EDISON ELECTRIC INSTITUTE

The Capital Investment Challenge

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We Are In A Period Of Significant Transformation

Capital Markets
Environment
Technology
Politics

Financial Crisis

Critical Political Issue

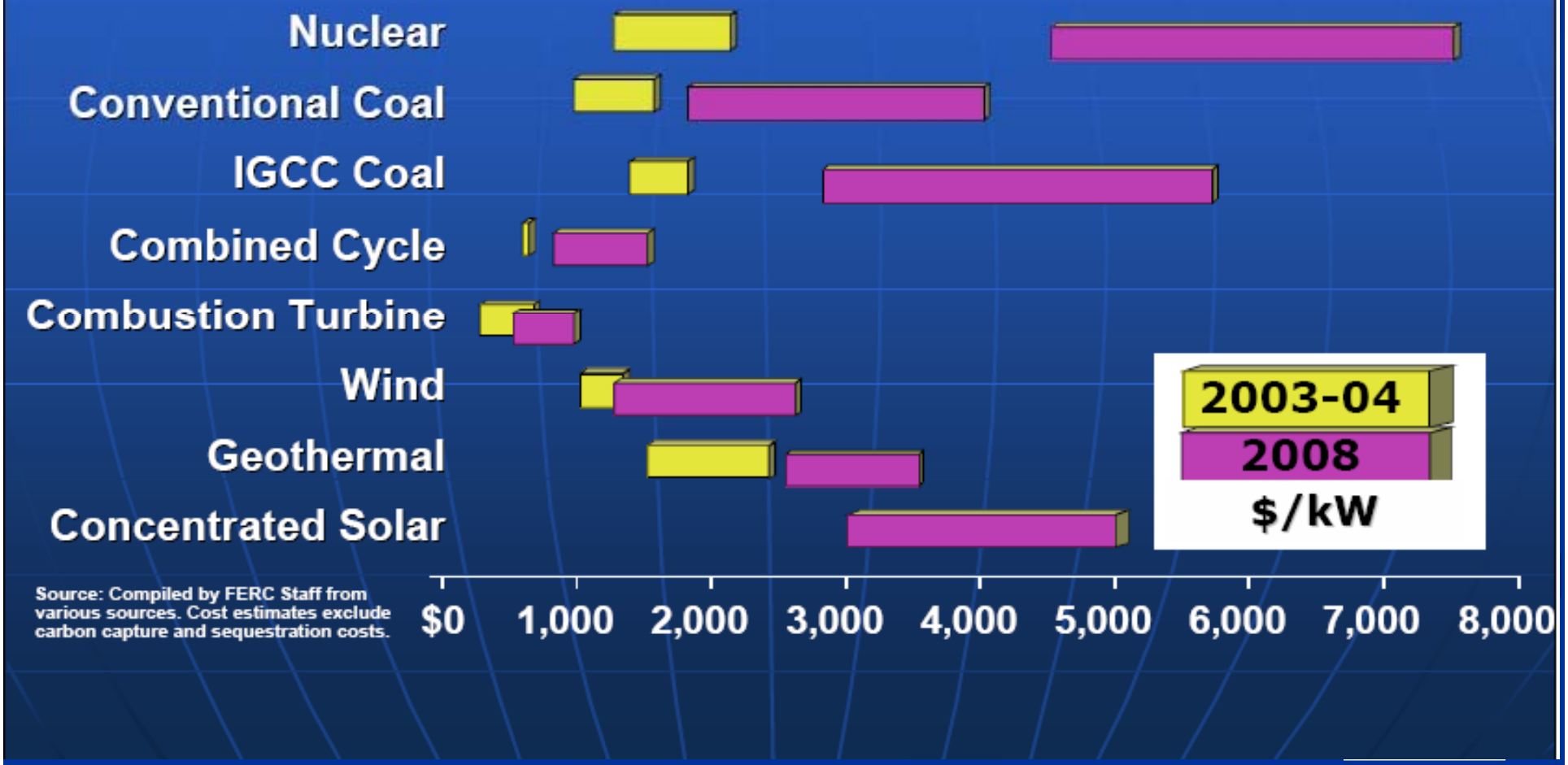
Financial Crisis Impacts …

Access to Capital

Short-term lines of credit

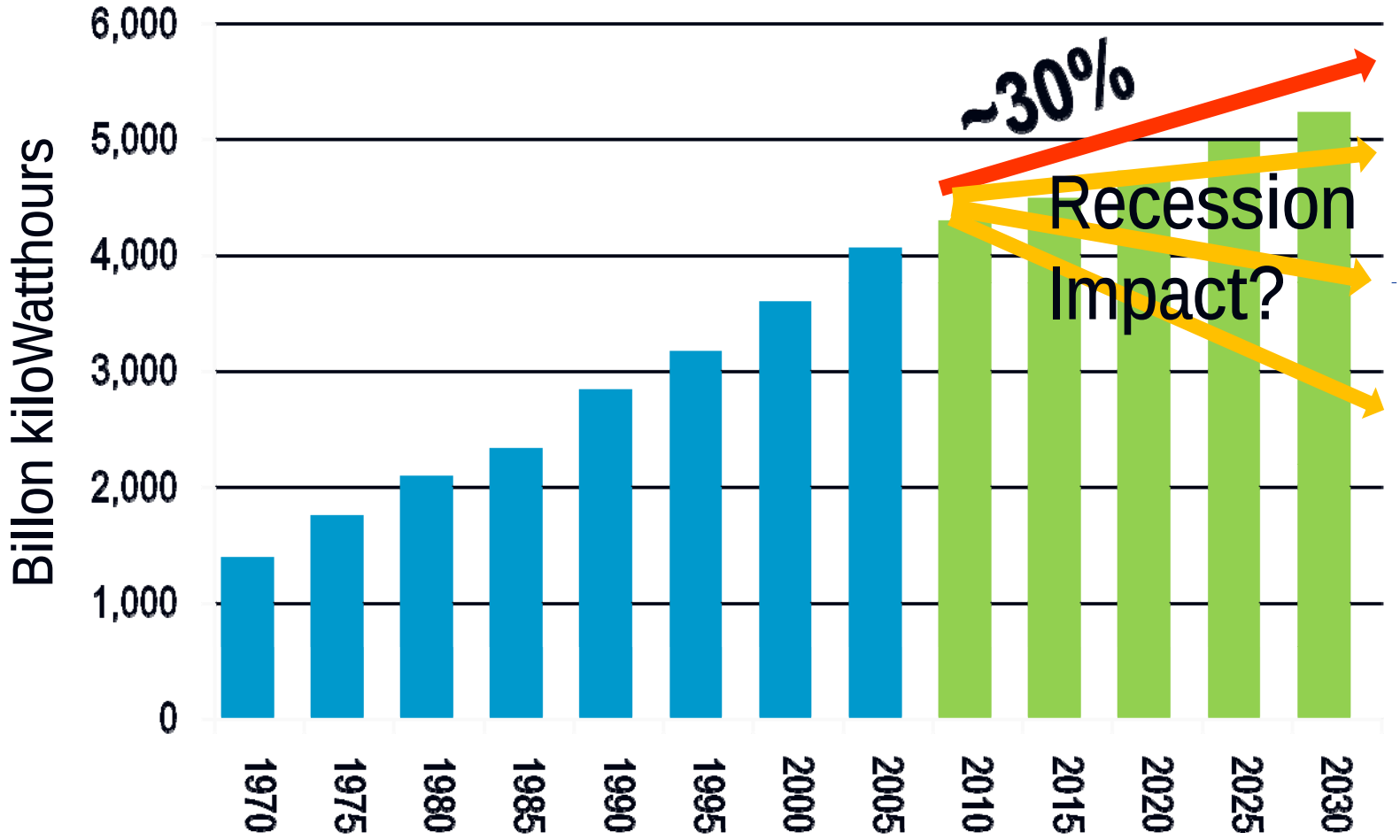
Long-term investments

Estimated Cost of New Generation



Source: Compiled by FERC Staff from various sources. Cost estimates exclude carbon capture and sequestration costs.

Demand Projected To Increase 30% by 2030



Sources: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 2006* and *Annual Energy Outlook 2008 Early Release*

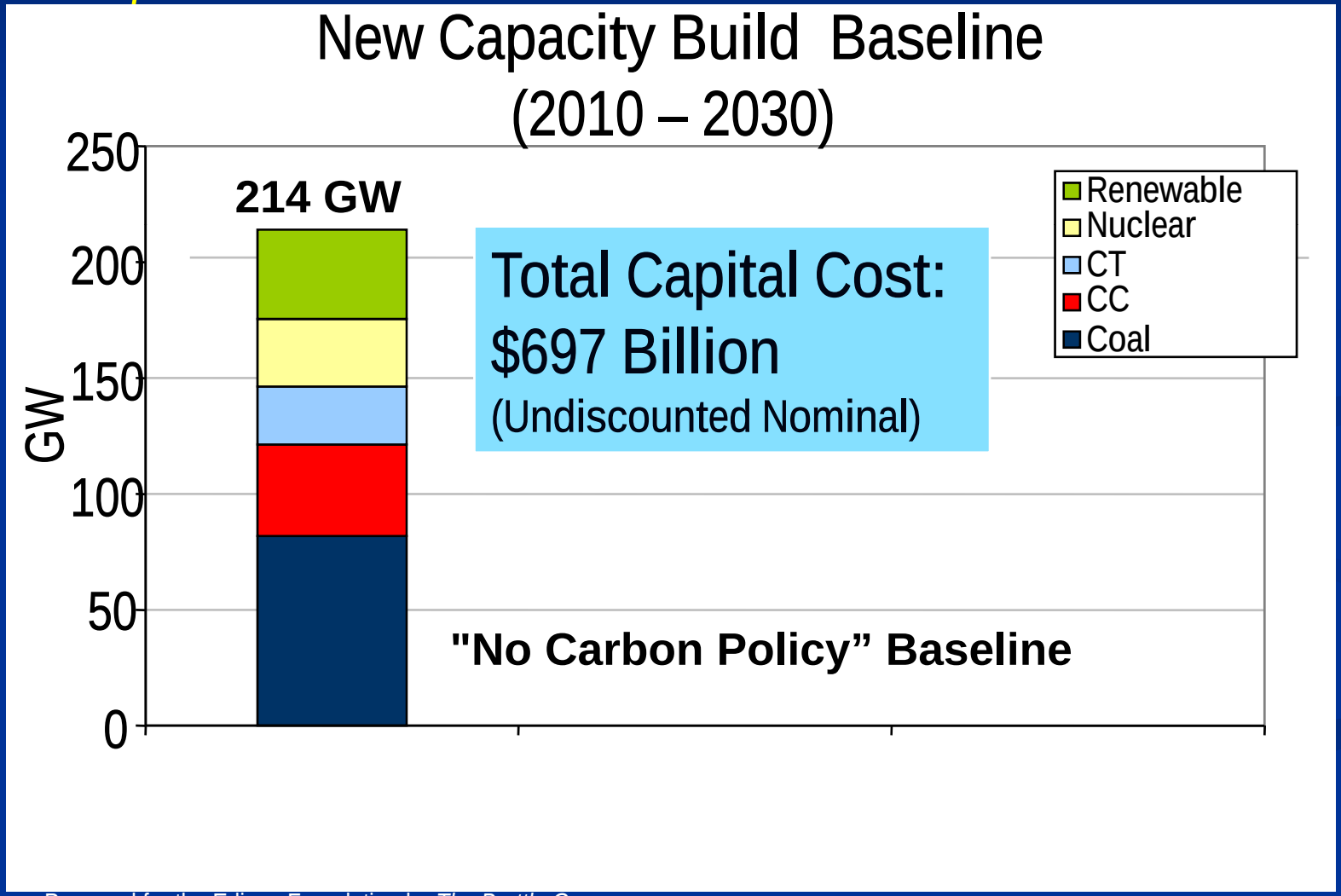
*Electricity demand projections based on expected growth between 2006-2030

The Capital Investment Challenge

- Industry investment in all segments through 2030 will be on the order of $1.5 Trillion
  - Generation $505 billion (133 GW, assuming Realistic Achievable Potential efficiency - RAP)
  - Transmission $287 billion
  - Distribution $588 billion
  - Energy Efficiency $85 billion (EE and AMI cost for RAP efficiency)
- Estimates do not reflect
  - Potential costs of new carbon policies that may be adopted
  - Potential new comprehensive federal energy legislation / policies
  - Potential new state energy policies
- T&D investments significantly greater than projected generation investment

214 GW of New Capacity Needed?

- *Does not include aggressive energy efficiency and potential price response impacts*



Energy Efficiency Potential
EPRI-EEI Joint Energy Efficiency Study

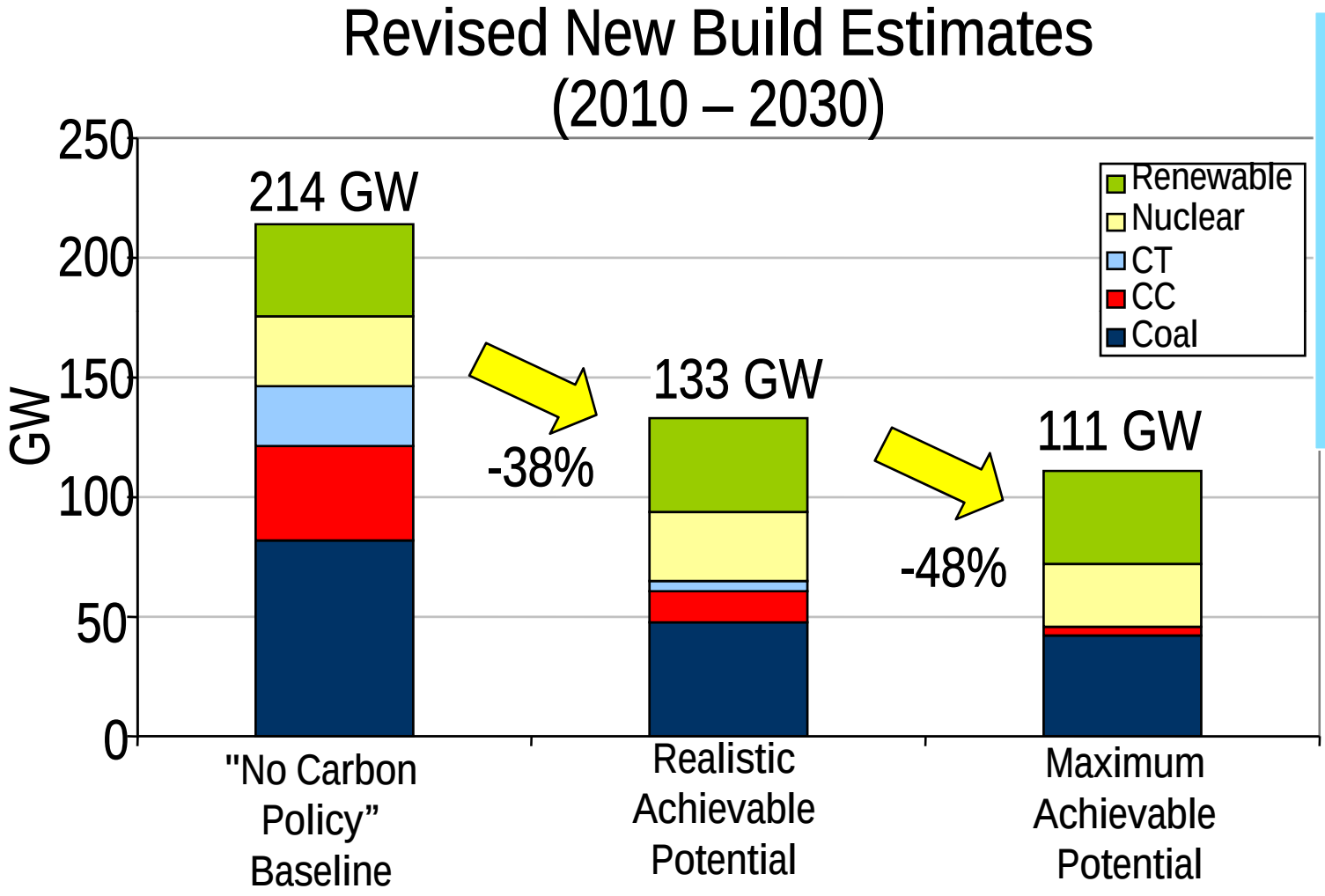
- Analyzed potential U.S. energy efficiency savings 2008 - 2030
  - Detailed micro-economic model based on equipment stock turnover
  - Comprehensive database of energy efficiency technologies and measures
  - Calibrated with opinions of 50+ industry experts, spanning utilities, regulators, government agencies and NGOs

- EPRI –EEI Results

  Realistic Achievable Potential Savings (RAP):
  - *Most likely impact* of expanded EE programs
  - Assumes moderate customer changes and penetration rates of existing efficient technologies

  Maximum Achievable Potential Savings (MAP):
  - *Higher-end of range of potential impact* of EE programs
  - Assumes a somewhat aggressive customer participation rate

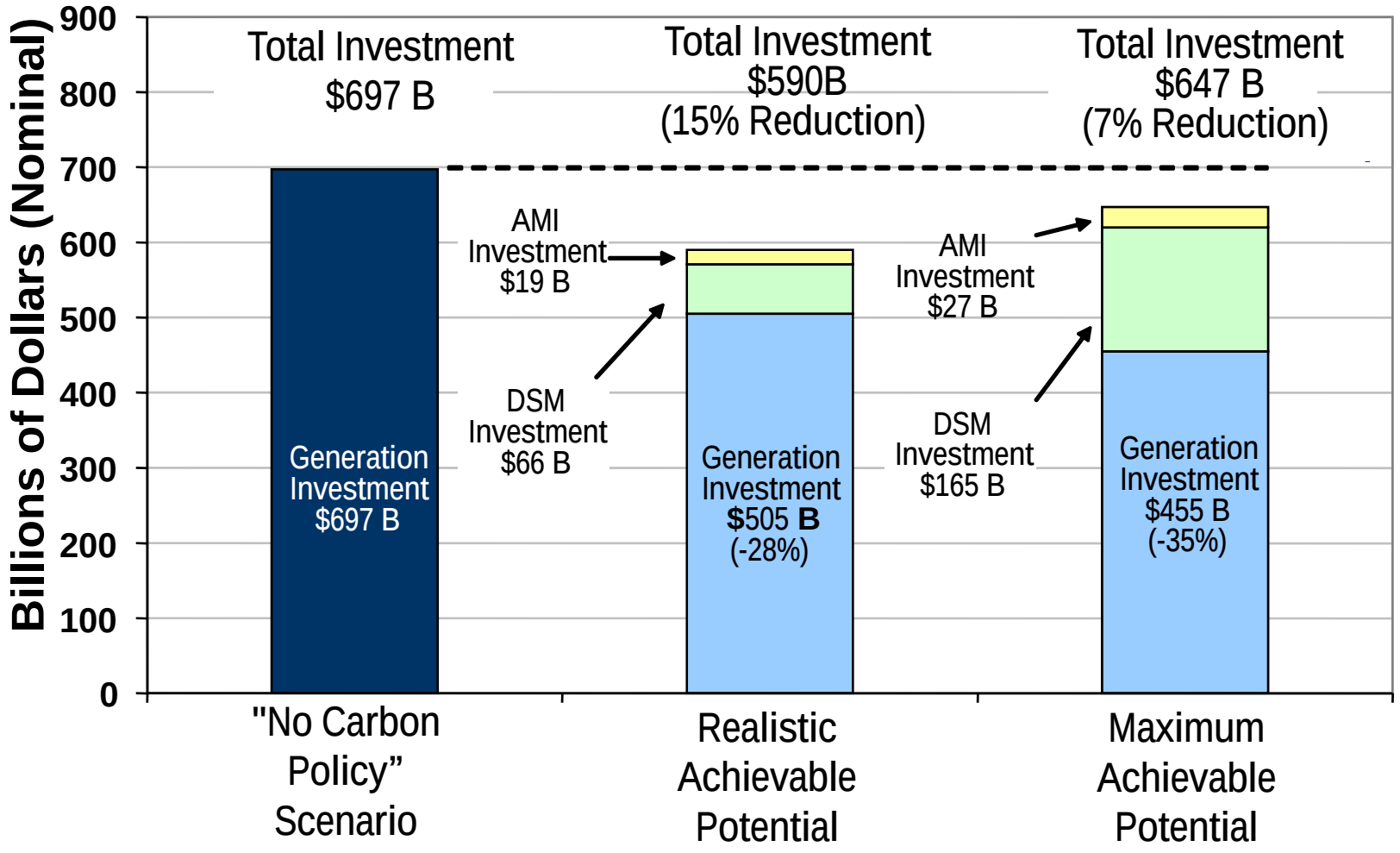
Results of Energy Efficiency Programs Capacity Reduce 38-48% - 133 GW



Total Capital Cost: $505 Billion
(Undiscounted Nominal for RAP)

EE Cuts Generation Investment by 28% to 35%, Total Investment by 15% to 7%

Avoided Capital Investment Due to Enhanced Efficiency



What Will It Take To Address Climate Change?

There Is No Silver Bullet!

- Energy Efficiency
- Renewables
- Clean Coal Technologies
- Carbon capture and storage
- Nuclear
- Plug-in hybrid electric vehicles

We need it all …
but it will be costly!