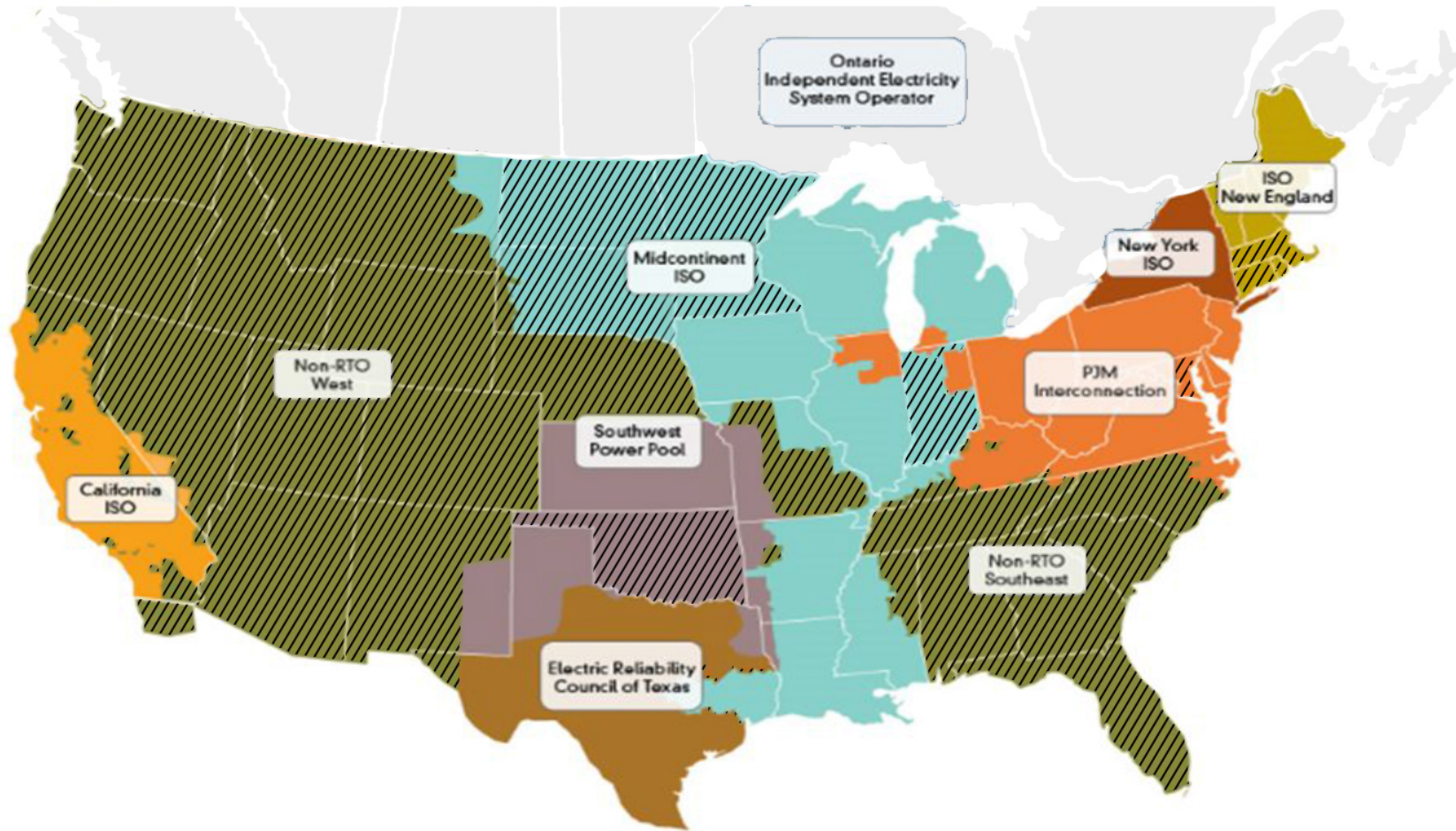


Competition in Electric Transmission Order 1000 Implementation Challenges

Harvard Electricity Policy Group

Nina Plaushin
Vice President Regulatory and Federal Affairs
ITC Holdings Corp.

States and regions Choosing to Limit Competition



ROFR Laws

IN*
MD
MN
ND
NE
OK
SD

RTO Challenges

Nick Brown, CEO of SPP, on competitive bidding: “It created more overhead and more uncertainty at a time when we didn’t need more overhead in order to invest in transmission.”

“I am thankful that we completed the vast majority of our transmission buildout in a pre-Order 1000 environment.”

Andy Ott, CEO of PJM, on competitive bidding: [It] was almost like a solution in search of a problem. ... It’s actually creating more challenges to investment.”

Andy Ott on enforcing cost caps on competitive projects: “We’re not set up or staffed to handle [it]. We’re not a regulator.”

Pre Order 1000 Cost Containment

RTO/ISO	Cost Containment
CAISO	<ul style="list-style-type: none">• Voluntary cost containment measure
MISO	<ul style="list-style-type: none">• Reevaluation of regionally cost shared project that exceed cost escalation bandwidth
NE-ISO	<ul style="list-style-type: none">• Cost review process for projects that exceed \$5M
NYISO	<ul style="list-style-type: none">• 80/20 Cost Sharing
PJM	<ul style="list-style-type: none">• Reevaluation of all projects for continued need• Reevaluation of economic projects to ensure they exceed 1.25 B/C ratio
SPP	<ul style="list-style-type: none">• Explain cost variances that exceed cost escalation bandwidth• Reevaluation of projects for continued need in successive cycles

Information Source: Brattle 2011, "Summary of Transmission Cost Control Mechanisms in Selected US Power Markets."

Cost Estimates in Project Development

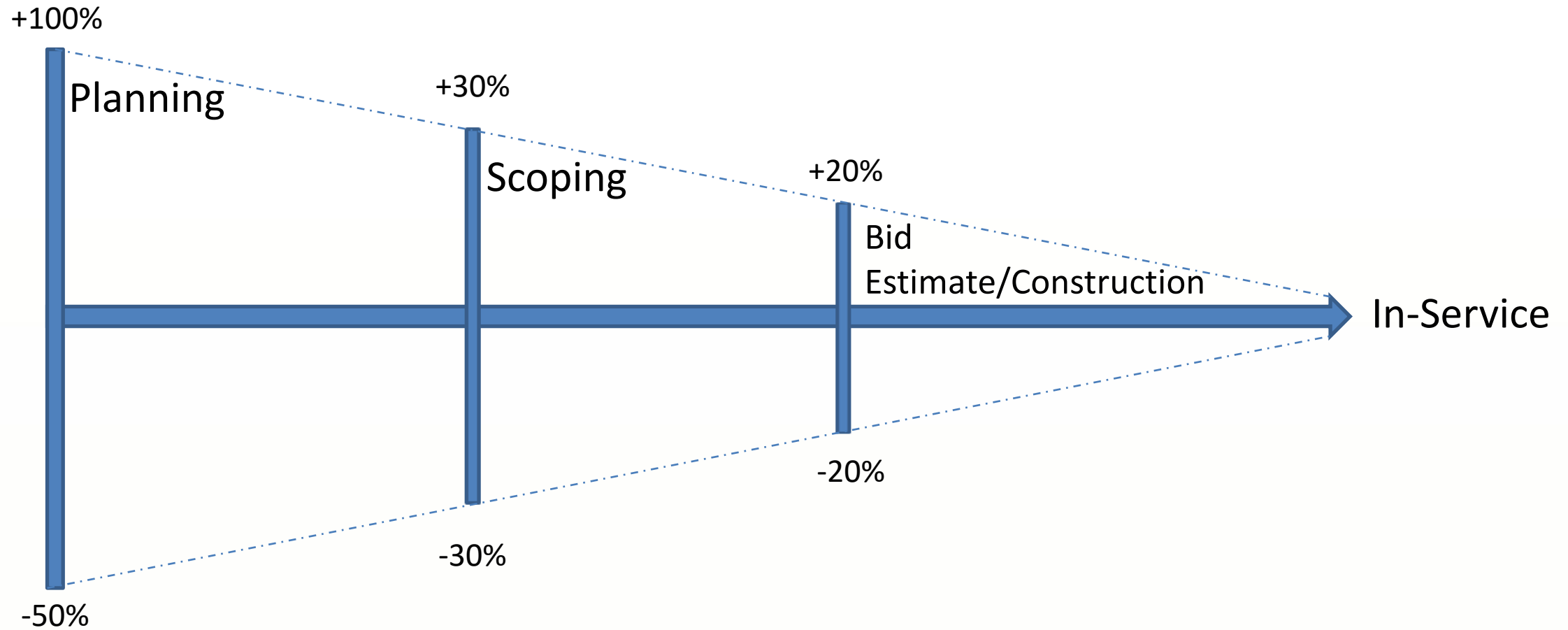
Cost Estimate Types and Uncertainty Bands in ISO-NE Planning Procedures

Project Stage	Level of Project Definition	Estimate Type	Regional Review	RSP Listing Target Accuracy
Project Initiation	0% to 15%	Order of Magnitude	Need Approval (RSP Listing)	-50% to +200%
Proposed Project	15% to 40%	Conceptual Estimate	RC Review / Retain Proposed Solution	-25% to +50%
Planning Project	40% to 70%	Planning Estimate	PPA Approval	-25% to +25%
Final Project Design	70% to 90%	Engineering Estimate	RC Review / TCA Approval	-10% to +10%
Under Construction	80% to 100%	Construction Estimate		-10% to +10%

Sources and Notes:

Selected data from ISO New England, *Table 1: Cost Estimate types per project phase (From AACE definition & customized for Transmission Project)*, Attachment D of “Planning Procedure No. 4: Procedure For Pool-Supported PTF Cost Review.”

Cost Estimate Certainty Increases Over Time



SPP's Cost Estimate Bandwidth

Competition – Past Experience

Case in Point: Competitive Renewable Energy Zones (“CREZ”)

– from 2011 progress report prepared for PUCT

- Transmission infrastructure plan designed to interconnect wind generation in ERCOT
- Scope: 2,400 miles of transmission to accommodate 18,500 MW of installed wind capacity
- Cost originally estimated at \$4.9B, but actual costs totaled \$6.8B

Factors contributing to cost variances:

- Original estimates based on planning-level information, before detailed engineering and design
- Actual project lengths and rights of way varied from illustrative locations in original study (routing)
- Original costs estimated in 2008 (study year) dollars; not escalated to in-service year dollars
- No contingency allowances applied to cover unknown variables and risks
- Original estimates did not include financing costs, such as interest rates on funds borrowed
- Original scope did not include all necessary elements, such as reactive power compensation

Risk Factors Impacting All Projects

Project Cost Drivers

Ratings / Capabilities
Geography / Terrain
Line Length & Routing
Project Schedule
Commodity / Labor Prices
Exchange Rates
Environmental Constraints
Regulatory Requirements
Legal Real Estate Acquisition Costs

Selected to Construct

Knowns	Unknowns
Ratings of Transmission Lines & Station Equipment	ROW Costs
Needed In-Service Date	Legal Costs
Regional Geography	Regulatory Issues
Rough Line Length	Environmental
Rough Station Locations	Issues / Constraints
	Specific Geography & Geotechnical Data
	Clearance Constraints
	Commodity (Material) Prices
	Line Length & Routing
	Construction Labor Cost

Later in Process

Unknowns After Regulator Approval	Unknowns At Start Of Construction
Legal Costs	Legal Costs (Restoration, Land-use)
ROW Costs	Operational Concerns (Outages)
Structure Locations	Environmental Impacts
Specific Geography & Geotechnical Data	Weather Impacts on Construction
Clearance Constraints	Construction Change Orders
Commodity (Material) Prices	Material Delivery Issues
Route-Specific Environmental Issues/Constraints	Unknown unknowns
Construction Labor Costs	
Final Engineering Design	

Regional Requirements - ROE

Bid Information Requirements by RTO / ISO Region

Region	Order 1000 Bid Information Requirements
ISO-NE	Submission of revenue requirement information is NOT required .
NYISO	<ul style="list-style-type: none"> Submission of revenue requirement information is NOT required. NYISO currently does not consider cost caps submitted in bids. A straw proposal is under discussion that (if approved) would allow NYISO to consider caps on some project costs.
PJM	<ul style="list-style-type: none"> Submission of revenue requirement information is NOT required. Revenue requirement information, including cost caps, will be considered if submitted. Compelled by a recently-endorsed member proposal, PJM is developing a comparative framework for evaluating project cost, ROE and capital structure caps.
MISO	Submission of revenue requirement information is mandatory .
SPP	Submission of revenue requirement information is mandatory .
CAISO	<ul style="list-style-type: none"> Submission of revenue requirement information is NOT required. Revenue requirement information, including cost caps, will be considered if submitted. Any FERC filing impacting the rate for a transmission facility that is the subject of a competitive solicitation must be provided to the CAISO.