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**Transmission: A Market  
Participant or a Neutral Essential  
Market Enabler ?**

# The state of the Transmission Grid

## There has been insufficient investment in the US grid

- Eric Hirst “US Transmission System: Present Status and Future Prospects” Aug 2004
- EEI – “Post Technical Conference Comments” January 2005
- National Grid “Transmission the Critical Link” compares US investments with European Countries

## The benefits of Transmission

- Improves Reliability
  - Connecting loads with non-coincident peaks
  - Connecting generation resources during contingency conditions
- Providing access to diverse fuel sources
- Eliminating load pockets

# In Search of SMD i.e. Successful Market Design

## **A Successful Market Design (SMD) would balance:**

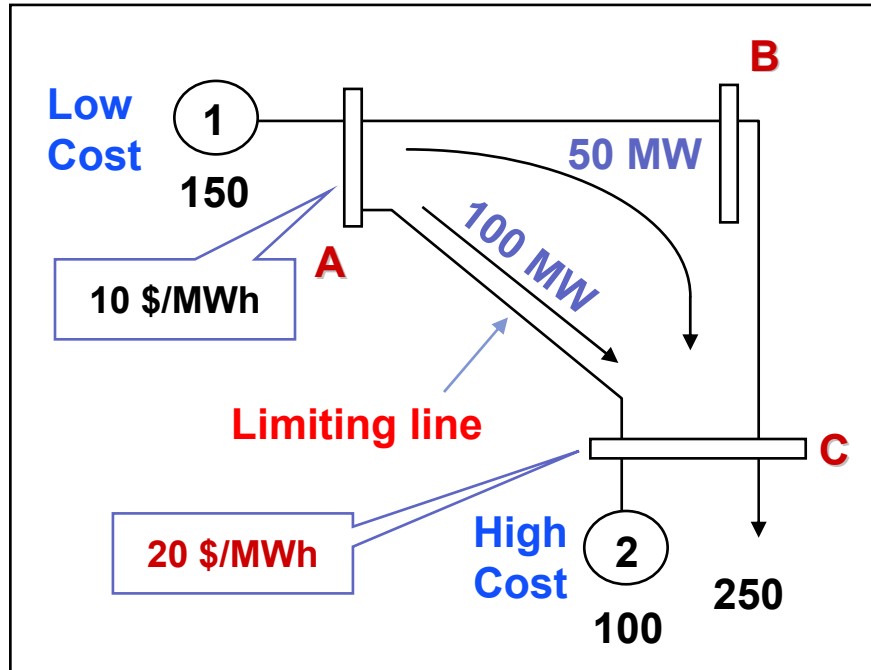
- Commercial Incentives
- Reliability Rules
- Network Interactions

\* Prof: W.H. Hogan “ Transmission Expansion and Electricity Restructuring” May 2005

## **In addition Successful Market Design (SMD) should be:**

- Transparent
- Non-discriminatory
- Not overly complex

## Three determinants of LMP

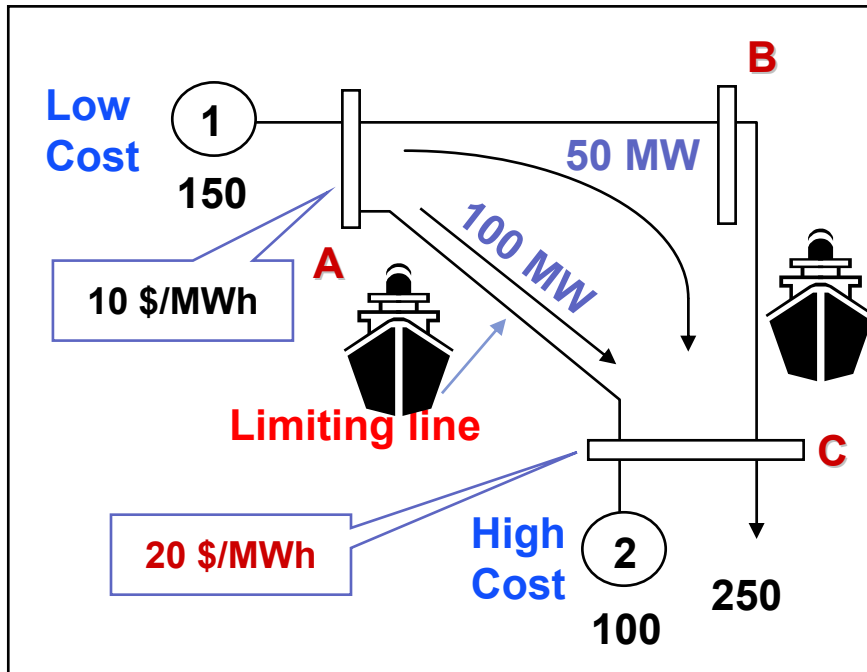


- Generation
- Load
- Transmission

## Implications

- Regional Planning should consider Generation/Load/DSM on a level playing field
- Regulating or Socializing one of the 3 leads one down a “slippery slope”
- A market approach to investments to all 3 needs to be developed under a Successful Market Design (SMD)

## The Ports Analogy



“Transmission is not a market product and no more competes with generation than do great seaports of the East Coast compete with the domestic factories that are alternative to suppliers of international goods”

National Grid – Transmission the Critical Link  
2005



The cost of transportation hubs is reflected in the price of goods sold in the importing market.

Liverpool does not pay for Port upgrades in Baltimore.

There is no Regional Planning to alleviate port congestion.

## Observations about transmission. (1)

- Short term TCCs are an excellent means of rationing existing transmission but do not provide a bankable mechanism for financing transmission projects.
- Long term TCCs would provide a bankable mechanism for investments in transmission projects.

## Observations about transmission.(2)

- Rate based transmission using a cost-of-service model provides does not allow a transmission company or ratepayers to capture the benefits of innovation in technology or management practices.

## Observations about transmission.(3)

- For transmission projects that are conceived to deliver economic power, there is no reason why merchant transmission developers cannot compete with the incumbent utility even if the projects are rate based.



## Observations about transmission. (4)

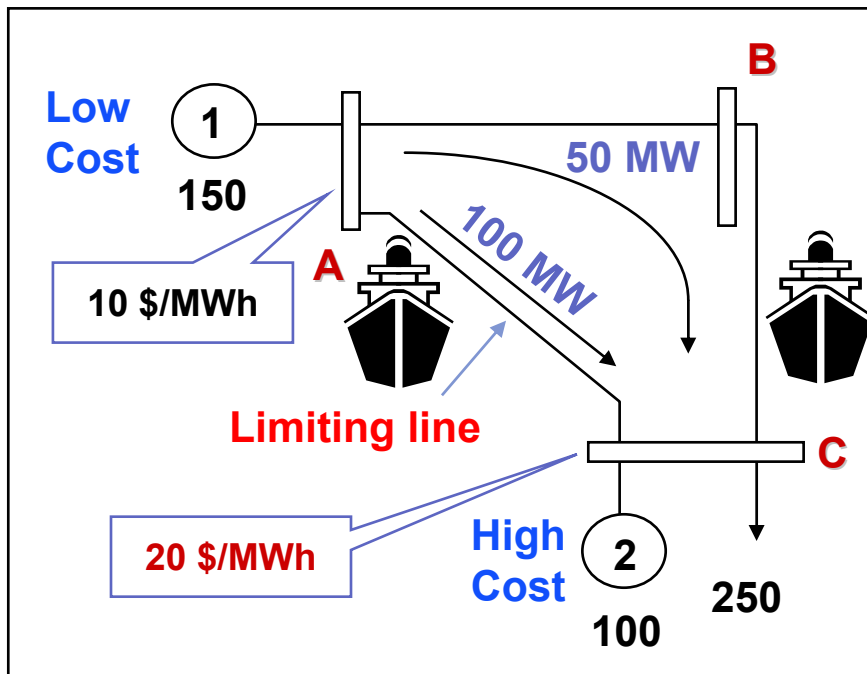
### Role of an RTO should be all about:

- Coordination
- Implementation of NERC reliability guidelines
- Developing queues for generation and transmission projects  
.....etc. (Activities involved in making sure the lights stay on.)

### RTOs should not get into:

- Central planning
- Ratemaking  
.....etc. (regulatory, ratemaking and project selection activities .)

## In search of a market mechanism for transmission investments



### Focus on the Load.

- Load Serving Entities (LSE) that benefit would pay for transmission projects.
- Long term TCCs could be obtained from the RTO by the project developer and sold to one or several LSEs. (The long term TCCs could work like a long term bond with coupon payments over duration of project. This would make the project bankable).
- Transmission projects may also have value in the capacity market.
- LSE would own the long term TCCs and would collect congestion rents over the duration of the long term TCCs (Also makes the LSE indifferent to the “free rider” syndrome.)