

# Equitable Solutions to Greenhouse Warming: On the Distribution of Wealth, Emissions and Responsibility Within and Between Nations.

**Stephen W. Pacala**  
**Petrie Professor of Ecology**  
**Director, Princeton Environmental Institute**

**Princeton University** 

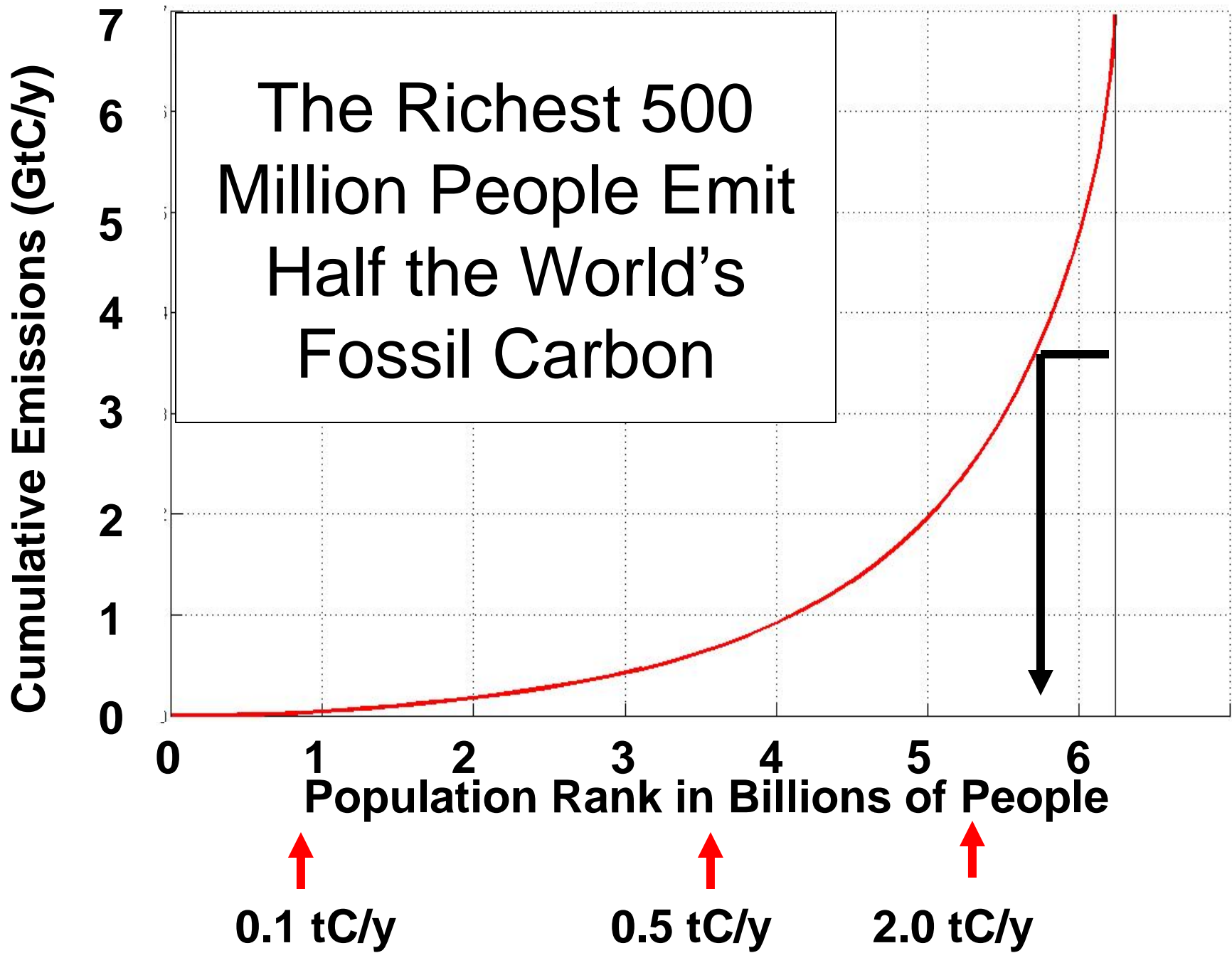


**IIASA**

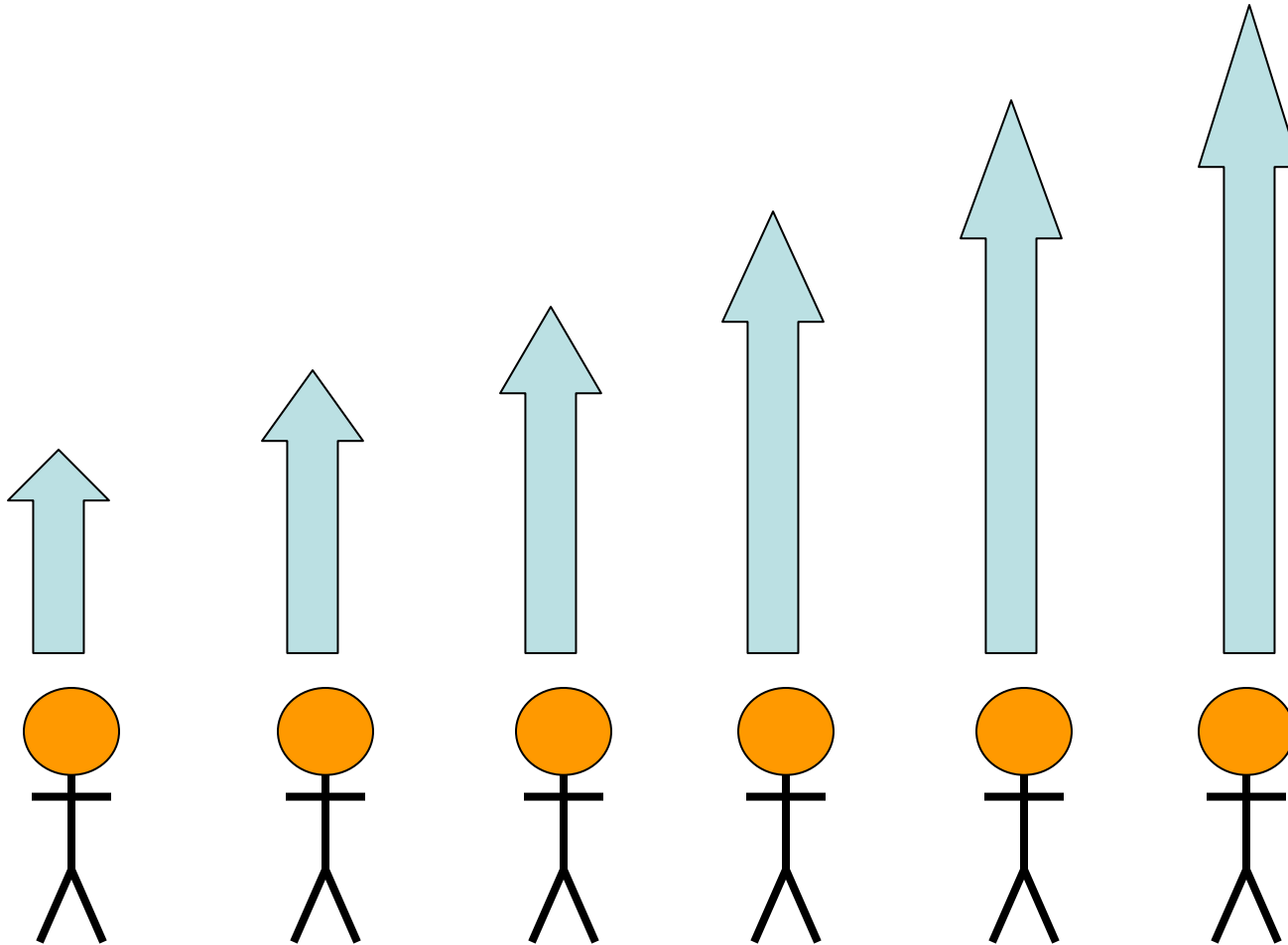
November 2007

# The Rhetoric of Fairness

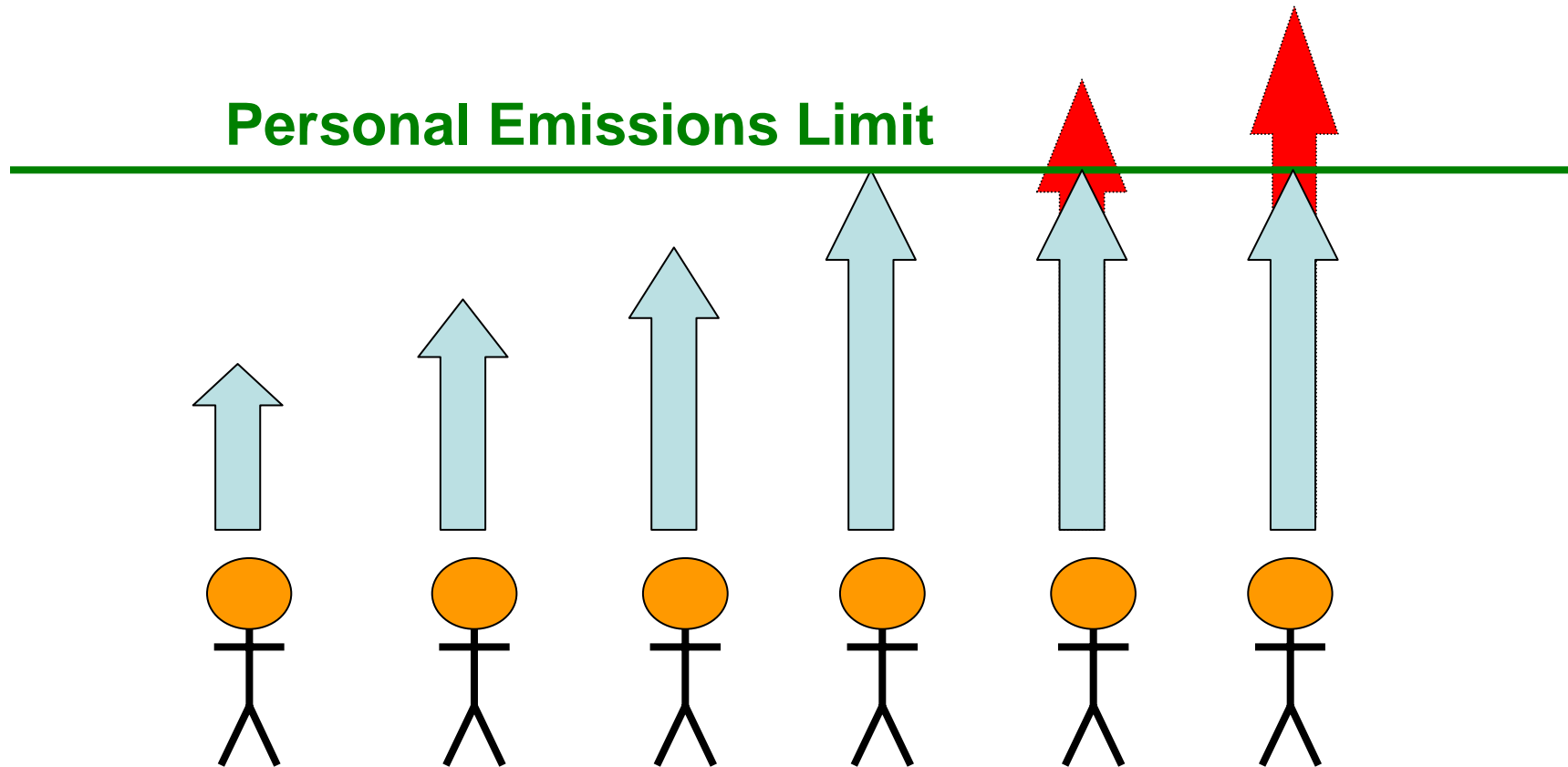
- President Bush on Kyoto: “I’m not going to let the US carry the burden of cleaning the world’s air.. China and India were exempted from the treaty.” (Bush/Gore debate 2000)
- Chinese Ministry of Economic Planning: “Mandatory quotas for China are not fair. Therefore China will not accept that.” (China Daily June 1, 2007).
- Indian Foreign Ministry: “We are not responsible for global warming so they cannot hold us up to in now.” (Reuters June 3, 2007)



# Rank People by Their Emissions

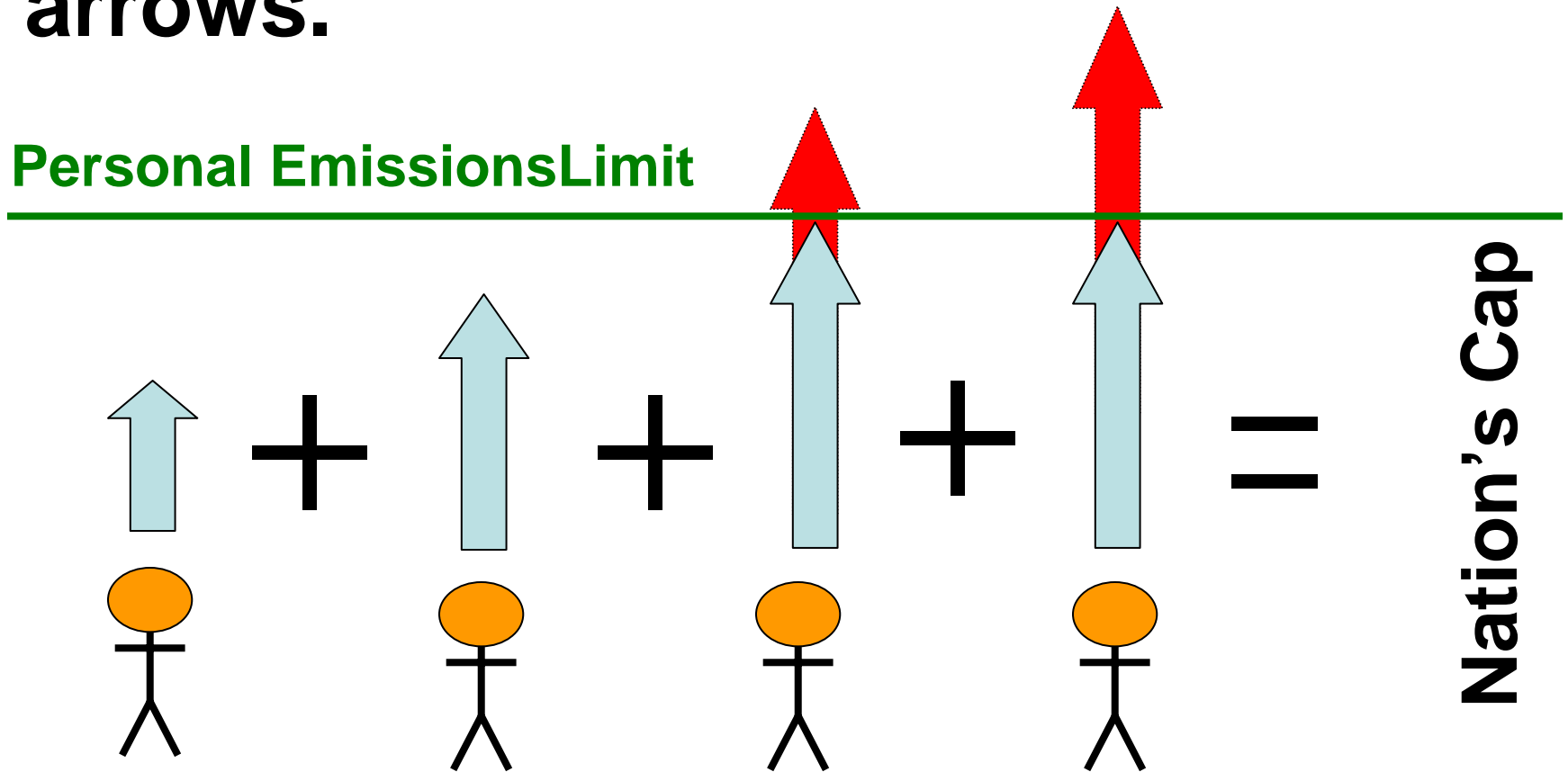


# Find the Personal Emissions Limit That Would Stabilize CO<sub>2</sub> at 450 PPM.



People at the limit would be wealthy by global standards: annual earnings of **\$30,000 - \$40,000** per capita (PPP, 2007-2030).

**To set a nation's cap, tell everyone who is not a citizen to leave the line. Then sum the blue arrows.**

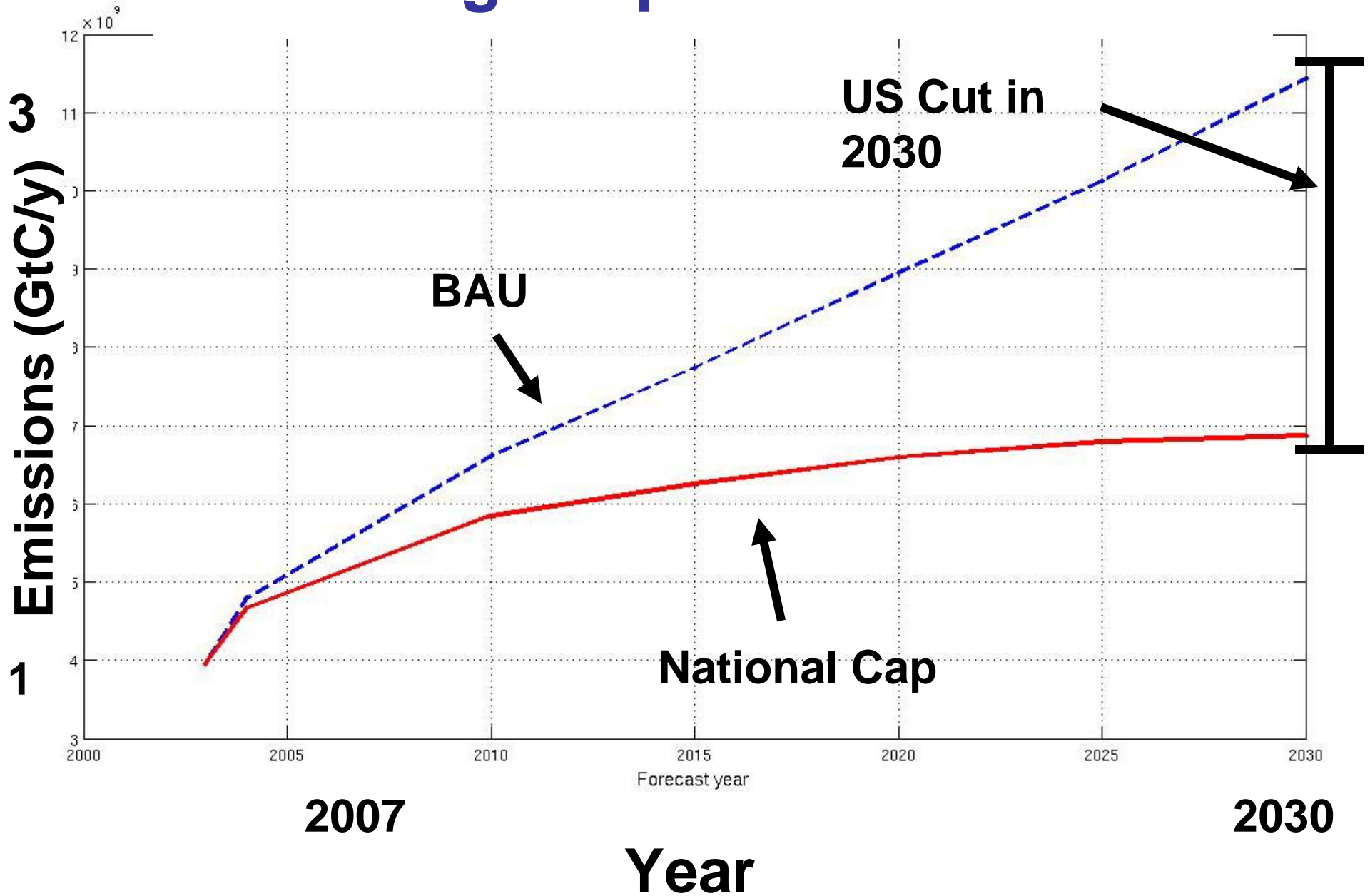


# National caps

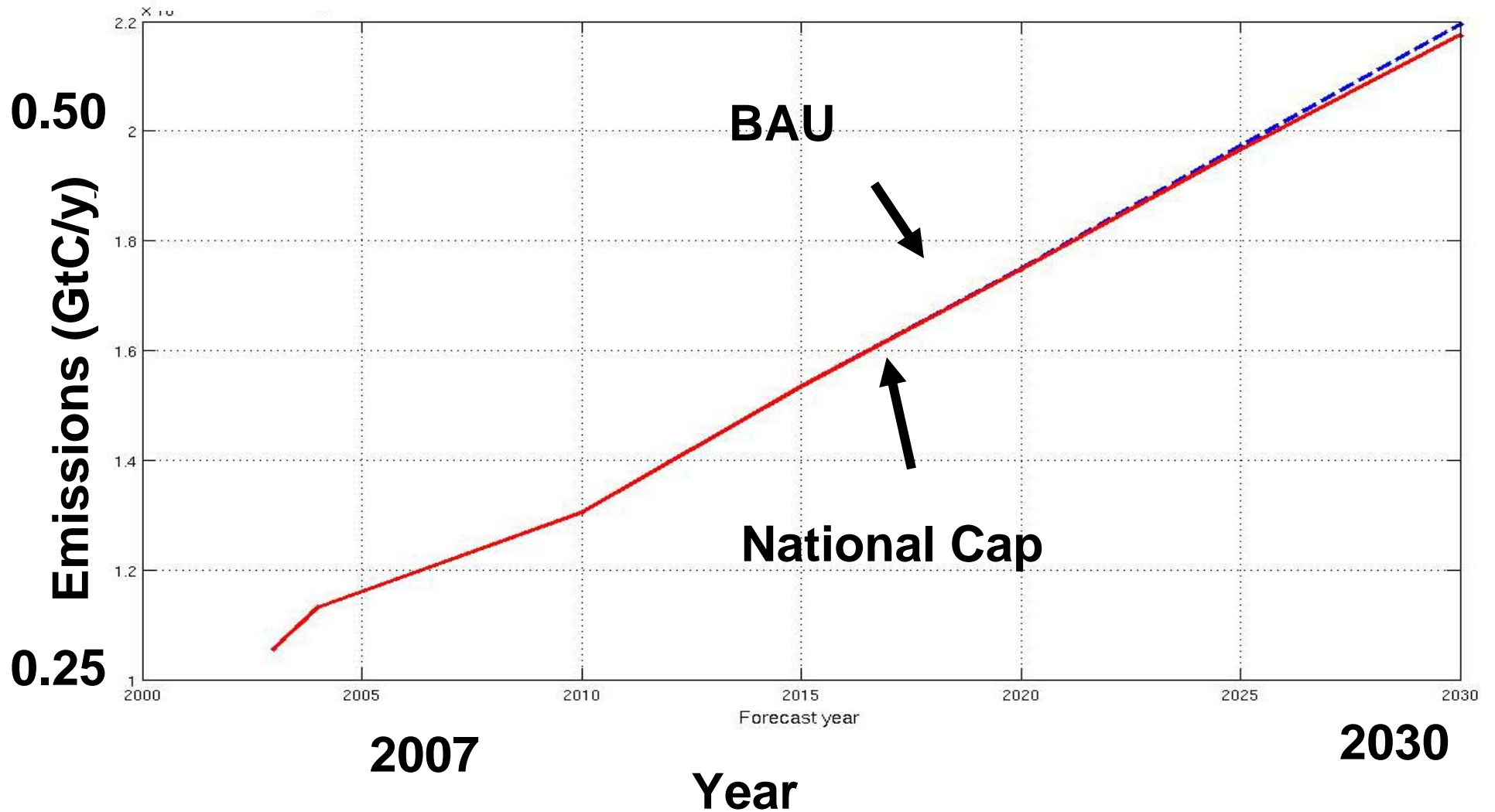
**The US would have to adopt  
Lieberman/Warner (1/5 of 1990 by 2050).**

**European nations would have to deliver  
on the targets most have already  
announced (1/3 of 1990 by 2050).**

# The Big Surprise Is China



# India and the Poor Nations Would Be Virtually Exempt



# The Rhetoric of Fairness

- **High emitters are rich in global terms; the poor do not own much that emits CO<sub>2</sub>.**
- **High emitters everywhere have the same obligation to solve the carbon problem. It does not matter if you are a wealthy American, Austrian or Chinese.**
- **Only the rich enjoy the benefits of their large incomes.**
- **But damages from the current and past carbon emissions associated with these incomes are distributed everywhere in the world.**