



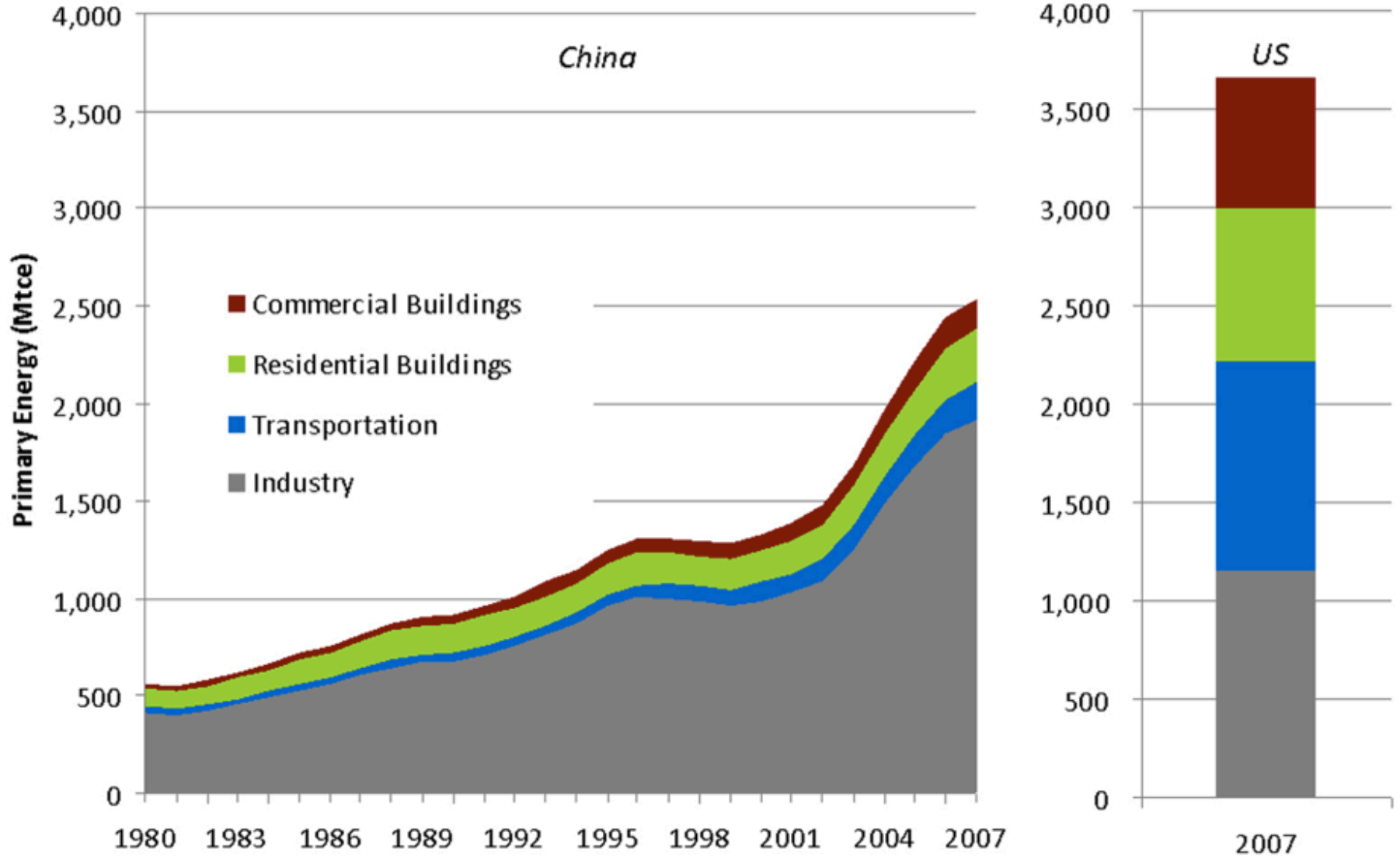
Coal in China: Industrial Efficiency and China in the Global Context

Deborah Seligsohn

World Resources Institute

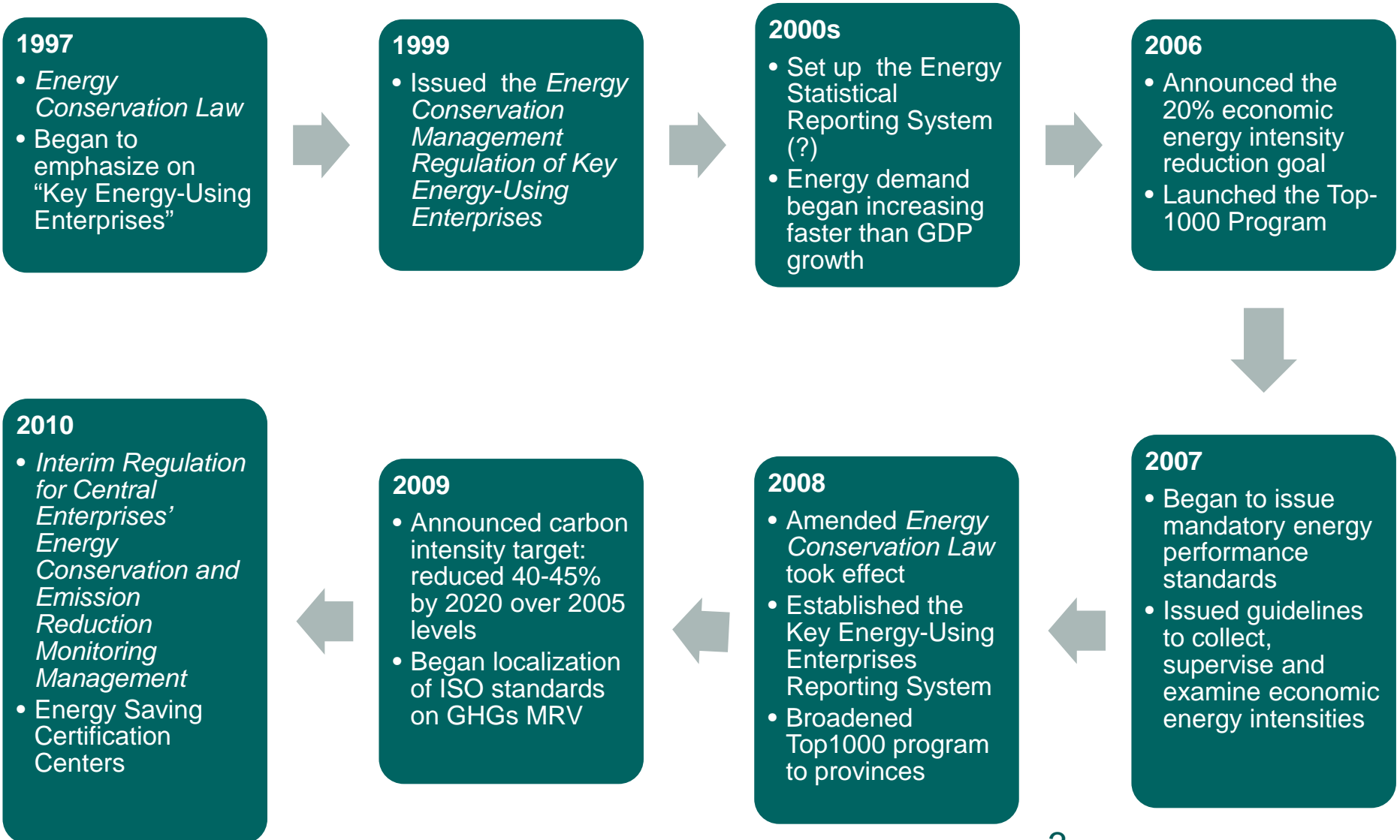
October 5, 2010

Industrial Energy Efficiency – Critical to the Chinese Energy Picture

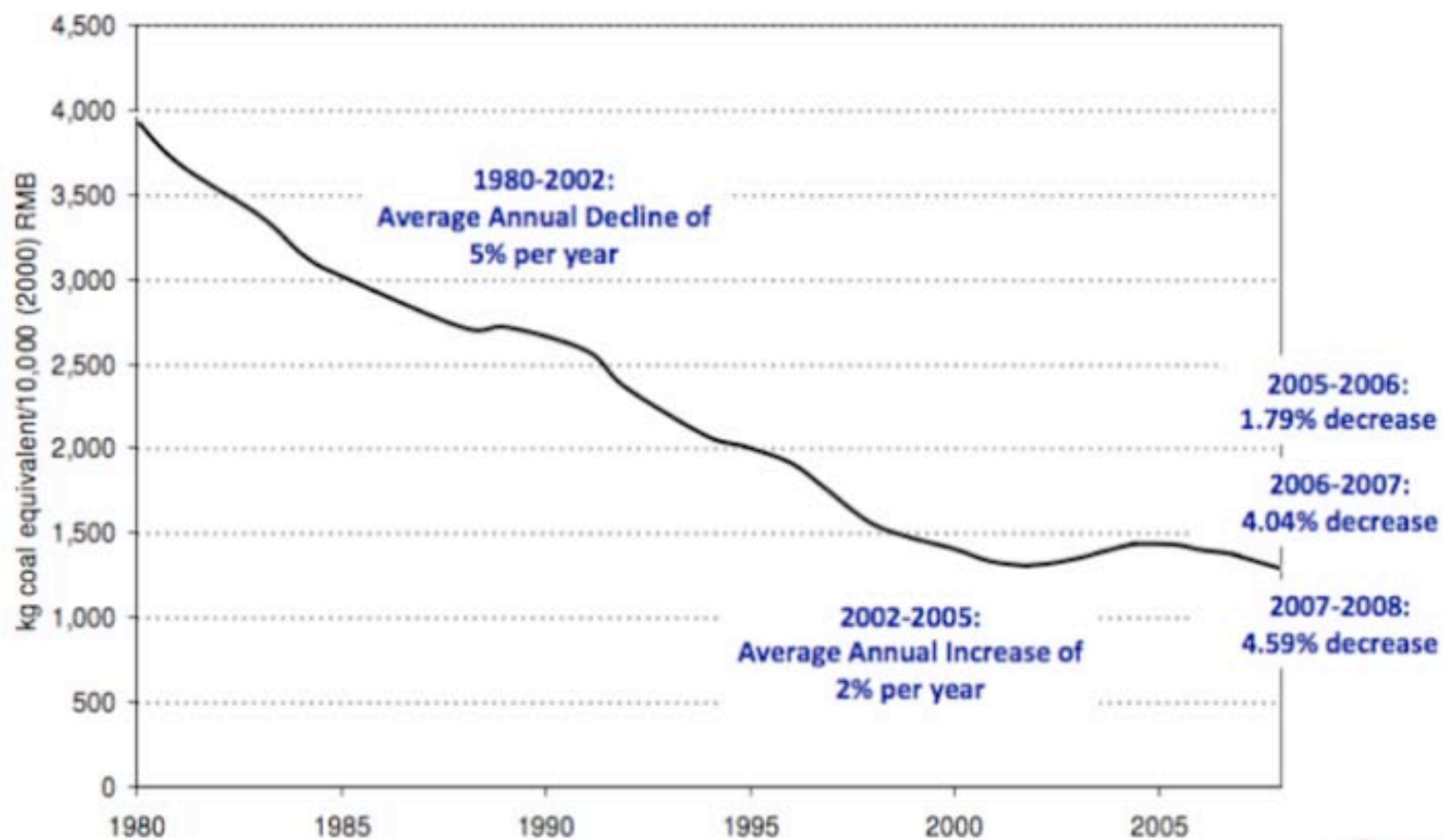


Sources: Lawrence Berkeley National Lab, the Chinese National Bureau of Statistics, the US Energy Information Agency

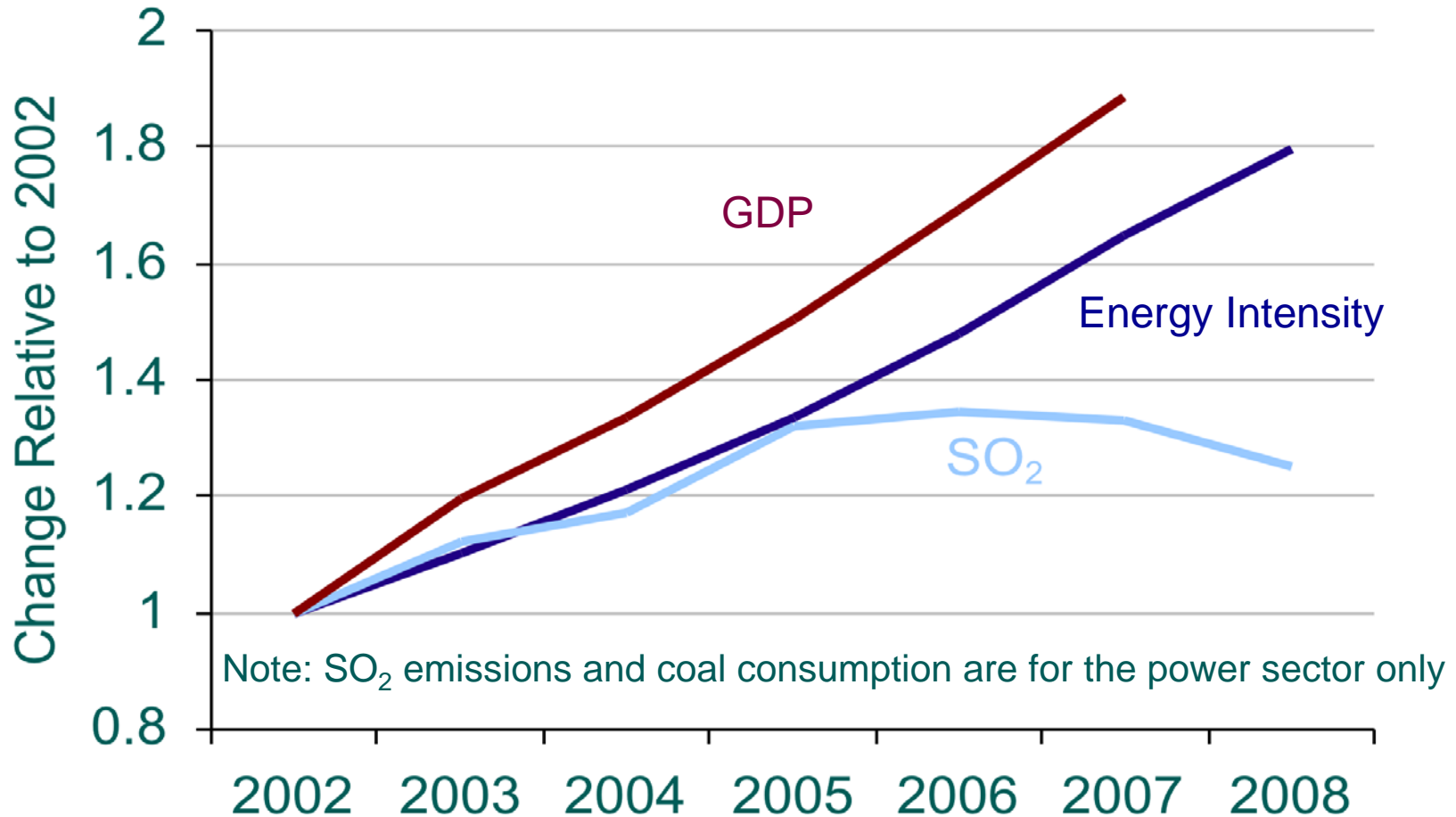
Industrial Energy Efficiency Timeline





Progress on Energy Intensity



The Multi-Pollutant Challenge



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

Policy/Program	11 th FYP Target	Savings to Date 2006-2008
	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

Energy conservation target (40 points maximum) 100% of target achieved: 40 points;
90% achieved: 35;
80% achieved: 30;
70% achieved: 25;
60% achieved: 20;
50% achieved: 0

Energy conservation measures (60 points maximum)

- Energy conservation leading group: 3 points
- Energy conservation management department: 2
- Decomposition of target to unit and person 3
- 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- Retirement of outdated equipment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

- 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)

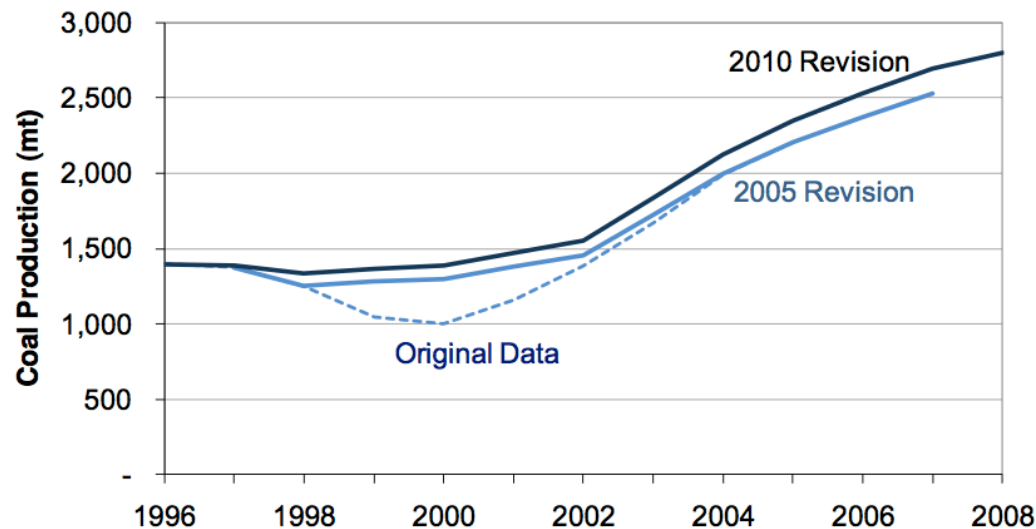
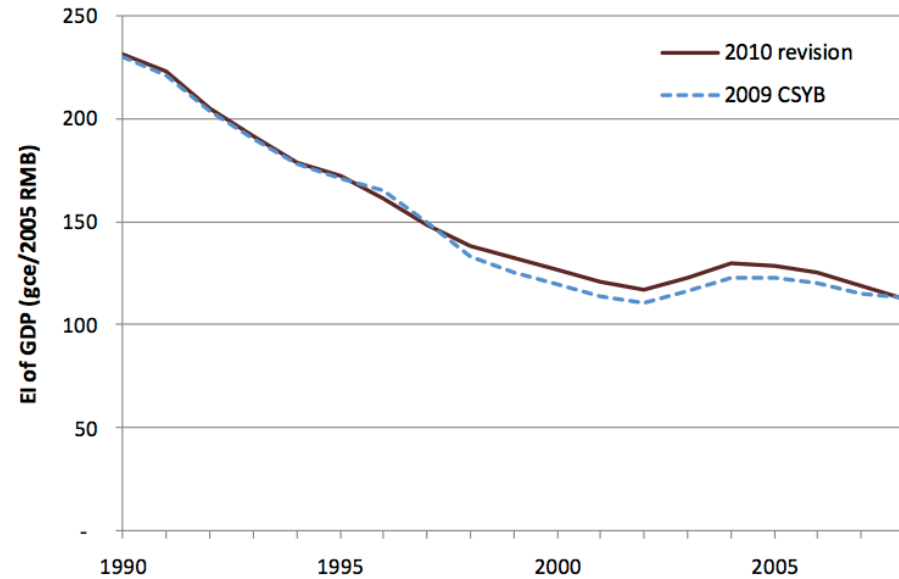


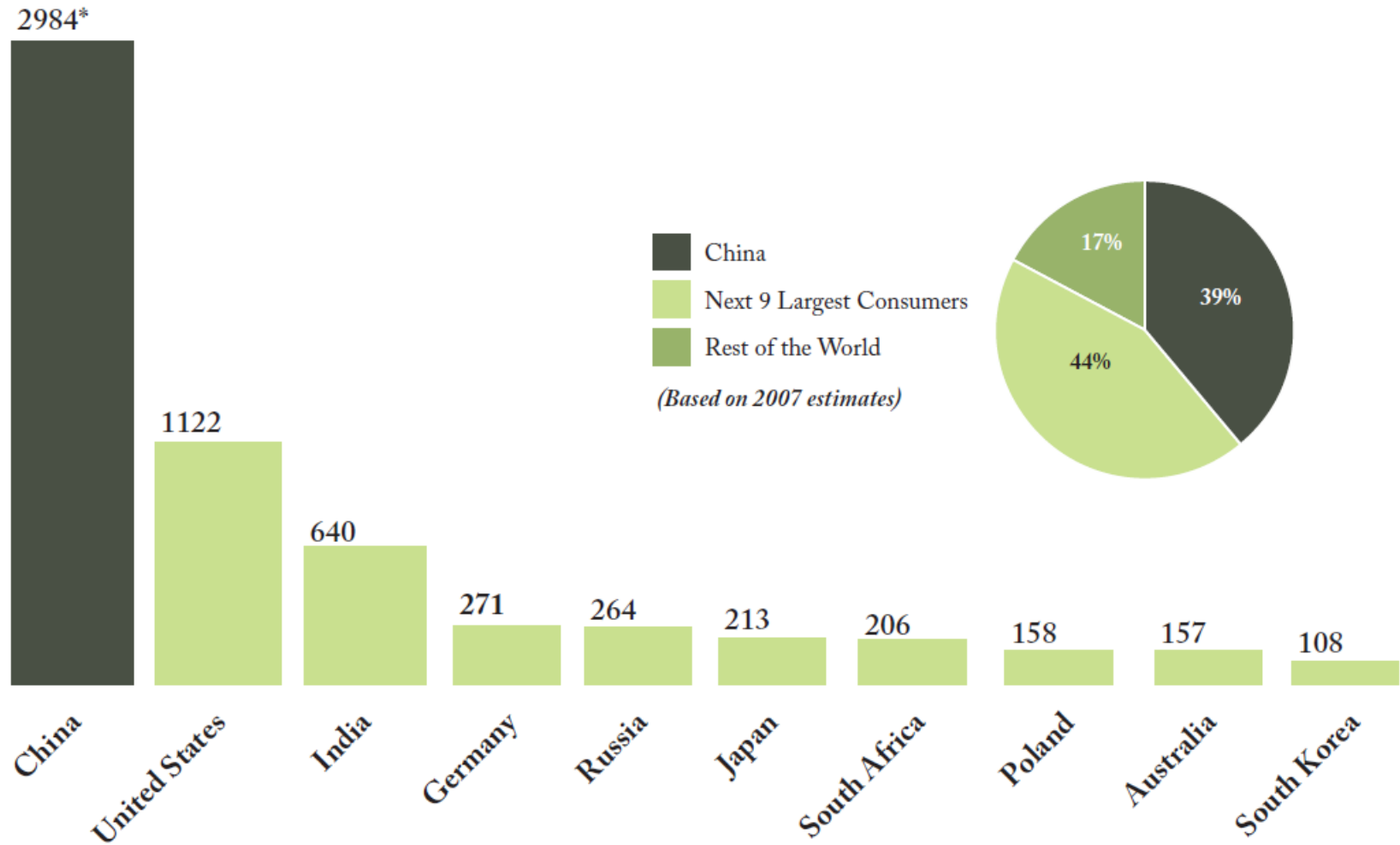
Figure 8: Energy Intensity of GDP Data Revisions (1990-2008)



Source: Aden, Lawrence Berkeley National Lab, 2010



TOP TEN COAL CONSUMERS (2008)



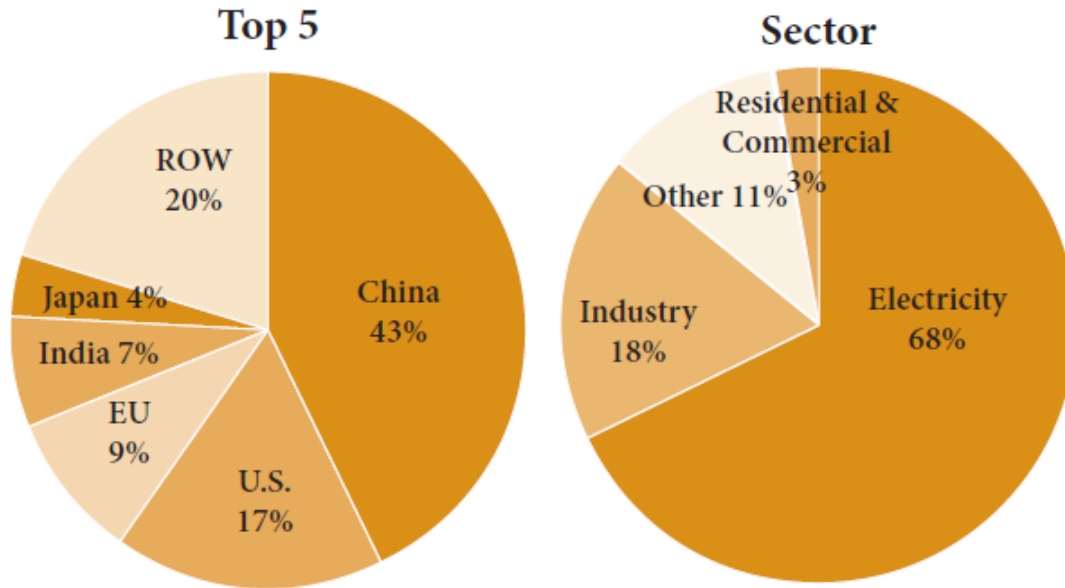
*Million short tons

Data Source: U.S. Energy Information Administration, 2009.



Coal Consumption by Country and Sector

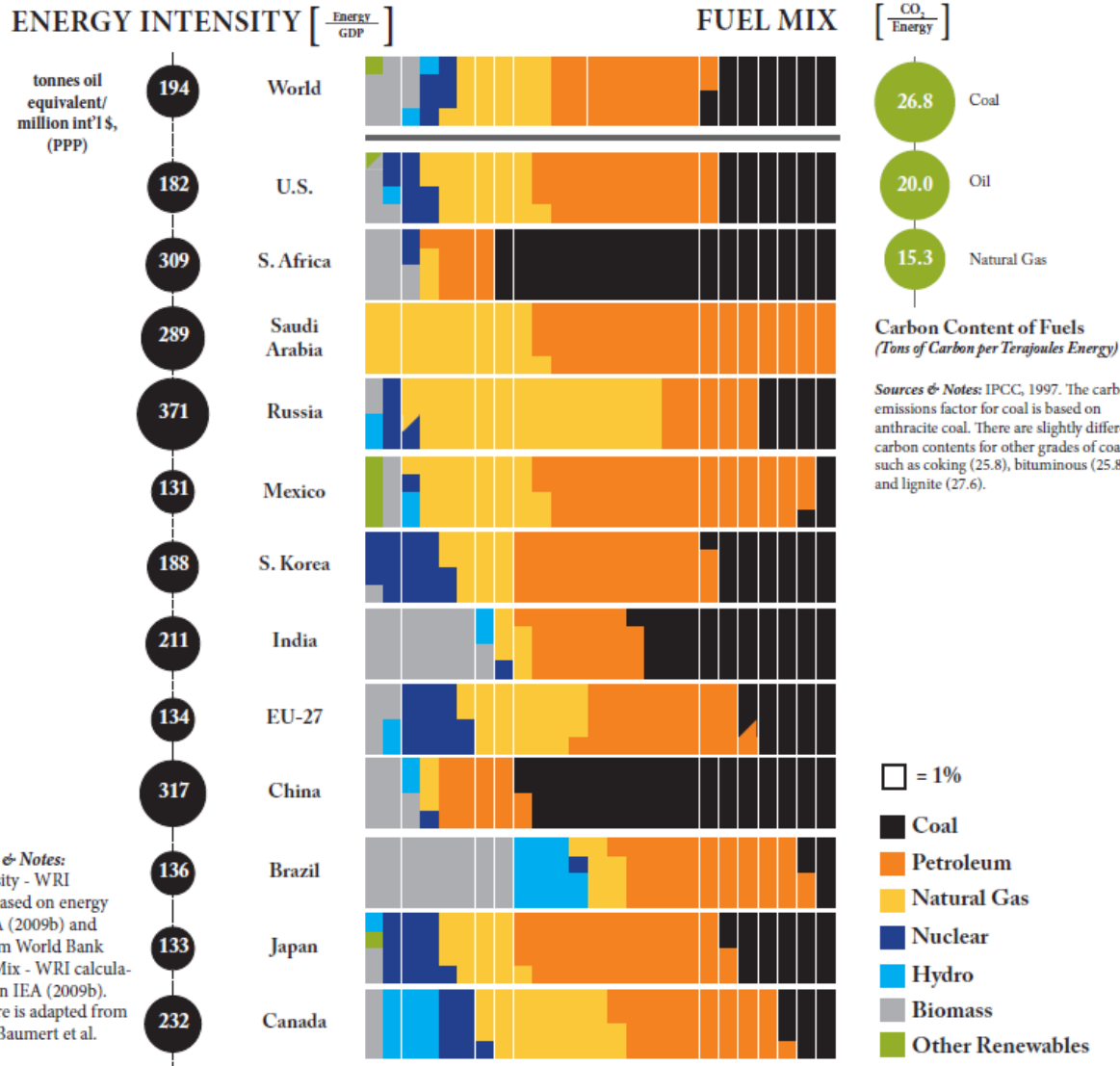
Consumption



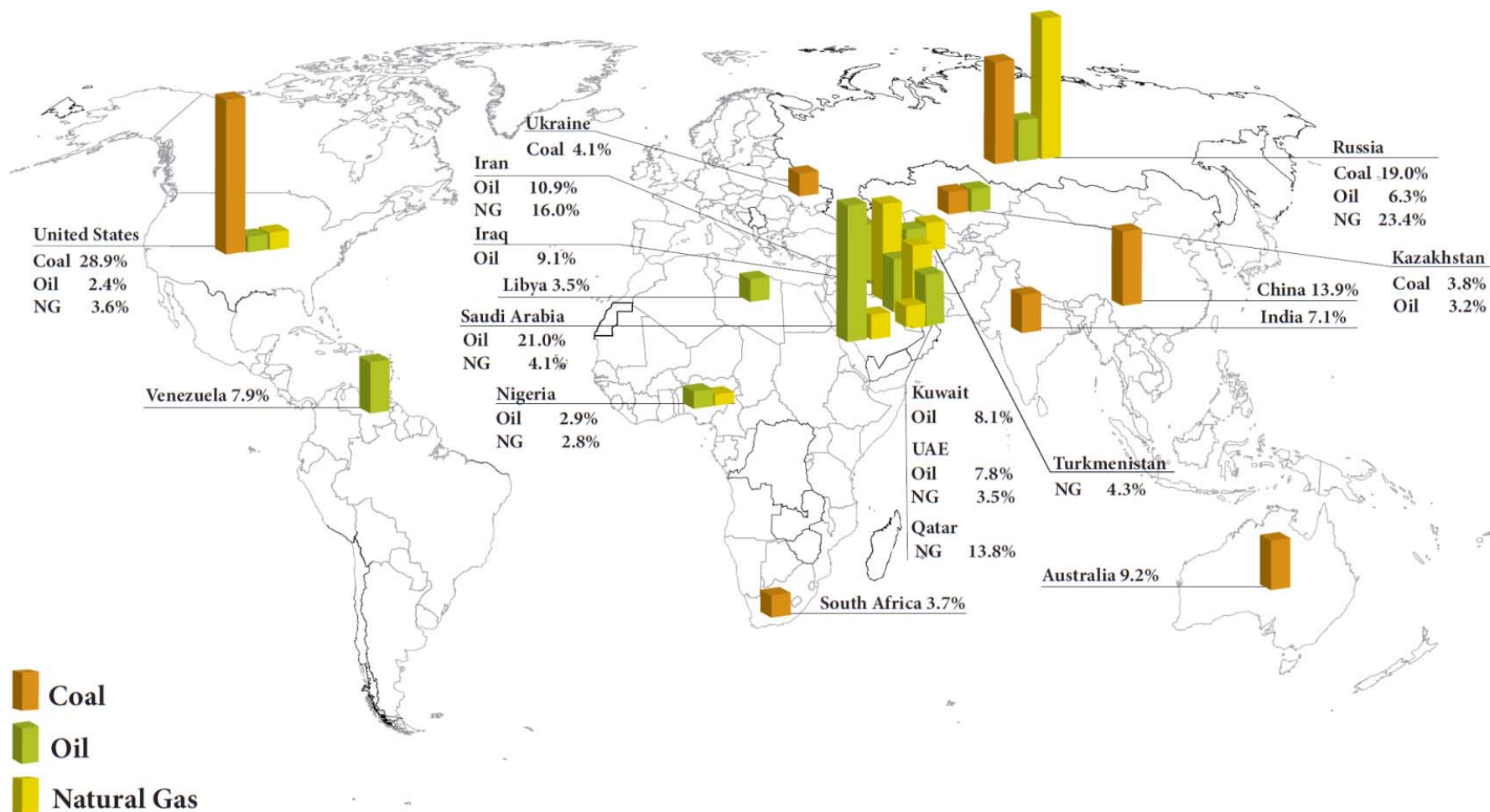
ROW=Rest of the World

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

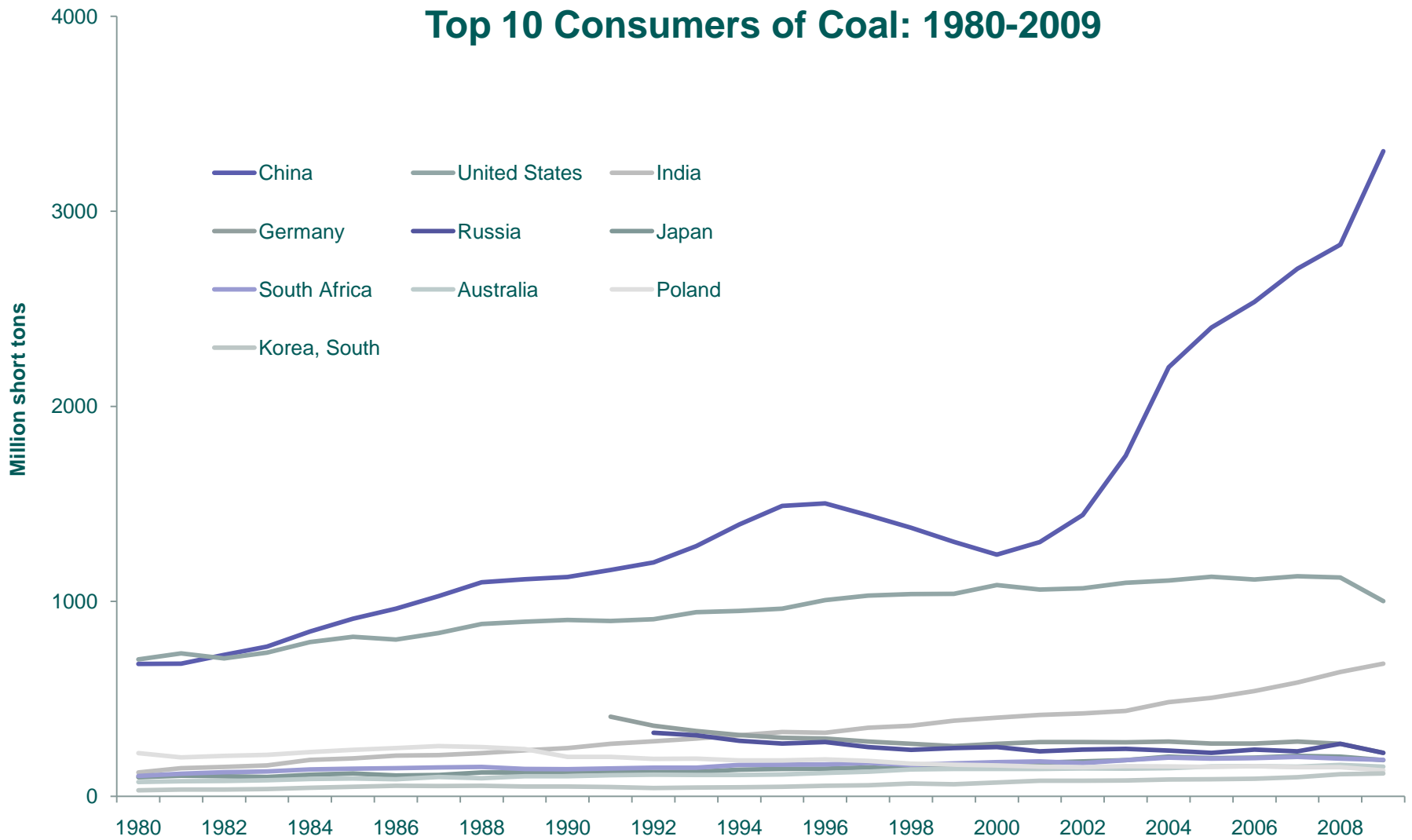


Selected Proved Fossil Fuel Reserves

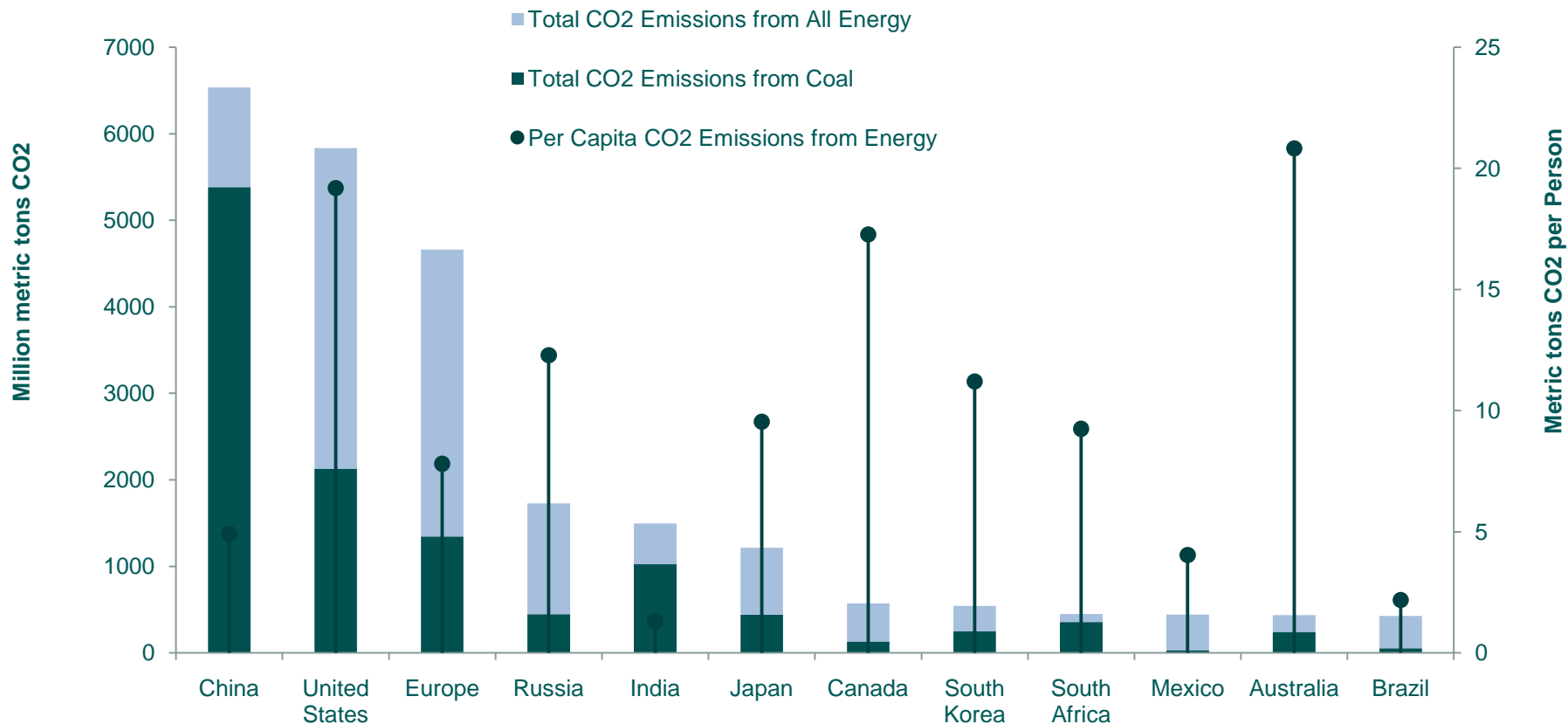




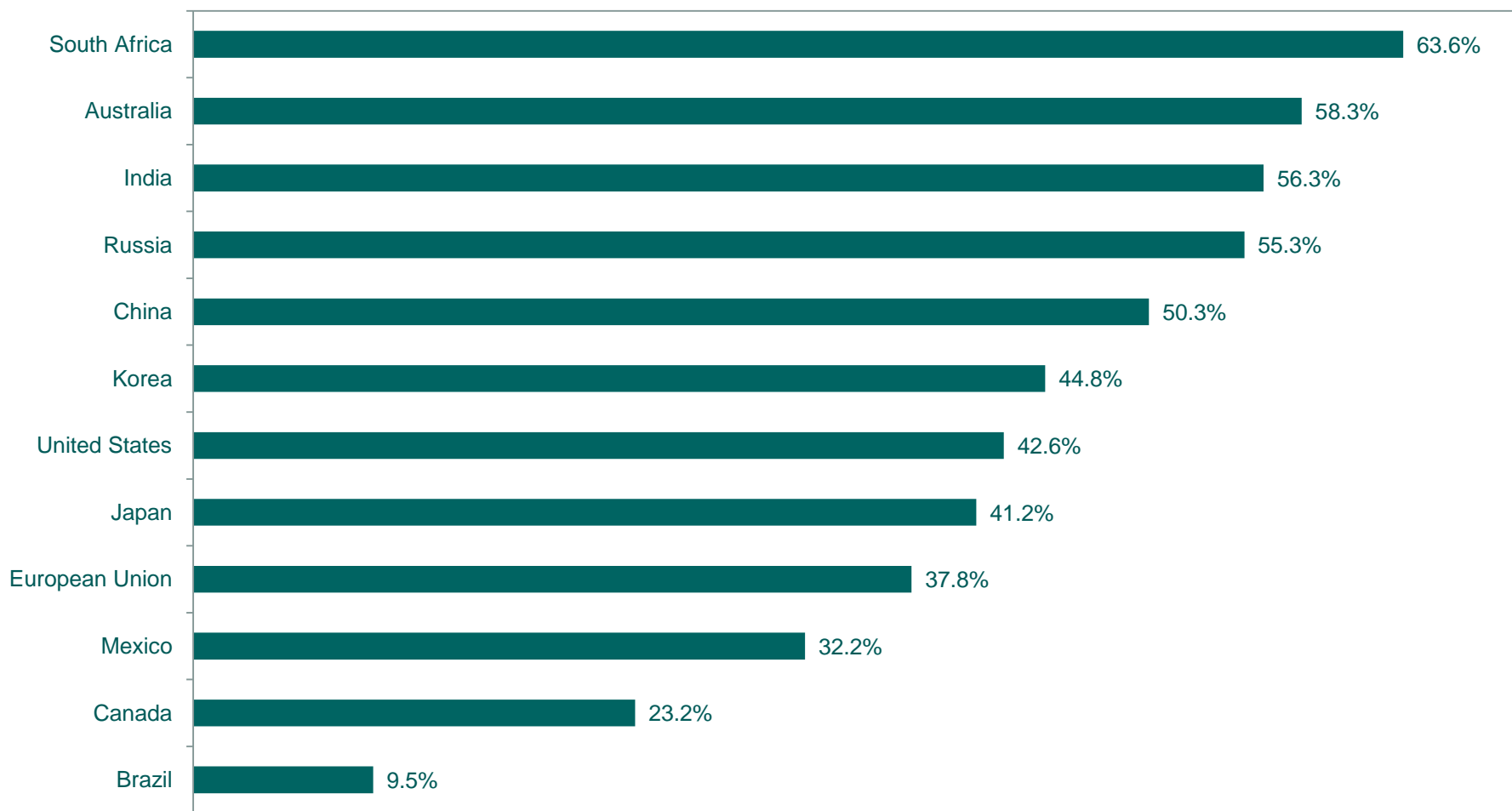
Top 10 Consumers of Coal: 1980-2009



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



Percent of Energy-related CO₂ from Electricity Generation: 2007





Electricity Generation Fuel Mix: 2008

