

Cutting Carbon: Time to Get Serious

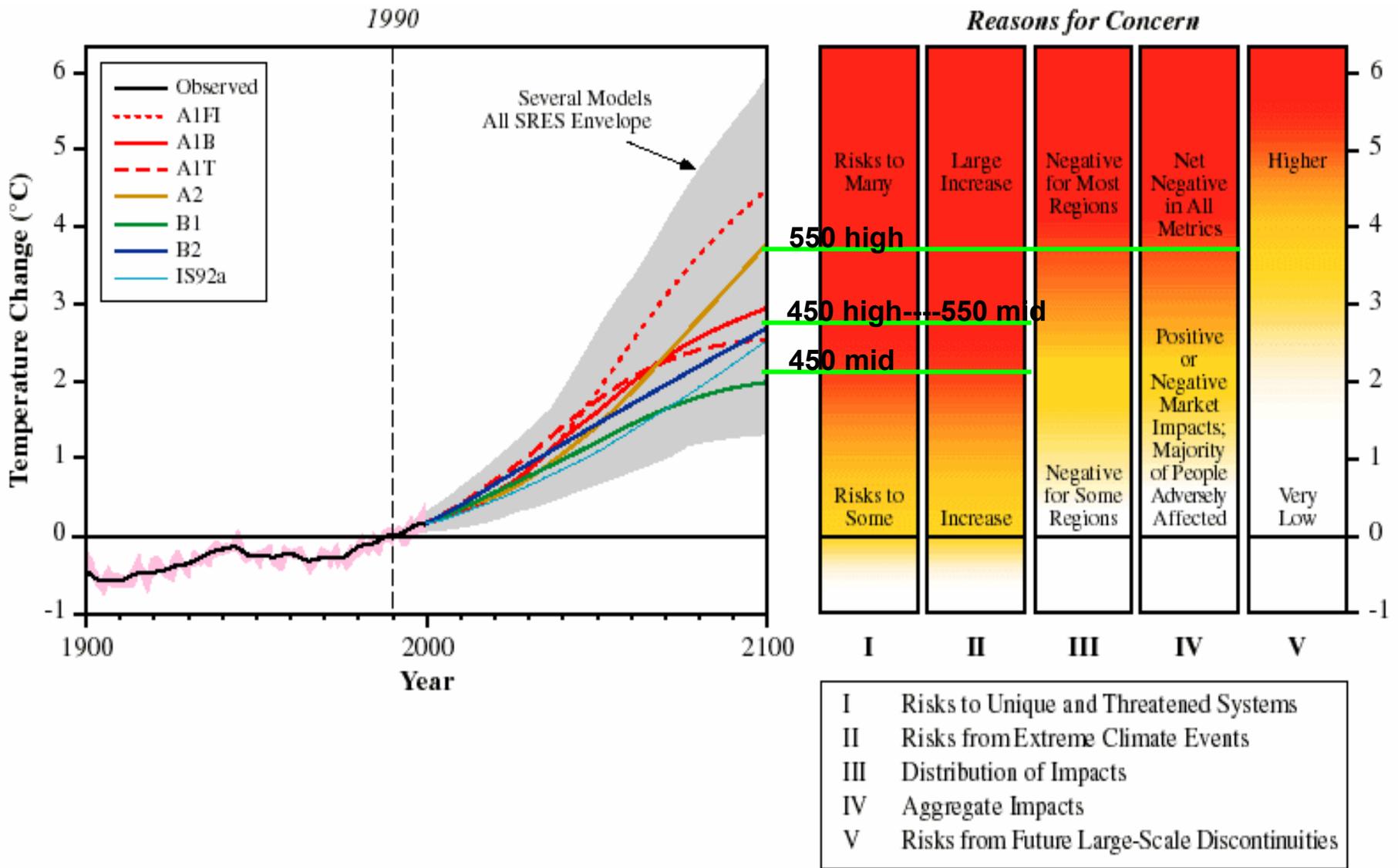


David G. Hawkins, NRDC
May 6, 2003

Problems with Current Path

- Locks in high-carbon energy projects
- Promotes delay by developing countries
- Eats up global carbon budgets
- Commits us to risky emission paths
- Means higher oil import dependence

Higher Emissions = Higher Risks

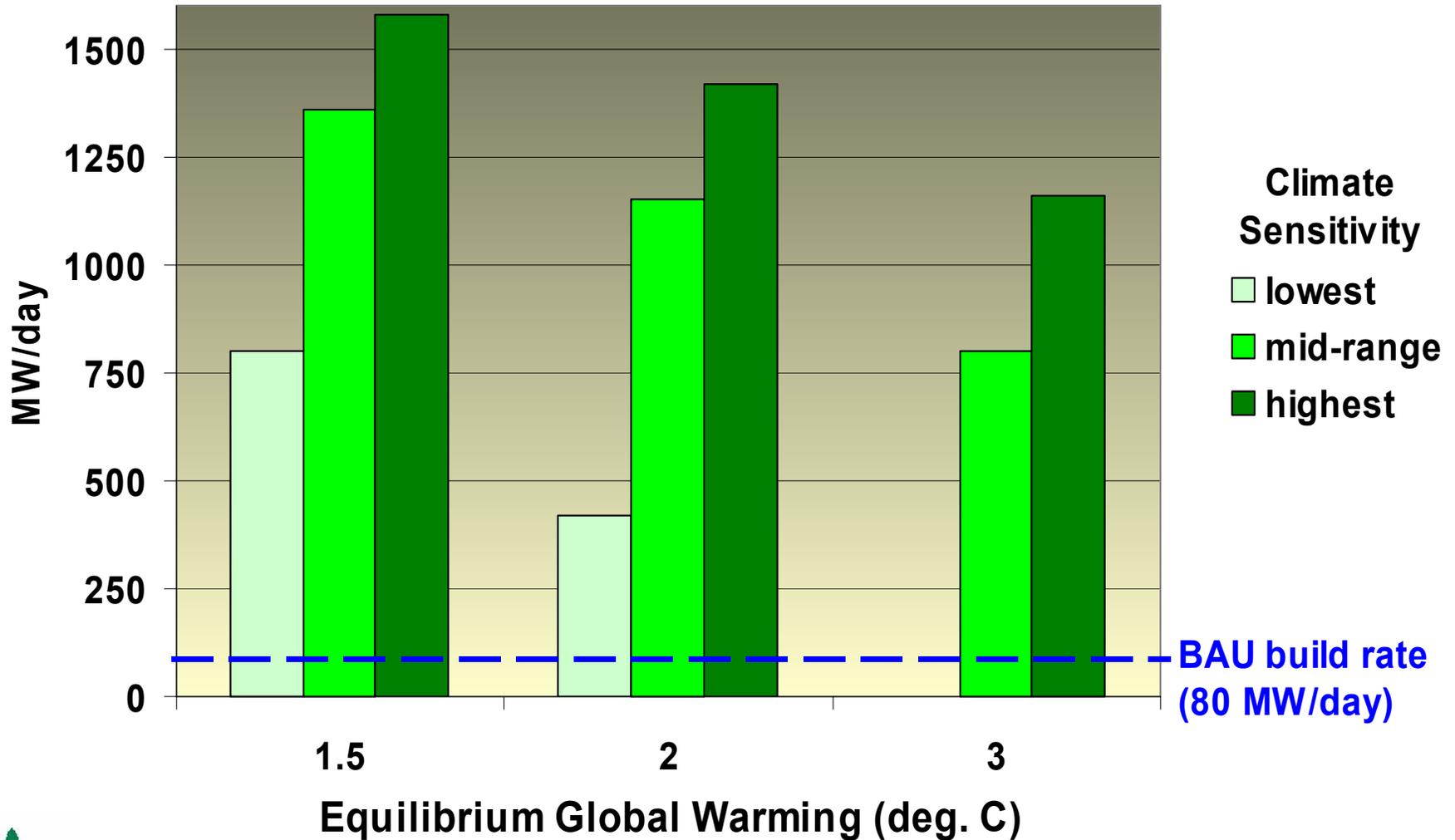


Source: IPCC TAR, 2001

Warming Roulette: A Losing Bet

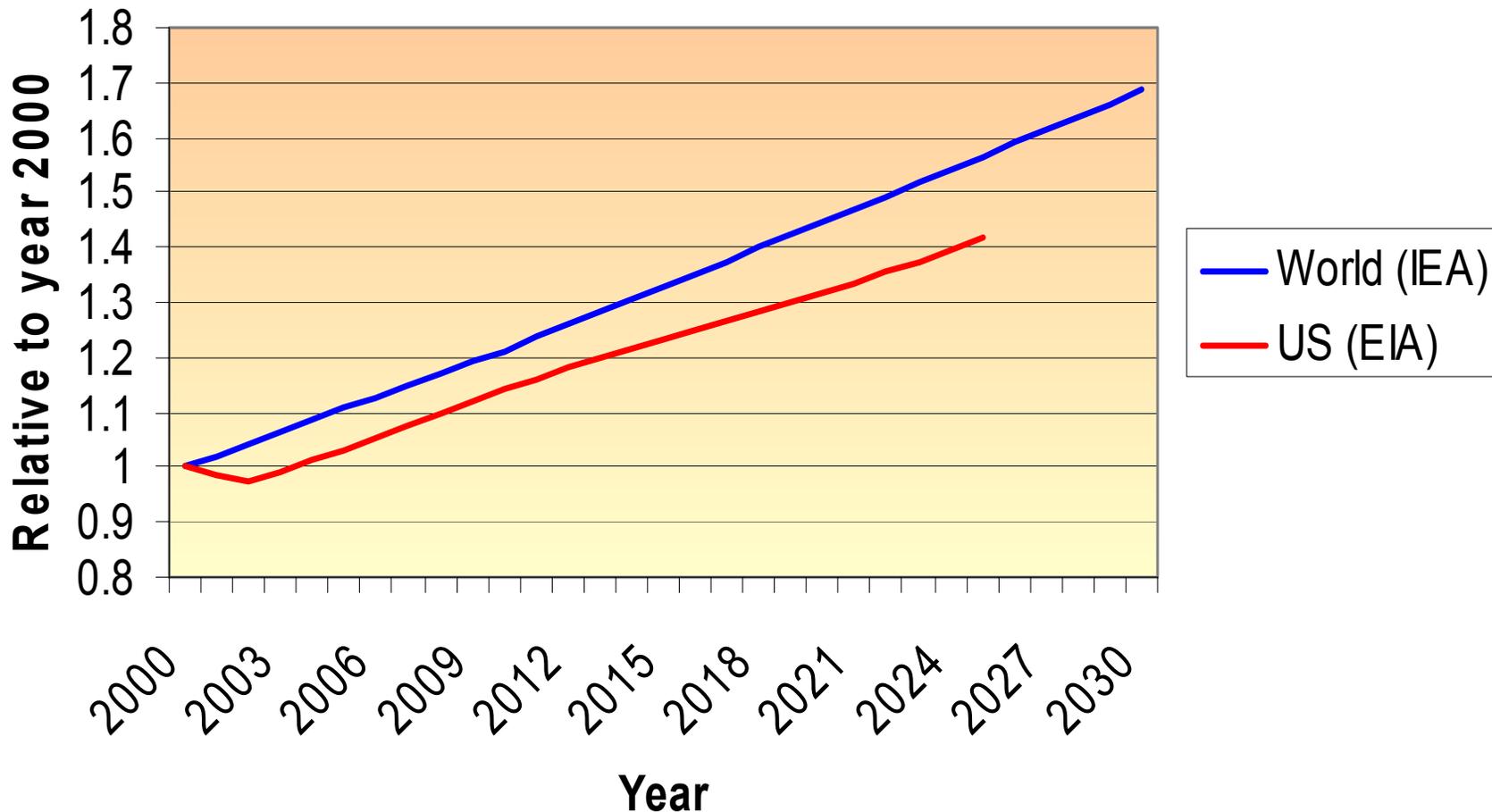
- Keeping options open requires lots of zero-carbon-emissions (ZCE) energy
- U.S. and global efforts are a fraction of mid-range estimates of ZCE energy needs
- Odds that current practices are a winning strategy are unacceptably small
- Playing with a 10-chamber gun that has 9 chambers loaded

Required Clean Energy Build Rates

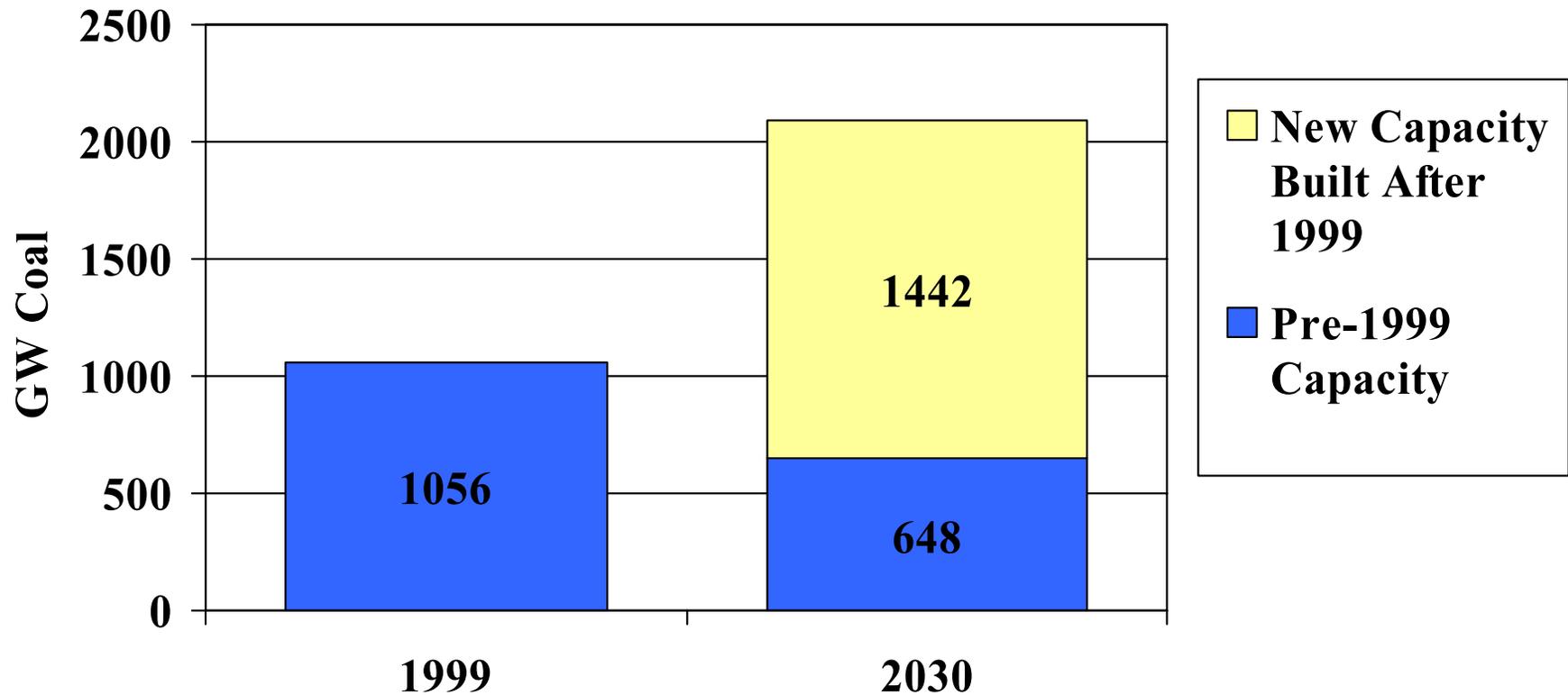


Sources: Caldeira, et al, Science, 3/28/03 and IEA, WEO 2002

Growth in Energy CO2 Emissions

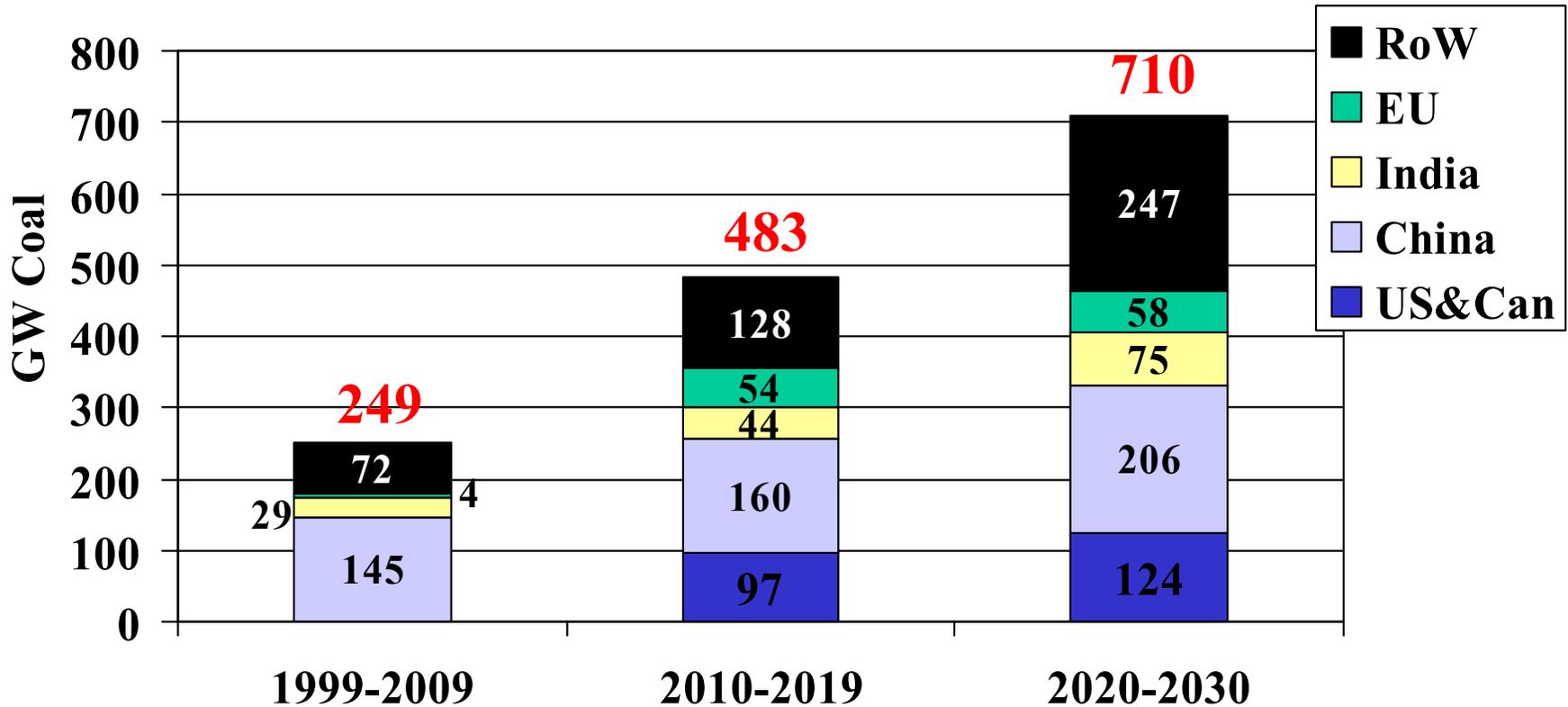


Two-Thirds of World Coal Capacity in 2030 is NOT Yet Built



World New Coal Additions by Decade.

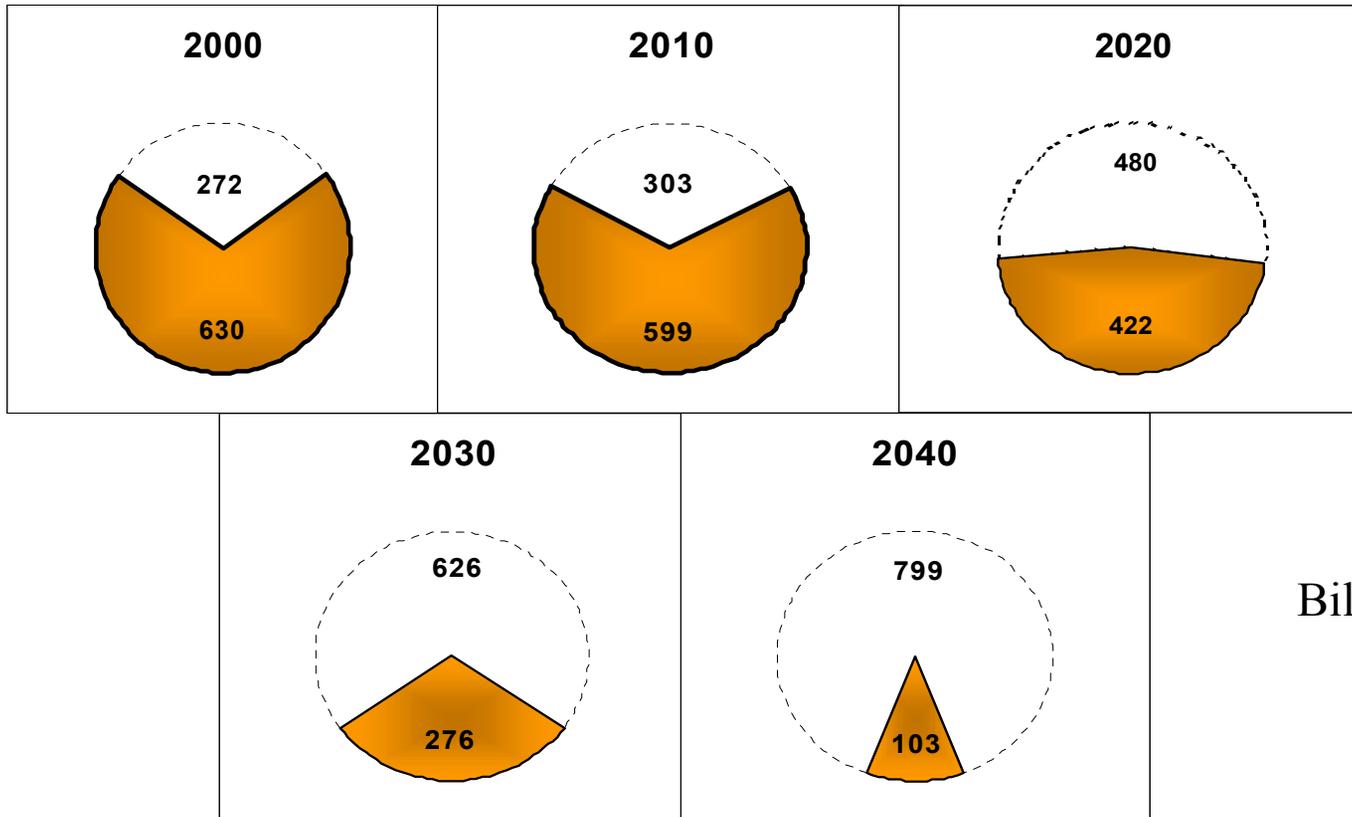
Catch the Wave or Miss the Wave?



Incremental new coal by decade

SHRINKING CARBON BUDGET

Ask not, “How big is the pie?”
Ask, “How much of the pie is left?”



Billion tonnes
carbon

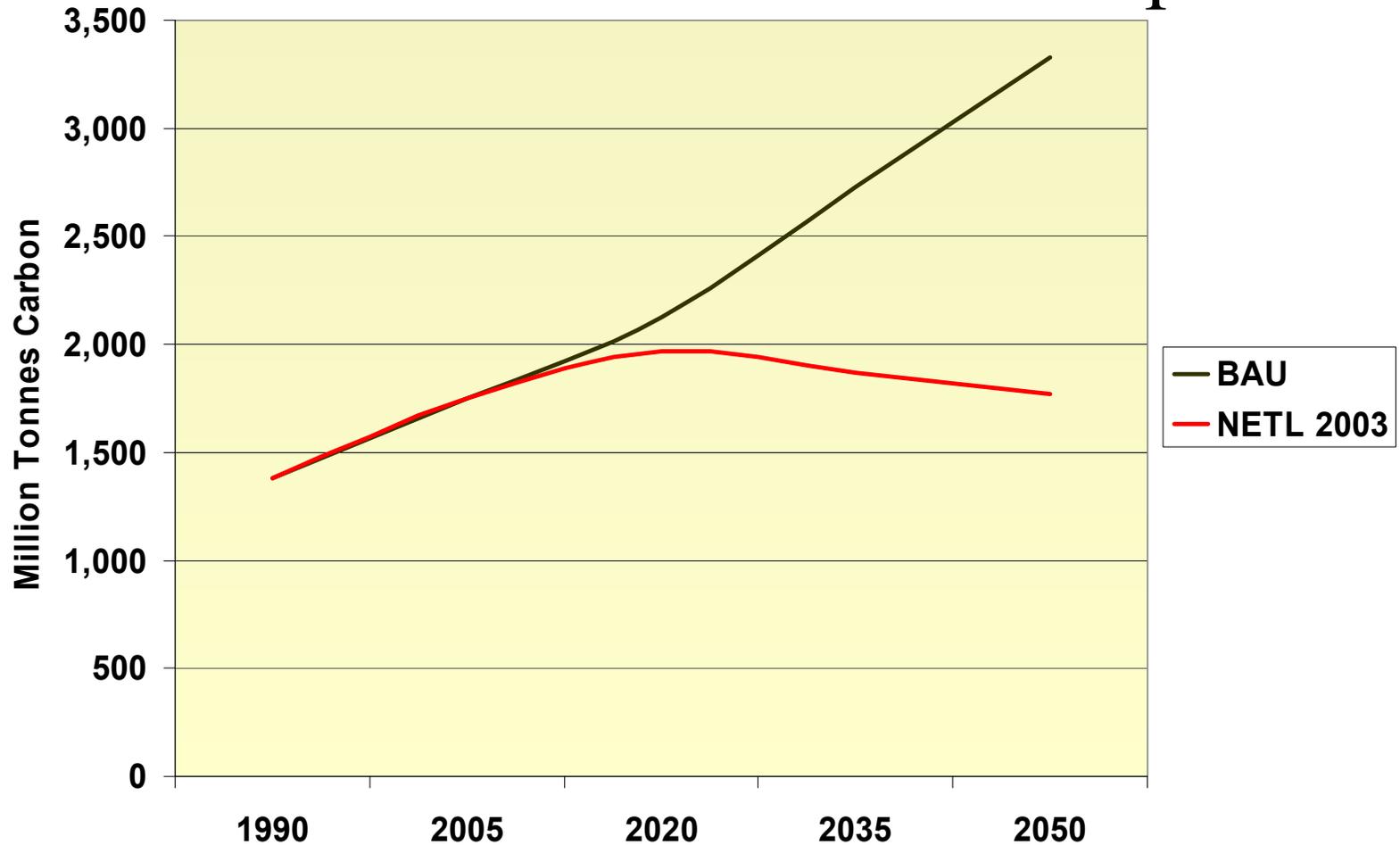
Budget for 450 ppm Stabilization (1900-2100)

U.S. CO₂ Forecasts to 2050

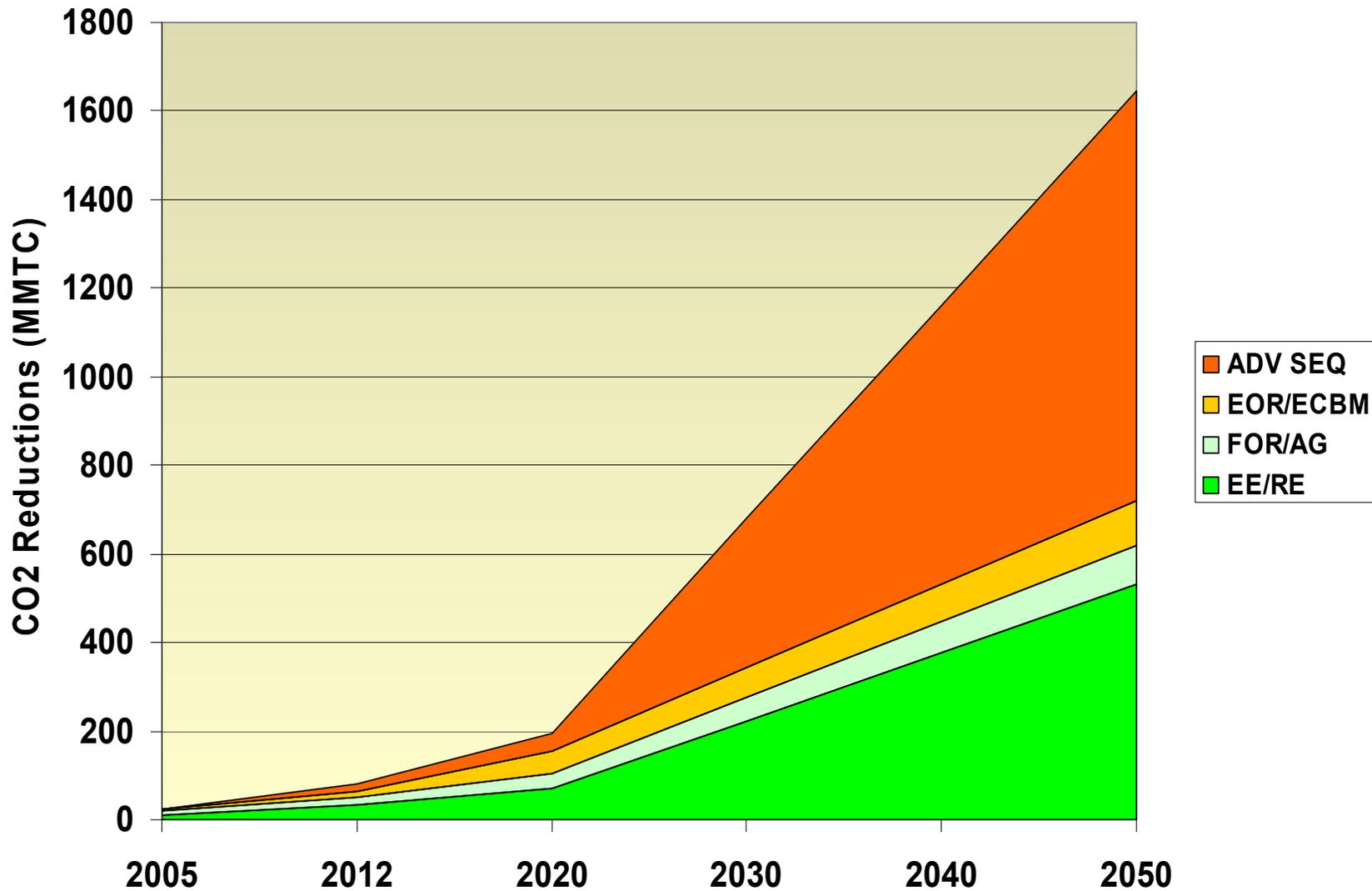
- Compare three scenarios—
 - BAU
 - DOE Carbon Sequestration Roadmap
 - Stabilization of CO₂ Concentrations
- Major effort needed to go from BAU to Roadmap and from Roadmap to Stabilization

U.S. CO2 Forecasts to 2050

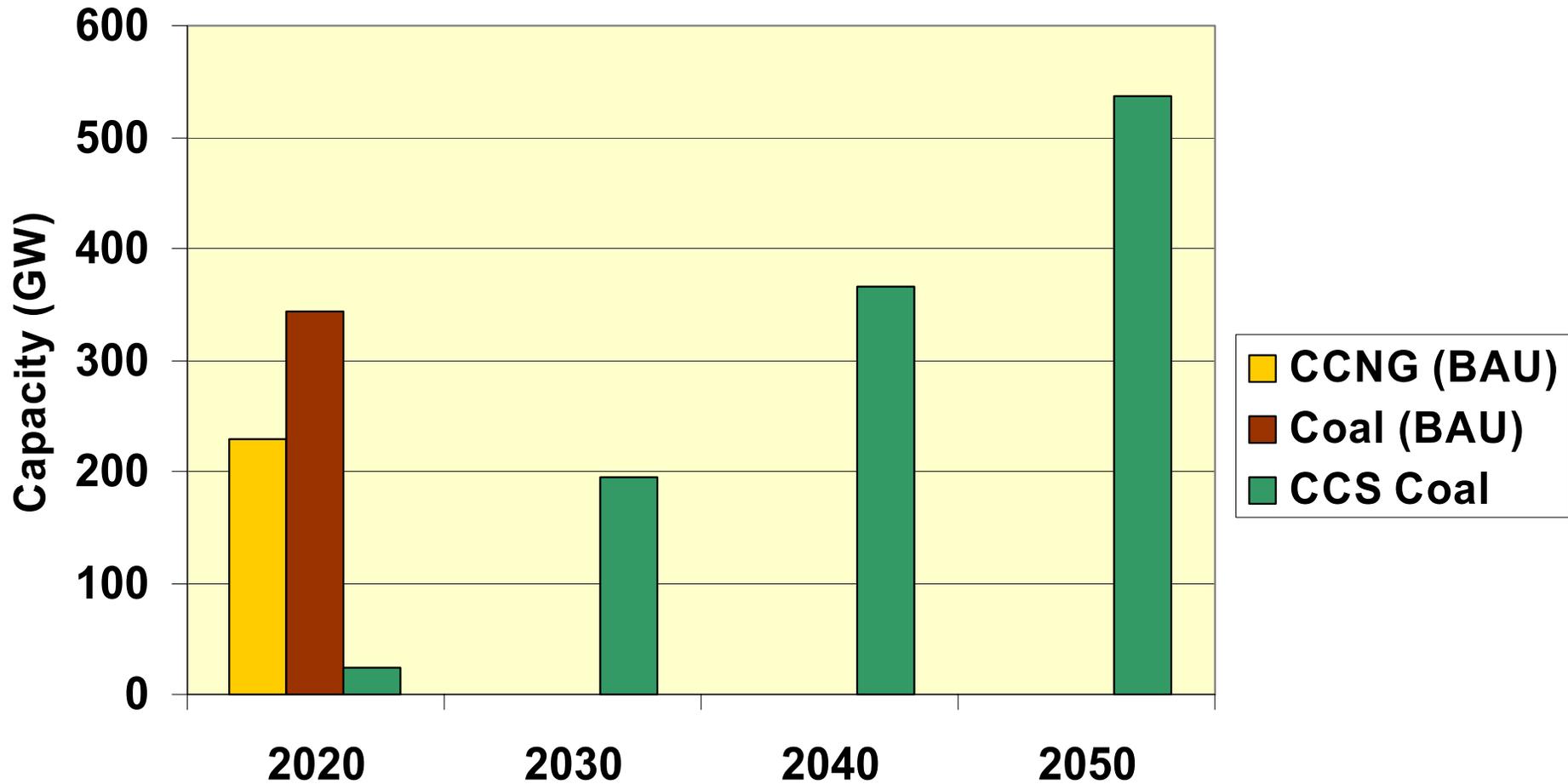
BAU v. NETL CCS Roadmap



CO2 Reductions in NETL Roadmap

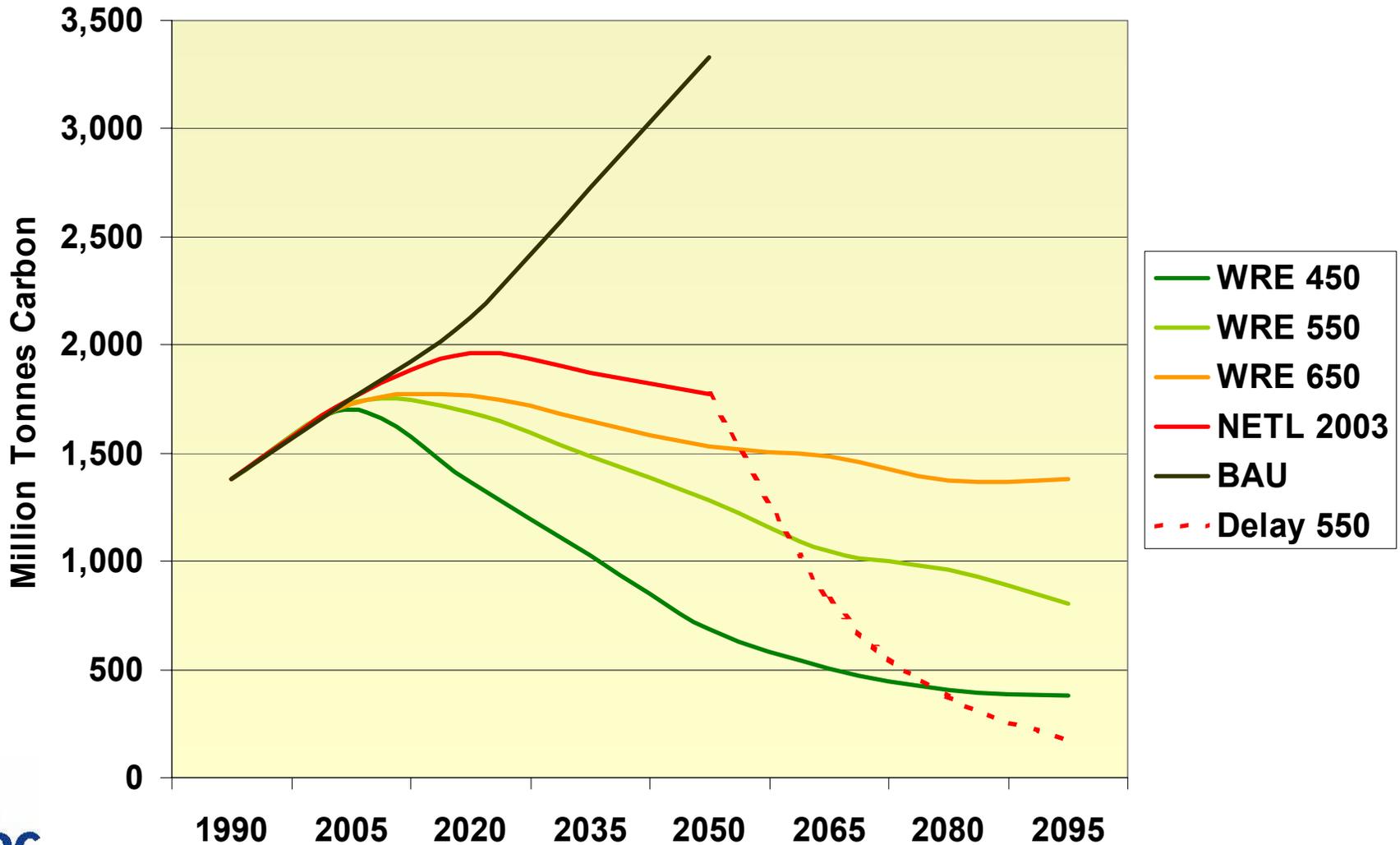


CCS Capacity in Roadmap



Future U.S. CO2 Emissions

Impact of Delay on Stabilization Options



What we can do to get serious

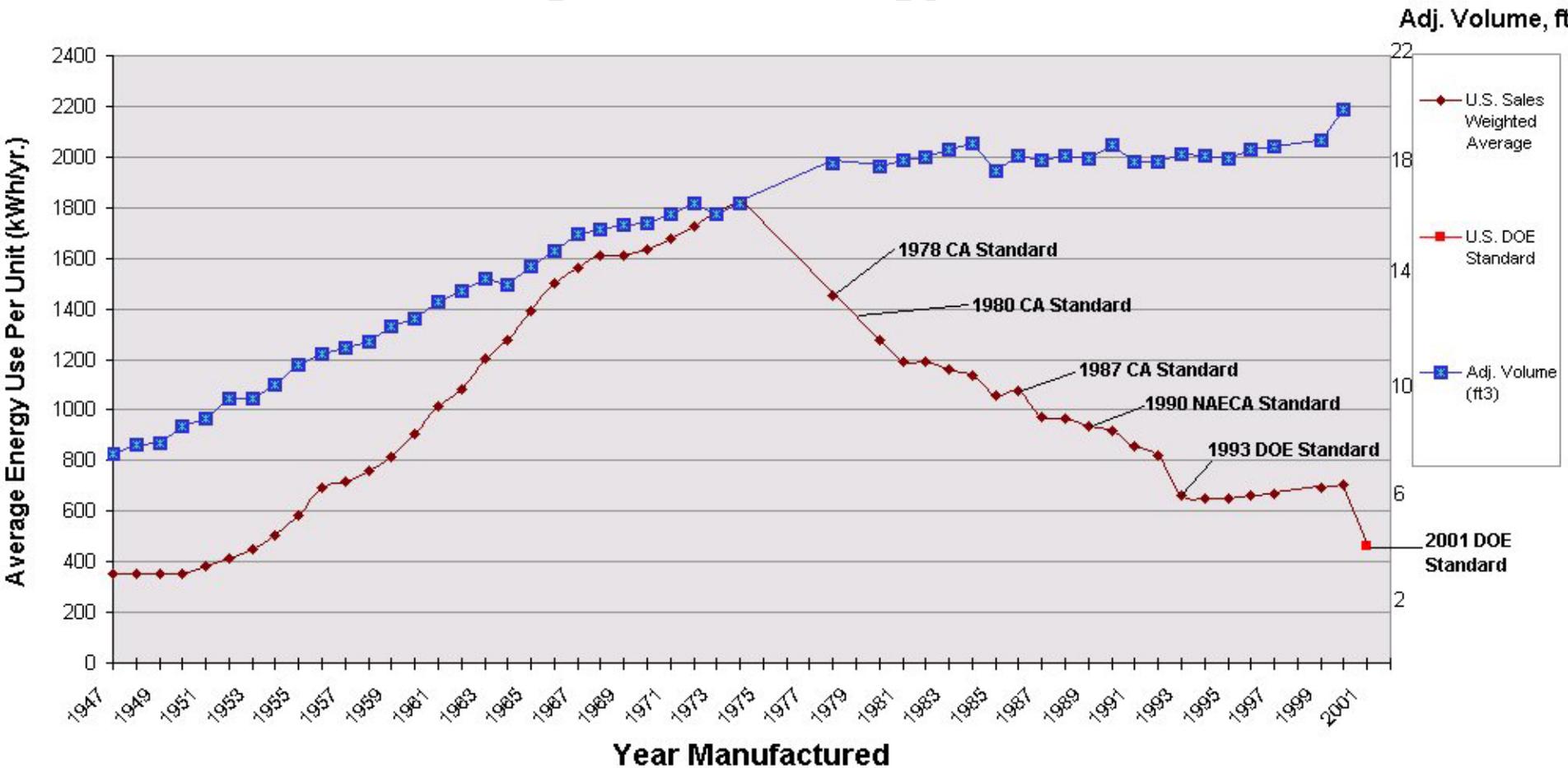
- Act now to increase energy efficiency
- Act now to increase renewable energy
- Develop and deploy systems to capture and store carbon from fossil energy
- Accelerate hydrogen fuel use: coal with CO₂ capture and renewables both can be big winners

To Drive New Technology We Need Policies to Limit Carbon Emissions

- Current CCS efforts too slow to avoid new high-carbon investments
- Without market value for limiting carbon emissions CCS technology will develop too slowly and will not be used
- Limits on carbon create the clear market needed to expand private sector investment

Policy Matters!

U.S. Refrigerator Energy Use v. Time



Current Domestic Policy Proposals

- Sector-based:
 - Electric Sector: Jeffords-Snowe-Lieberman;
Carper-Chafee
 - Vehicles: NRDC-UCS “Dangerous Addiction”
- Economy-wide:
 - McCain-Lieberman

Benefits of Starting Now

- Preserves safer GHG stabilization options
- Can speed use of domestic instead of foreign energy
- Makes new fossil investments climate sensitive
- Engages developing countries in climate protection
- H2 with carbon capture can cut emissions from electric and vehicle sector
- Reduces global oil import crunch