NYISO Economic Planning Process

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NYISO Economic Planning Process Course
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The Roles of the NYISO

Reliable operation of the bulk electricity grid

- ***Managing the flow of power nearly 11,000 circuit-miles of transmission lines from more than 300 generating units***

Administration of open and competitive wholesale electricity markets

- ***Bringing together buyers and sellers of energy and related products and services***

Planning for New York's energy future

- ***Assessing needs over a 10-year horizon and evaluating the feasibility of projects proposed to meet those needs***

Advancing the technological infrastructure of the electric system

- ***Developing and deploying information technology and tools to make the grid smarter***

Agenda

- **Comprehensive System Planning Process (CSPP)**
- **NYISO Economic Planning Process**
  - ***Study Phase***
  - ***Project Phase***
- **Regulated Economic Transmission Voting Process**

Objectives

- **At the completion of the course the trainees will be able to:**

  1. ***Describe the NYISO Comprehensive System Planning Process (CSPP) including the:***

     - **Local Transmission Planning Process**
     - **Reliability Planning Process**
     - **Economic Planning Process**

Objectives--continued

2. ***Identify the purpose and steps of the Economic Planning Process Study Phase***
   - **Including the Congestion Assessment and Resource Integration Study**
3. ***Describe the following for the Economic Planning Process Project Phase:***
   - **Submittal of Economic Transmission Project Proposals**
   - **Cost recovery eligibility**
   - **Ten Year Cost/Benefit analysis**
   - **Beneficiary determination**
   - **Report review and approval**
   - **Regulatory Approval**

Objectives--continued

4. Describe the following for the Regulated Economic Transmission Voting Process:

- **Voting notifications and information disseminated**
- **Voting share determination**
- **Voting process**
- **Notifications of Voting results**
- **Requirements of beneficiary LSEs voting against project**

Comprehensive System Planning Process (CSPP)

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Local Transmission Planning Process

- ***Transmission Owner Plans***

Comprehensive System Planning Process (CSPP)

- **Reliability Planning Process**
  - ***Area Transmission Review (ATR)***
  - ***Reliability Needs Assessment (RNA)***
  - ***Comprehensive Reliability Plan (CRP)***

Comprehensive System Planning Process (CSPP)

- **Economic Planning Process**
  - ***Congestion Assessment and Resource Integration Study (CARIS)***
    - **Phase One---Study Phase**
    - **Phase Two---Project Phase**

Economic Planning Process

Congestion Assessment and Resource Integration Study (CARIS)

- **Function**
  - ***Provide estimates of future congestion on the NYS bulk transmission facilities for a ten year horizon***
  - ***Identify, through appropriate scenarios, factors that might mitigate or increase congestion***
  - ***Provide information on generic solutions to reduce congestion***

CARIS

- **Function**
  - ***Provide opportunities for developers to propose solutions that may reduce congestion***
  - ***Provide a process for the evaluation and approval of regulated economic transmission projects for regulated cost recovery***

CARIS

- **Frequency**
  - ***Two years***
  - ***10-year look ahead***

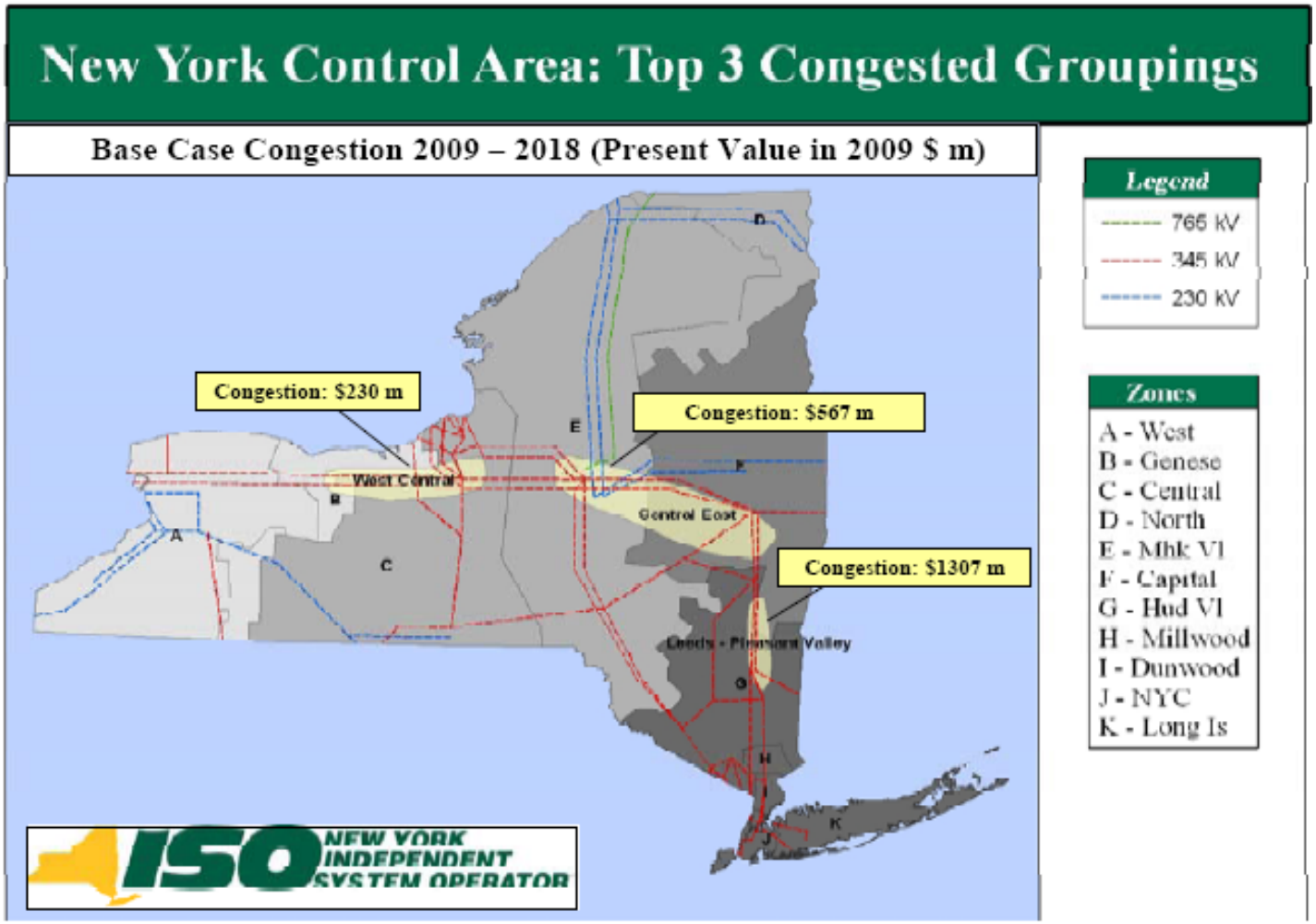
CARIS

- **Two Phases**
  - ***Study Phase***
  - ***Project Phase***

Phase One -- Study Phase

- **Perform Congestion Assessment**
  - ***Determine three congestion elements***
    - **With highest production cost savings resulting from relaxing of the congestion**
      - *Become subject of three CARIS studies*

Sample Congested Group Data



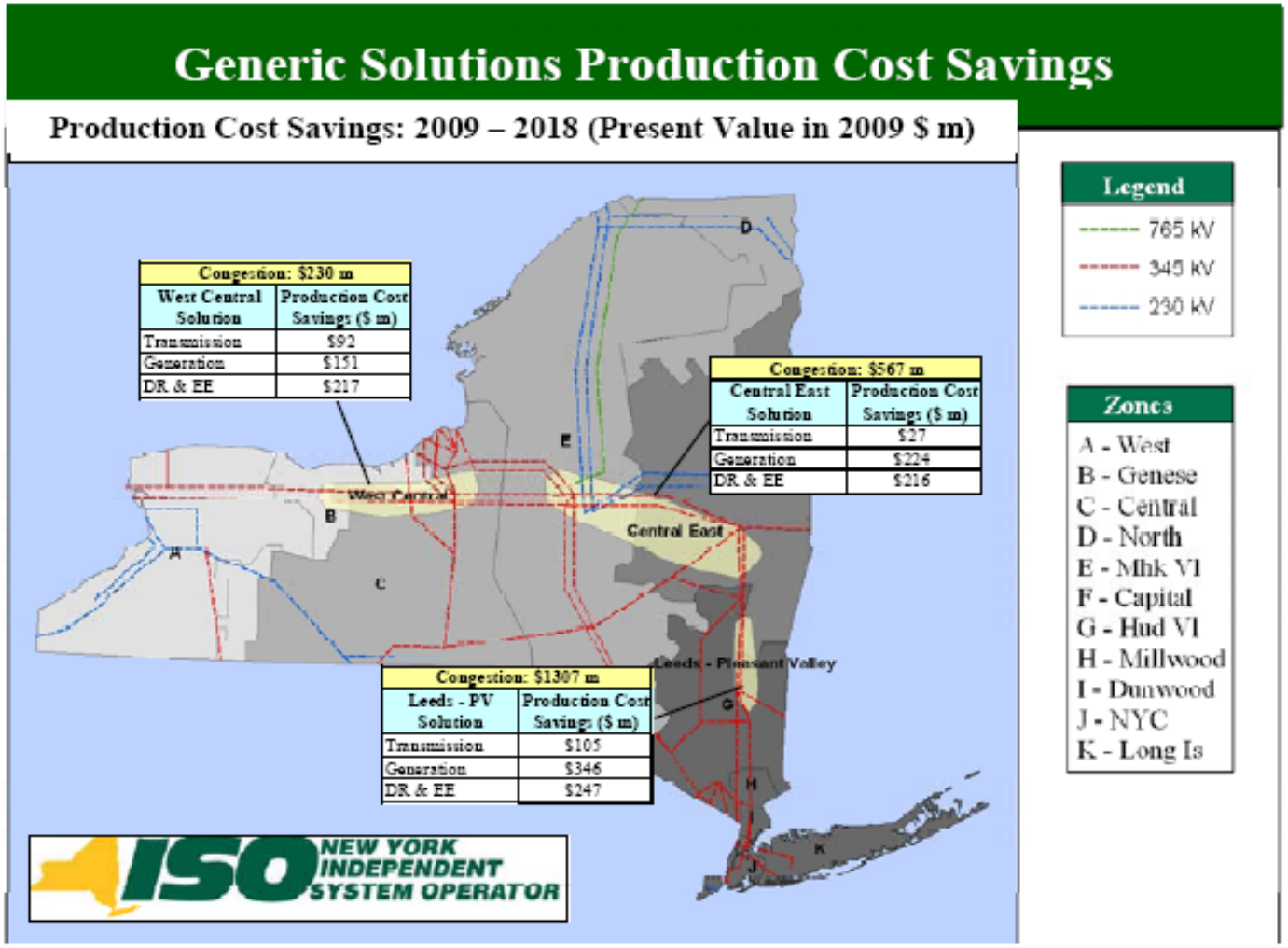
Phase One -- Study Phase

- **Perform benefit/cost analysis of generic solution**
  - ***Generation, Transmission, Demand Response***
    - **Placed in key locations to measure effect**
    - **Production Cost Savings from each over ten years**
    - **Changes in load costs, emissions costs, transmission congestion contract payments, generator payments, losses and ICAP costs**

Phase One -- Study Phase

- **Stakeholders may request additional CARIS studies**
  - ***At own expense***
    - **Form to request available on www.nyiso.com**

Sample Generic Solution Data



Phase One -- Study Phase

- **Reviews and Approvals**
  - ***Electric System Planning Working Group (ESPWG) and Transmission Planning Advisory Subcommittee (TPAS)***
    - **Review and makes recommendations**
  - ***Business Issues Committee***
    - **Reviews and Approves**
  - ***Management Committee***
    - **Reviews and Approves**
  - ***NYISO Independent Market Advisor Review***
  - ***NYISO Board***
    - **Reviews and Approves**
  - ***Report Issued***

Phase Two – Project Phase

- **Economic Transmission Project proposals submitted**
  - ***Developers of project > $ 25 Million that alleviates congestion***
  - ***May seek regulated cost recovery***
    - Submit project for NYISO analysis of cost and benefit

Phase Two – Project Phase

- **Eligible if**
  - ***Produce NYCA-wide production cost savings***
    - **Comparison of NYCA –wide production costs savings with total revenue requirements for the project >1**
    - **Benefit must exceed cost**

Project Eligibility for Cost Allocation

- **Benefit > Project Cost for the first ten years from proposed commercial operation for the project**
- **Benefit = 10-year Present Value**

  (NYCA 10 Year Production Cost w/o Project – NYCA 10 Year Production cost w/Project)

Cost Benefit Analysis

- **If Production Cost Saving > Project costs**
  - ***Determine beneficiaries***
  - ***Zones that will economically benefit from project***
  - ***Net LBMP savings adjusted for TCC revenues and applicable bilateral contracts***
  - ***Sum of Net LBMP load savings must exceed Project Cost***
    - **Measured in Present Value for ten years**
- **Requires ≥ 80% of Beneficiary LSEs to approve**

Example

- **Example Net LBMP Load Savings:**
  - ***Zone G: $ 8 million***
  - ***Zone H: $ 8 million***
  - ***Zone I: $ 16 million***
  - ***Zone J: $ 56 million***
  - ***Zone K: $ 17 million***
    - **Sum of positive net zonal benefits is $105 million**

Net LBMP Load Savings

- **Zonal Benefit = 10-year PV**

  (net zonal LBMP load cost w/o Project – net zonal LBMP load cost w/project)

  - ***Net of reduction in TCC revenues***
  - ***Net of applicable bilateral contracts***

Exercise

- **Determine if a project would be eligible for Cost Recovery**
  - ***The project is a 500 MVA transmission line addition to address congestion identified in a CARIS study***
  - ***Project costs: $ 87 million***
  - ***The present value of the annual NYCA-wide Production Cost for the first ten years without the project is $ 59,400 million***
  - ***The present value of the annual NYCA-wide Production Costs for the first ten years with the Project is $ 59,230 million***
  - ***Sum of Beneficiaries net zonal LBMP load costs, net reduction of TCC revenues, net applicable bilateral contracts w/o Project is $70,600 million***
  - ***Sum of Beneficiaries net zonal LBMP load costs, net of reduction in TCC revenues net of applicable bilateral contracts w/ project is $ 69,840 million***

Zonal Cost Allocation

Zonal Cost Allocation Ratio =

Net Zonal benefit/sum of positive Net Zonal Benefits

Fixed ratio for zonal cost allocation

- ***Used to inform beneficiary voting process***
- ***Used for recovery of FERC approved costs***

Exercise

- **Determine Zone H Cost Allocation Ratio using the following data:**
  - ***Zone G: $ 8 million***
  - ***Zone H: $ 8 million***
  - ***Zone I: $ 16 million***
  - ***Zone J: $ 56 million***
  - ***Zone K: $ 17 million***
    - **Sum of positive net zonal benefits is $105 million**

Reviews and Approvals

- **Electric System Planning Working Group (ESPWG)**
  - ***Review and makes recommendations for BIC discussion and action***
  - ***Following ESPWG review, project Cost/Benefit analysis, Project Conceptual Package and Beneficiary Determination, including beneficiary list, voting shares will be sent to each beneficiary. Beneficiary voting shares are treated as confidential information.***
- **Business Issues Committee (BIC)**
  - ***Reviews C/B analysis***
  - ***Reviews beneficiary list***
- **Management Committee (MC)**
  - ***Reviews C/B analysis***
  - ***Reviews beneficiary list***
- **NYISO Board of Directors**
  - ***LSEs may submit comments directly to Board***
  - ***Reviews and sets for vote***

Phase Two Approval

- **Regulated Economic Transmission Voting Process**
- **FERC approval of project costs in order to be eligible for cost recovery**
- **NYS Public Service Commission may approve Siting and Permitting**

Regulated Economic Transmission Voting Process

Voting Process

- **Beneficiary LSEs Only**
- **Prior to vote, NYISO provides the following to beneficiary LSEs**
  - ***An information session***
  - ***Project benefit/cost analysis***
  - ***Project conceptual package***
  - ***List of voting beneficiary LSEs***

Voting Process (continued)

Prior to vote, NYISO provides the following to beneficiary LSEs (continued)

- ***LSEs own weighted vote share***
- ***Voting materials sent by email as applicable to:***
  - **LSE Customer Relations**
  - **LSE Billing Contacts**
  - **LSE Management Committee representative (if applicable)**
- ***Notice of vote***
  - **Time, date, location, telephone dial in information**
  - **No vote will be scheduled within 5 business days of distribution of materials**

LSE Roles & Responsibilities

- **Attend NYISO Informational Meetings**
  - ***Additional ESPWG meeting for LSEs***
  - ***Informational public forum***
- **Submit to the NYISO your Bilateral Contract Data**
  - ***For modeling contracts that are not indexed to LBMP or partially indexed to LBMP***
  - ***For LSE-owned Generation supplying LSE load in each zone***
  - ***For time period covered by the contract within 10 year period beginning with commercial operation date of the project***
- **Submit Voting Entity Designation to the NYISO**
  - ***A written statement is required***

Voting Share Determination

Weighted in accordance with the LSE share of the total project benefit

Weighted zonal voting share of each LSE =

$$\frac{\text{Zonal Benefits}}{\text{Total Benefits}} \times \frac{\text{LSE Zonal MWh}}{\text{Total Zonal MWh}}$$

Calculated to seven decimal places with rounding

Voting Share Determination

- **If benefits are in more than one zone**
  - ***Calculate each zone of benefit***
  - ***Total share of LSE will be sum of calculations***
- **Megawatt-hour (MWh) data**
  - ***Uses the most recent rolling 12-month settlement data***
  - ***Each LSE load share = LSE MWh/Total Load MWh***

Exercise

Determine the weighted Zonal voting share for LSE A using the following data:

Zone H Net Benefits:	**$ 8 M**
Total Zonal Net Benefits:	**$ 105 M**
LSE A 12 month load in Zone H:	**300 GWh**
Total Zone H 12 month Load:	**3,000 GWh**

Exercise

Voting Process

- **Benefiting LSE casts its weighted vote**
- **LSE may give proxy to its Billing organization**
- **Must supply written authorization to NYISO**
- **Special voting meeting conducted**
  - *Chaired by BIC Chairperson*
  - *If multiple projects*
    - **Vote conducted in descending order of cost/benefit ratio**
  - *Vote taken by roll call in selected alphabetical order*
  - *May vote in person or by telephone*
  - *NYISO records vote*
    - **Results announced directly after vote**

Voting Results

- **Voting results reported immediately at voting meeting and on www.nyiso.com**
- **80% required for approval of project**
- **Results determined by calculating the ratio**

$$\frac{\text{Sum of total voting shares cast in favor}}{\text{Sum of all total voting shares cast}}$$

If ratio < 80%---Project rejected

If ratio ≥ 80%---Project accepted

Voting Against Project

Beneficiary LSEs voting against project are required to:

- ***Provide detailed explanation within 30 days of the vote with their reasons such as:***
  - Additional benefit metrics used
  - Quantification of metric or factors
  - Quantification and explanation of net benefit or net costs of project beneficiary
  - Data supporting metrics and other reasons
- ***NYISO forwards the reasons to FERC within 60 days of vote***

Exercise

- **Determine month of May charge for LSE A in Zone H for cost recovery of project:**
  - ***Project Monthly required revenue: $ 1.2 million***
  - ***Zone H Net Load Savings: $ 8 million***
  - ***Sum of positive Net zonal load savings: $ 105 million***
  - ***LSE A May: 25 GWh/month***
  - ***Zone H May Total Zonal: 250 GWh/month***

Monthly LSE Cost Allocation

(Monthly Project Revenue Required) X

$$\left[\frac{\text{Zonal Benefits}}{\text{Total Benefits}}\right] \text{ X } \left[\frac{\text{LSE Zonal MWh}}{\text{Total Zonal MWh}}\right]$$

$ 1.2 M X ($ 8M/$ 105 M) X (25 GWh/250 GWh) =

$ 9,142.80

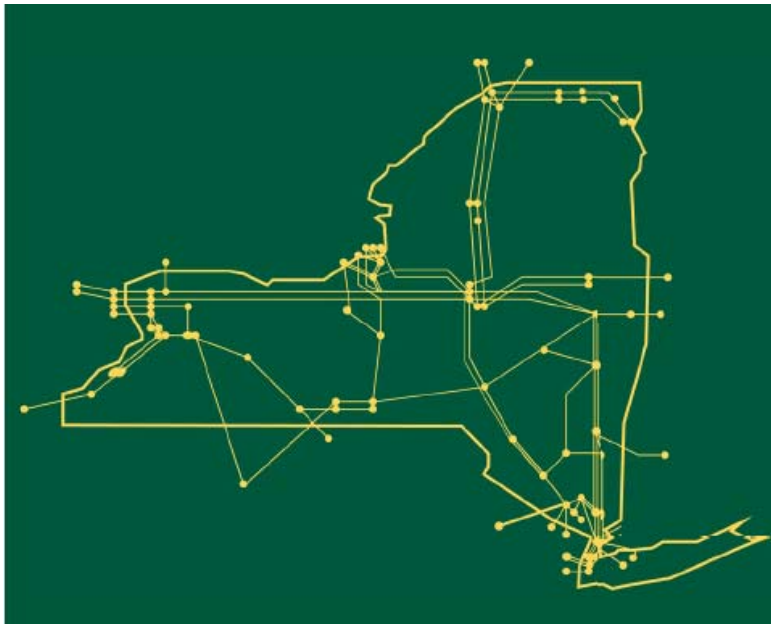
Summary

- **NYISO Comprehensive System Planning Process**
- **Economic Planning Process Study Phase**
- **Economic Planning Process Project Phase**
- **Regulated Economic Transmission Voting Process**

References

- **Attachment Y NYISO OATT Tariff**
- **Initial Manual Congestion Assessment And Resource Integration Study**
- **2009 Congestion Assessment and Resource Integration Study—Phase One**

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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