Understanding Energy in China: geographies of efficiency

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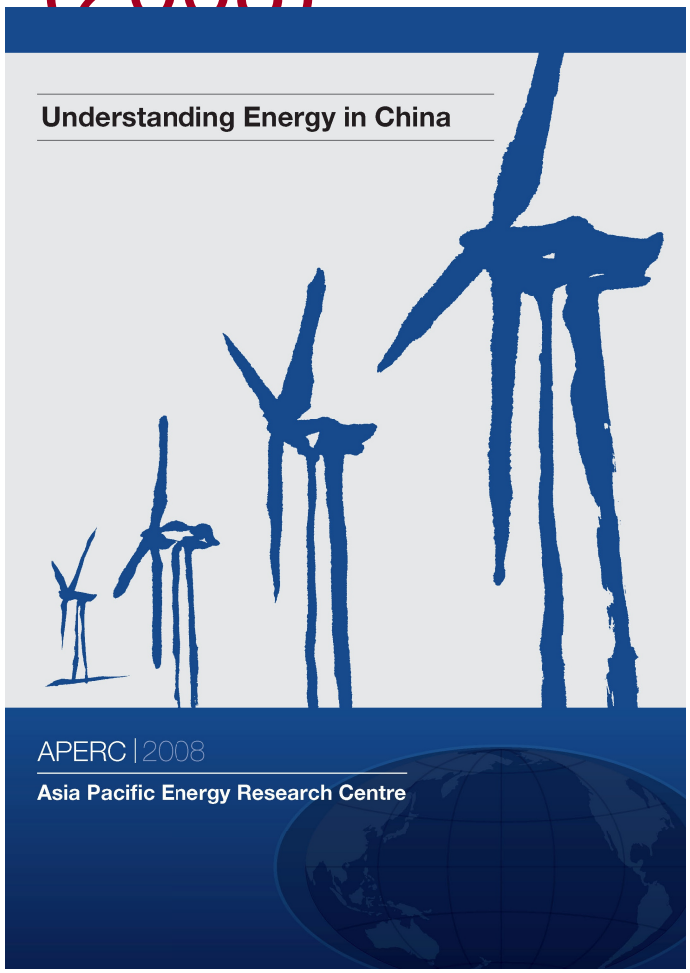
Understanding Energy in China (2008)



- Energy policy through the reform period
- Energy pricing
- China's story of coal
- Overseas upstream investment and petroleum supply security
- Ongoing issues in power and refining
- Energy efficiency
- Urbanisation and energy use
- China's air

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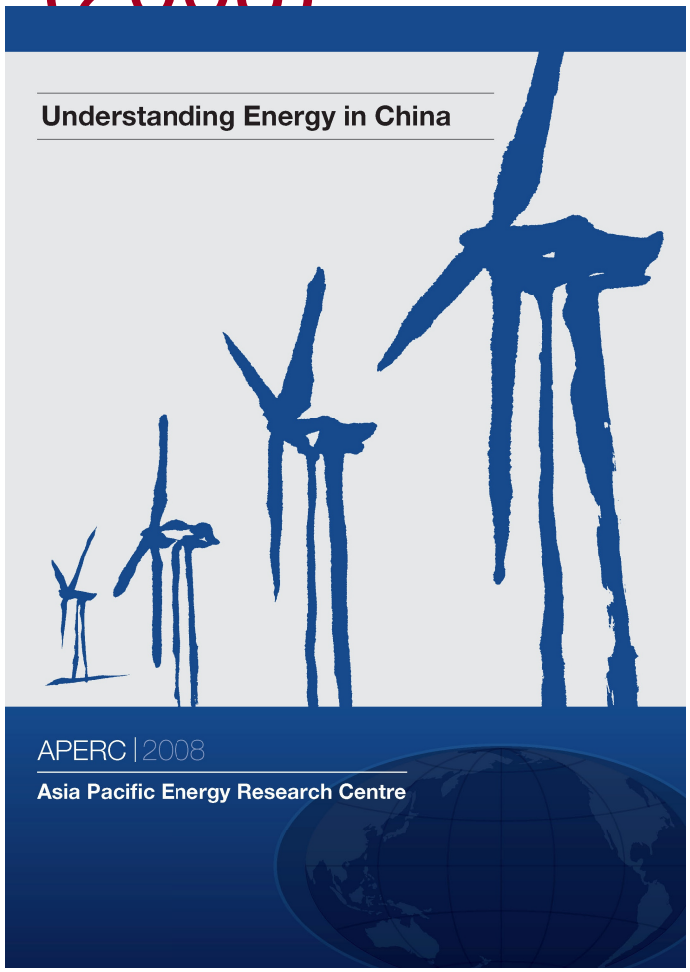
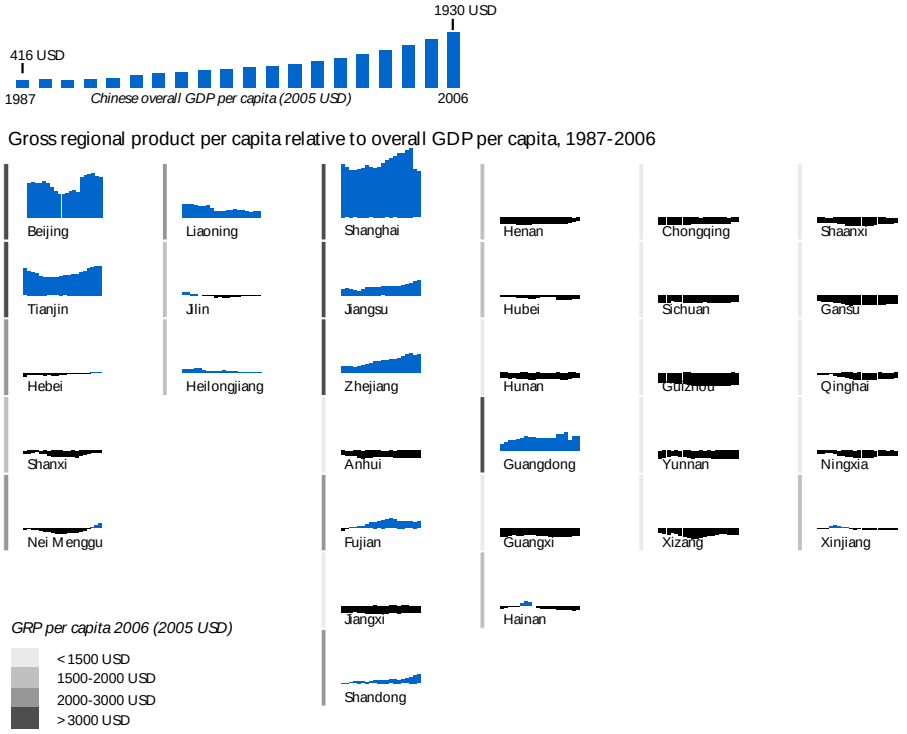
Understanding Energy in China (2008)



- 30 thematic time series energy charts



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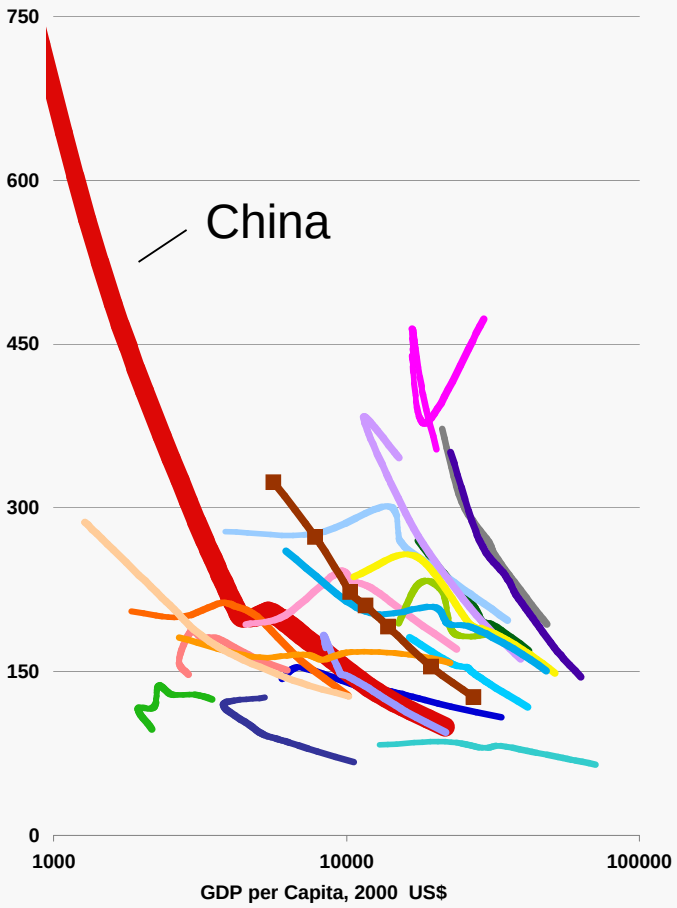
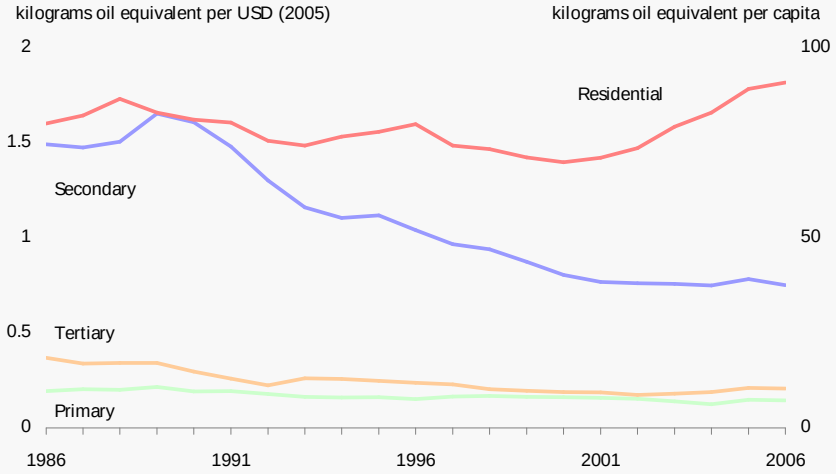
Geographies of Efficiency

compelling trends



Energy intensity of China and other APEC region economies (1980-2030)

APEC Energy Demand and Supply Outlook 2006 (APERC 2006)



Energy intensity of industry & residential per capita energy consumption in China (1986-2006)

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Geographies of Efficiency

compelling trends

	UNIT	1980	1990	2000	2005	**2010**	**2020**
Comprehensive energy consumption per tonne of steel	kgce/ tonne			906	760	730	700
Comparable energy per tonne of steel	kgce/ tonne	1201	997	784	700	685	640
Comprehensive energy consumption of 10 types of non-ferrous metal	kgce/ tonne			4809	4665	4595	4450
Comprehensive energy consumption of aluminum	kgce/ tonne			9923	9595	9471	9220
Comprehensive energy consumption of copper	kgce/ tonne			4707	4388	4256	4000
Energy consumption of unit energy factor of oil refining	kgoe/ tonne factor			14	13	12	10
Comprehensive energy consumption of ethylene	kgce/ tonne			848	700	650	600
Comprehensive energy consumption of large scaled synthetic ammonia	kgce/ tonne	1431	1343	1372	1210	1140	1000
Comprehensive energy consumption of caustic soda	kgce/ tonne			1553	1503	1400	1300
Comprehensive energy consumption of cement	kgce/ tonne	219	201	181	159	148	129
Comprehensive energy consumption of plated glass	kgce/ weighting box			30	26	24	20
Comprehensive energy consumption of architectural ceramics	kgce/ sq. meter			10.04	9.9	9.2	7.2

Energy efficiency indicators and future targets for major industrial products (1980-2020)

China Medium and Long Term Energy Conservation Plan 2004

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Geographies of Efficiency
ambitious policies

- “Put [energy supply] expansion and conservation hand-in-hand” (1980)
- Temporary provisions for energy conservation (1986)
- Green lights program (1996)
- Energy conservation industrial voluntary agreements (1998)
- Medium- and long-term special plan for energy conservation (2004)
- Fuel consumption limits for passenger cars (2004)
- Guiding catalogue for industry restructuring (2005)
- Top-1000 enterprise program (2006)
- Energy conservation law [amended] (2008)

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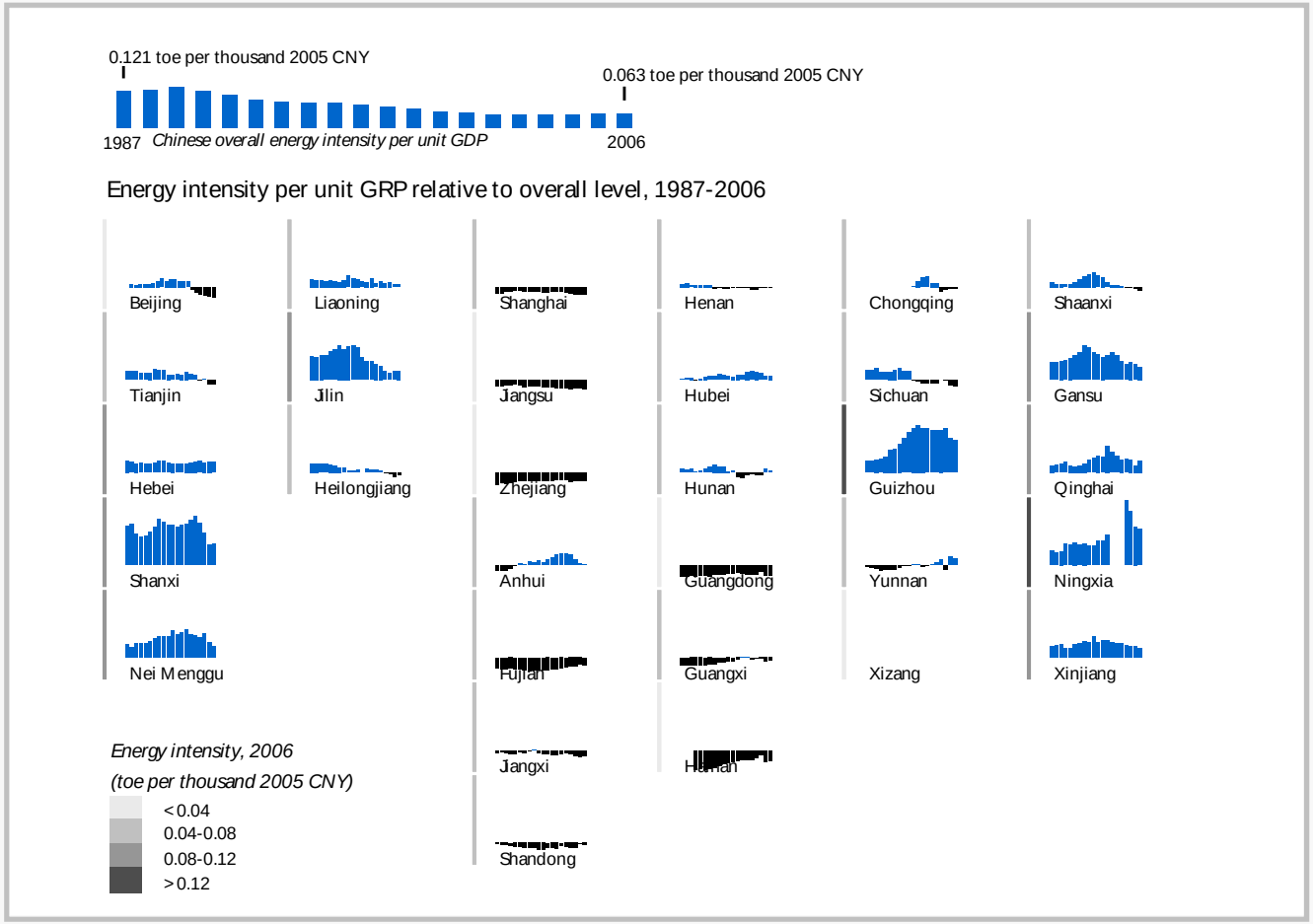
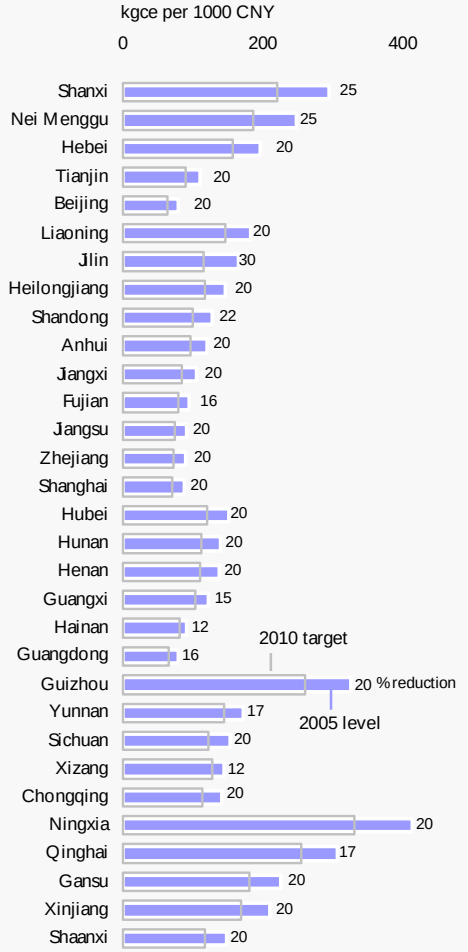
ambitious policies

- Eleventh 5-year plan (2006-2010)





Provincial energy intensities and target reductions

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Historical performance

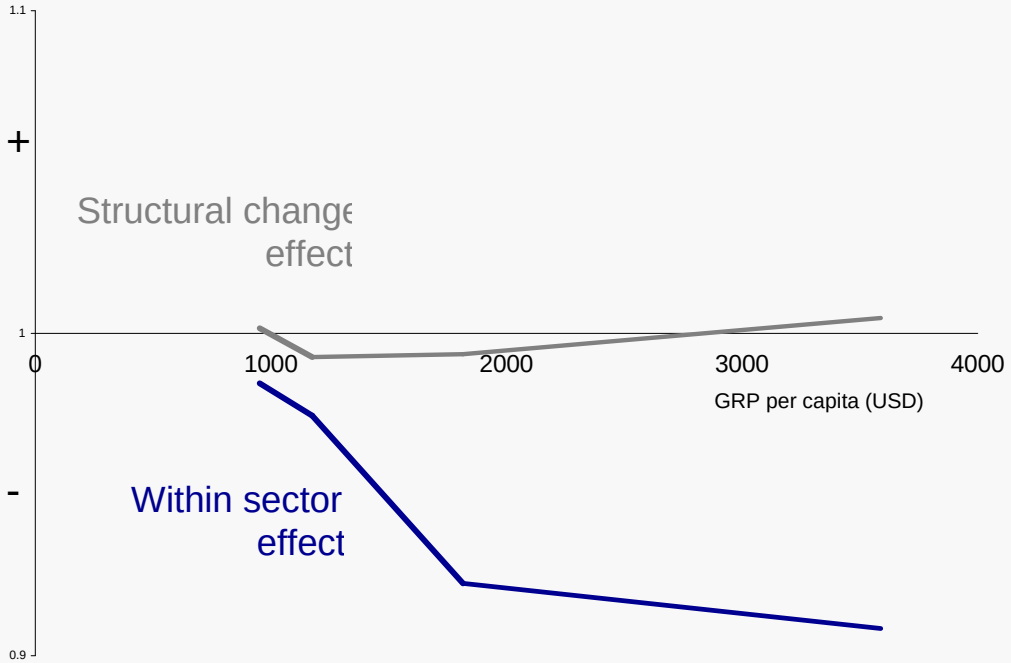
- Data-driven provincial analysis
- Unit- and economic-efficiency indicators
- Macro-level and sector-specific
- *Presents the overall picture of diversity and change*

Specific narratives

- Implementation of efficiency policy and enterprise initiatives
- Cases from across development levels
- Description of regional characteristics
- *Explains EE successes and challenges from behind the numbers*

Geographies of Efficiency

- ex: industrial structural change in Tianjin



Contribution of industry structure and in-sector energy intensity to Tianjin's overall energy intensity (1986-2006)

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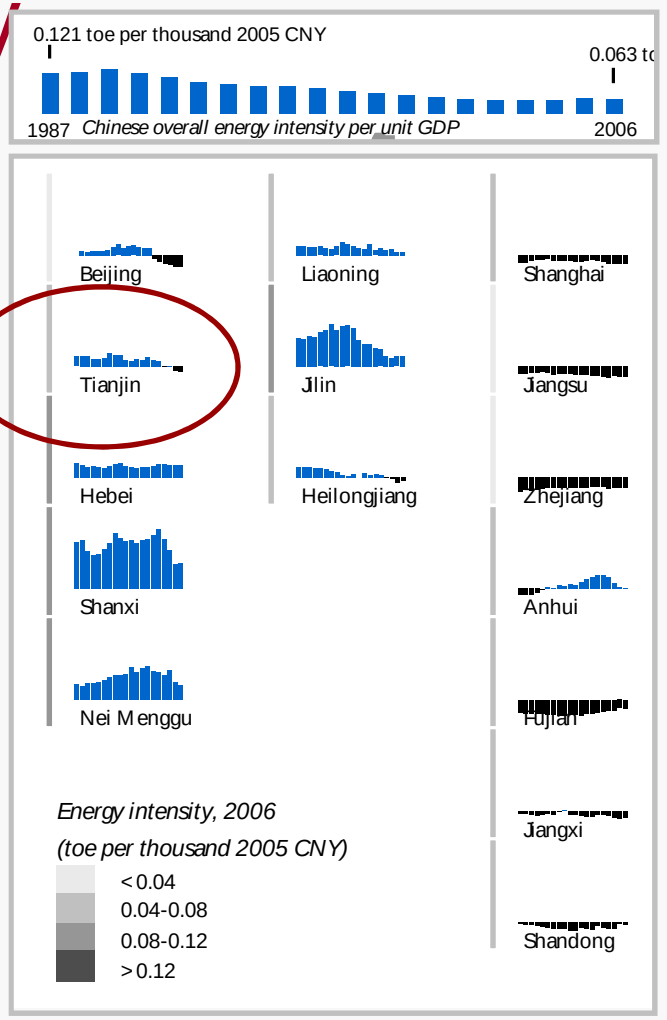

Energy intensity per unit GRP relative to overall level (1986-2006)

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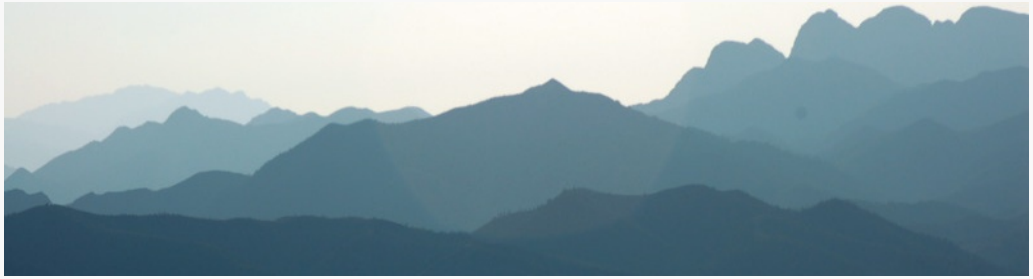
Geographies of Efficiency

- ex: industrial structural change in Tianjin

***narrative:* Tianjin Economic-Technological Dev Area (TEDA)**

- Frontrunner high-value manufacturing area
- Overall intensity only about one-quarter the Chinese average
- Two-part strategy to meet 20% energy intensity target:
  - Unit efficiency improvement in existing enterprises
  - Management to minimise new energy-intensive investment



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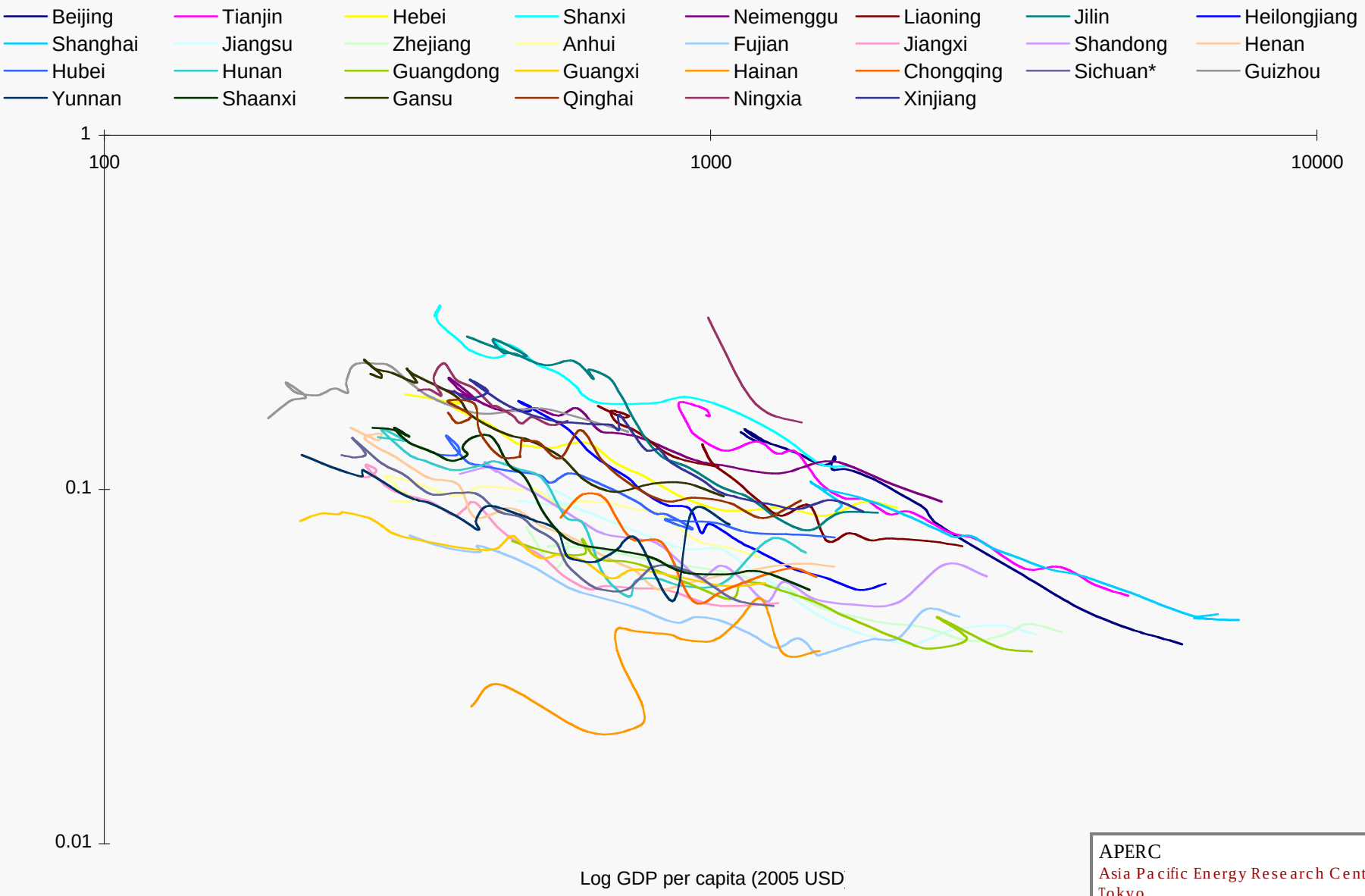
Geographies of Efficiency



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