

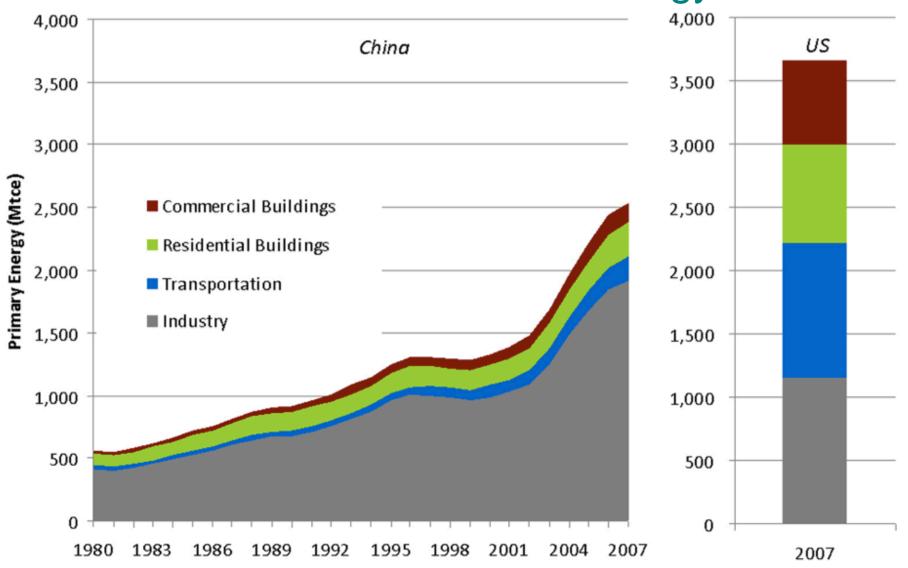
Coal in China: Industrial Efficiency and China in the Global Context

Deborah Seligsohn World Resources Institute October 5, 2010



Industrial Energy Efficiency –

Critical to the Chinese Energy Picture



Sources: Lawrence Berkeley National Lab, the Chinese National Bureau of Statistics, the US Energy Information Agency



Industrial Energy Efficiency Timeline

1997

- Energy
 Conservation Law
- Began to emphasize on "Key Energy-Using Enterprises"



1999

 Issued the Energy Conservation Management Regulation of Key Energy-Using Enterprises



2000s

- Set up the Energy Statistical Reporting System (?)
- Energy demand began increasing faster than GDP growth



2006

- Announced the 20% economic energy intensity reduction goal
- Launched the Top-1000 Program



2010

- Interim Regulation for Central Enterprises' Energy Conservation and Emission Reduction Monitoring Management
- Energy Saving Certification Centers



2009

- Announced carbon intensity target: reduced 40-45% by 2020 over 2005 levels
- Began localization of ISO standards on GHGs MRV



2008

- Amended Energy Conservation Law took effect
- Established the Key Energy-Using Enterprises Reporting System
- Broadened Top1000 program to provinces

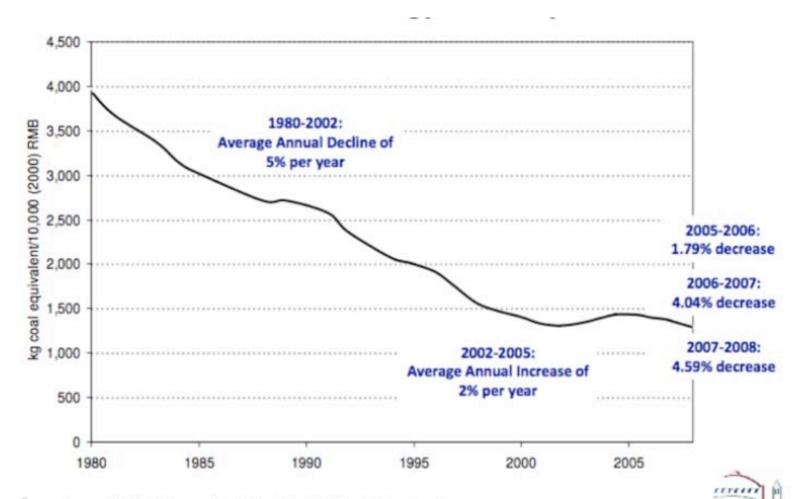


2007

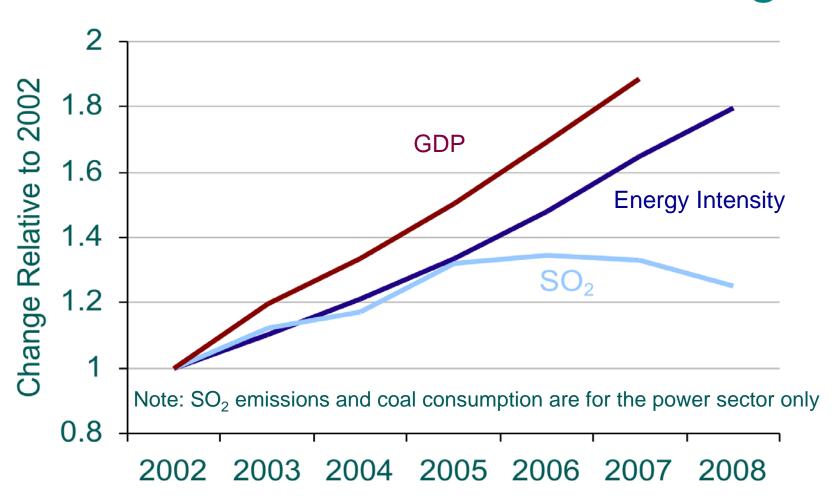
- Began to issue mandatory energy performance standards
- Issued guidelines to collect, supervise and examine economic energy intensities

Source: Hongyou Lu, China Energy Group, Lawrence Berkeley National Laboratory

Progress on Energy Intensity



The Multi-Pollutant Challenge





Two Energy Efficiency Programs Stand Out: Top 1000 and Plant Closures

	11 th FYP	Savings to Date
	Target	2006-2008
Policy/Program	Primary Energy (Mtce)	
Ten Key Projects	268	102
Buildings Energy Efficiency	112	41
Top-1000 Program	130	124
Small Plant Closures	118	129
Appliance Standards	79	37
Other savings including provincial programs	1146	147
Total Primary Energy Savings	1709	527

Source: Levine et al, Lawrence Berkeley National Laboratory, April 2010



Scorecard for Top 1000 Enterprises

	1000/ 6
Energy	100% of target achieved: 40 points;
conservation	90% achieved: 35;
target (40 points	80% achieved: 30;
maximum)	70% achieved 25;
	60% achieved: 20;
	50% achieved: 0
Energy	Energy conservation leading group: 3 points
conservation	Energy conservation management department: 2
measures (60	Decomposition of target to unit and person 3
points maximum)	Assessment of energy conservation target 3
	Reward and punishment system 4
	Energy efficiency performance in 1000 enterprises: 10 for
	top 10% and 5 for top 50%.
	Energy conservation R&D fund 4
	Annual energy conservation plan 4
	Closure of backward equipment 7
	Retirement of outdated equipment
	Implementation of local regulation 2
	Implementation of energy consumption norm 4
	Norm management for energy consuming equipments 2
	Implementation of energy conservation design 2
	Energy audit and monitoring system 2
	Energy statistics manger and account 3
	Energy monitoring appliance 3
	Energy conservation training 2



RESOURCES Chinese Data Revisions in 2010

- The Chinese issue periodic revisions to economic data
- This is standard practice most countries revise monthly and quarterly data
- China conducts a 5 year economic census to further check its economic data
- The result has been revisions after each of the last 2 censuses

Figure 2: China Coal Production Data Revisions (1996-2008)

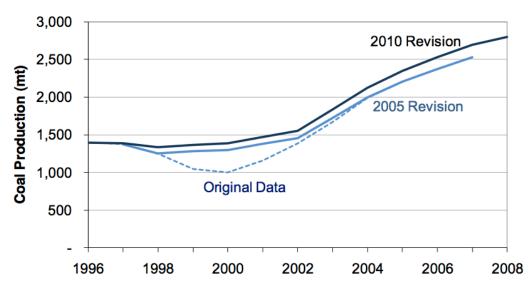
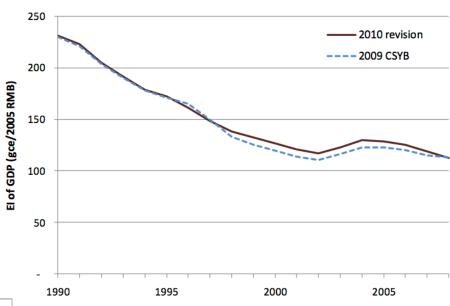


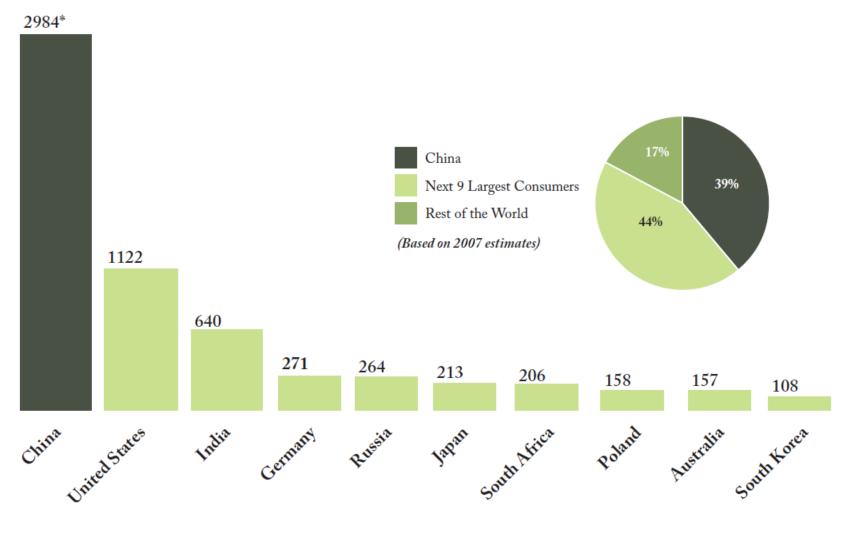
Figure 8: Energy Intensity of GDP Data Revisions (1990-2008)



Source: Aden, Lawrence Berkeley National Lab, 2010

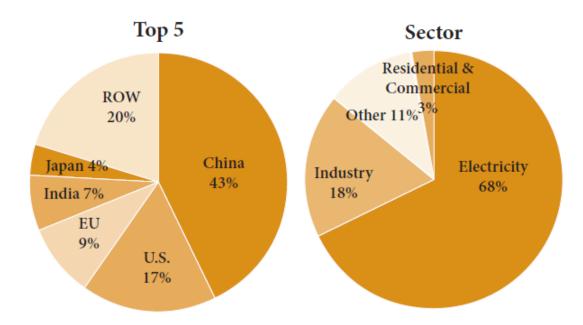
ChinaFAQs www.chinafaqs.org Convened by the World Resources Institute

TOP TEN COAL CONSUMERS (2008)





Coal Consumption by Country and Sector Consumption



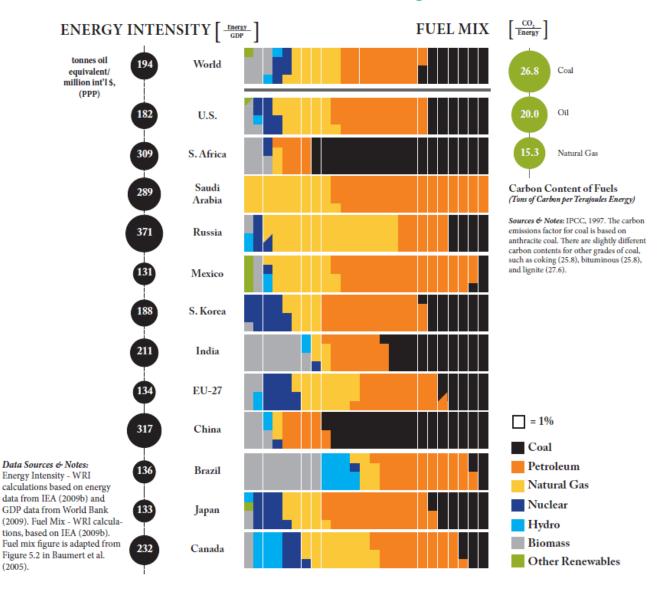
ROW=Rest of the World

Data Sources & Notes: All data are from BP (2009) and are year 2008 estimates, except fossil fuel consumption by sector, which are WRI calculations based on IEA (2009b) and are year 2007 estimates. Industry totals include direct fossil fuel combustion and non-energy uses (e.g., feedstock use in the petrochemical industry). Residential and commercial sector totals include agriculture. Other includes energy transformation and energy industries (e.g., oil and gas extraction).



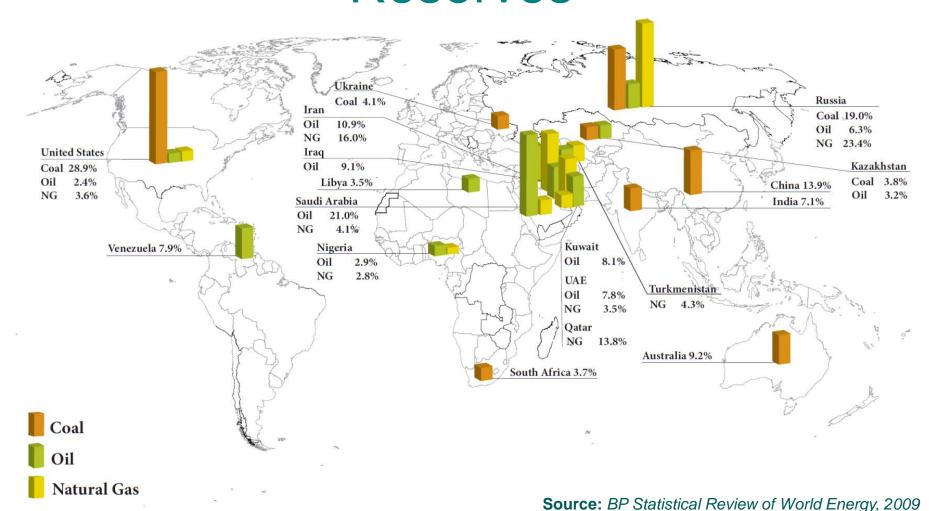
Energy Intensity & Fuel Mix for

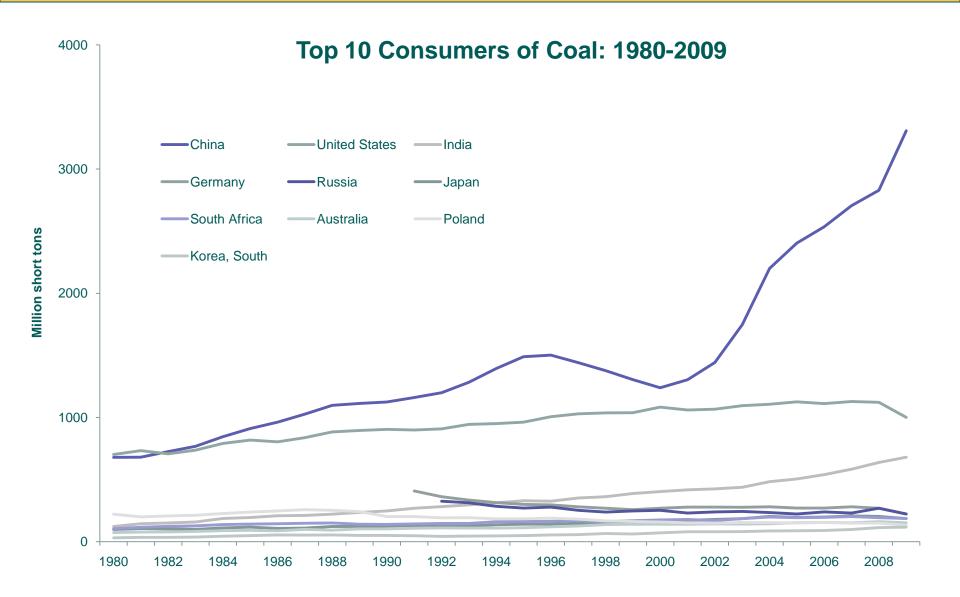
Selected Major Emitters





Selected Proved Fossil Fuel Reserves

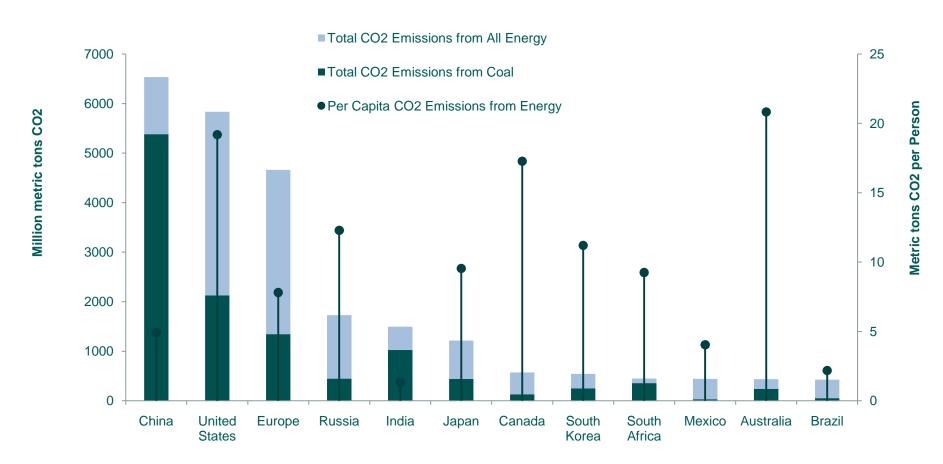




Source: Energy Information Administration, 2010



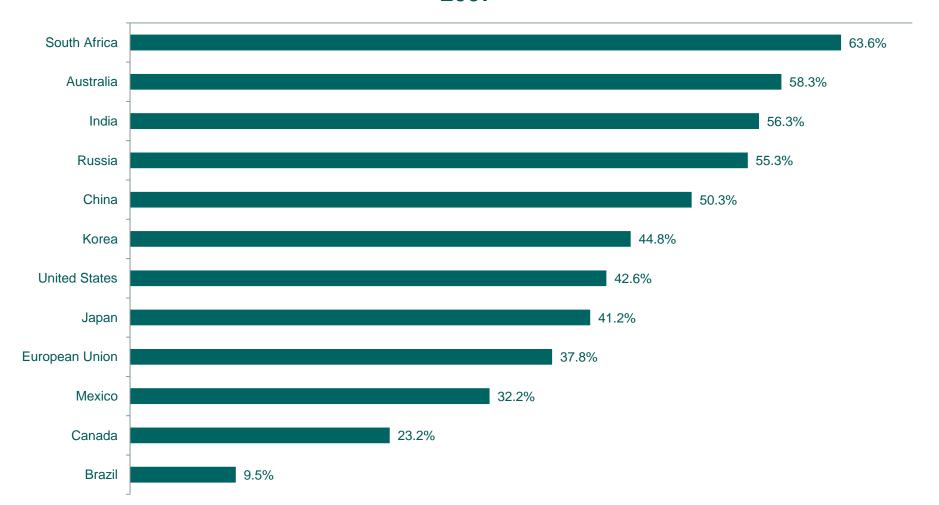
2008 Energy-related CO2 Emissions: Total, from Coal, and Per Capita



Source: Energy Information Administration, 2010



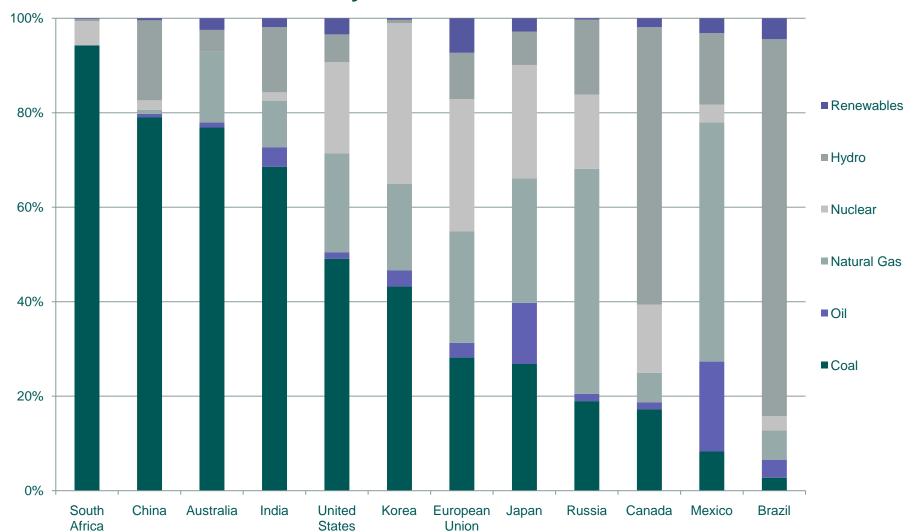
Percent of Energy-related CO2 from Electricity Generation: 2007



Source: International Energy Agency, 2009







Source: International Energy Agency, 2009