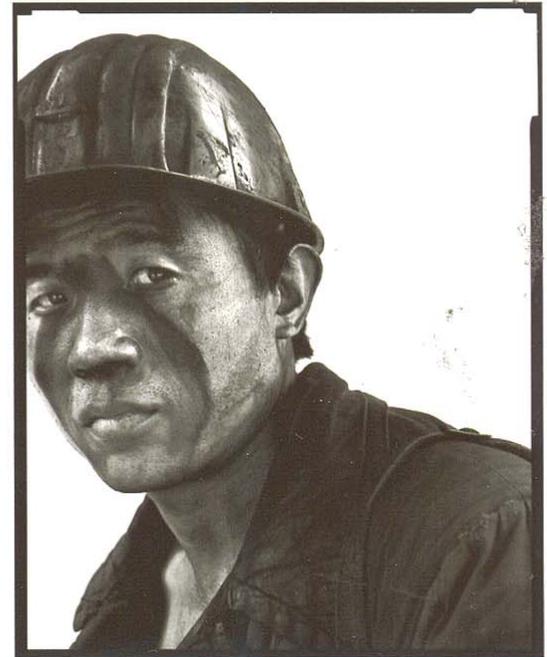
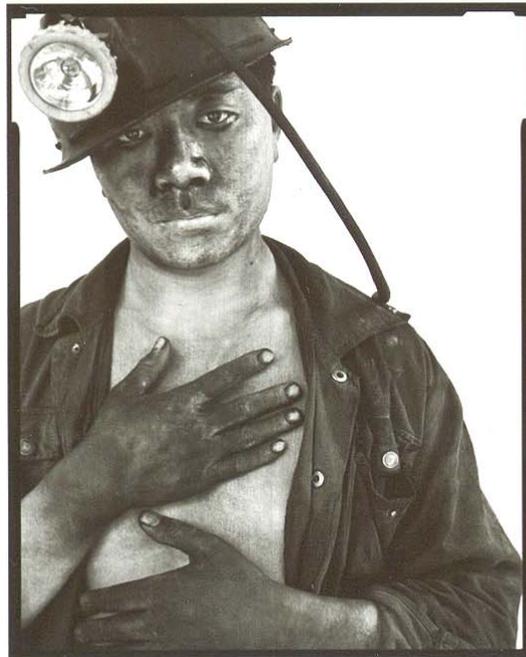
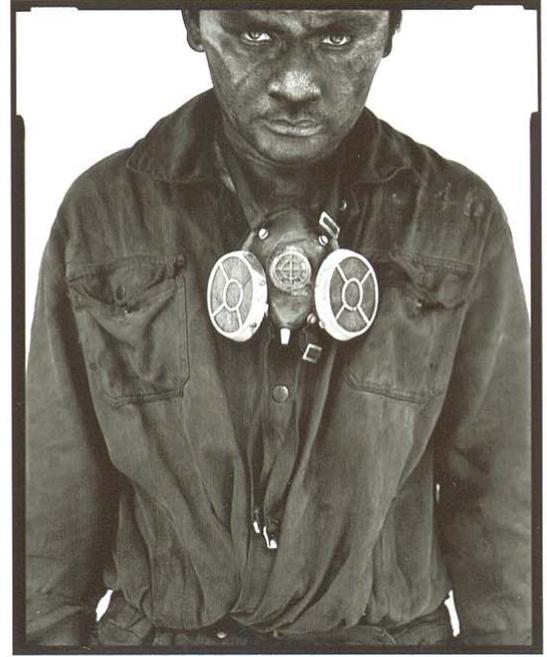
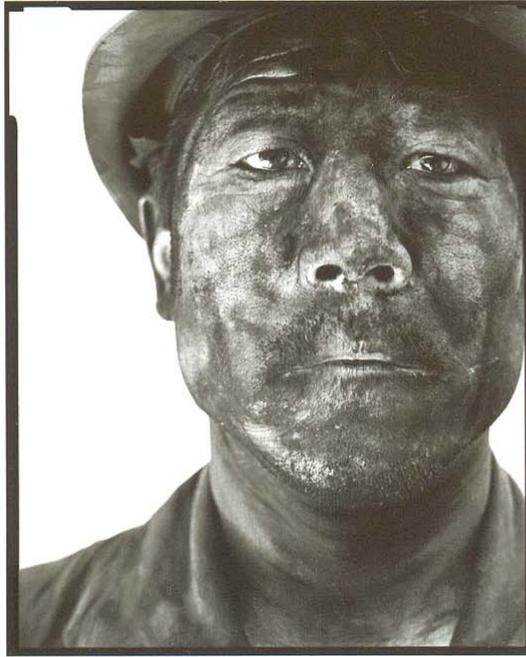


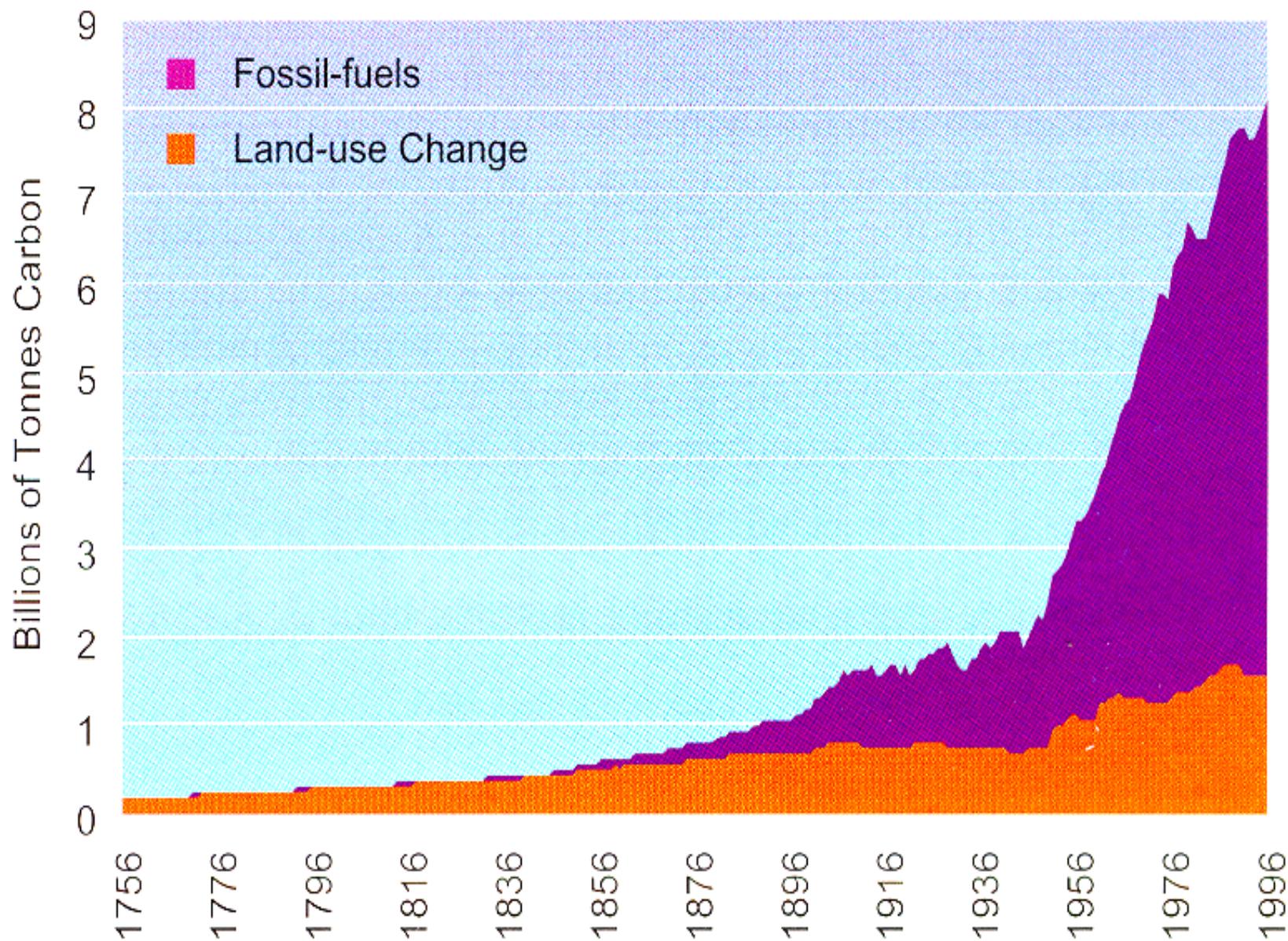


Man's long adventure with knowledge has been a climb up the heat ladder. The creature that crept furred through the glitter of blue glacial nights now lives surrounded by the hiss of steam and roar of engines... And he is himself a flame, a great roaring furnace...

**4 Million
Chinese Entered
a Coal Mine This
Morning**

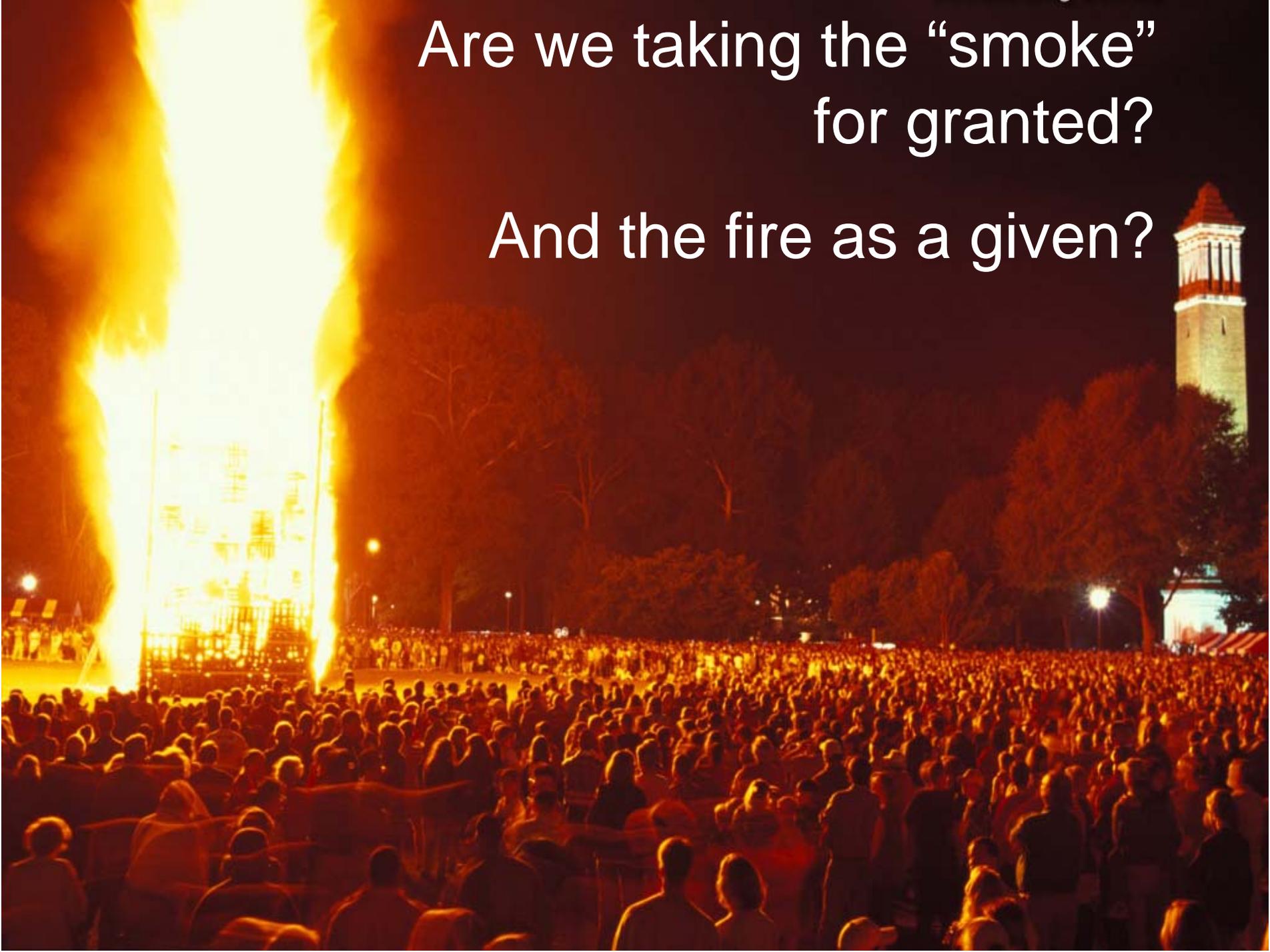


Global Carbon Emissions

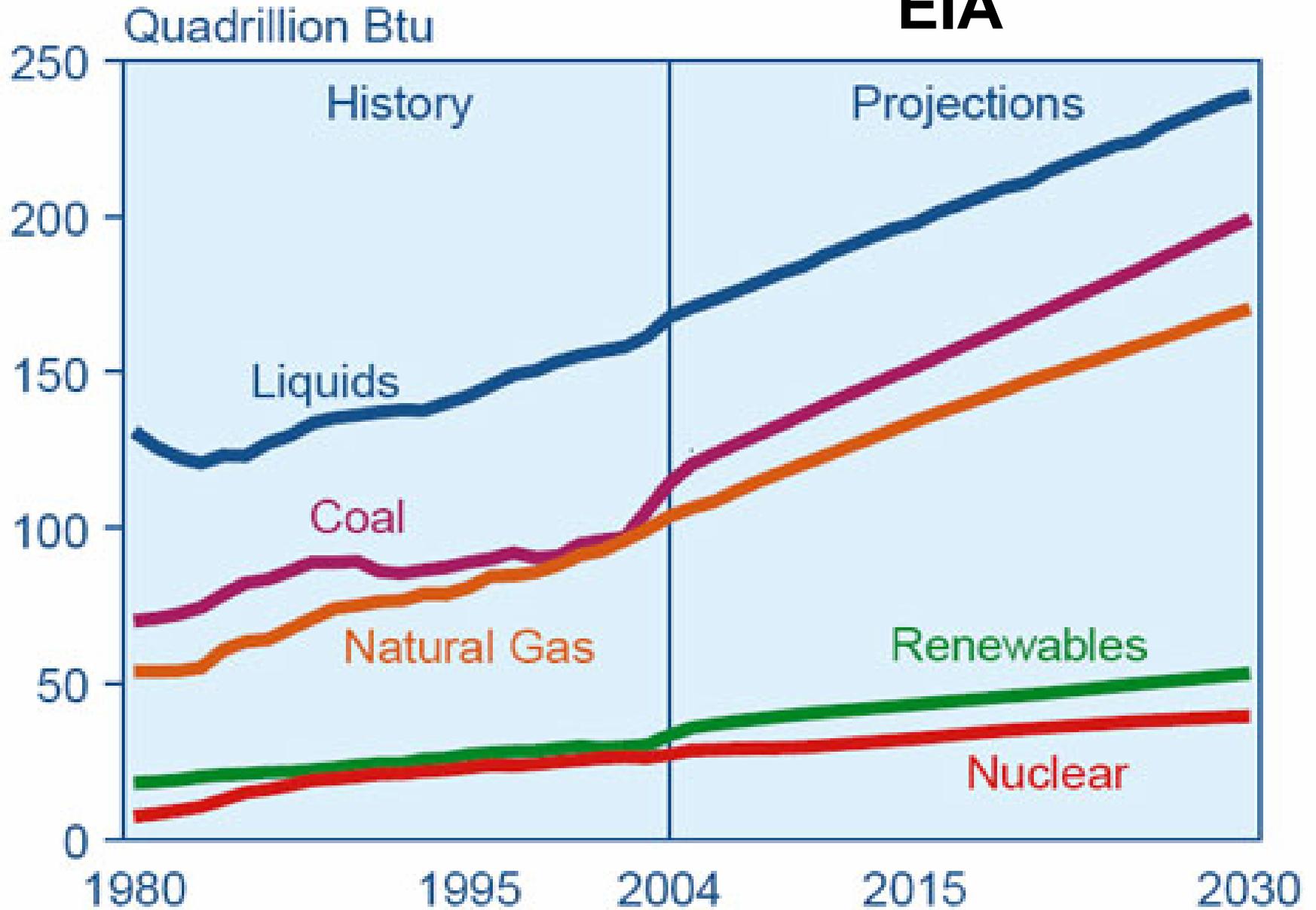


Are we taking the “smoke”
for granted?

And the fire as a given?

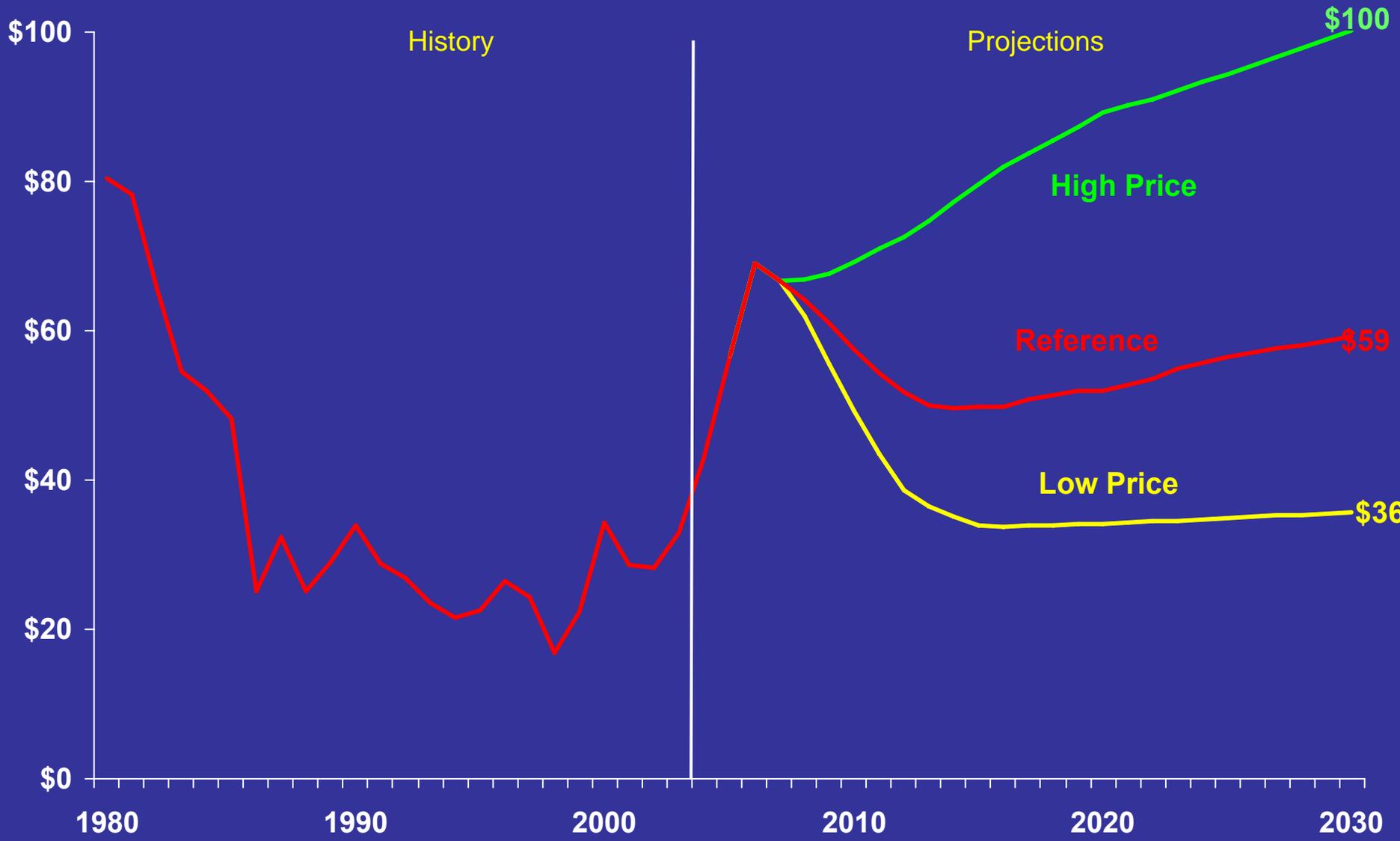


EIA



The Soaring Appetite For Fuel

World Oil Price, 1980-2030 (2005 dollars per barrel)



Phillips

Regular

442⁹

Diesel

509⁹

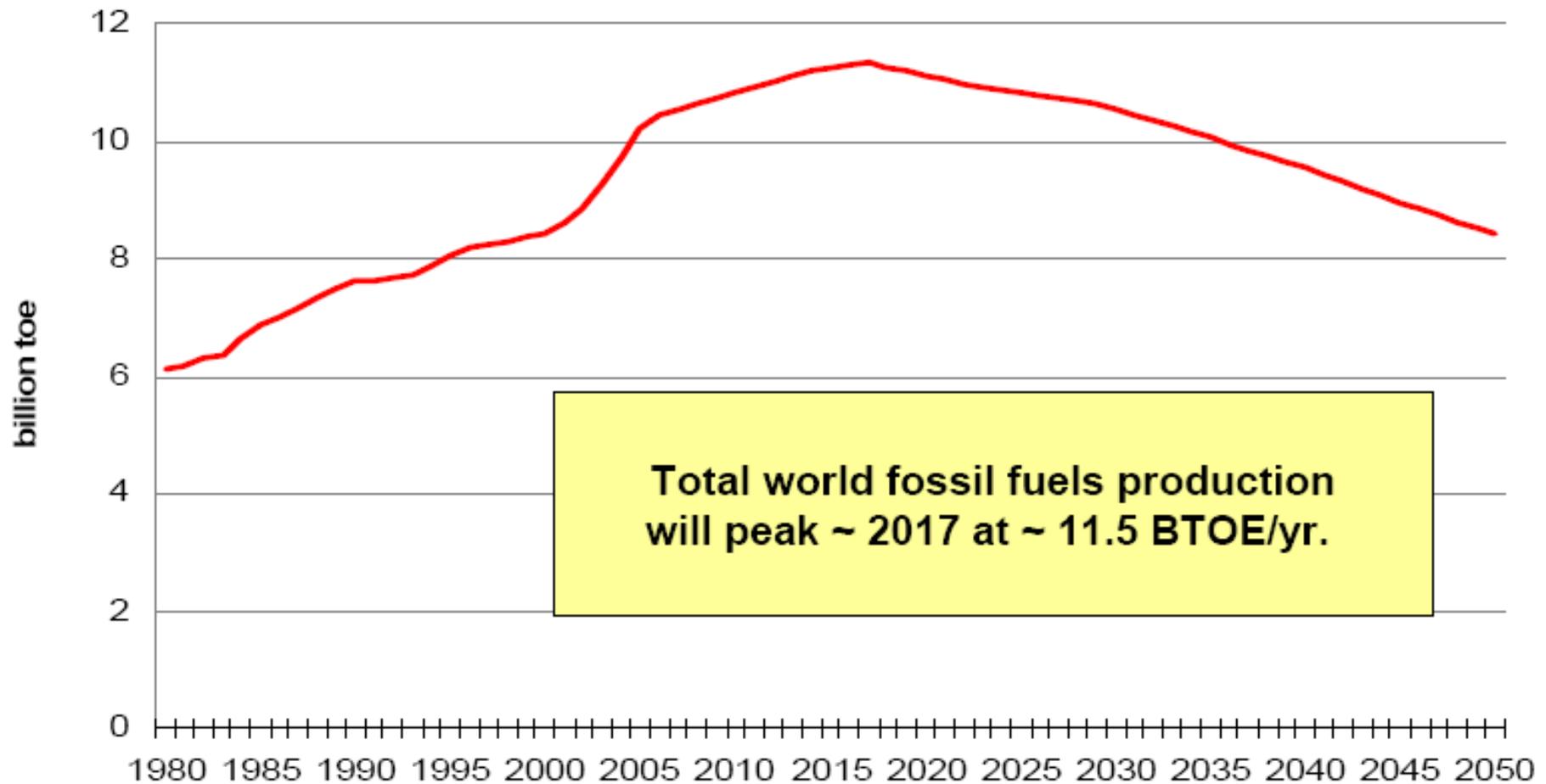
Auto

“We are all extraordinarily skeptical of the "peak oil" stuff. We know of no reliable information that suggests that we're going to be running significantly short of any fossil fuel in this century... It certainly won't happen with any significant price on carbon.

“We've done a few 300-year scenarios that have some shortages in them, but even that may not be realistic. This is especially so with coal!”

“The Chinese say they have enough coal for centuries...The idea that we're only going to reach 450 ppm is not defensible, especially when we're already around 385 ppm. Do we really think there is only another 60 years of fossil fuel left? I don't think so.”

MISI WORLD FOSSIL FUEL PRODUCTION FORECAST

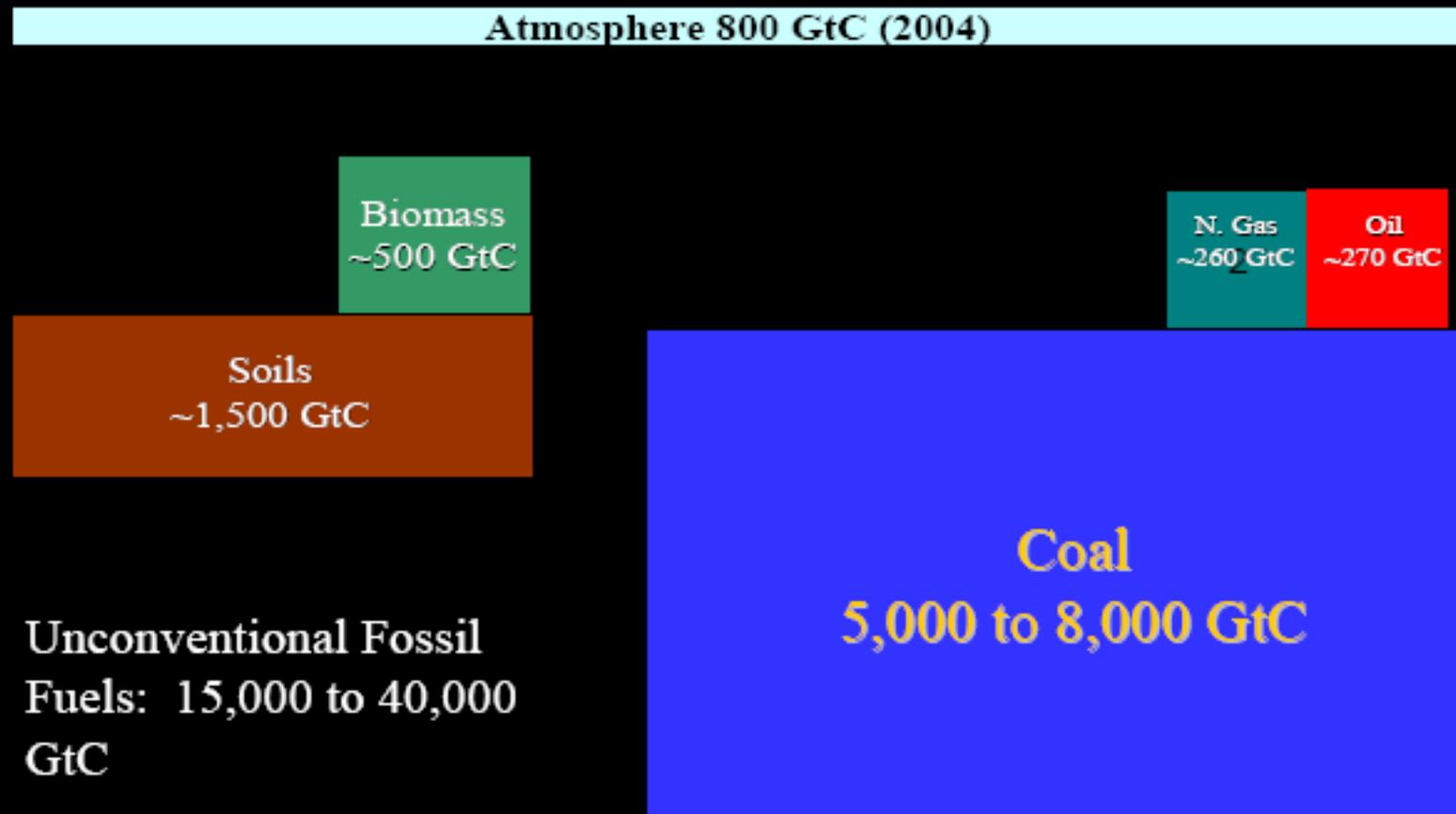




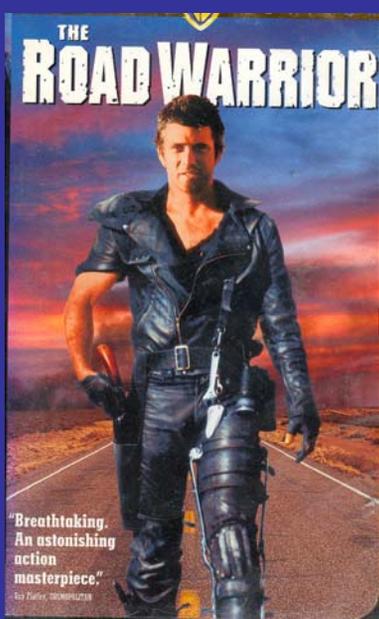
Plentiful Fossil Fuels Means Problem Will Not Go Away On Its Own



Carbon Reservoirs

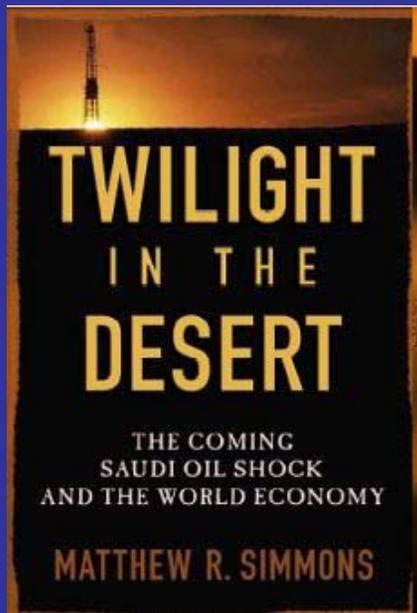


Sources: Jae Edmonds (Battelle) and Nebojša Nakićenović (IIASA)



Mad Max Excluded

“The scenarios are intended to exclude catastrophic futures that involve large scale environmental or economic collapses. In such scenarios GHG emissions might be low because of negative economic growth, but it seems unlikely they would receive much attention in the light of more immediate problems. Hence, this report does not analyze such futures.”





Nested Assumptions

- * Energy scarcity is a myth
- Fuels are superabundant
- No reason to hoard or fight over them,
- Globally traded from haves to have-nots
- Coal to anything
- Fuel will remain cheap—
for a century





Q. How high do you think oil will go?

A: We will hit \$300 a barrel, because oil supply will be so short. That will be in 2015, after peak oil.

Q:. What concerns you the most about such high oil prices?

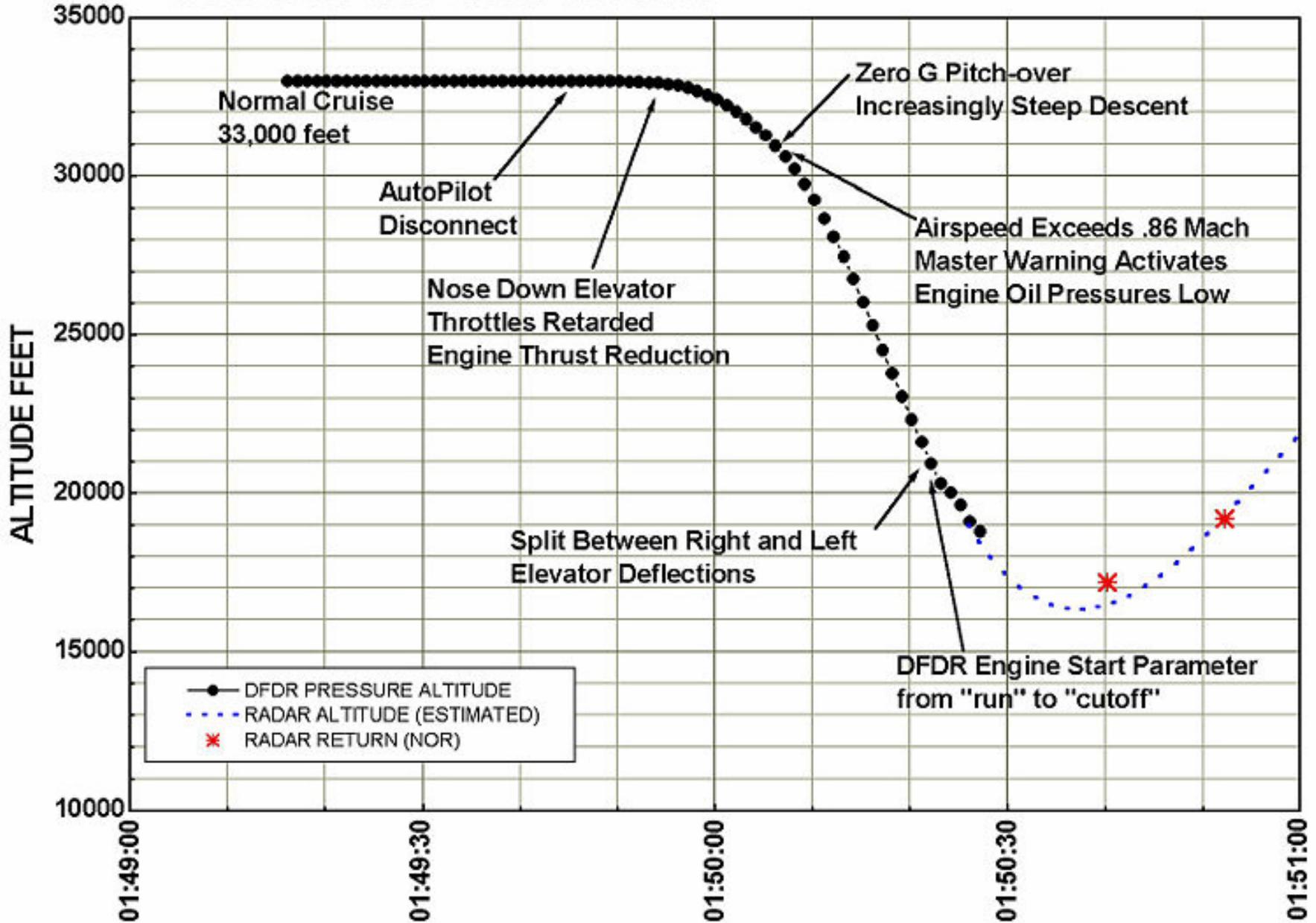
A: People are going to be asked to change must faster than they are willing to.

Charley Maxwell, in current Barron's



**Is our
obsession
with climate
change
dangerous?**

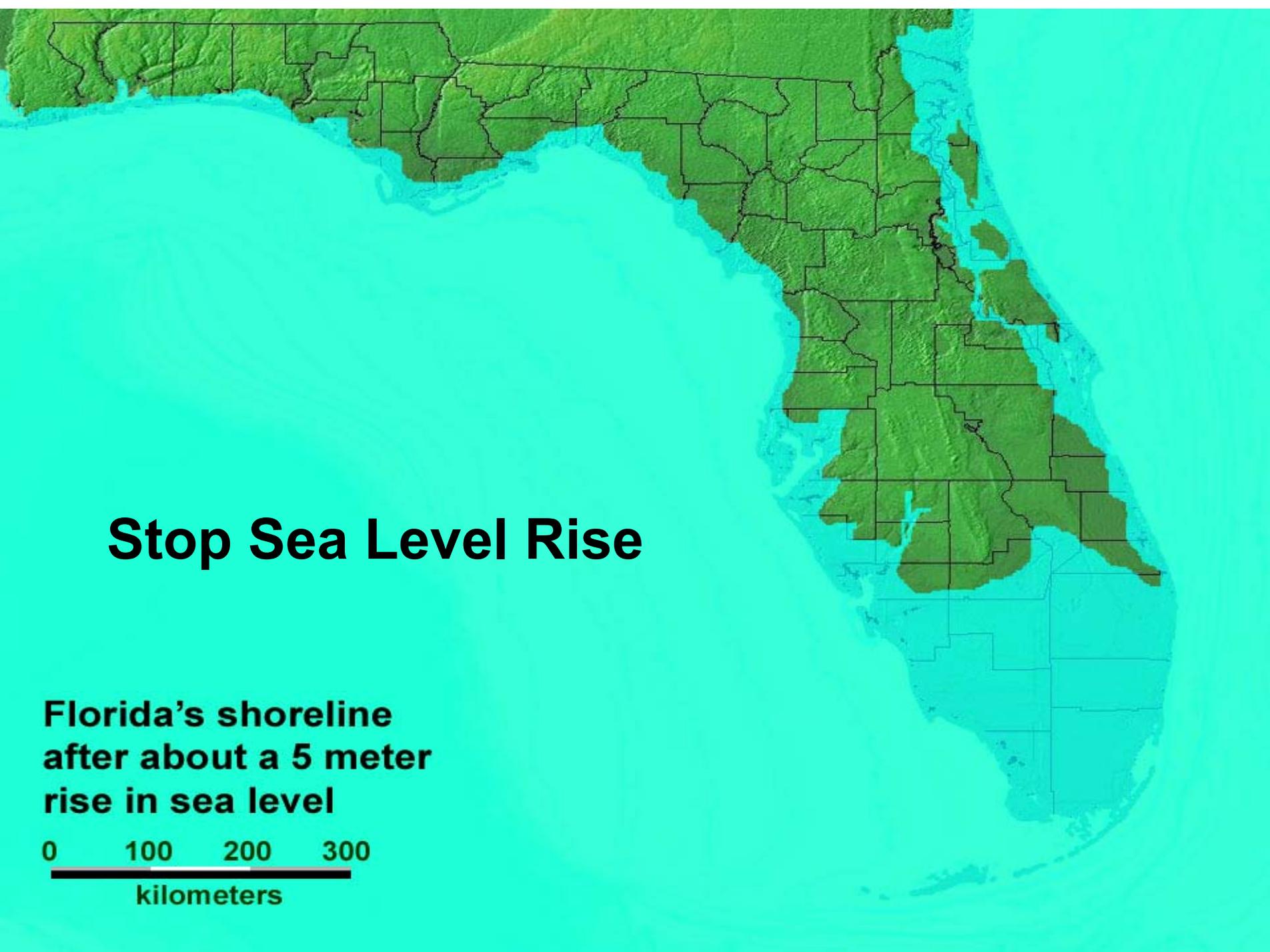
EGYPTAIR 990 FLIGHT PROFILE



Gore's Flight Plan

Objective: Protect Posterity

- We're heading to 550 ppm by 2100
- Commits us to 3°C and 20-80 ft sea rise
- Global emissions must peak ~2025, and fall 80% by 2050
- First step: put a price on carbon!



Stop Sea Level Rise

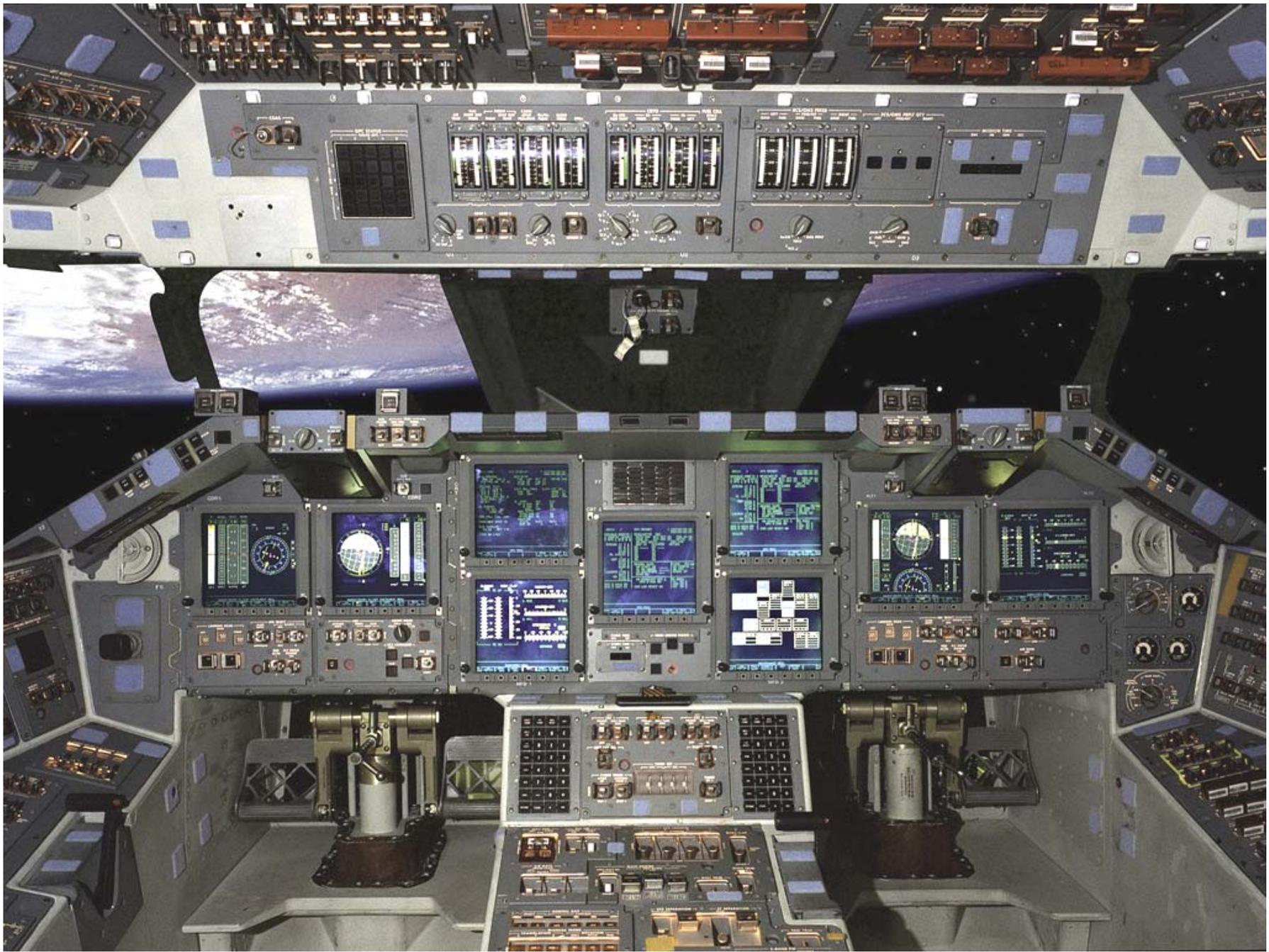
Florida's shoreline
after about a 5 meter
rise in sea level





Save New Orleans!



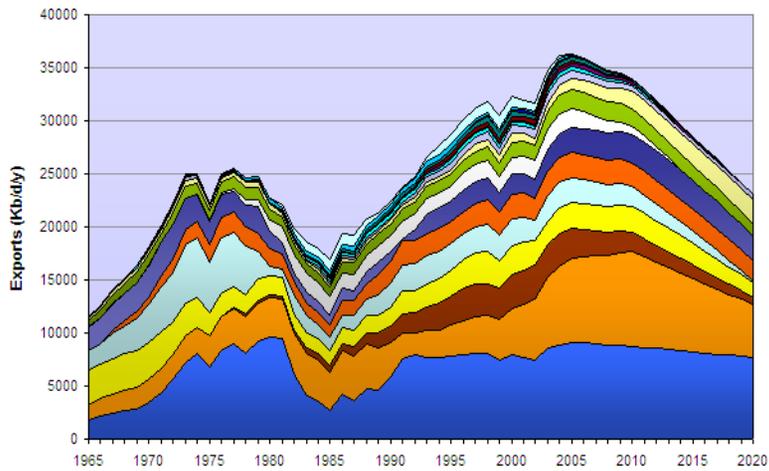


Charley Maxwell's Flight Plan

Preserve Prosperity!

Energy is the original currency

Save it, conserve it, use it efficiently



| | | | | | |
|--------------|-----------|----------|-----------|--------|----------|
| Saudi Arabia | F.S.U. | Norway | Venezuela | Iran | UAE |
| Kuwait | Mexico | Algeria | Qatar | Canada | Malaysia |
| Ecuador | Argentina | Colombia | Denmark | Egypt | UK |

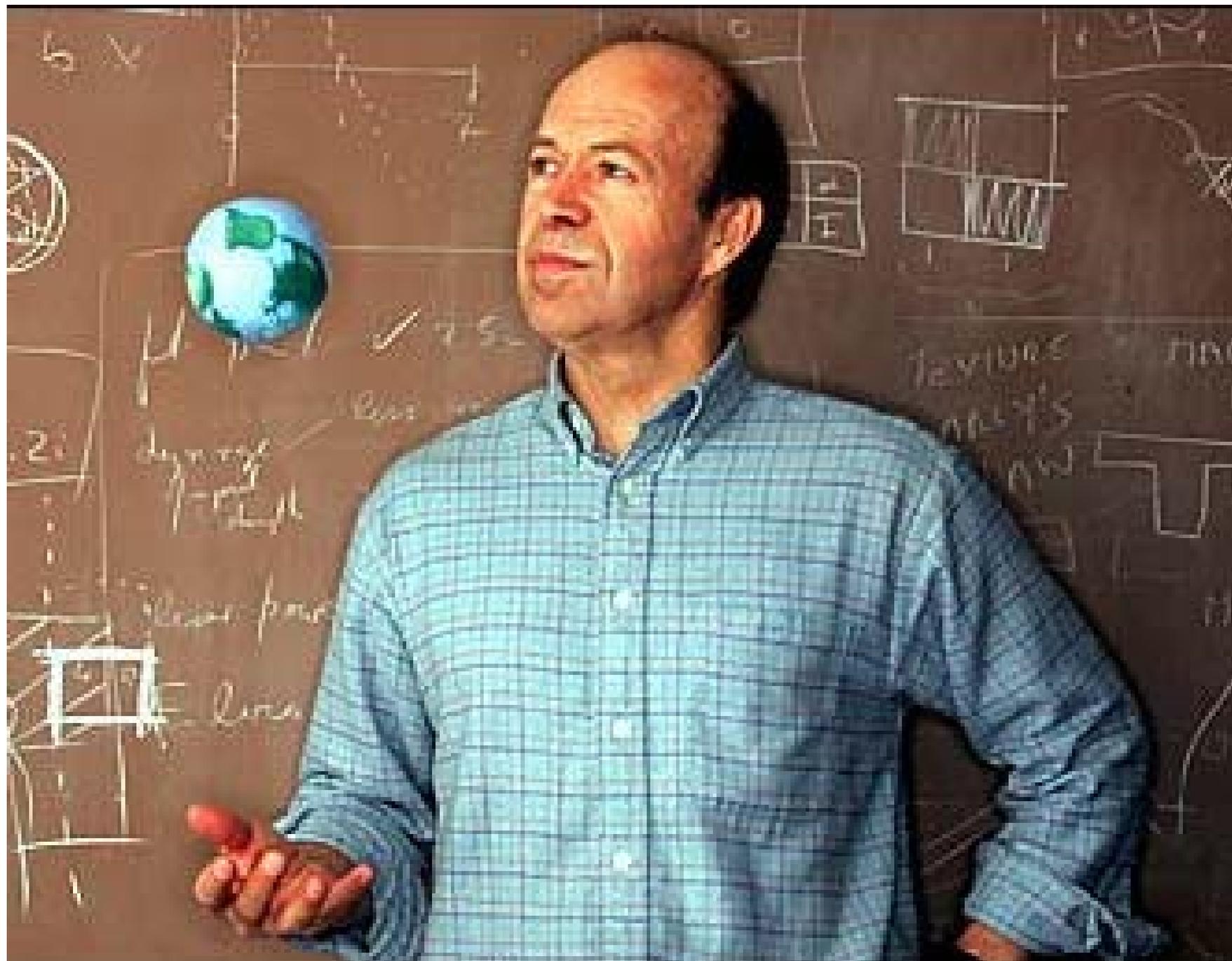
Challenger



If oil exports are peaking, then we are “facing the most serious crisis in the history of space flight....”

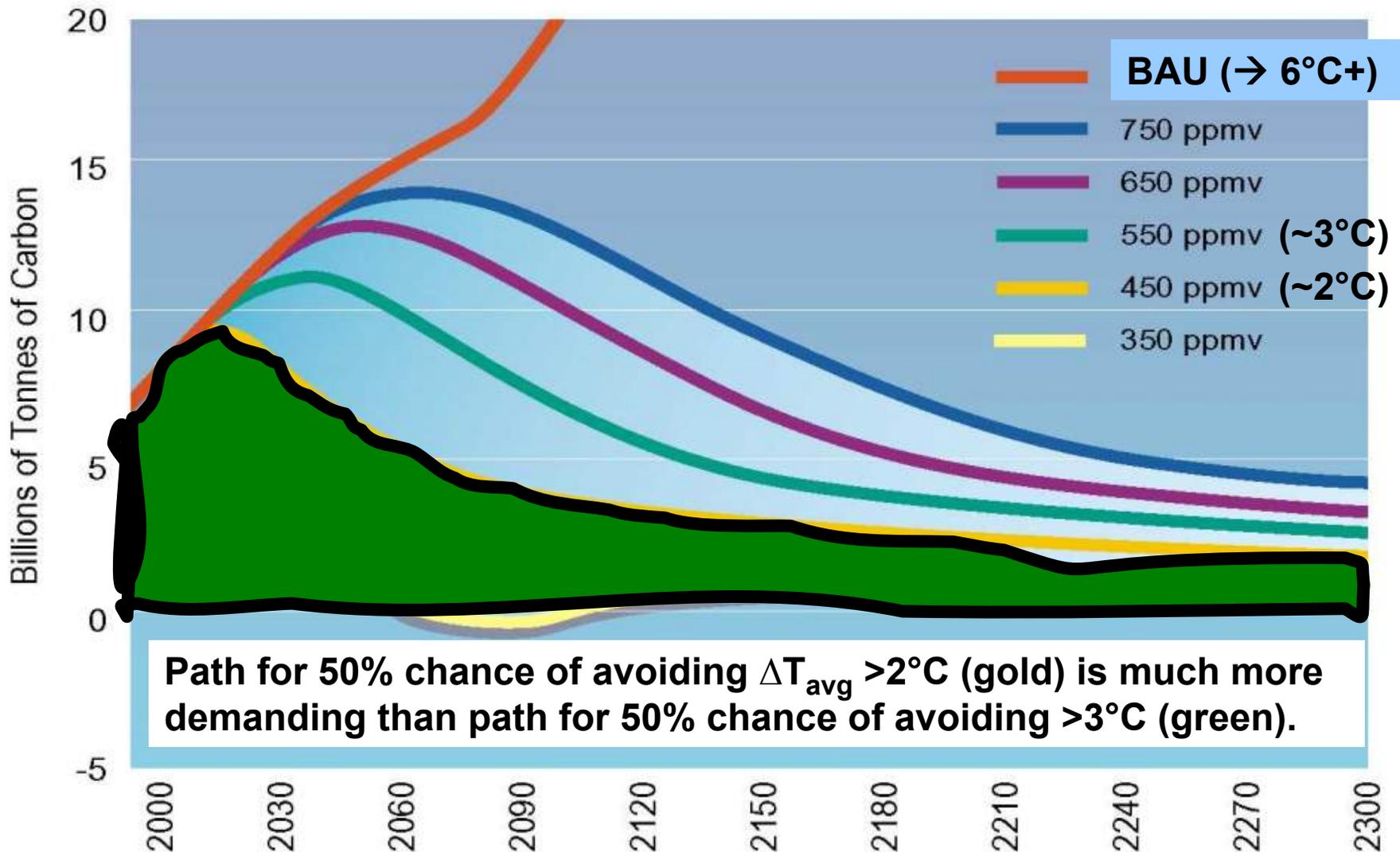


Columbia



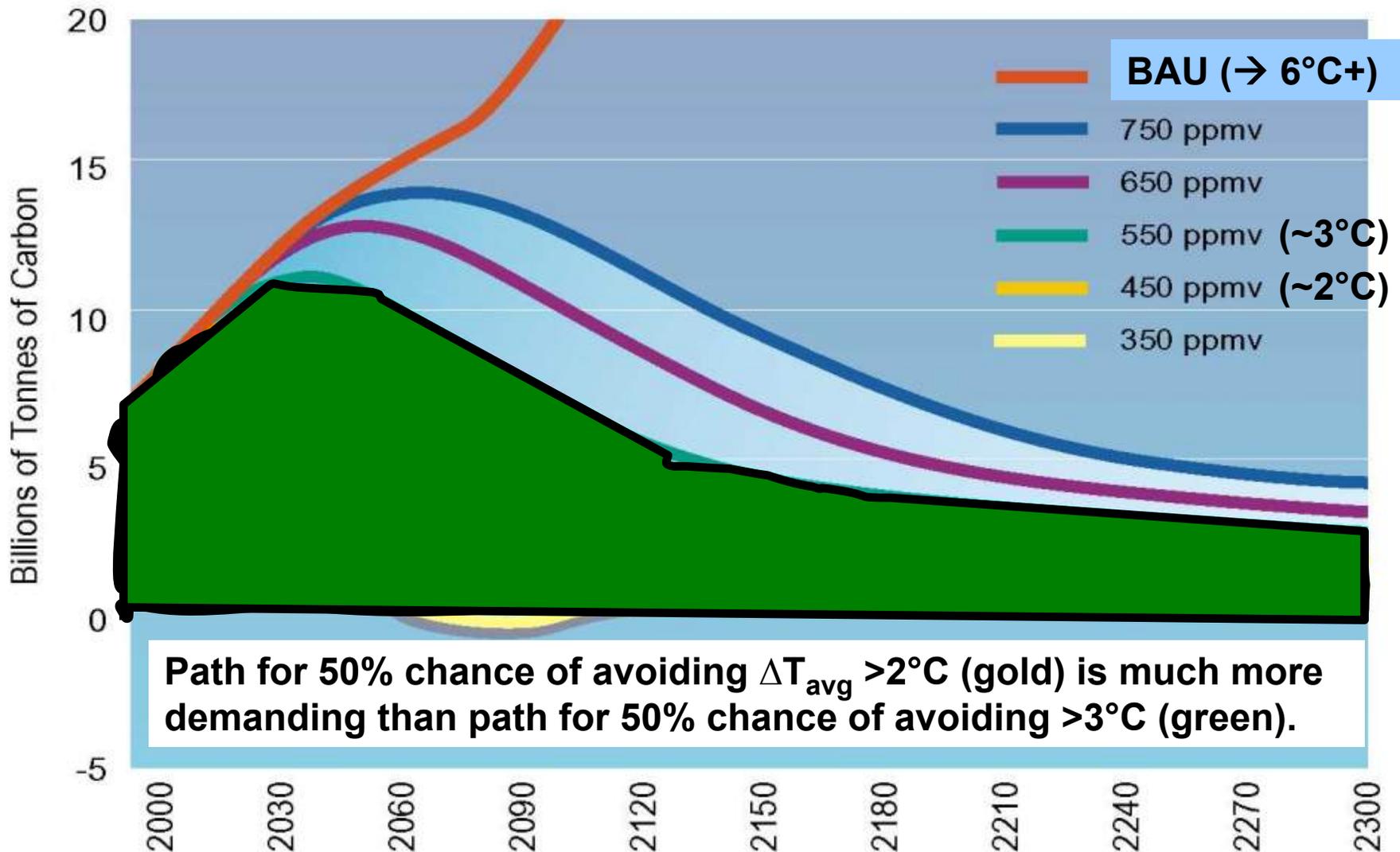
How big is our “carbon budget?”

Atmospheric CO₂ Concentration Ceilings



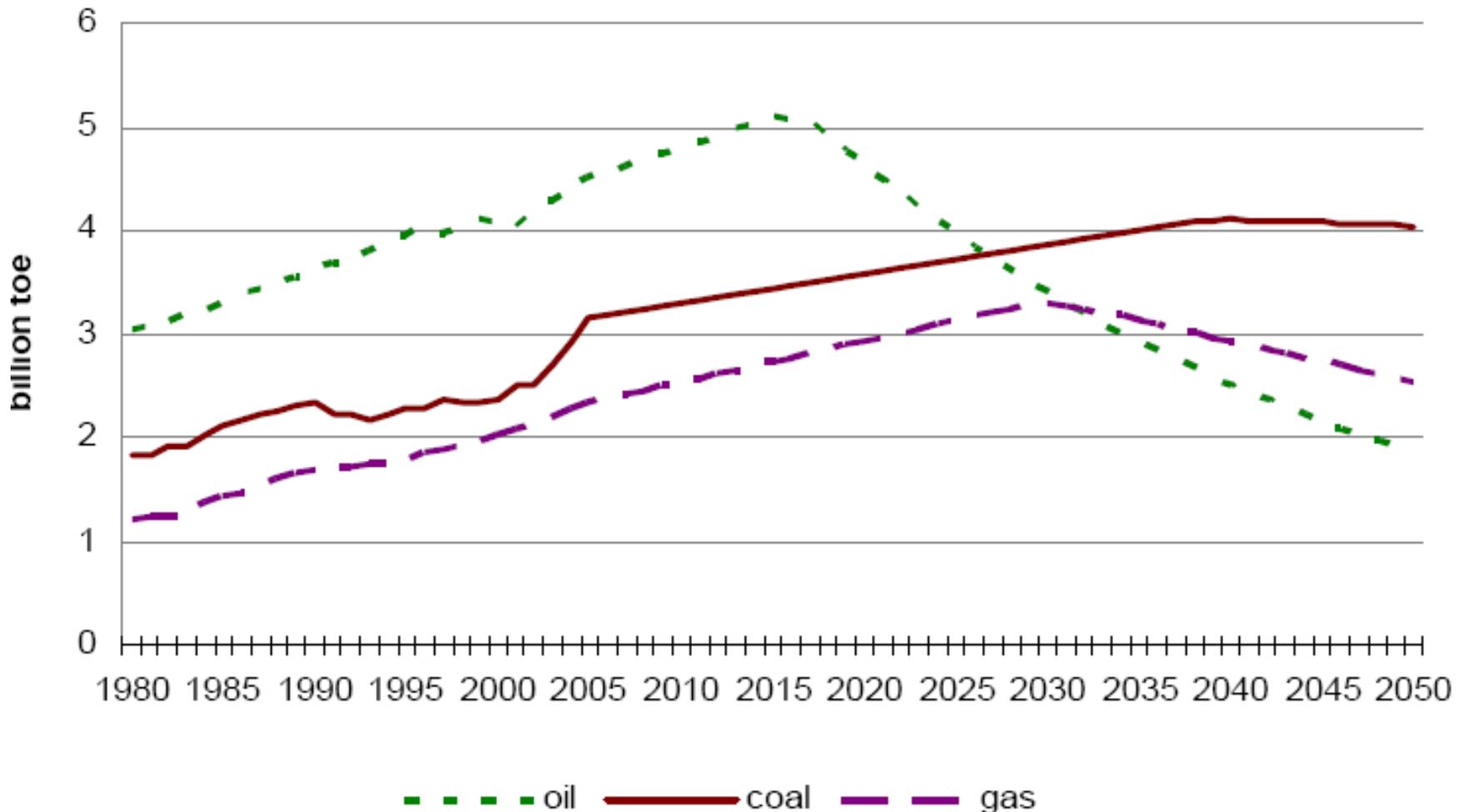
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Atmospheric CO₂ Concentration Ceilings

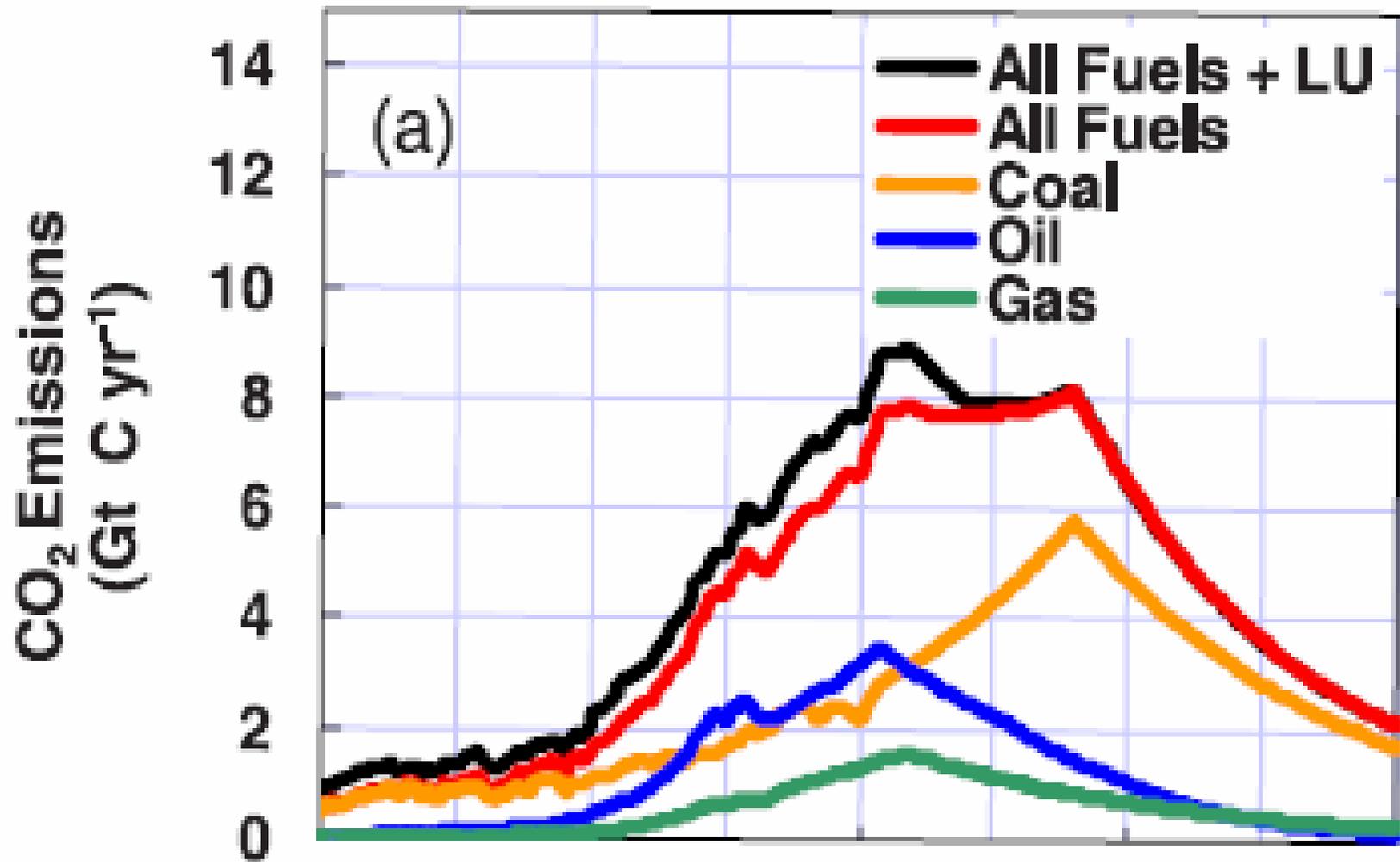


Path for 50% chance of avoiding $\Delta T_{avg} > 2^\circ\text{C}$ (gold) is much more demanding than path for 50% chance of avoiding $> 3^\circ\text{C}$ (green).

MISI ESTIMATES OF WORLD LIQUID FUELS, NATURAL GAS, & COAL PRODUCTION

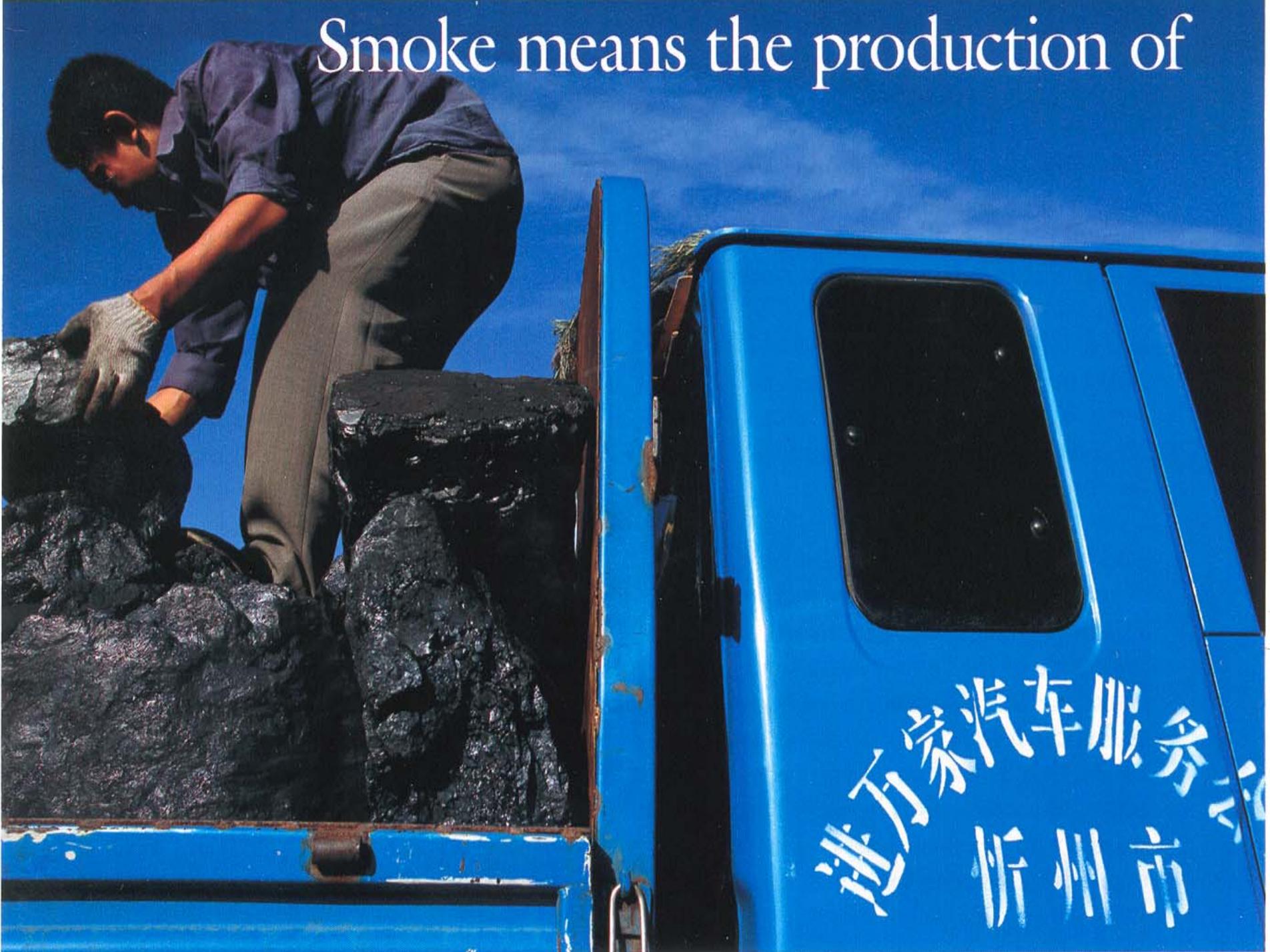


Source: Management Information Services, Inc., 2008.

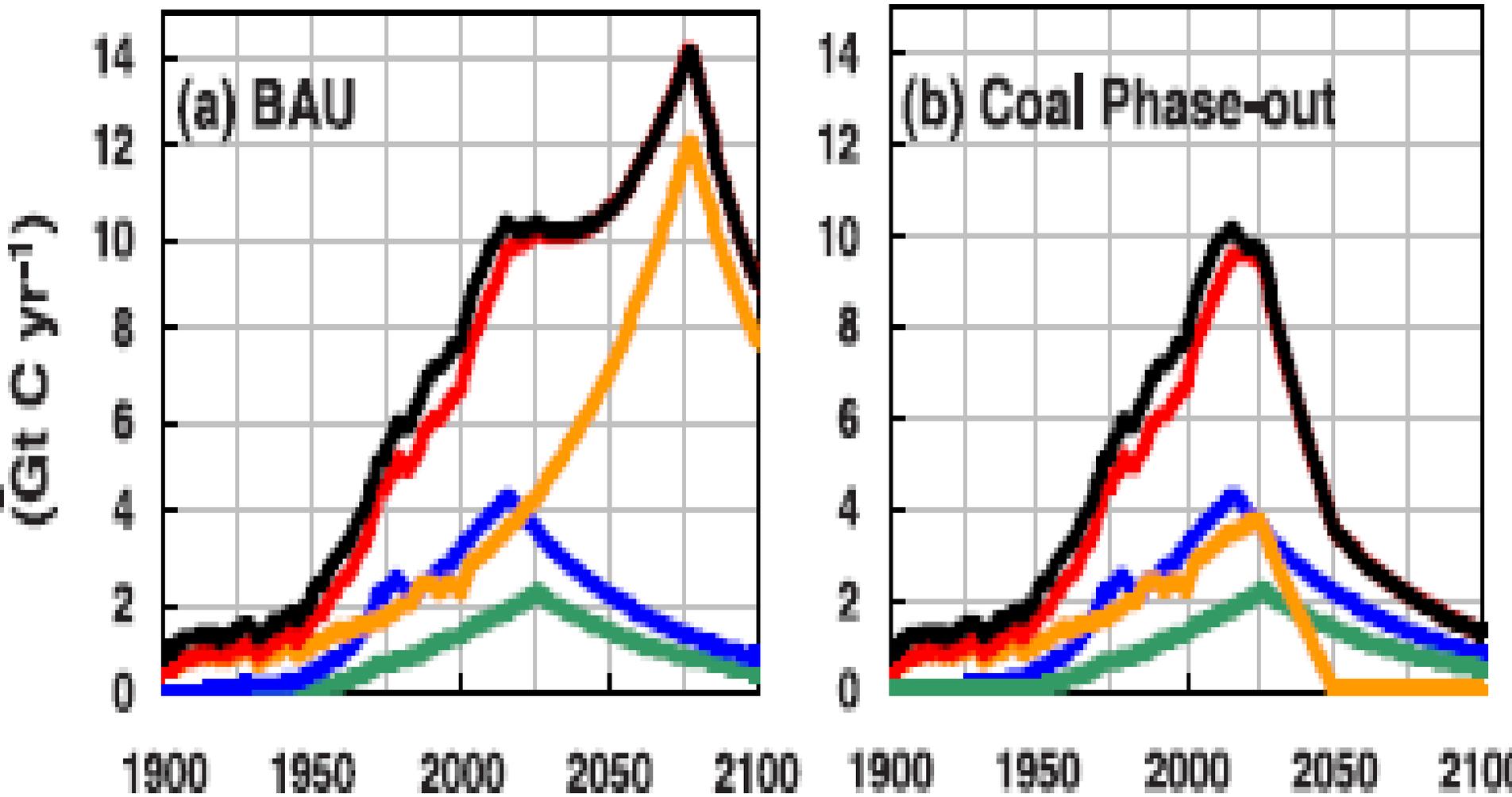


Implications of “Peak Oil” for Climate
Kharecha, Hansen

Smoke means the production of



进万家汽车服务有限公司
忻州市



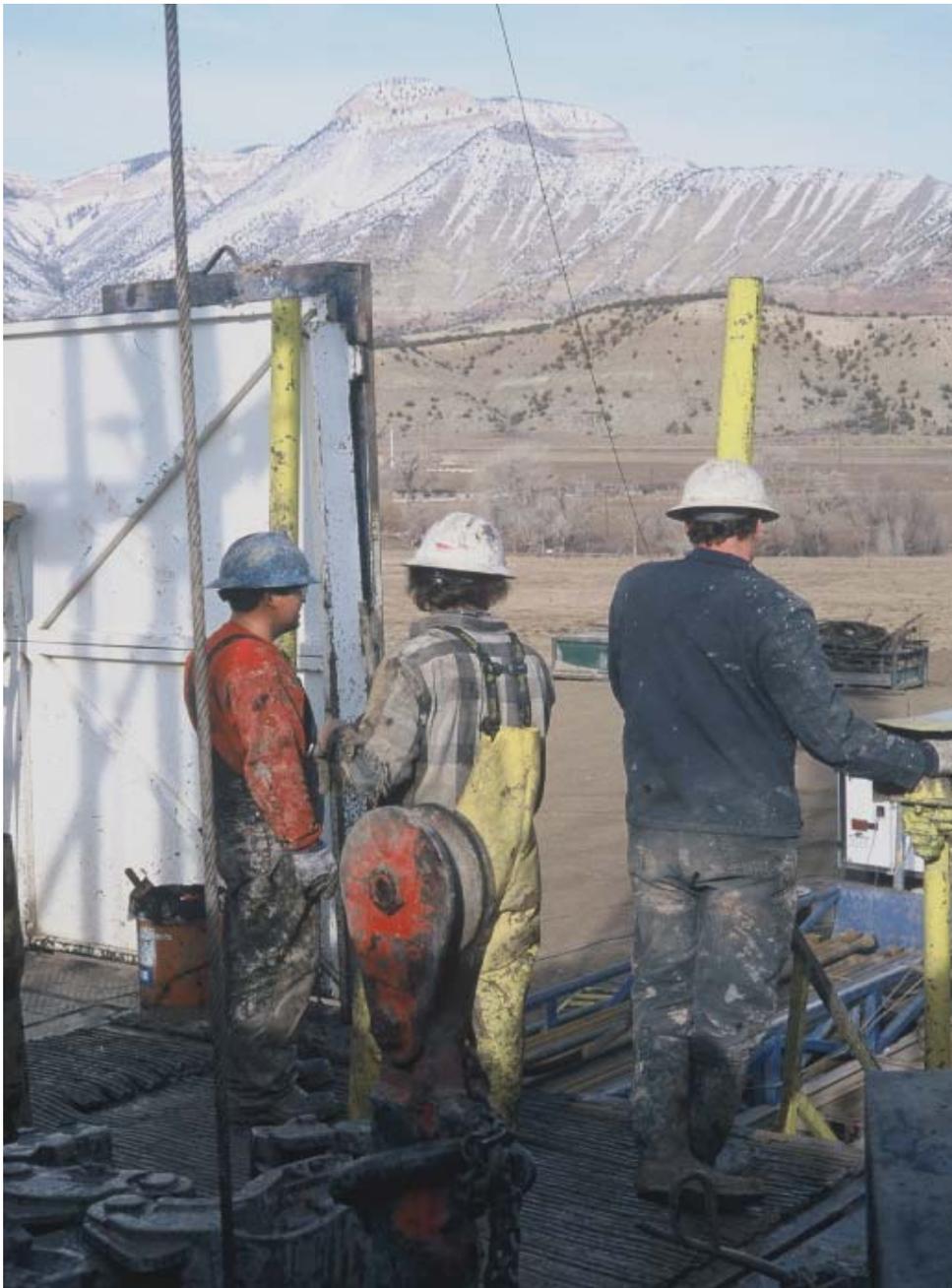
Implications of “Peak Oil” for Climate,
Kharecha, Hansen



“Wyoming boasts enough coal to weld every tie that binds, drive every wheel, change the North Pole into a tropical region or smelt all hell!” Fenimore Chatterton



A “mentality of abundance” is at the core of the American character. We are chosen people, with a western destiny.”



Earth First!
We Will Drill
the Other
Planets Later



