

Modernizing and Greening the Grid: The Challenges of Transmission Planning

2010 NARUC Summer Committee Meetings

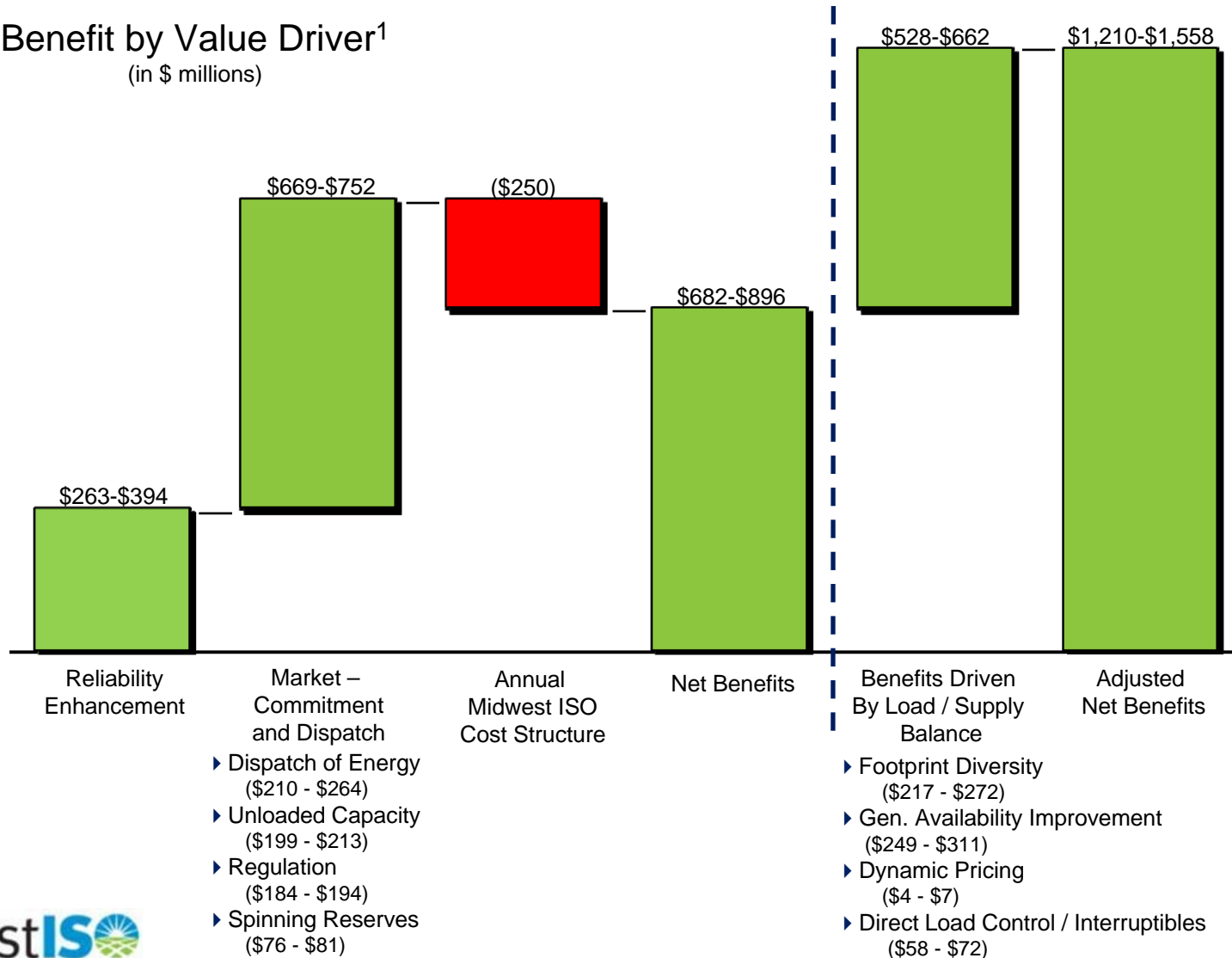
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DRAFT

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The Midwest ISO is focused on value creation – transmission is a common enabler and value driver

Benefit by Value Driver¹
(in \$ millions)



¹Figures shown reflect annual benefits and costs for 2009

The current transmission system was not designed for its current use

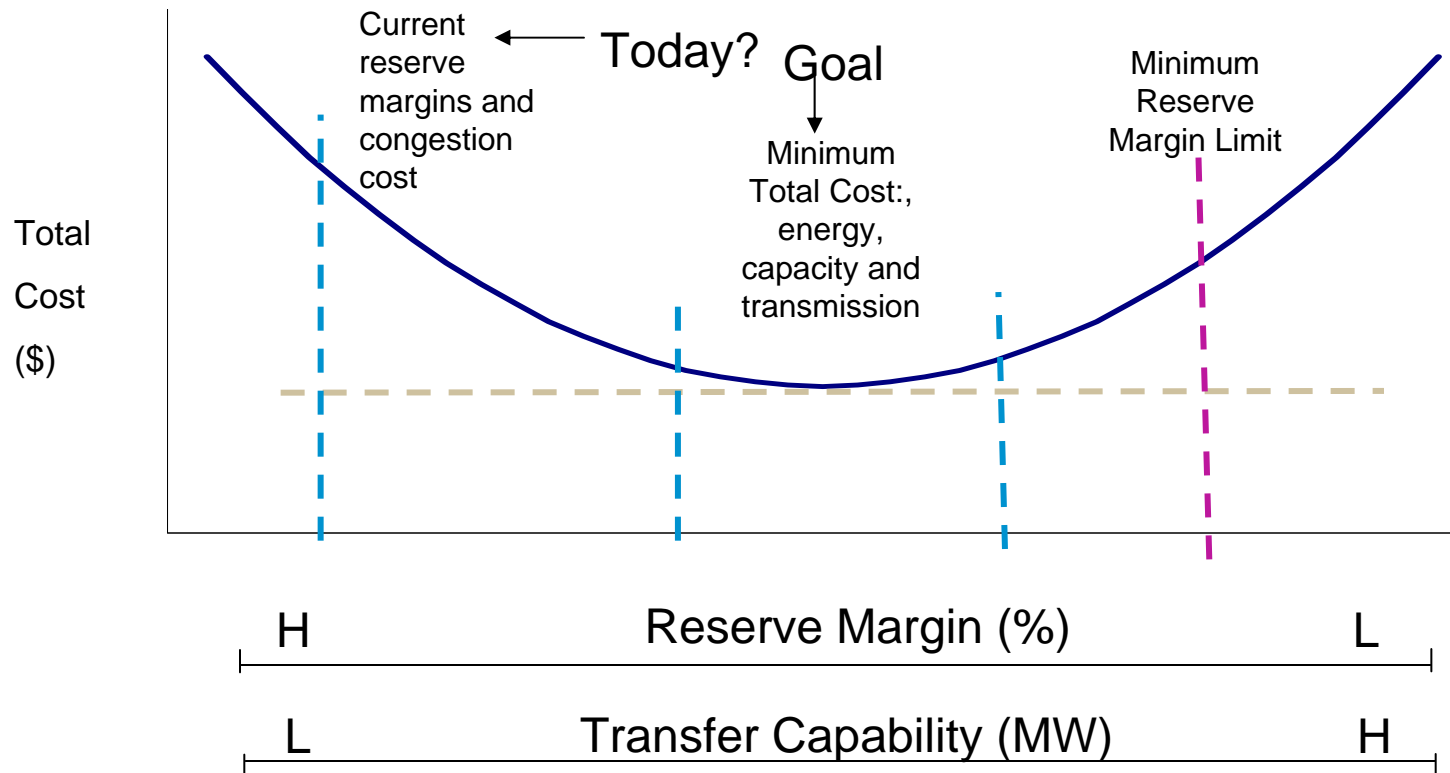
- Local planning and design vs. regional operation
- Congestion limits delivery of economic generation
- Expansion of state renewable portfolio standards
- Facilitate future generation portfolio evolution (e.g., intermittent resources, carbon restrictions, PEV's)

The transmission grid can enable energy policy and increase the value of delivery to end users

- Transmission planning must
 - Be both bottoms-up and top-down
 - Follow a consistent objective – Enable the lowest, reliably delivered cost of energy
 - Account for multiple possible policy futures; seek the path of “least regrets”
- Barriers to transmission construction must be addressed
 - Cost allocation and recovery
 - Incremental planning – no losers
 - Material availability and acquisition

Value based planning focuses on balancing the total system costs – transmission and generation

Increased transfer capability, in conjunction with appropriately located generation, could allow for reduced reserve margins, and thus reduced overall cost



The Midwest ISO's cost allocation proposal provides the incentives to encourage development while recovering costs appropriately

- ▶ 100% postage stamp of revenue requirements to load and exports (MWh) for Multi Value Projects
- ▶ Generation Interconnection Projects cost sharing methodology remains the same
 - ▶ 10% of 345kV and above facilities will be shared postage stamp to load
 - ▶ All other costs borne by the interconnecting developer
- ▶ Use inclusion criteria for qualifying projects
 - ▶ Multi Value Projects (MVP)
 - ▶ RECB I Baseline Reliability stays the same
 - ▶ RECB II criteria stays the same (for now)
- ▶ Filed proposal with FERC on July 15th

The benefits of a backbone transmission expansion on the scale contemplated far outweigh the cost

- ▶ Lower power costs to all consumers driven by:
 - ▶ Congestion relief,
 - ▶ Increased deliverability of wind, and
 - ▶ Expansion of storage
- ▶ Decreased planning reserve margins costs driven by:
 - ▶ Improved deliverability of generation
 - ▶ Improved deliverability of demand response resources
- ▶ Improved ability to economically meet Renewable Portfolio Standards (RPS)
- ▶ Increased economic development

Wholesale grid evolution is driven by reliability, efficiency and emerging energy policy

Reliability

- ▶ Transmission Automation
- ▶ Wide-Area Visualization

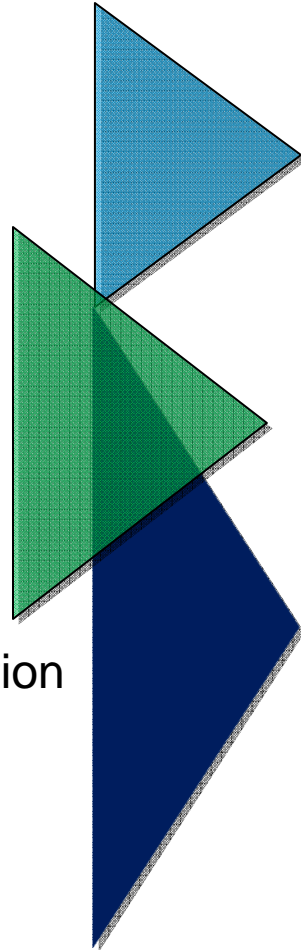
Congestion Management

Generation Optimization

- ▶ Energy
- ▶ Regulation
- ▶ Reserves

Generation Portfolio Evolution

- ▶ Renewables (Wind / Solar)
- ▶ Storage
- ▶ Demand Response



Initial operations focused on using technology to improve reliability

Wholesale markets used technology to improve congestion management and optimize the commitment and dispatch of existing generation

New applications will integrate retail load into the wholesale market's optimization of the generation portfolio to moderate peak growth and integrate renewable generation

Modernizing and greening the grid will require a comprehensive, value based portfolio planning approach.....

- Regionalize the transmission grid to access all resources and reliably provide the lowest delivered energy cost to end users
- Create planning scenarios for possible outcomes and focus first on common “least regrets” projects
- Balance the overall portfolio; resource portfolio, demand portfolio, transmission