China's energy insecurity: strategies and future prospects

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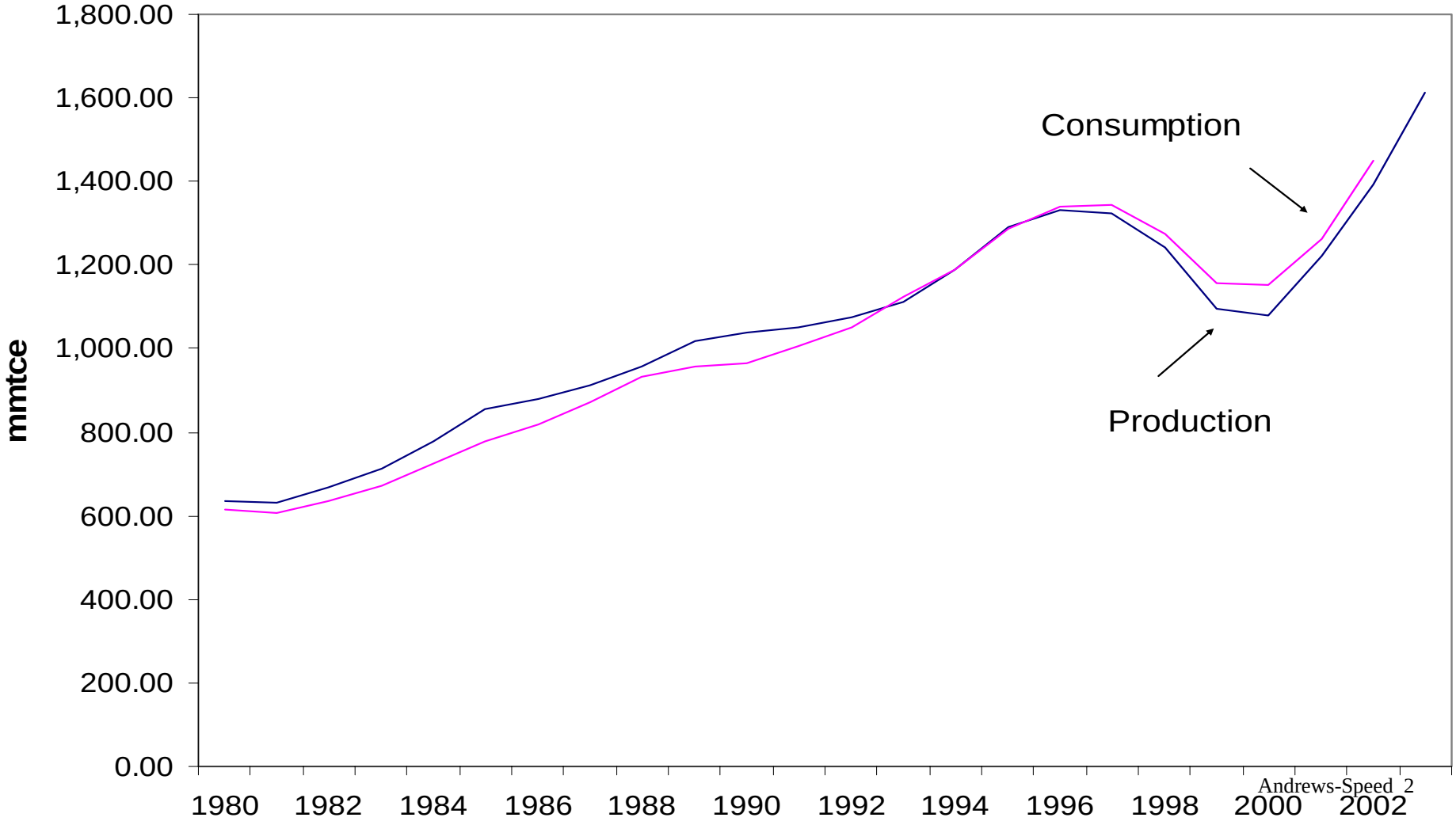
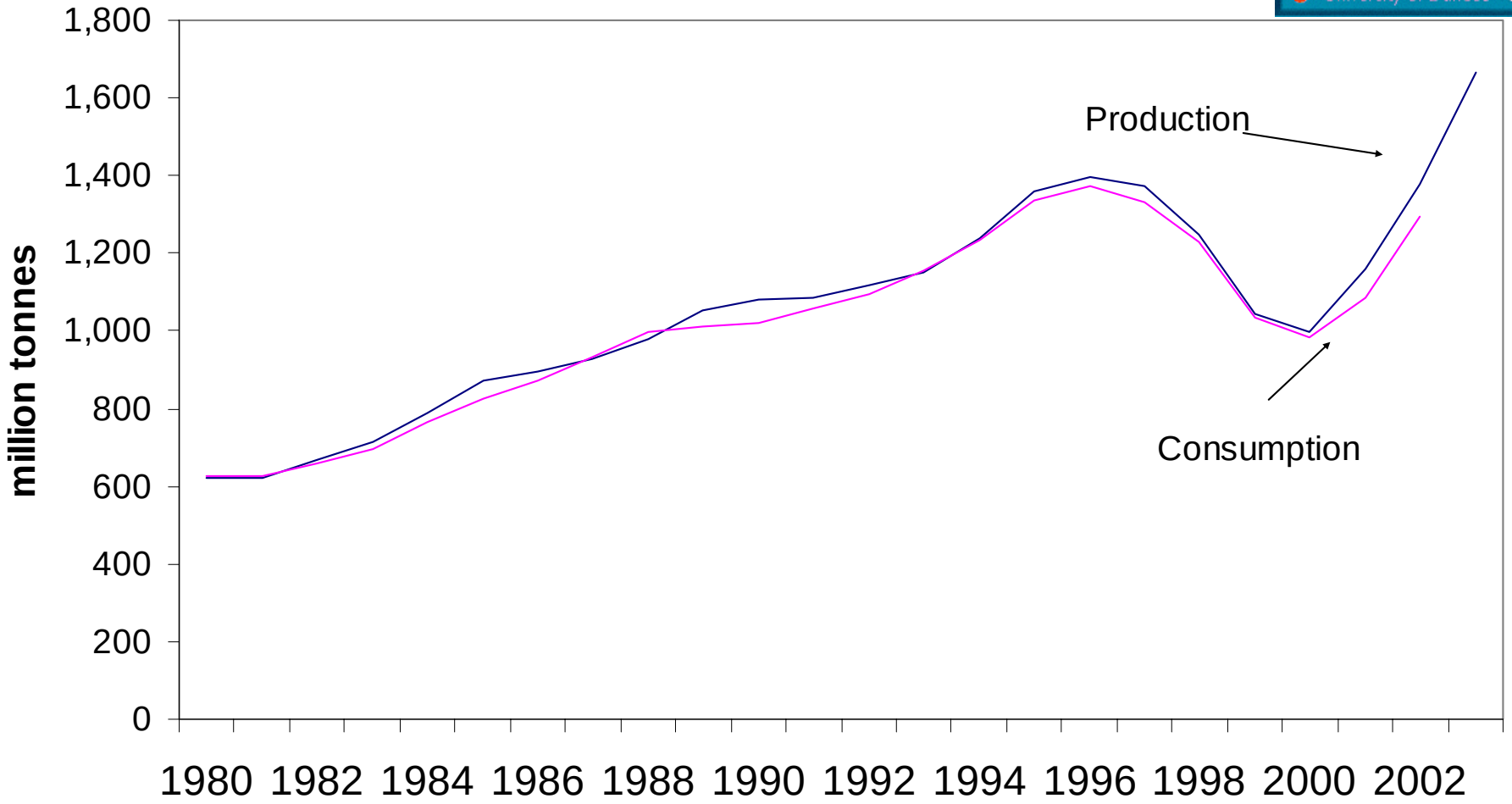
Energy supply & demand

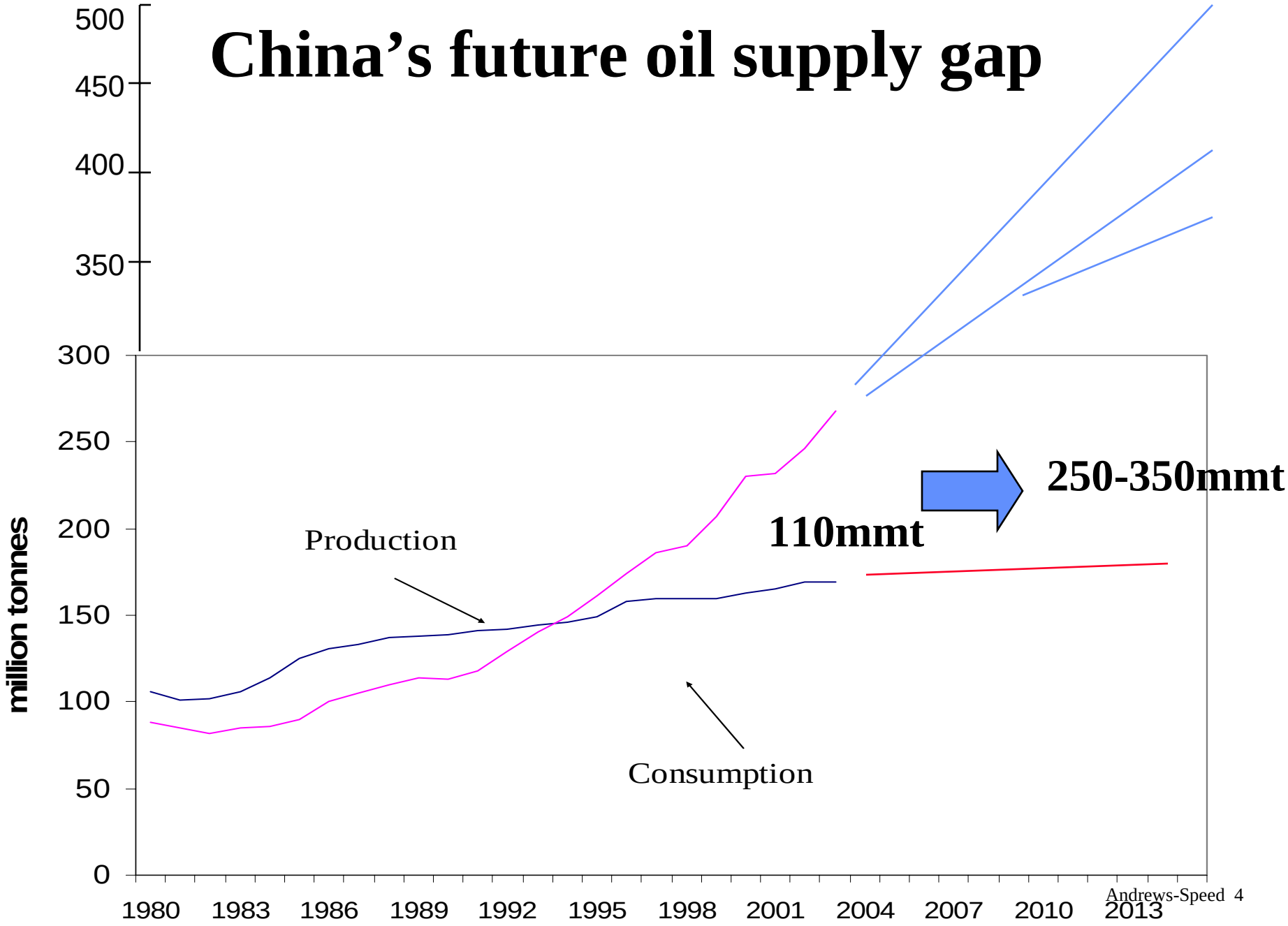


Coal supply & demand



Source: Lawrence Berkeley Laboratory

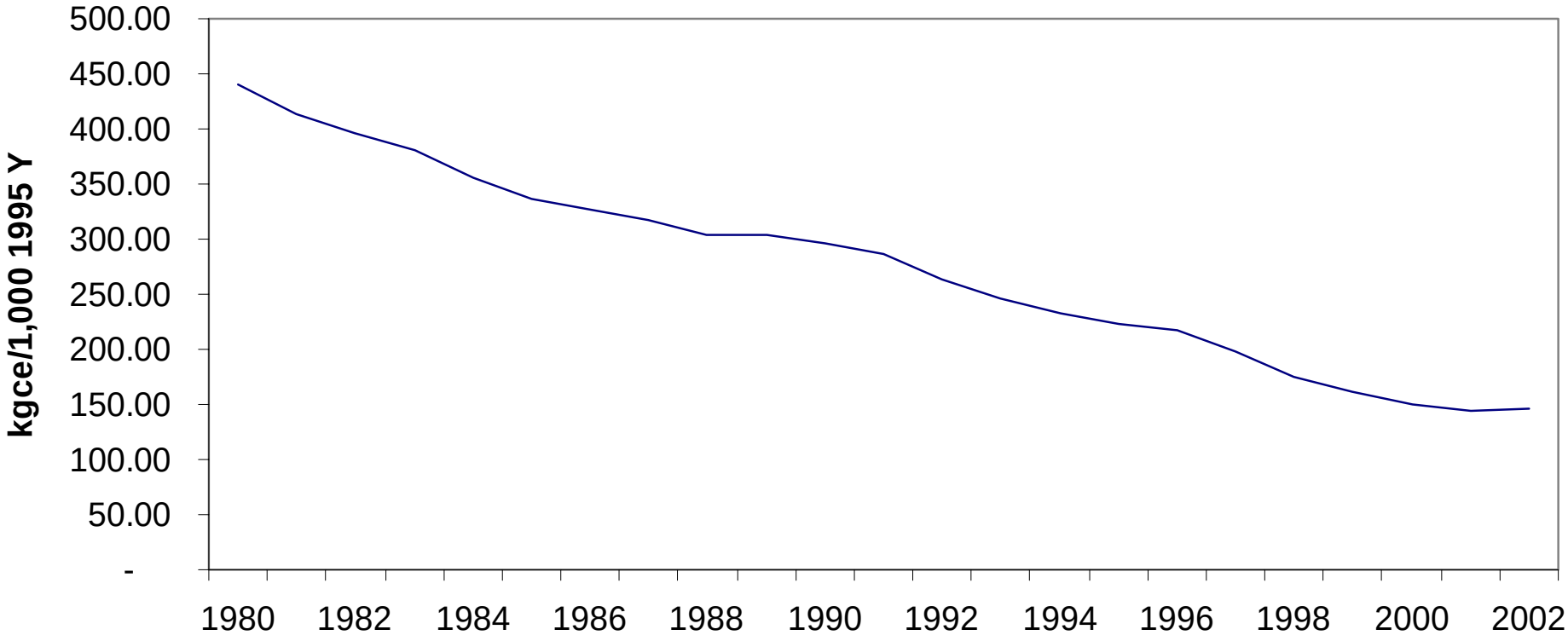
China's future oil supply gap



China's future gas supply gap

bcm	1980	1990	2000	2003
Demand	13	14	27	34
Import				
	2010	2015	2020	
Demand	50-100	70-130	100-200	
Import	10+	20+	50+	

Energy intensity



Source: Lawrence Berkeley Laboratory

The questions

- What drives China's current approach to energy security?
- How might this approach change?
- What are the domestic and international implications?
  - Unpredictability, competition, tension
    - OR
  - Consistency, cooperation, accommodation

What is energy security?

- "Western approach"
  - Reliable supply (?), acceptable cost (?)
  - Acceptable environmental and social cost (?)

    Risk management
  - What are the threats?
  - Probability of these threats materialising?
  - Probable impacts if these threats materialise?
  - *Cost-effective* measures
  - Markets supported by non-market measures
- Contrast with "strategic" approach

China's sources of energy insecurity

- 'Hard' sources:
  - Rising energy demand (15% p.a.)
  - Static (or rising?) energy intensity
  - Limited oil and natural gas resources: rising imports
  - Dependence on coal: environment
  - Domestic energy transportation
- 'Soft' sources
  - Lack of coherent and effective energy policy
  - Stranded between the plan and the market

Apparent energy policy 1995-2004

	1996	1998	2000	2002	2004
Energy conservation	**XXX**	**XXX**	XXX	XXX	**XXX**
Energy production	XXX	XXX	XXX	XXX	XXX
Energy structure	XX	XX	XX	XX	XX
Geography/transport	X	XX	XX	XX	XX
Overseas Energy	X	XX	XX	XXX	XXX
Environment	X	X	XX	XX	XX
Emergency storage		X	X	X	XX
Reform/liberalisation		XX	X	XX	X

Key elements of oil security strategy

Domestic

- Maximise production
- Maximise refining
- Build pipelines
- Ports/shipping
- Build storage
- Coal to liquids

BUT

- Encouraging private road transport
- Fuel pricing/tax
- Efficiency

Overseas

- Diversify imports
- Maximise crude imports cf product imports
- Long-term contracts/relationships
- Overseas production
- Overland import (pipe/rail)
- Overseas refining

Immediate issues for current oil security strategy

- To what extent will demand for oil decouple from total demand for energy?
- What steps will government take to constrain demand for oil and how successful will they be?
- How fast will imports from Russia and Kazakhstan build up?
- How fast can China expand its refinery and import capacity?
- How well can the state oil companies manage their overseas assets?
- When and how fast will China start to fill its strategic storage?

Origins of China's approach

- Ideological
  - Self-sufficiency
  - Preference for state action
- Actors:
  - Lack of strong energy agency
  - Power of state energy companies & provinces
  - Top leadership:
    - Domestic:
      - energy as an instrument of social policy
      - consumerism encouraged
    - International: energy as a political tool

The outlook for China's energy security strategy

- Business-as-usual (BAU)
  - State: ownership and control dominant. 'Strategic' approach
  - Energy policy: lacks coherence, focus on production
- Modified BAU
  - Limited further liberalisation
  - More coherent energy policy, more focus on energy efficiency
  - Slightly greater focus on project commerciality
- Robust moves to market approach
  - Extensive programme of liberalisation and shift to 'market' approach

‘External’ variables

- China:
  - rate and nature of economic growth
  - Domestic politics
- International energy markets:
  - Oil prices, OPEC capacity, non-OPEC production
  - LNG markets
- International politics: cooperation or rivalry
  - Relationship with Japan
  - Behaviour of Russia, USA
  - Regional flashpoints: Taiwan, Korean peninsula
  - International flashpoints: Middle East, SE Asia SLOCS

Implications: BAU

- Domestic
  - Rapid growth of energy demand, oil imports
  - Slow decline of energy intensity
  - Discontinuities and hiatuses persist
  - State energy companies retain power
  - Heavy investment in coal-to-liquids etc
- International
  - Unattractive for foreign investors
  - Overseas investments continue to rise (production& transport)
  - **Competition and tension likely to grow**

HIGH COST POLICY, UNCERTAIN BENEFITS

Implications: modified BAU

- Domestic
  - Less rapid growth of energy demand, oil imports
  - Real decline of energy intensity
  - Discontinuities and hiatuses diminished
  - State energy companies lose power
  - Less investment in coal-to-liquids etc
- International
  - More attractive for foreign investors
  - Overseas investments constrained
  - Greater chance for cooperation and accommodation; dependent on other players

→ LOWER COST STRATEGY, BENEFITS MORE LIKELY

Regional dimensions

- Middle East:
  - China satisfied with US/western umbrella
  - Investment opportunities
- Central Asia
  - Costs high and benefits difficult to realise
  - Tensions from many directions
- Northeast Asia
  - Sino-Japanese relations; Russian policy; Korea
  - US role: Korea, Japan, Taiwan
- Southeast Asia
  - ASEAN: engagement of China and Japan via ASEAN +3
  - Transport: SLOCS, pipeline and rail routes
- South Asia
  - India: less complex than Japan?
  - NOCs: India, Malaysia, Indonesia

Global dimensions

- International Energy Agency
- Energy Charter Treaty
- International Energy Forum
- Organisation of Petroleum Exporting Countries
- World Trade Organisation
- Cooperation with other NOCs and with IOCs

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