

A black and white historical photograph showing a group of about seven men sitting in a horse-drawn wagon. The wagon is pulled by a horse and is positioned on a dirt road. In the background, a tall wooden utility pole stands prominently, with several other similar poles receding into the distance. The scene is set in a rural, wooded area. The text of the slide is overlaid on the image.

# **MSC Opinion on Transmission Expansion Evaluation Methodology**

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# Five Principles of TEAM Methodology

1. Benefits framework
2. Network representation
3. Modeling market prices (including market power)
4. Uncertainty
5. Resource (demand/generation) substitution

**MSC opinion comments on:**

- implementation of the principles
- issues raised by stakeholders



# 1. Benefits Framework

## a. Quantifies benefits to market participants

- *By type*
- *By location*

## b. Appropriate economic criterion

- *Decided by relevant regulatory authority*
- *Depends on who is assumed to own facility*
  - if by consumers, ratepayer test
  - if all market participants, then cost savings
- *Will affect results (income shifts >> net cost savings)*



## 2. Network Representation

- a. Rebuttable presumption: full network modeling (“parallel flows”/Kirchhoff’s voltage law)
  
- b. Simpler representation (“zonal”/“transshipment”) permits more scenarios
  - *But should demonstrate that results are not distorted*



## 3. Market Prices

### a. Interactions

- *Transmission affects market power*
- *Market power affects transmission benefits*

### b. Market power difficult to predict

- *Econometric, game theory approaches*
  - No single approach is correct
- *Need to consider range of possibilities*



## 4. Uncertainty

### a. Focus on extreme conditions

- *Hydro, demand, fuel, entry*
- *View transmission as “insurance”*

### b. Examination of variety of views on extreme events

- *So method should easily accommodate different assumptions*



## 5. Resource Substitution

### a. Tradeoffs:

- *Transmission affects demand-side/supply resource mix & location*
- *Transmission can substitute*

### b. Should explicitly consider how market investments respond to transmission choices