



# NARUC: 120<sup>th</sup> Annual Convention

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**NorthWestern**<sup>™</sup>  
**Energy**

*Delivering a Bright Future*



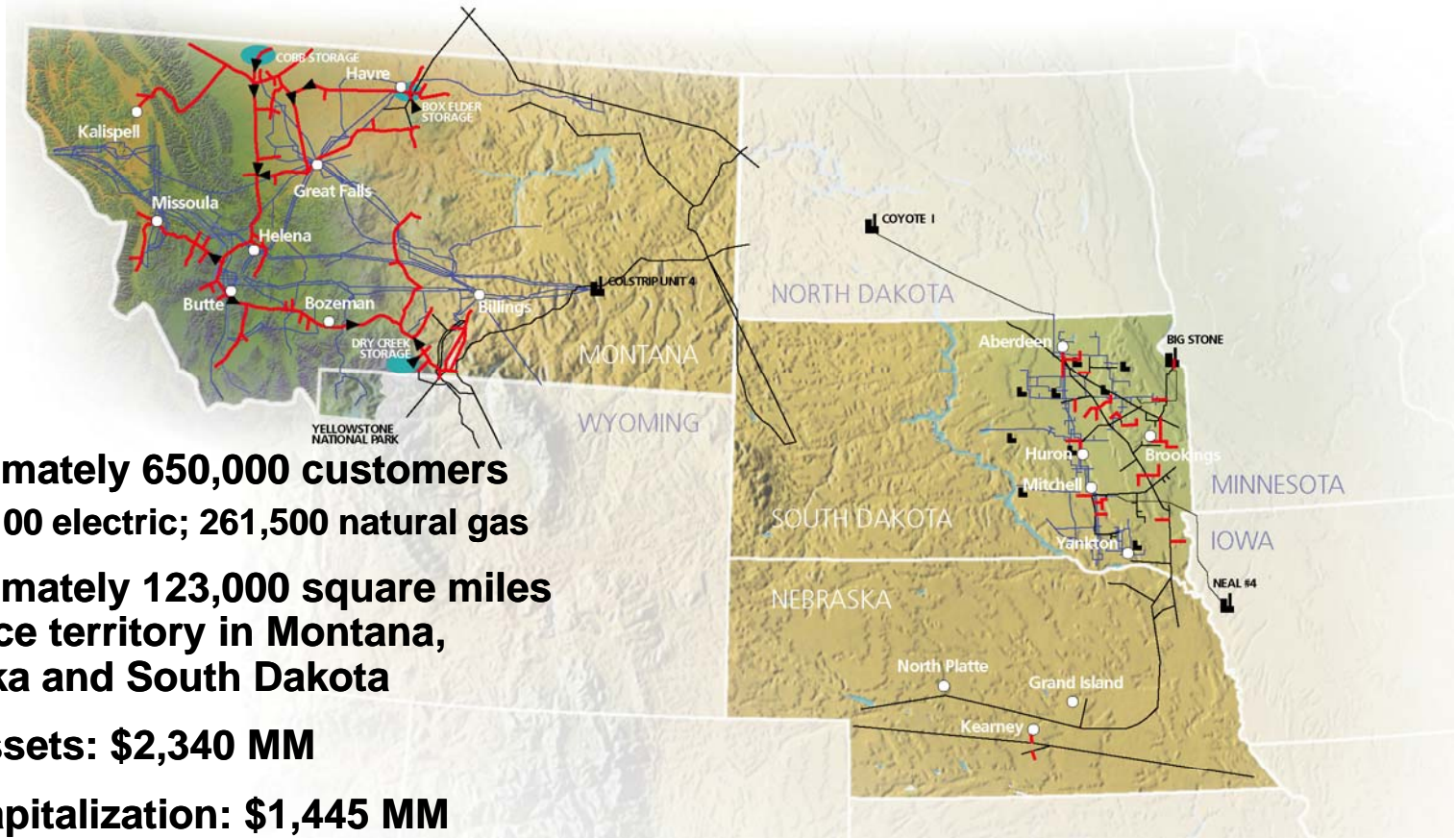
# Outline

- The NRDC – EEI challenge
- Who we are at NorthWestern Energy
- Where we're going – *investment-in-service*
- Investment is critical
  - » Distribution
  - » Transmission
  - » Supply and demand-side
  - » Technology
- Alignment of interests
- Technical versus leadership challenges
- Conclusion
- Appendix: Sizing the task – the EPRI-EEI Joint Energy Efficiency Study

# NRDC – EEI Letter to NARUC (11-18-08)

- **“Urgent” goal of helping all energy users exploit cost-effective efficiency opportunities**
- **For utilities, goal of “all cost effective energy efficiency”**
  - » **Cost recovery for prudent investment**
  - » **Earnings opportunity tied to verified success in delivering cost-effective savings**
  - » **Kept whole for authorized fixed power costs as sales volumes decline relatively**
  - » **“Durable business case” based on**
    - ◆ **Cost recovery**
    - ◆ **Performance-based earning opportunity tied to results**
    - ◆ **Utility kept whole for authorized fixed costs**
- **Significantly enhanced investment in smart meters and smart grid, focused on**
  - » **New energy management tools to customers**
  - » **Increased efficiency**
  - » **Supporting new technology**
- **RD&D**
  - » **Federal**
  - » **Utility-based, with regulatory support**

# Who We Are at NorthWestern Energy



- **Approximately 650,000 customers**
  - » 388,100 electric; 261,500 natural gas
- **Approximately 123,000 square miles of service territory in Montana, Nebraska and South Dakota**
- **Total Assets: \$2,340 MM**
- **Total Capitalization: \$1,445 MM**
- **Total Employees: 1,400**

- Electric transmission lines
- Natural gas distribution lines
- Supplier-owned electric or natural gas lines
- Electric generating plant
- Natural gas storage fields
- ▶ Natural gas compressor stations

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# Where We're Going: Investment-in-Service

- **Focused on our utility operations**
  - » Regulated by three states and Federal Energy Regulatory Commission
- **Focused on our customers**
  - » We succeed by providing our customers, large and small, high quality service
- **Focused on our communities**
  - » Provide essential infrastructure and service for strong communities, economic growth
    - ◆ Residential and commercial growth
    - ◆ Environmentally friendly resource development
  - » Employees leaders and contributors where we serve
  - » Intellectual, technology and policy contributions
- **Focused on our employees**
  - » High-quality workforce, good balance of experienced veterans and newer employees
  - » Technologically sophisticated
  - » Safe place to work
- **Focused on our shareholders**
  - » Despite secular financial challenges, if we provide good service and are allowed the realistic opportunity to earn a reasonable return, our investors will support the company
- **Focused on our future**
  - » Gas and electric distribution
  - » Transmission
  - » Supply and demand-side
  - » Technology deployment and integration
  - » *Unique past positions NWE to be able to build utility of the future*
- **Engaged with our stakeholders**
  - » Communicating and discussing our long-term vision

# Investment is Critical

- **Infrastructure**
  - » Aging infrastructure needs replacing
- **Maintain Reliability**
- **Address climate change and related environmental issues**
- **Enhance energy efficiency technologies**
- **Exploring ways to maximize technology benefits throughout the system and to our customers**
- **“Main frames versus Apples”**
  - » Historic investments were large, single investments
  - » Many state-regulated investments and expenditures, desired by policy makers are incurred over time but cumulatively as significant as is “big iron”
  - » How to recover these costs in timely fashion and earn a return without constant rate cases?

# Distribution System

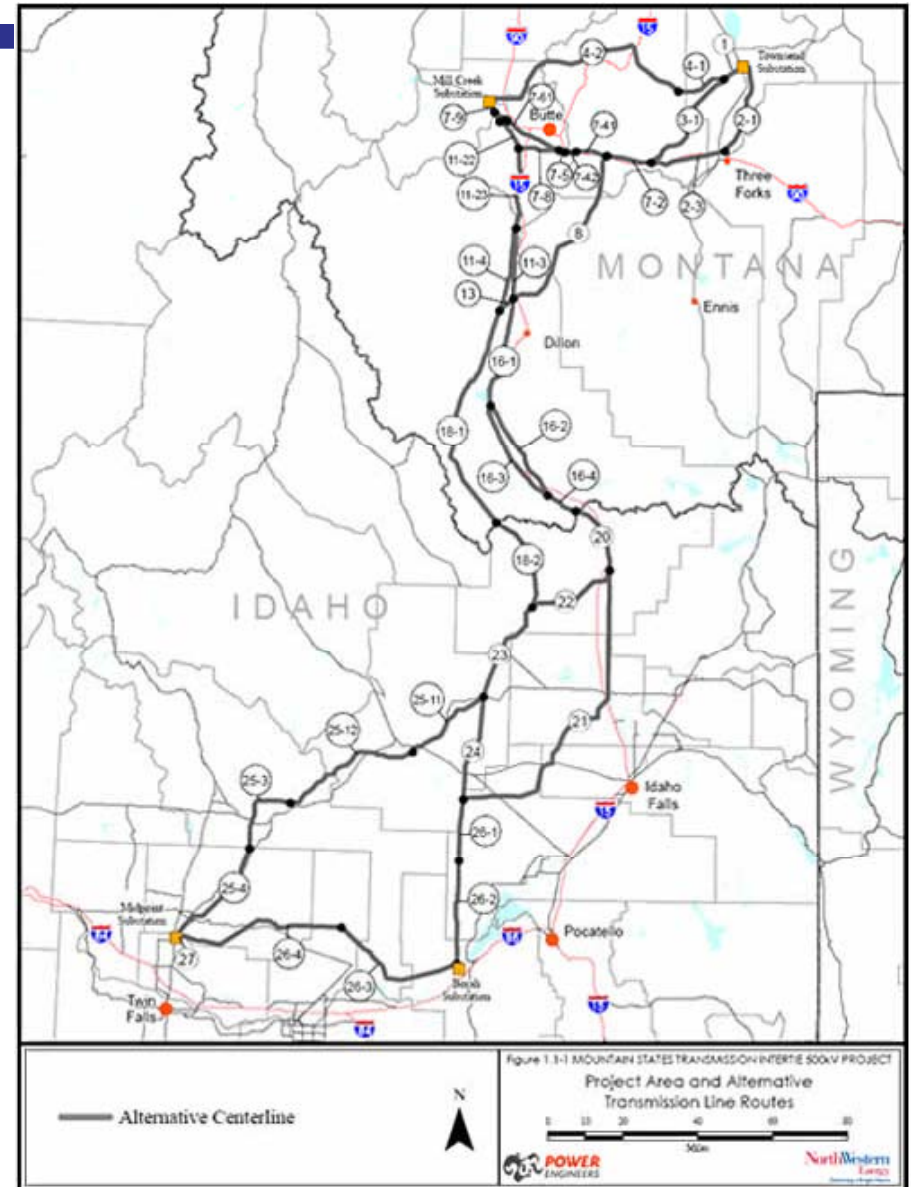
- **Aging assets**
  - » Some known and some unknown lives
  - » Variations between rural and urban network op ex and cap ex requirements
  - » Nothing similar to rural telecoms programs
- **High quality data about network**
  - » Failures
  - » Maintenance
  - » Inspections
  - » Benefit/cost of various op ex/cap ex strategies
- **Costs associated with important state and federal safety/environmental compliance programs**
  - » Need to understand benefit/cost and engage stakeholders
- **Need risk analysis and investment prioritization, using advanced asset management techniques**
- **Investment will need to exceed depreciation, likely with targeted investment programs**
- **Historic test year flows through to constrain budgeting to address needs**

# Transmission

- **Asked to perform new functions not designed to do (compare to telecoms)**
  - » **Size, volume and complexity of transactions**
  - » **Provide various services to support load and generation**
  - » **Enable markets for customers and shippers**
  - » **Unorganized Western markets make task more difficult**
- **Help meet RPS and other environmental goals**
  - » **Where the wind blows and the sun shines**
  - » **Environmental and resource considerations do not respect state lines**
- **Bulky investments with externality and coordination challenges, long lead times**
  - » **Last major investments 20+ years ago**
- **State, regional national interests all important**
  - » **Many states working constructively to address**
  - » **Assure costs track with benefits, adequate protection for native load customers**
  - » **Other approaches to regionalism and cooperative federalism**
    - ◆ **NARUC Telecom federalism resolution**
    - ◆ **OMS**

# Mountain States Transmission Intertie MSTI

- 500 Kv line from Townsend MT to Idaho Power's Midpoint Substation near Twin Falls
- Responds to requests for interconnection
- Relieves congestion
- Enables high quality wind to reach markets in west and southwest
- Environmental review, WECC path rating, and public consultation all well underway
- Open season anticipated in early '09



# Supply

- **Supply- and demand-side**
- **Traditional and renewable**
- **Many technologies not currently feasible in sufficient scale or at all (technology, cost curve, environmental concerns)**
- **“Rush to gas”**
  - » **Important fuel, including as near-term reliability resource**
  - » **Concern about gas as primary fuel for baseload**
    - ◆ **Fuel price risk**
    - ◆ **Strain on gas transmission and storage**
    - ◆ **Impact on other gas customers**
- **Renewables**
  - » **Wind is commercial**
    - ◆ **NWE has significant wind as network resource and system throughput**
    - ◆ **Learning how to integrate – committed to getting it right**
    - ◆ **Montana Wind Power Integration Study, [www.commerce.mt.gov/energy/presentations.asp](http://www.commerce.mt.gov/energy/presentations.asp)**
  - » **RD&D to develop other resources**



Power Plants Around the World

# Technology

- **Smart grid/smart meter**
- **Smart applications (electric car refueling)**
- **Customer tools – web based and home based**
- **Workforce training and management**
  - » Utility work force is sophisticated and getting more so!
- **GIS, asset management**
- **Integrating strategies within the company**
  - » IT moves from project support to collaborative design and integration
  - » Coordinate strategies off increasingly shared platforms
  - » Technology evolution
  - » Changing benefit/cost over time
    - ◆ Different points for different companies depending on, e.g. past deployment and network configuration
- **Coordination with other utilities**
  - » EPRI
  - » Regional efforts
  - » Shared RD&D
- **Public policy**
  - » Support for innovation and appropriate R&D
    - ◆ “Dry holes” are not used and useful
  - » Historic test year constrains significant ramp ups
  - » Coordinated with rate design

# Alignment of Interests

- **Need investment to realize potential benefits**
  - » Enable energy efficiency technologies
  - » Improve reliability
  - » Position the Grid for next generation and beyond
- **Far-sighted regulation**
  - » Easy to lose sight of long-term benefits when focus is on near-term pressures to produce results (e.g. cost, politics, etc.)
- **Investors have options even in this economy**
  - » Predictability is important to attract capital
- **Individual State v. Regional/National Benefits**
  - » Strike balance between protection of State interests and regional benefits re: reliability, renewable portfolio standards, etc.

# Technical Versus Leadership Challenges

- **Technical – applying tools (engineering, economics, law, finance, etc.) to solve problems**
  - » Is there agreement that a problem exists, and what it is?
  - » Regulators are trained and good at applying professional tools to solve complicated problems
  
- **Leadership – helping stakeholders come together to identify and solve problems**
  - » Different set of skills, can be learned
  - » Need to identify the difference between technical and leadership challenges
  - » Know how to evaluate stakeholders' interests and keep them engaged to solve problems
  - » “Practicing leadership”
    - ◆ Orienting the group – where are we now? Knowing when you are part of the problem
    - ◆ What “casualties” are we willing to accept?
      - As a result of decisions made now, who might not be at the table in the future?
      - Are “no losers” approaches politically attractive but sometimes substantively problematic or dishonest?
    - ◆ “View from the balcony” – maintaining perspective
    - ◆ “Regulating the pressure cooker” – Need to keep focus/urgency without blowing the lid
  
  - » “Leadership is dangerous work”
    - ◆ U. of Florida PURC leadership workshops
    - ◆ [www.purc.ufl.edu](http://www.purc.ufl.edu)

# Leadership Challenges

- For policy makers/regulators and for utilities
- Help citizens understand long-term challenges, their importance and alternatives
- Understand stakeholders and their interests
  - » Understand investors as key stakeholders, enabling realization of the future we want to achieve
    - ◆ Utility/financial community dialogue outside of cost of capital cases
  - » Managing for Stakeholders (Edward Freeman, Jeffrey Harrison, Andrew Wicks)
- Develop, communicate, and *discuss* a vision (which is then inevitably revised)
- Importance of ADR and non-adjudicative processes as complements to contested cases
- “Thinking outside the lines”
  - » Engagement outside current formal authority
  - » Regional engagement

# Technical Challenges

- **Goal: Match regulatory and policy incentives with desired outcomes over long-term**
  - » Some traditional methods still make sense, some need modification, and some that served a purpose may now be detrimental
- **Utilities must be willing to accept transparency and accountability when regulators embrace substantive reforms**
- **Possible barriers**
  - » Investment risk
  - » Lag in cost recovery for new projects
  - » Long-term inability by some utilities to have a realistic opportunity to earn authorized returns even on current base
  - » Historic test year constrains forward-looking budgeting to address public policy goals
  - » “Used and useful” test without modification may discourage desired investments
    - ◆ Difficult to apply to interstate facilities such as transmission
  - » Lack of targeted support for rural investments
  - » Disinvites and lack of positive incentives for certain desired initiatives
  - » Rate designs may hinder ability to capture full benefit of customer-facing technologies


# Conclusion

- **Complex issues**
- **Multiple, overlapping externalities (economic, technology, engineering, jurisdictional)**
- **Long lead times to get to the future we want**
- **Significant stakeholder impacts**
- ***Need thoughtful leaders (see following)***
- ***Need new/revised technical tools***
  - » **Regulatory**
  - » **Financial**
  - » **Operational**
- ***Need robust new decision-making processes, building on today's successes***
- ***NorthWestern Energy eager to play our part***



***“Keep it  
simple. So  
simple that  
everybody  
will  
understand  
it.”***

**FDR to Francis Perkins as  
they designed social  
security**



***“By all measures energy prices are expected to continue upward. This plan is good for NWE consumers in the long run because it will help minimize the impact of price spikes in the market.”***

**Montana PSC Chairman Greg Jergeson, describing the Commission’s decision to rate base NorthWestern’s interest in an existing coal plant, the first rate based generation in Montana since deregulation**

# Appendix – Sizing the Task



## The EPRI-EEI Joint Energy Efficiency Study

*See also*

***Transforming America's Power Industry  
The Investment Challenge 2010-2030***

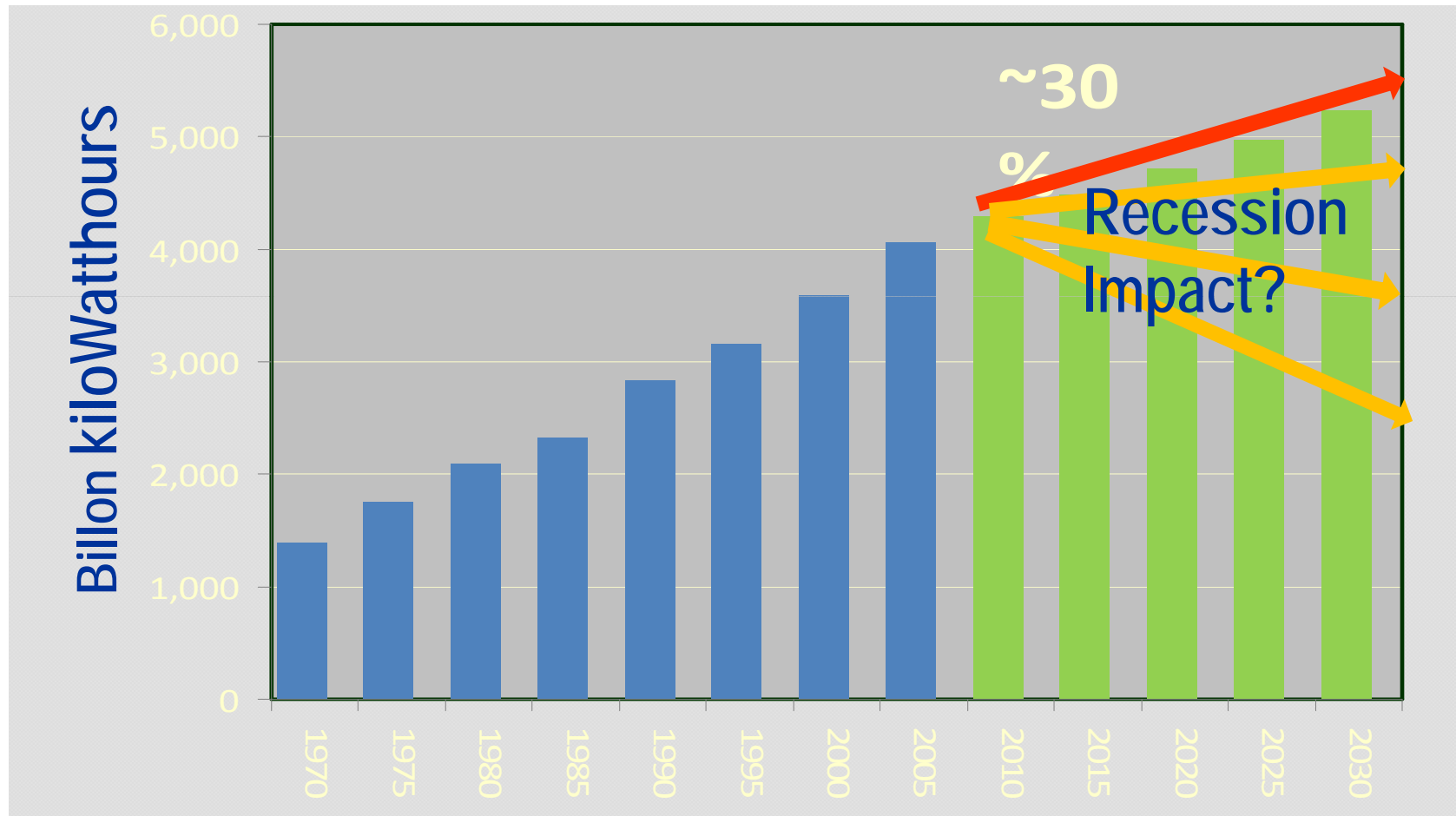
**The Brattle Group**

*prepared for*

**The Edison Foundation  
[www.edisonfoundation.net](http://www.edisonfoundation.net)**

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# Demand Projected To Increase 30% by 2030



Sources: EEI/ 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

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# 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**

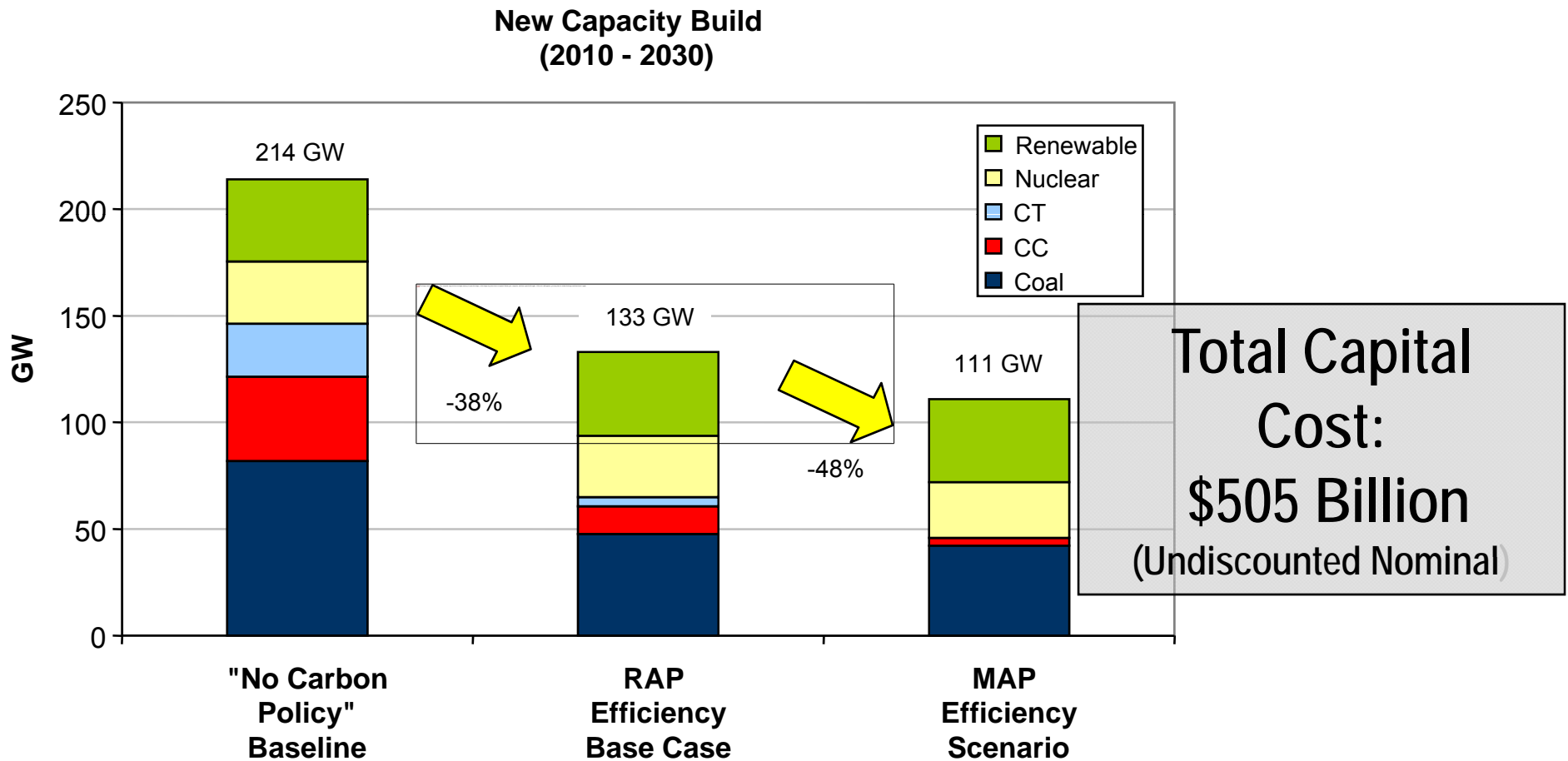
**Realistic Achievable Potential Savings (RAP):**

- » *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

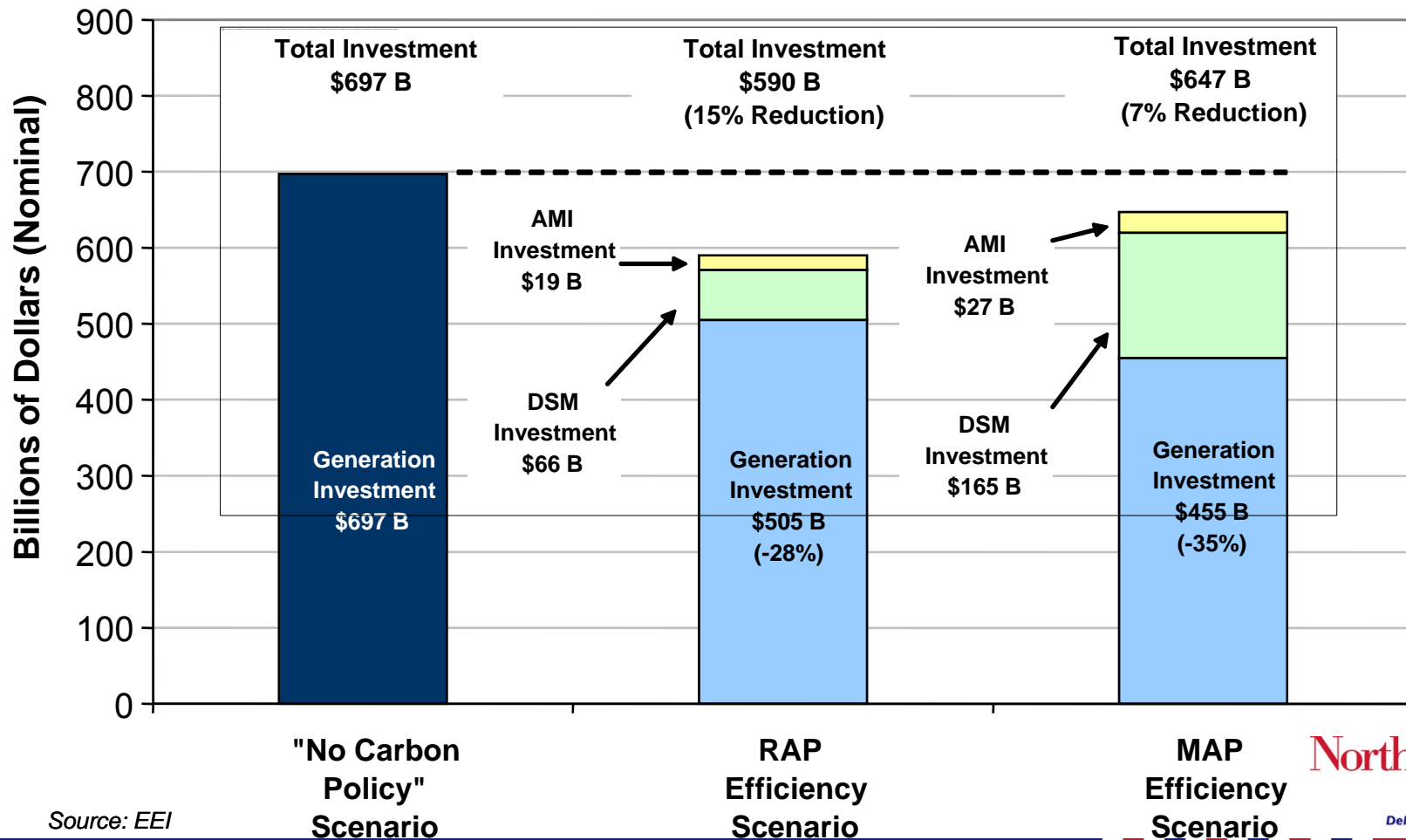
# Energy Efficiency Potential



Source: EEI

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

Summary of Avoided Capital Investment Due to Enhanced Efficiency Illustrated Using "No Carbon Policy" Scenario



Source: EEI