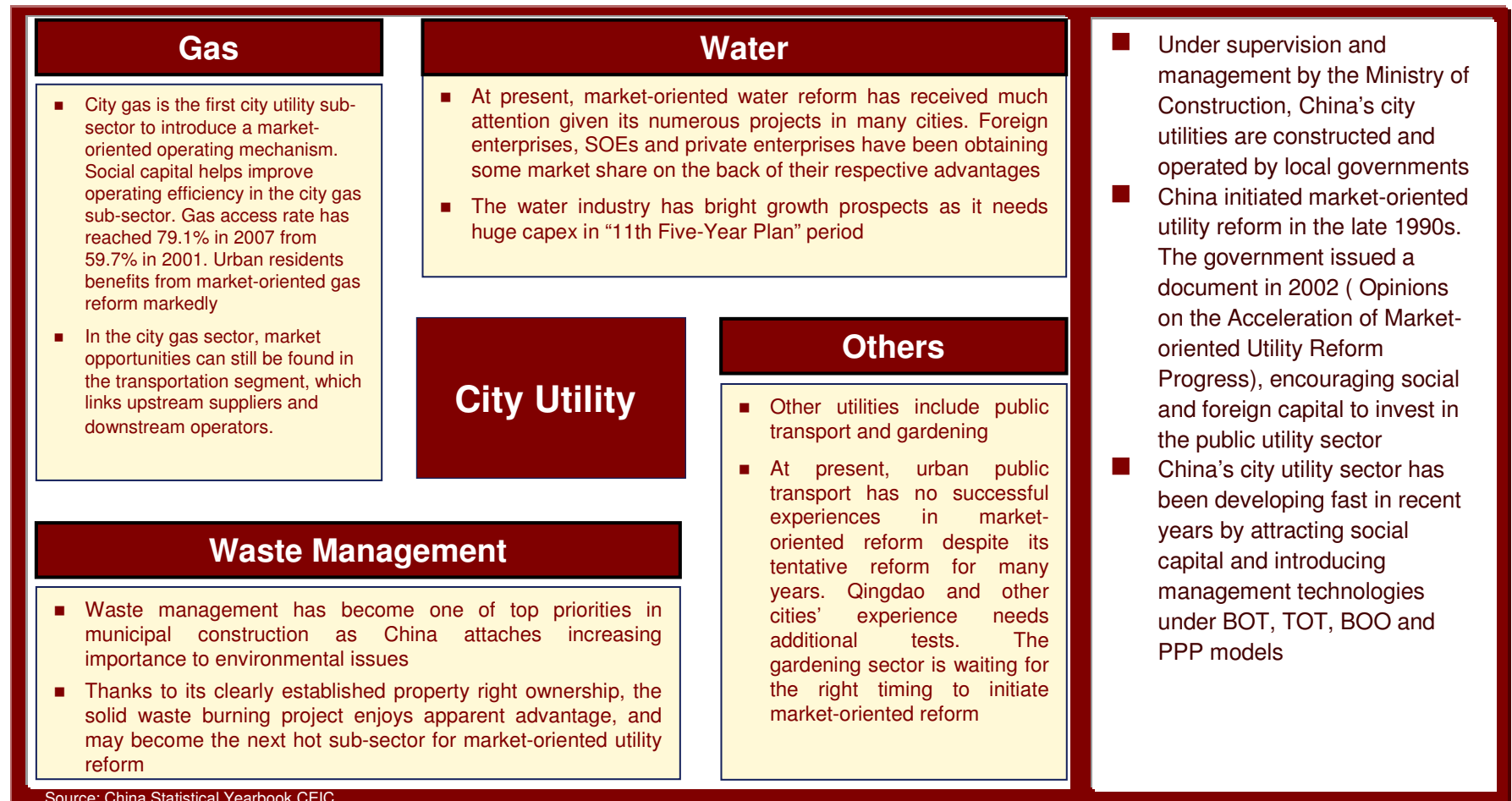
Solid and growing ROA



Source: China Statistical Yearbook 2007

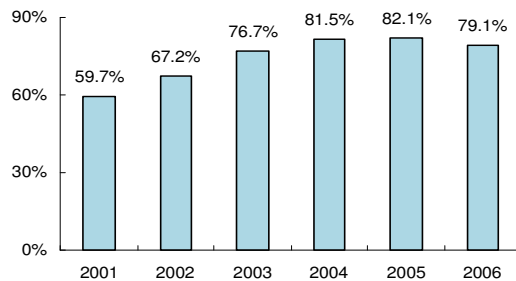
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Overview of China's city utility sector



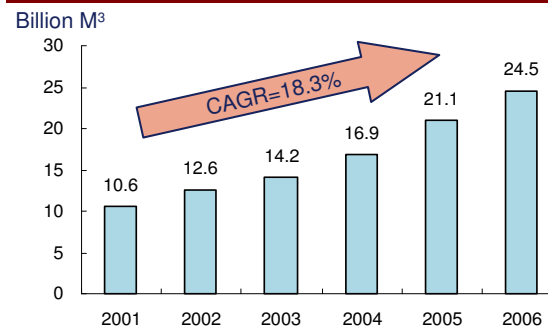
Gas: market-oriented reform pioneer project becomes increasingly mature

Gas Access Rate



Source: China statistical yearbook on environment 2007

Natural Gas Consumption



Source: CEIC

Major players in City Gas Sector

SOEs

Typical players: Beijing Gas, Shenzhen Gas

- Leveraging on regional advantages, state-owned gas enterprises have been improving their competitiveness through restructuring and introduction of new technologies and management experiences. SOEs dominate major gas consumption cities like Beijing, Shanghai, Shenzhen and Chengdu

Private enterprises

Typical players: Xin'ao Gas, China Gas

- Copying successful operation and management experiences, private enterprises obtain concession rights to operate gas of many Chinese cities on the back of its flexible capital operation. Xin'ao Gas and China Gas have obtained concession rights of more than 100 cities among 200 with access to gas in China

Source: CICC Research

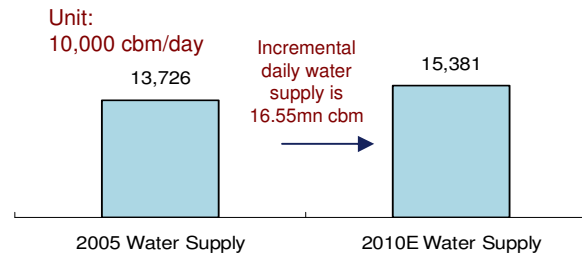
- City gas is one of the first city utility sub-sectors that introduced market-oriented operation mechanism. The reform succeeded due to its simple industrial chain and clear accountability. Social capital helps promote enterprises' operating efficiency and improve city gas service. Urban residents benefit from the market-oriented reform markedly
- A relatively stable competitive pattern has taken shape in city gas operation sector. Market opportunities can be found in the gas transportation segment, especially branch network construction, since transportation has been long operated by upstream suppliers

Water: huge investment demand amid market-oriented operation

Water supply demand driven by growing water-consuming population due to accelerating urbanization

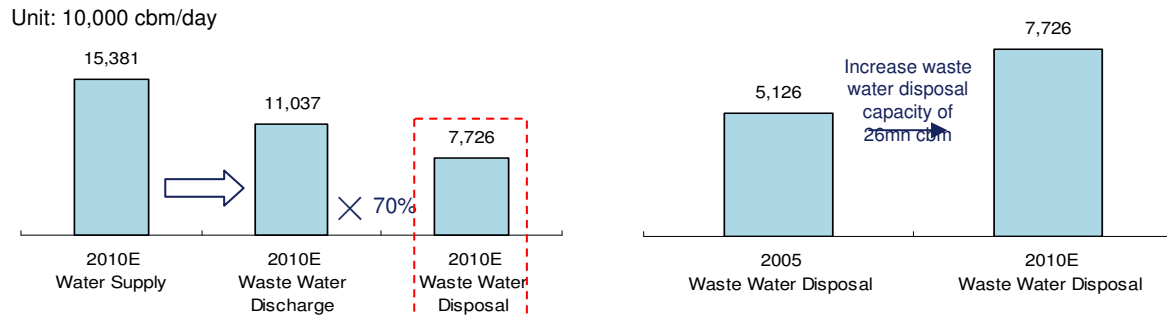
(10,000 population)	2005	2010 E	Calculation method
Total	130,756	134,726	Annual growth 0.6%
Urban population	56,212	67,363	Urbanization rate 50%
City population	35,894	43,112	Ratio between city and urban population in 200
Water-consuming population	32,682	40,957	Water supply ratio 95%

- All incremental water supply comes from household water consumption of incremental water-consuming population, provided that production water consumption remains unchanged
- Daily average water consumption is 200L/(person-day)



Water-consuming population increase 82.75mn in 2005-2010

Waste water treatment demand raised by water supply growth and higher waste water treatment criterion

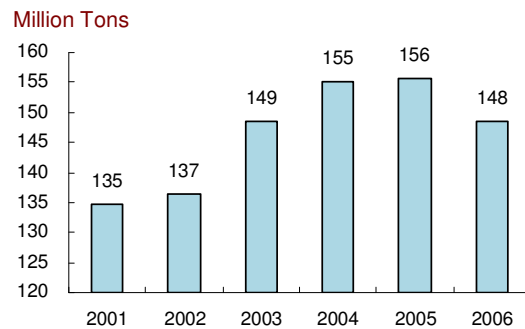


- China's urbanization rate could reach 50% by 2010, while waste water disposal rate should amount to 70%. Higher urbanization rate and the importance attached by the Chinese government to the environment are catalysts to urban water industry development
- According to the 11th five-year plan formulated by the Ministry of Construction, China needs to increase daily waste water treatment capacity by 50mn cbm and the size will reach trillions of RMB for the overall water market (investment, operation and equipment manufacturing)

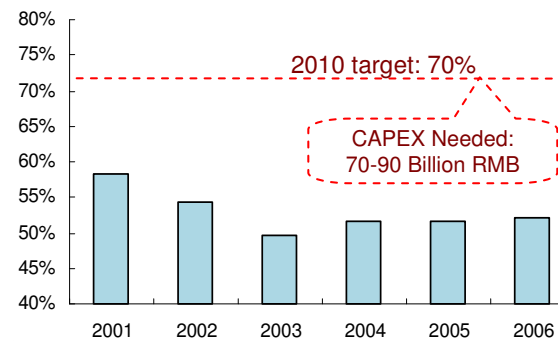
Source: China Yearbook, CICC Research

Waste management: initial market-oriented operation stage, bright prospects

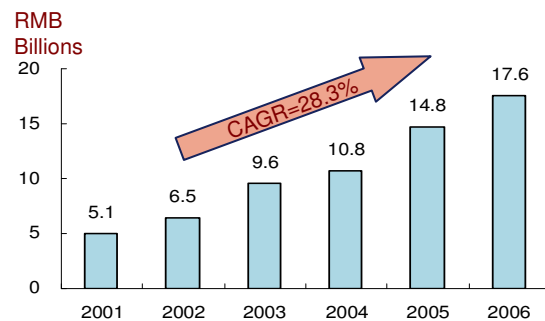
Garbage Disposal Volume



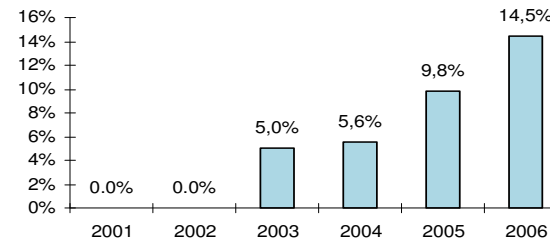
Garbage Harmless Disposal Rate



Investment in Sanitation



Burning Disposal Percentage



Advantage of burning disposal: small floor coverage, marked diarized effect

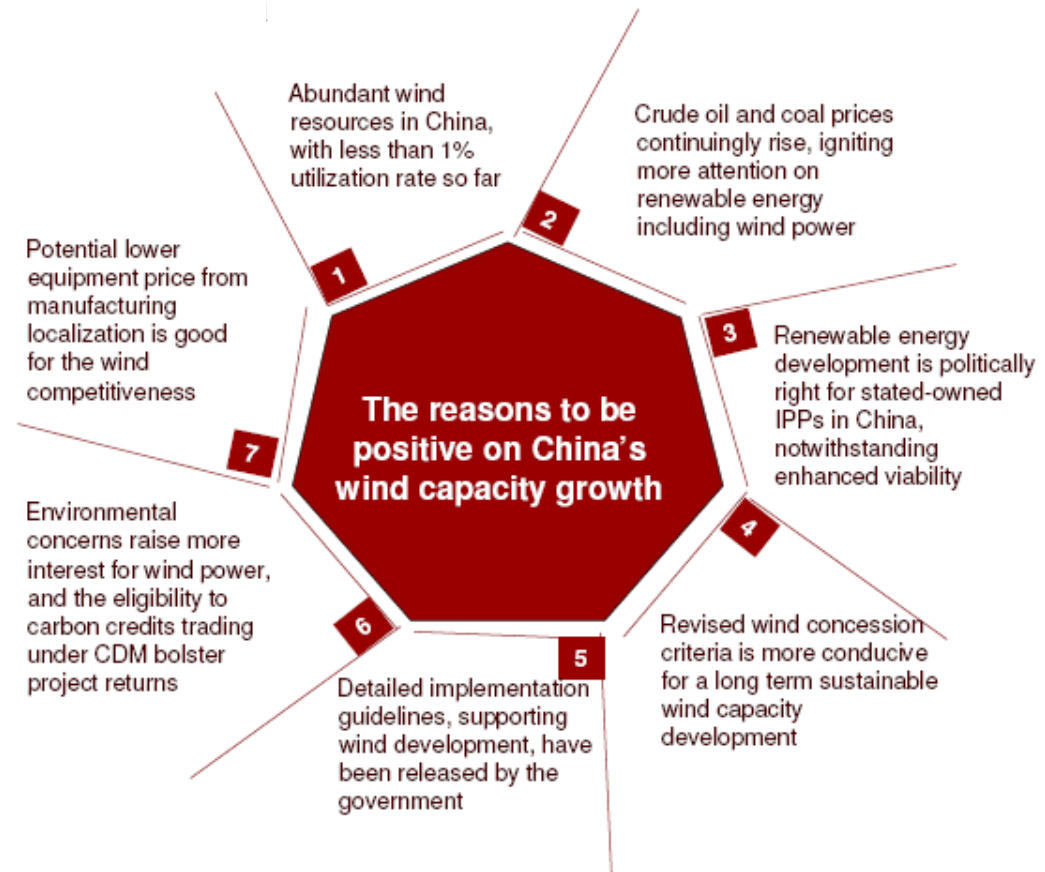
- The State Environmental Protection Administration estimates that China could increase 0.29mn tons/day garbage disposal capacity the 11th Five-Year Plan, which needs Rmb70 ~ 90bn capex. Besides, the garbage disposal facility market size could also reach Rmb30bn
- The garbage disposal sector is still in the initial stage of market-oriented operation. Among various disposal modes, burning treatment is the most important development direction going forward

Source: China Statistical Yearbook, CEIC

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China's vast energy demand is the reason for the rapid growth of the wind-power industry

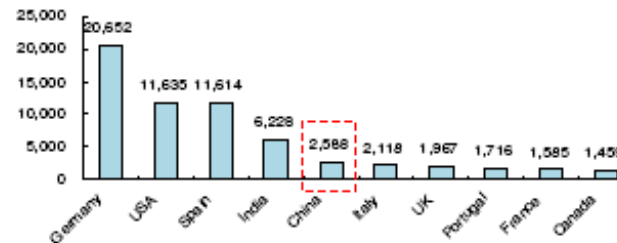
- We identify 7 reasons that have made us increasingly positive on China's wind capacity growth outlook.



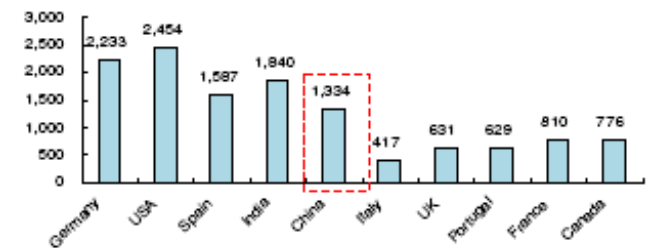
Explosive wind capacity growth in China

- China is rich in wind resources, with total capacity exceeds 1,000GW. At the end of 2007, the likely total installed capacity of 5GW means less than 1% utilization rate so far
- Analysts expected that China's wind power capacity to grow at 25% CAGR from 2.5GW in 2006 to 60GW in 2020.

Top 10 countries by total installed wind capacity (MW, end of 2006)



Top 10 countries by newly added wind capacity (MW, 2006)



China's wind capacity growth forecast

	2006	2010E	2020E	CAGR (06-10)	CAGR (06-20)
NDRC	2.6	5.0	30.0	18%	19%
BTM Consult	2.6	13.4	n.a.		
China Renewable Energy Industries Associations/GWEC					
Low case	2.6	8.0	40.0	32%	22%
Base case	2.6	10.0	70.0	40%	27%
High case	2.6	13.2	122.0	50%	32%
Investment Banking Analysts	2.6	12.0	60.0	47%	25%

Source: China Wind Power Report 2007, research reports

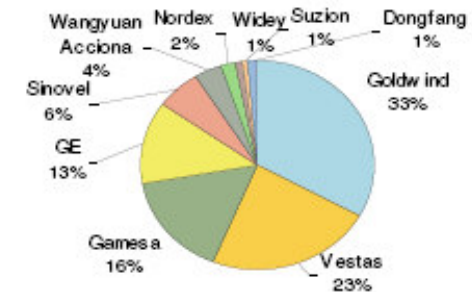
The dynamics of China's wind-power equipment market

- In 2006, of the total 1.4GW installed, 59% were imported.
- Over recent years, China has seen a rising mix of domestic supply, thanks to the government requirement on domestic content.
- Among Chinese players, Goldwind is the national champion with a leading 33% market share, followed by Sinovel and Dongfang Electric.
- The current average unit size is relatively small at 0.9MW as compared to 1.5-2MW in Europe and the US. In 2006, the mix of >1MW turbines was only 30%. Nonetheless, the size is rising in 2007 with 1-1.5MW becoming the mainstream products for new orders

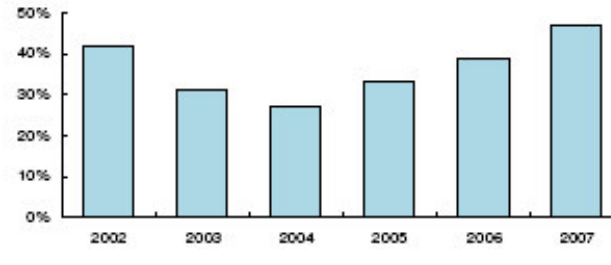
Wind equipment supply in 2006



Market share in 2006

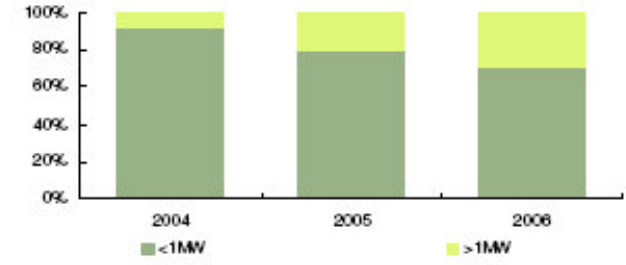


Domestic players market share



Source: China Wind Energy Association, research reports

Unit capacity mix in 2006



Key domestic players

- At present, more than 40 companies, including domestic players, JVs and foreign manufacturers, are engaging in the wind turbine manufacturing in China.

Manufacturer	2007 Financials (Euro Mil)	Type (specification)	Technical source	Stage
Goldwind Science & Technology (listed)	Sales: 296.9 Net profit: 60.5	GW 50/750 (Ø50-P750-SR)	Repower of Germany	Batch production (731 units)
		GW 70/1,500 (Ø70-P1,500-DD)	Gold Wind and Vensys of Germany joint development	Sample production
		GW 77/1,500 (Ø77-P1,500-DD)	Gold Wind and Vensys of Germany joint development	Sample production
Dongfang Steam Turbine (listed)	Sales: 2,314.1 Net profit: 213.6	FD70B/1,500 (Ø70-P1,500-VV)	Repower of Germany	Sample production
		FD77B/1,500 (Ø77-P1,500-VV)	Repower of Germany	Sample production
Sinovel Windtech	Sales: na Net profit: na	70/FL1,500 (Ø70-P1,500-VV)	Föhrländer of Germany	Sample production
		77/FL1,500 (Ø77-P1,500-VV)	Föhrländer of Germany	Sample production
Shanghai Electric (listed)	Sales*: 4,263.7 Net profit*: 204.8	SEC64-1,250 (Ø64-P1,250-VV)	Dewind of UK	Sample production
		SEC82-2,000 (Ø82-P2,000-VV)	Shanghai Electric/Aerodyn Design	Design

Note:
1) * only 2006 data is available so far

2) turbine specifications: Ø=rotor diameter; P=rated power; AS=active stall; DD=direct drive; SR=stall regulation; VV=variable pitch and speed; VF=variable pitch and constant speed

Source: China Wind Power Report 2007, research reports, Bloomberg

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Our value proposition is the key to your success





**Our value proposition
is to work as an ...**




independent management consultancy that ...
tackles the strategic challenges from a pragmatic and
operational point of view ...
understands the strategic impact of Asia and China ...
brings innovative thinking to work ...
has a high industry expertise, and ...
works "side by side" to make change happen.

MSM has successfully developed several China strategies for leading European companies





Strategy Development

- Market potential and competitor analysis
- Key success factor evaluation and corporate performance assessment
- Business unit strategy and corporate portfolio valuation along strategic fit and market attractiveness
- Development of organizational design and business unit alignment and transformation
- Development of management leadership principles
- Process mapping



Case Example

	1  Develop common understanding	2  Definition of vision, ambition and goals	3  Development and evaluation of strategic options	4  Development of strategic master plan
Steps	<ul style="list-style-type: none"> ■ Understand starting situation – focus on the Chinese market ■ Review drivers of the business for the Lanxess business units ■ Understand the implications on Lanxess 	<ul style="list-style-type: none"> ■ Review ideal business models for market expansion ■ Identify the gaps between ideal business models and Lanxess ■ Draft realistic vision and ambition for Lanxess 	<ul style="list-style-type: none"> ■ Develop strategic options for the Lanxess business units - I - II ■ Evaluate and detail attractive options ■ Strategy Selection 	<ul style="list-style-type: none"> ■ Develop long-term transformation concept ■ Define plan of strategic measures ■ Implement Optional: Post integration support
Goal	Development of a common information basis for the China venture	Definition of Lanxess's ambition in expanding in the Chinese market	Selection of strategy leading to sustainable success	Elaboration of action plans

Results and Benefits

- China strategy and positioning
- Organizational redesign with improved performance
- Cooperation structure and partnership options for joint market entry / new business/ acquisition / Greenfield approach

The strong intercultural differences call for a solid and well organized integration management system

Intercultural integration Management	Case Example						
<ul style="list-style-type: none"> ▪ Understanding the key cultural challenges ▪ Change Management ▪ Internal cultural & communication issues ▪ Identification & selection of foreign service employees ▪ Cultural integration of joint venture partners ▪ Preparation & training measures ▪ International personnel development programs ▪ Re-integration procedures for foreign experts 	 <table border="1"> <tr> <td> <p>What you see</p> </td> <td> <p>Politics, structures, processes e.g. incentives mechanism, controlling and budgeting regulations, planning process, job description, promotion guidelines</p> </td> </tr> <tr> <td> <p>What you assume</p> </td> <td> <p>Routines e.g. risk attitude, accuracy of planning, cost orientation, working mind set</p> </td> </tr> <tr> <td> <p>What you need to know</p> </td> <td> <p>Personal views, mental models, estimations e.g. "younger employees need to learn first before promotion; females could not lead unit xyz, "I don't care about budgets"</p> </td> </tr> </table> <p style="text-align: center;">Results and Benefits</p> <ul style="list-style-type: none"> ▪ Intercultural change ▪ Performance measurement tools ▪ Intercultural & internal communication concept ▪ Train-the-trainer & coaching concepts 	<p>What you see</p>	<p>Politics, structures, processes e.g. incentives mechanism, controlling and budgeting regulations, planning process, job description, promotion guidelines</p>	<p>What you assume</p>	<p>Routines e.g. risk attitude, accuracy of planning, cost orientation, working mind set</p>	<p>What you need to know</p>	<p>Personal views, mental models, estimations e.g. "younger employees need to learn first before promotion; females could not lead unit xyz, "I don't care about budgets"</p>
<p>What you see</p>	<p>Politics, structures, processes e.g. incentives mechanism, controlling and budgeting regulations, planning process, job description, promotion guidelines</p>						
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<p>What you need to know</p>	<p>Personal views, mental models, estimations e.g. "younger employees need to learn first before promotion; females could not lead unit xyz, "I don't care about budgets"</p>						

MSM’s unique network and experience in government relations & lobbying are the key to success for your enterprise in the PR China

Gov. Relations & Communication

Government Relations

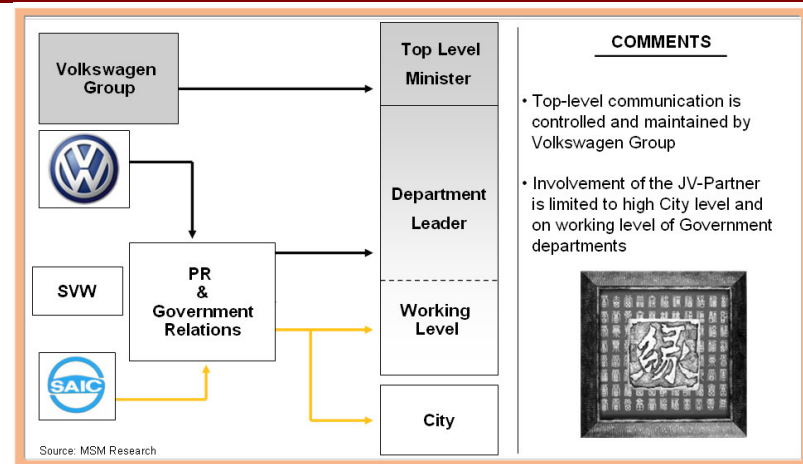
- Understanding the main drivers
- Building up personal networks
- Set-up Communication strategy and action plans
- Monitoring system
- Pro-active Lobbying
- Build up internal attention to GR

Communication Policy

- Control external communication
- Provide aligned internal communication procedures



Case Example



Results and Benefits


- Clear GR & communications Roadmap & Action-plan
- CEO coaching & preparation of key staff
- Communication rules and responsibilities
- China Government Relations and Lobbying strategy
- GR- building & Monitoring system
- Pro-active lobbying & Joint initiatives

MSM supports it’s clients during the whole M&A process from preparation, target identification, negotiations, transitional- & post merger integration (PMI)

MSM’s M&A support

Wholistic side-by-side approach

- Understand the market/sector
- Understand the demographical, political and logistic requirements and circumstances
- Screen for potential partners
- Conduct feasibility study and commercial due diligence
- Understand administrative measures and processes in China
- Identify and negotiate transitional management and general HR implications
- Set-up appropriate government relations
- PMI



Case Example

A structured, parallel screening process guarantees transparency and speed of transactional phase

Illustrative

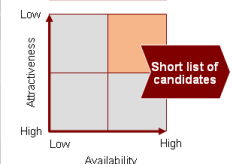
Screening criteria

Long list of candidates

We will apply OBO Bettermann’s selection criteria to the priority matrix

Criteria	Attractiveness		
	low (1)	medium (2)	high (3)
Production	no	< 30 kt	> 30 kt
Critical size	< 10 mill.	10 – 50 mill.	100 mill.
System approval	no	n.a.	yes
R&D teams	no	n.a.	yes

Priority matrix



Short list

- 1 _____
- 2 _____
- 3 _____

- MSM is able to make first (confidential) contact with attractive candidates
- MSM does offer also the full range of M&A related services

Source: MSM

Results and Benefits

- Clear and actual information from key experts of the relevant Chinese authorities, institutions & industries
- Reliable preparation, support for negotiations
- Trustworthy feasibility study & due diligence
- Understand administrative measures and processes

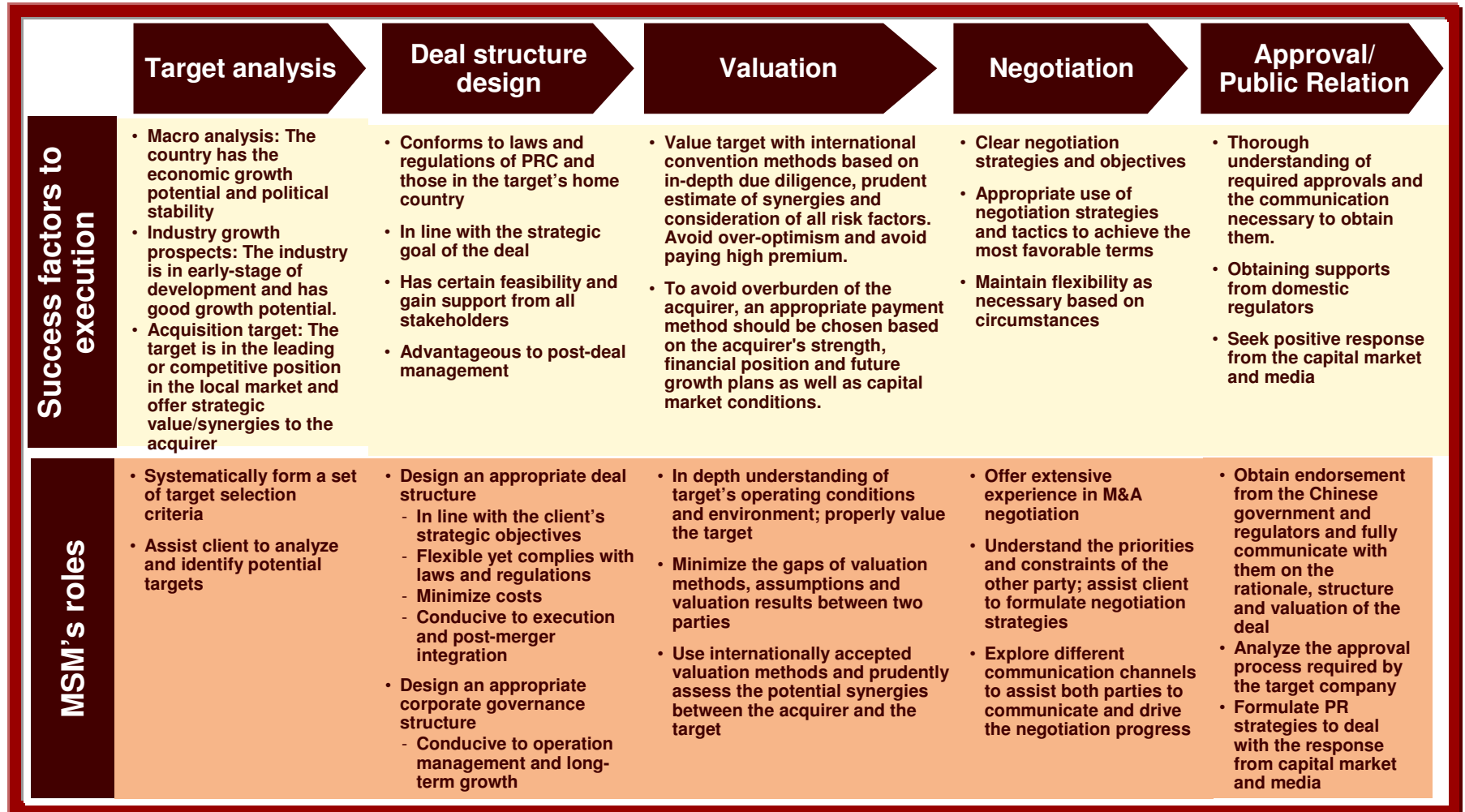
MSM has a deep understanding of its clients interests, the Chinese M&A environment and broad experiences of the approval process in China



Development of sustainable M&A strategies need to be based on a broad understanding



M&A service overview/approach



MSM's top consultants have extensive experience helping companies enter the China market, or conduct China related businesses





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