



# Energy Issues for the CEM

*David Roland-Holst*  
*UC Berkeley*

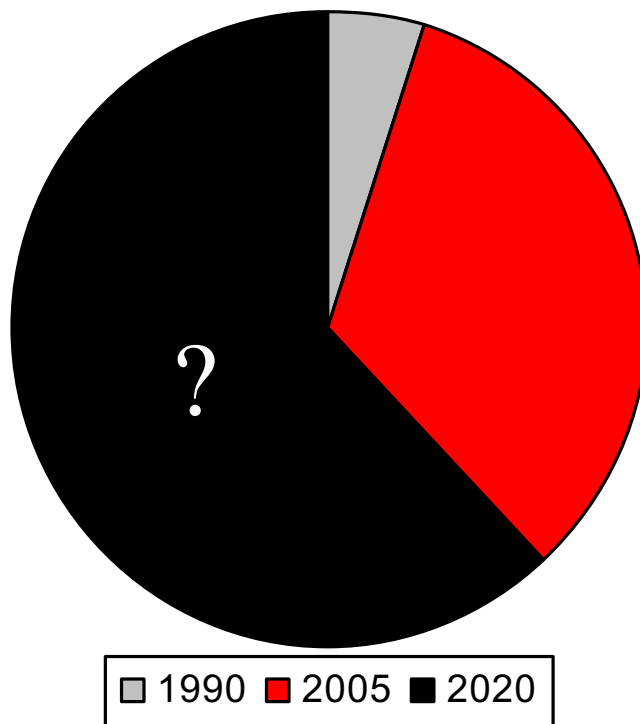
Background seminar for the  
Chinese Country Economic Memorandum

World Bank Resident Mission  
Beijing, March 30, 2006

# Sustainability I

Over the last 15 years, the North China Power Grid increased capacity six-fold.

Over the next 15 years, it will nearly triple capacity.



27 July 2006

North China Power Grid			Annual
	Installed MW	Cumulative	Growth
1940-1950	360		
1950-1960	730	1090	
1960-1970	657	1747	4.83
1970-1980	2848	4595	10.15
1980-1990	6893	11488	9.60
1990-2000	27416	38904	12.97
2000-2005	32410	71314	12.88
2005-2010	-	104784	8.00
2010-2020	-	206125	7.00
Capacity built	0.84		
Growth since	6.38		

This implies:

200MMT additional coal

(19% of total US use in 2005)

560MMT additional CO<sub>2</sub>

(25% of US total emissions)

220KMT additional SO<sub>2</sub>

(even with 95% efficiency)



# Sustainability II

- The 11<sup>th</sup> Plan enunciates a goal of 20% reduction in aggregate energy intensity.
- This appears to be a reaction to the fact that projected resource use for 2010 was attained instead by 2005.
- To give substance to this objective, much stronger empirical evidence is needed.

- In both industrial and residential energy use, Chinese efficiency levels can be improved substantially.
- Policies that promote energy efficiency will stimulate economic growth by re-directing expenditure to more labor intensive, higher value added goods and services.
- A GE model can produce detailed estimates of these macroeconomic efficiency benefits.



- Speculating about oil price trends is of limited usefulness in the present context.
- In contrast, coal price trends can exert substantial aggregate and compositional effects on the Chinese economy. Coal will fuel 90% of NCPG capacity.
- Prices at each stage of the energy supply chain are becoming increasingly uncertain.