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Crossing the Natural Gas Bridge: The Changing Outlook and Implications Grid and Utility Considerations

**Panel Discussion
Center for Strategic and International Studies**

**24 June 2009
Washington, D.C.**

**Revis James
Director**

Energy Technology Assessment Center

Our Members...

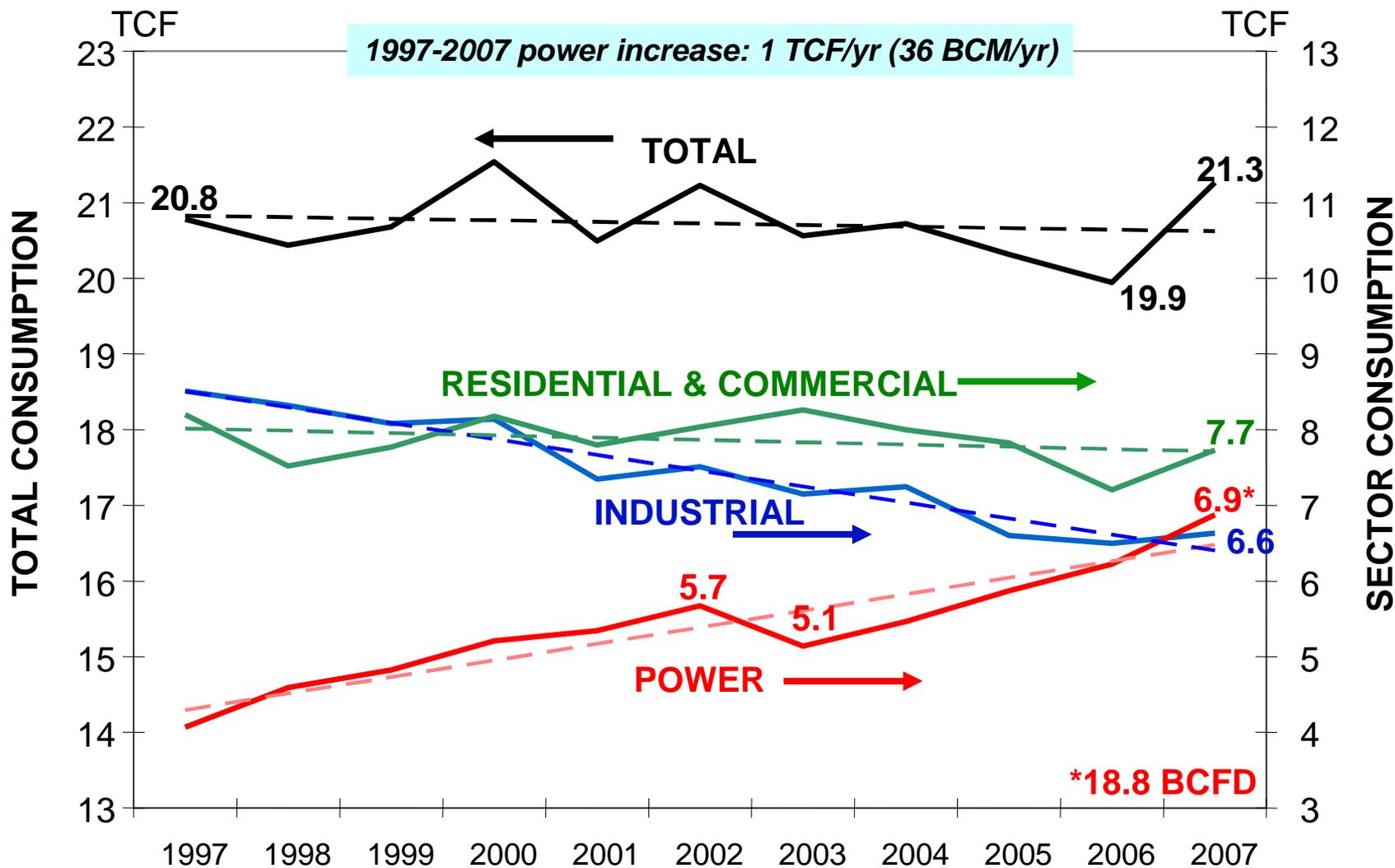
- 450+ participants in more than 40 countries
- EPRI members generate more than 90% of the electricity in the United States
- International participation in more than 15% of EPRI's research, development and demonstrations
- Programs funded by more than 1,000 energy organizations



2008 Potential Gas Committee Report Colorado School of Mines

- Proven reserves ~ 238 TCF
- Potential resources ~ 1836 TCF
 - Shale gas represents ~ 616 TCF of potential (~33%)
- Considers all resources, regardless of cost of recovery.

US Natural Gas Demand for Power Production

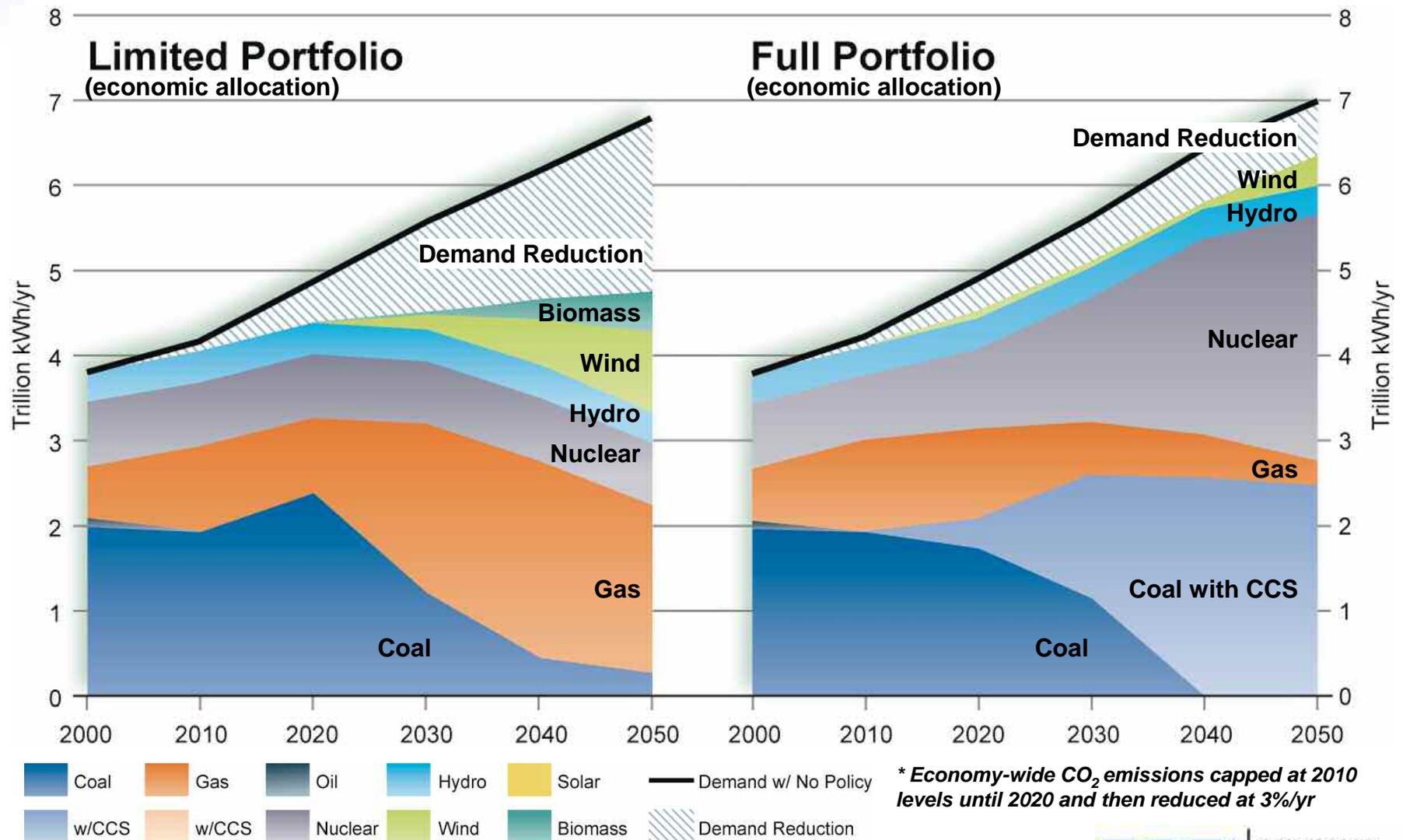


SOURCE: EIA

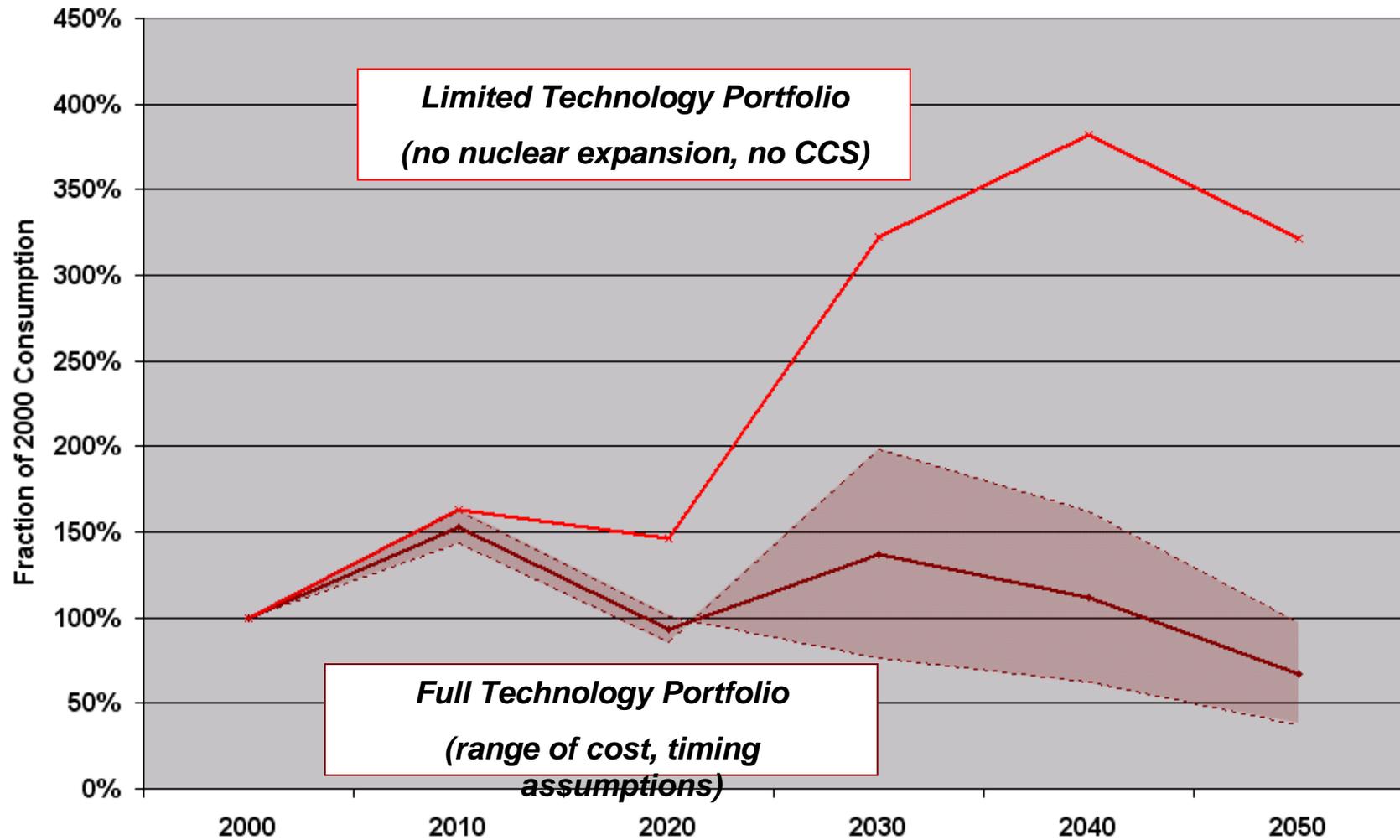
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U.S. Electricity Generation: 2000 to 2050

("bookend" scenarios meet the same economy-wide CO₂ constraint*)



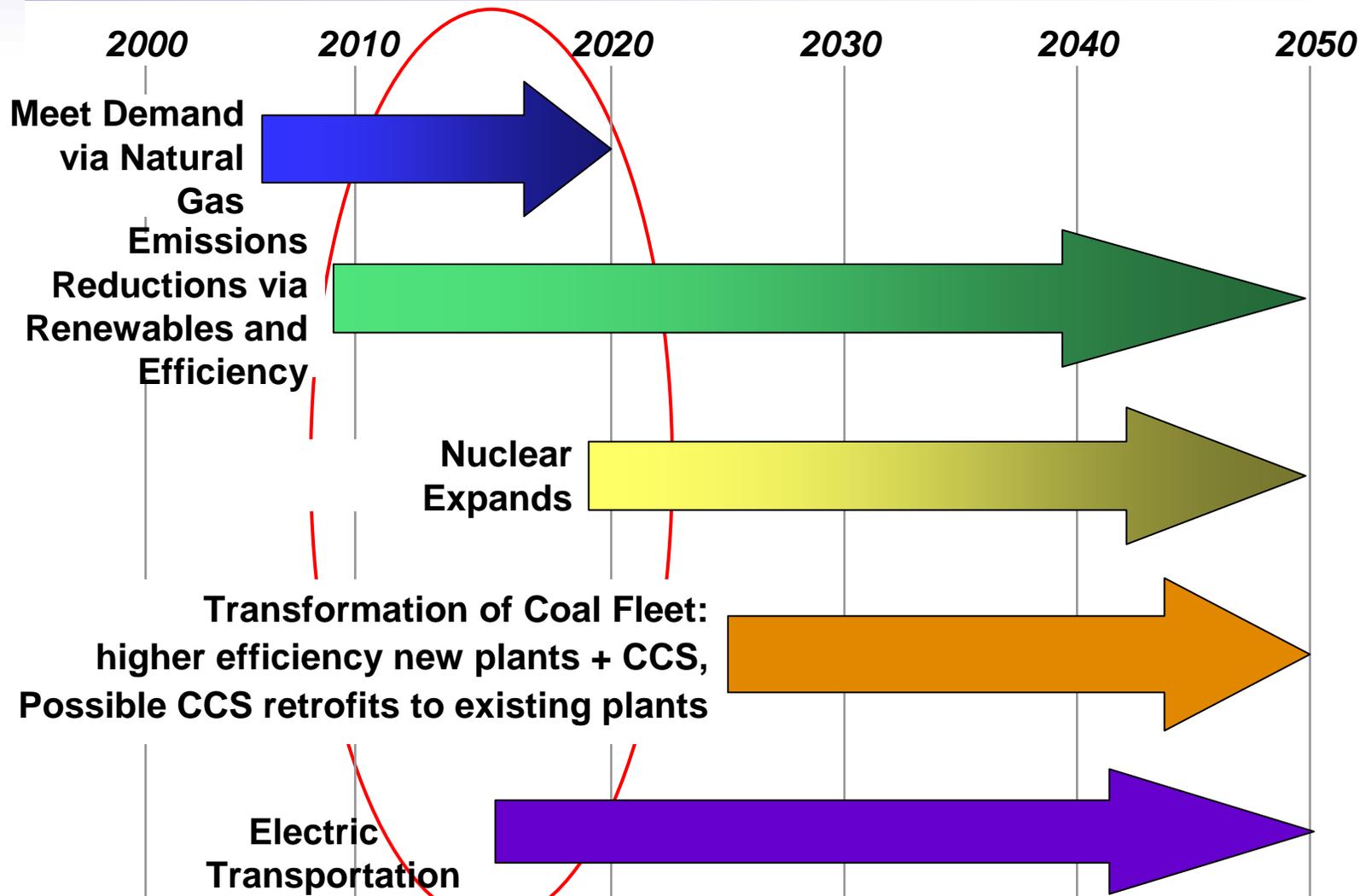
Portfolio Diversity Strongly Affects NG Demand



Power Sector and Gas

- The period beginning about 5 years from now remains a significant concern; several factors driving increased gas use:
 - cancelled coal plants
 - little else is affordable
 - possible CO₂ legislation
- Increasing need for LNG
- 2000 – 2050 NG consumption for power production under Limited Portfolio ~ 634 TCF, or all of estimated shale gas reserves.

Timeframes for Key Technologies



Conclusions

- **The scale of technology expansion and transformation will be huge.**
- **No one technology will be a silver bullet – a portfolio of technologies will be needed.**
- **Much of the needed technology isn't available yet – , sustained, substantial R&D, demonstration is required.**
- **A diverse, full technology portfolio**
 - **lowers economic impact of CO₂ emissions constraints**
 - **Decarbonized electricity will play a vital role in reducing emissions outside of the electricity sector.**

**LOW CARBON
GENERATION**



**LOCAL ENERGY
NETWORKS**

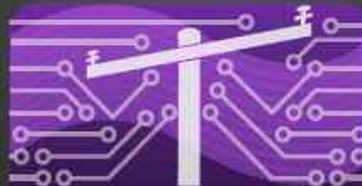


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TRANSPORTATION**



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A Framework for Action to Create the Low Carbon Future