



**EDISON ELECTRIC
INSTITUTE**

The Need For New Transmission

How Will We Pay For It?

David K. Owens
Executive Vice President
Edison Electric Institute

NARUC
Committee On Electricity
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Overall Infrastructure Investment Needs

- According to *The Brattle Group*, investment on the order of \$1.5 Trillion required from 2010 – 2030
 - Generation - \$560 Billion w/ no changes in carbon policy and forecasted energy efficiency
 - Transmission - \$233 Billion
 - Distribution - \$675 Billion
- Enhanced energy efficiency will help but overall capital requirements are less affected:
 - Reduced peak demand displaces less expensive peakers
 - Energy efficiency measures add significant costs

Source: Transforming America's Power Industry: The Investment Challenge (Preliminary Findings), *The Brattle Group*, April 2008



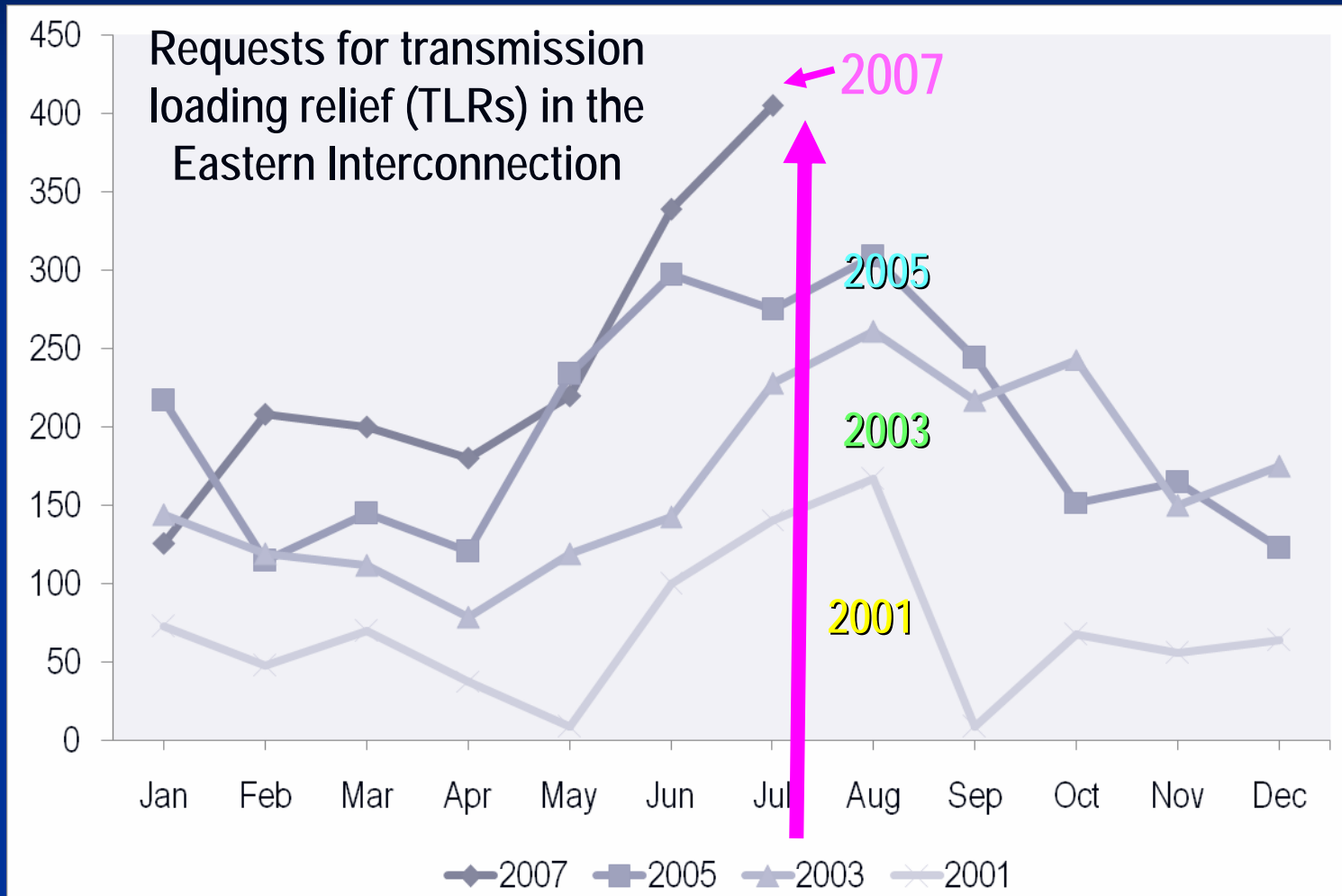
Aging Transmission Infrastructure

- “Rising Utility Construction Costs: Sources and Impacts”
 - Edison Foundation / *The Brattle Group* Report
- 70 % of *transmission lines* are 25 years or older
- 70 % of *power transformers* are 25 years or older
- 60 % of *circuit breakers* are more than 30 years old

http://www.globalenvironmentfund.com/GEF%20white%20paper_Electric%20Power%20Grid.pdf

Transmission Congestion Dramatically Increasing

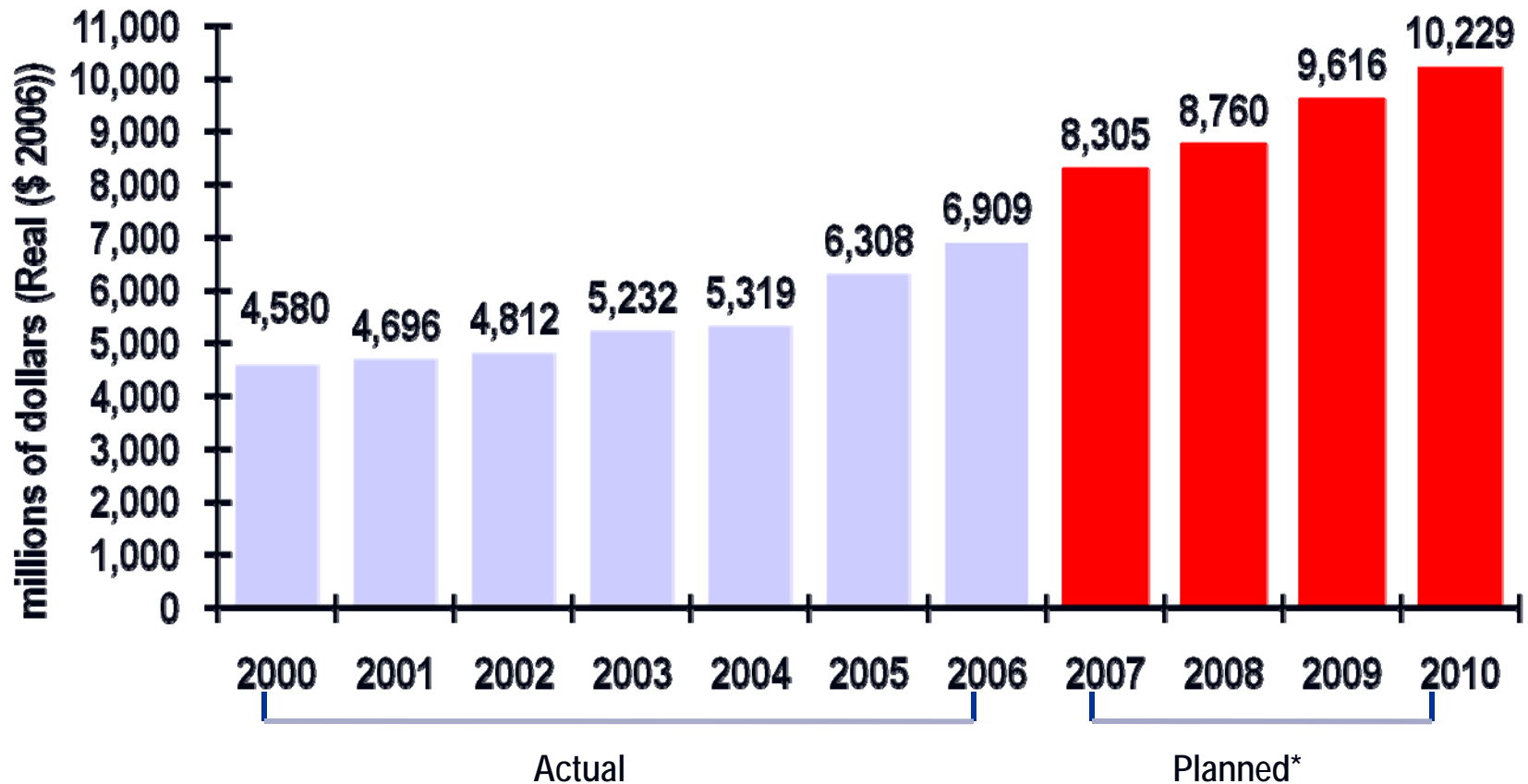
Level 2 or higher TLRs



Source: NERC Transmission Loading Relief Procedure Logs



Actual and Planned Transmission Investment by Investor-Owned Electric Utilities (2000-2010)

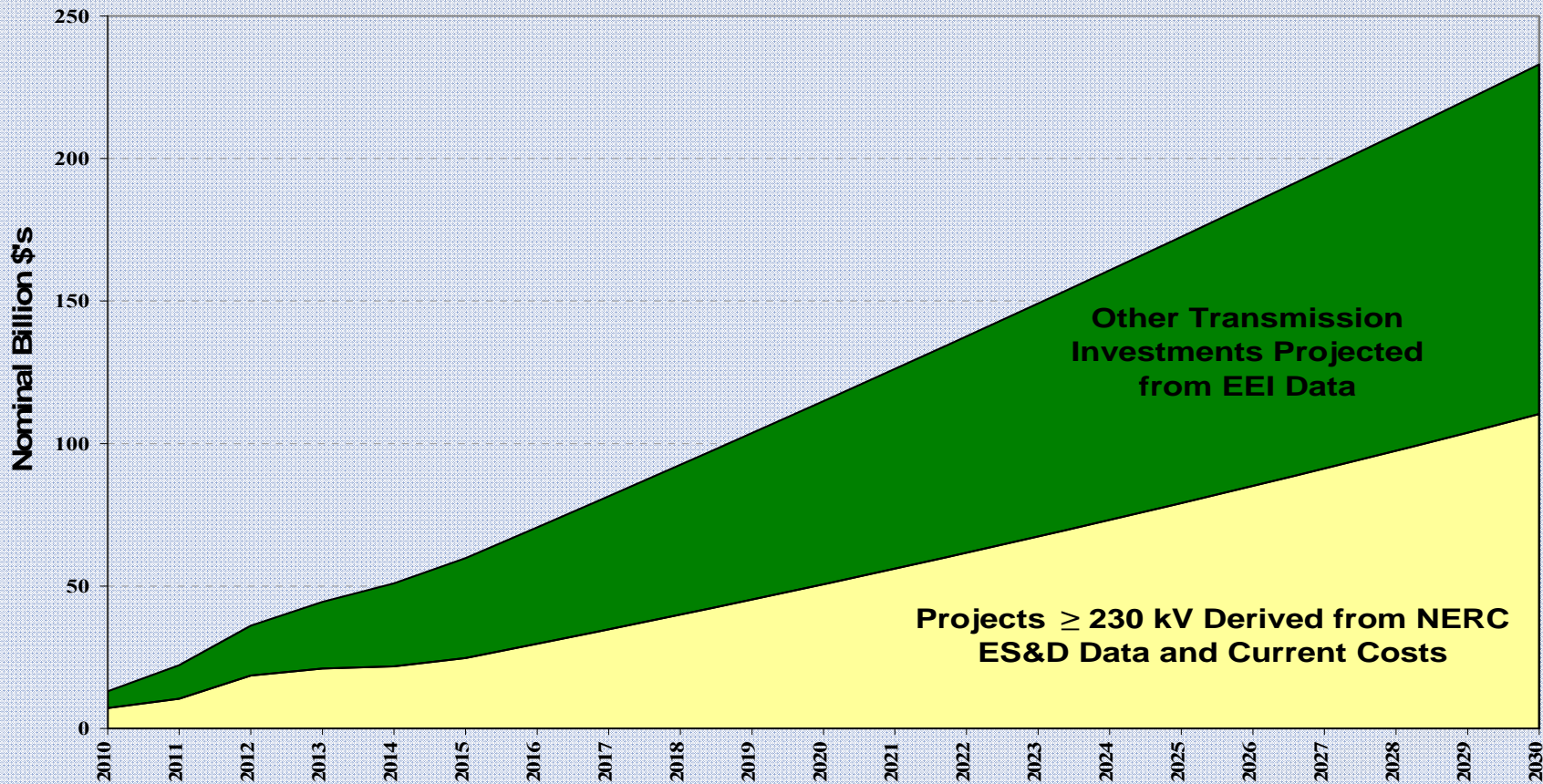


Note: From 2004 to 2006, the industry exceeded investment projections in their transmission capital budgets. *The Handy-Whitman Index of Public Utility Construction Costs* used to adjust actual investment for inflation from year to year. The GDP Deflator used to adjust planned investment for inflation from year to year. Data represents both vertically integrated and stand-alone transmission companies. *Planned total industry expenditures are preliminary and estimated from 85% response rate to EEI's Electric Transmission Capital Budget & Forecast Survey. Actual expenditures from EEI's Annual Property & Plant Capital Investment Survey & Form 1s.



Transmission Investments \$233 Billion 2010 – 2030

PROJECTED COST OF NEW TRANSMISSION (2010-2030)

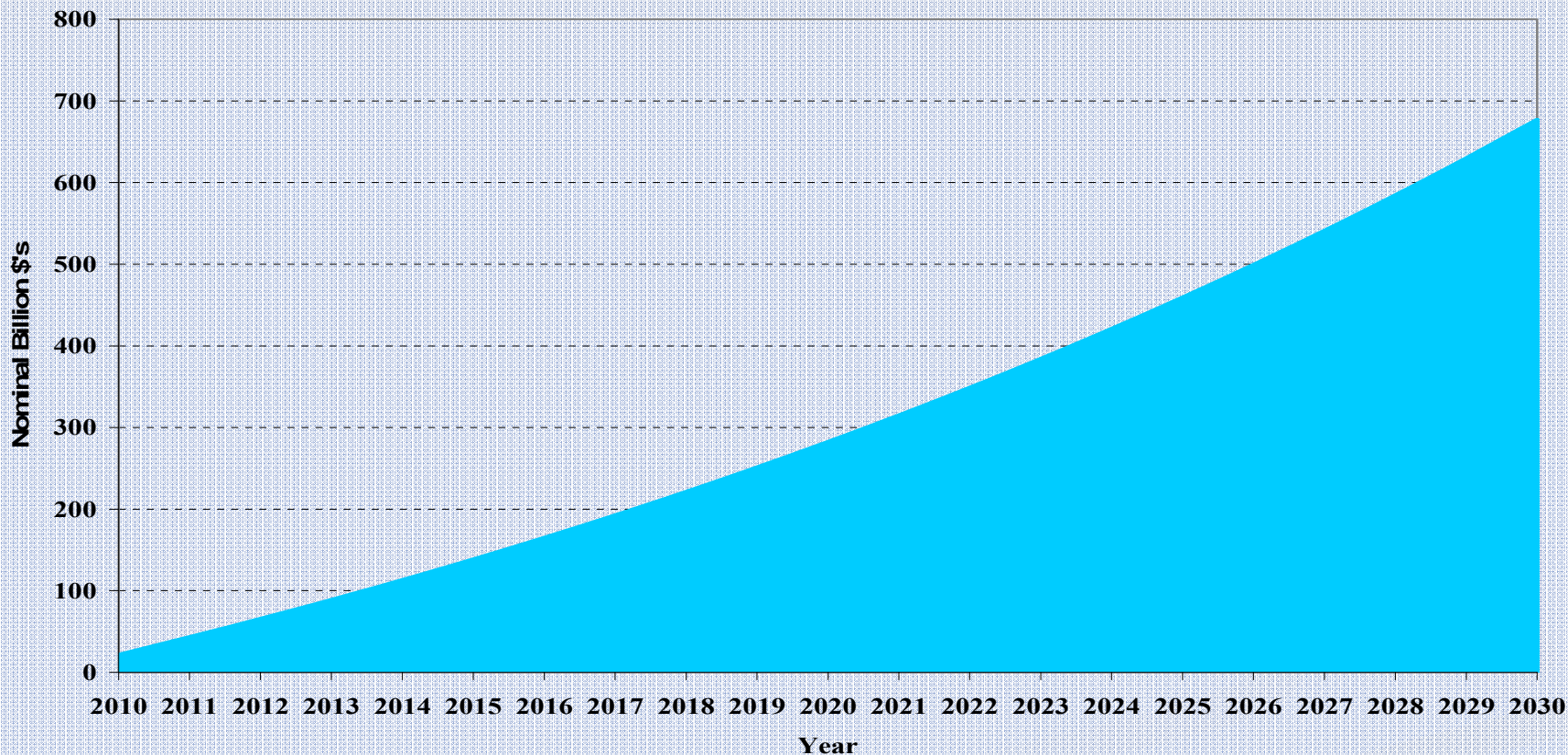


Source: Transforming America's Power Industry: The Investment Challenge
(Preliminary Findings), *The Brattle Group*, April 2008



Distribution Investments \$675 Billion 2010 – 2030

Cumulative Forecasted Distribution Costs (2010-2030)



Source: Transforming America's Power Industry: The Investment Challenge
(Preliminary Findings), *The Brattle Group*, April 2008



Transmission for Renewables S. 2076 (Reid) / H.R. 4059 (Inslee)

- Designating of National Renewable Energy Zone (NREZ)
 - Potential to generate >1 GW from renewable sources and insufficient transmission

- Enhancing the role of Federal Transmitting Utilities
 - Finance if no privately-funded entity commits to finance identified transmission lines within 3 years
 - Federal eminent domain authority to facilitate siting

- Ensuring Cost Recovery and Allocation
 - FERC to ensure cost recovery and reasonable ROE for new transmission capacity in NREZ
 - FERC to permit public utilities to fund renewable trunklines upfront
 - FERC to allocate costs on “rolled – in” basis
 - Unless it approves an alternative approach proposed by a PUC in or adjacent to the NREZ



Cost Allocation: EEI 2005

Principles On Transmission Investment

- **Transmission pricing should:**
 - (a) allow for cost recovery of fixed and variable costs and a reasonable return on transmission investment
 - (b) ensure, to the extent practicable, that cost responsibility follows cost causation
 - (c) minimize the potential for cost shifting
 - (d) permit the recovery of all prudently incurred transition costs
 - (e) promote efficient siting of new transmission and generation facilities

- **Where states require purchases of renewable resources that lack siting flexibility -**
 - FERC should allow alternative transmission pricing and cost recovery approaches to support the building of transmission facilities to help achieve state renewable resource goals.

Cost Allocation

Evolving Changes Since 2005

- Growing emphasis on renewable resources (including RPS) has lead to projects that expand beyond individual states
- As a result large regional and multi-regional renewable projects are under development
- Does the cost allocation associated with the transmission for these renewable projects need to follow the regional / multi-regional scope?

