Special PC – Cost Containment / Comparative Cost Framework Workshop

August 29, 2019
Special PC – Cost Containment / Comparative Cost Framework
Mark Sims, Manager, Infrastructure Coordination
Current PJM FERC Order 1000 Implementation and Cost Containment
Current Competitive Planning Evaluation Process

- PJM Competitive Planning process in place since the 2014 timeframe
- ~ 15 windows
- ~ 850 proposals
- ~ 150 had proposed cost containment provisions

https://pjm.com/planning/competitive-planning-process.aspx
• Approximately 150 competitive proposals have had a cost containment component as part of the proposal.

• Current process

• Stakeholders at the PJM Markets and Reliability Committee in May 2018 initiated a cost containment effort
PJM Planning Committee Presentations
Comparative Cost Framework

- Comparative Cost Framework development
- PJM & IMM
- Input from Financial Consultant
- Planning Committee Input and Updates
Cost Containment - Progress to Date
Presentations to PJM PC

- May 2018
  - MRC motions initiating the cost containment effort approved (and Aug 2018 motion to delay schedule)
- 2Q and 3Q 2019
  - Timeline and overall conceptual approach updates
- January 2019
  - Overview of major components and overall approach
- February 2019
  - Additional detail of overall approach
- March 2019
  - Additional detail and example data visualization
- April 2019
  - Examples of what output to expect from the cost containment process

- May 2019
  - High level example and discussion of process implementation
- June 2019
  - High level summary of process and next step
- July and August 2019
  - Schedule and next steps

- Today - August 29, 2019 – Special PC – Cost Containment Workshop
PJM Discussions With Monitoring Analytics (Market Monitor)
PJM Staff & IMM Meetings

• 2018
  – June
  – July
  – September
  – November
    • Joint PJM / IMM / Independent Cost Consultant conference

• 2019
  – January
  – February
  – June
  – July
  – August
  – August 29, 2019
    • Today
    • PC Special Session – Cost Containment
Comparative Cost Framework Example
Comparative Cost Framework - Example

• Example:
  - PJM Competitive Proposal Window Opens and Closes
  - 20 Proposals Received along with project proposal templates and associated data packages
  - Reliability or Market Efficiency
• PJM Competitive Proposal Window Opens and Closes

• 20 Proposals Received
• PJM review of project submissions

• In this example, one project didn’t solve the violation
• Logical clusters identified by PJM

• Clusters of projects typically target similar problem areas
• Projects A, B and C to be evaluated as a project cluster

• Analysis of other clusters and other projects to proceed in parallel
• Initiate constructability analysis for the example project cluster

• Continue work on other clusters in parallel
## Comparative Cost Framework: Review Proposed Cost Containment Elections

<table>
<thead>
<tr>
<th>Proposed Cost</th>
<th>Proposal - A</th>
<th>Proposal - B</th>
<th>Proposal - C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Containment</td>
<td>$</td>
<td>$$$</td>
<td>$</td>
</tr>
<tr>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
## Example Comparative Cost Framework
### Cost Containment Summary

<table>
<thead>
<tr>
<th>Cost Containment Component</th>
<th>Proposal - A</th>
<th>Proposal - B</th>
<th>Proposal - C</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Capital Structure (Debt to Equity)</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Capital Cost</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>O&amp;M Expense</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Forego AFUDC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forego CWIP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt Cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schedule Guarantee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abandonment Cost</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Example Comparative Cost Framework
Comparison of Proposals – Scenarios

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Proposal - A</th>
<th>Proposal - B</th>
<th>Proposal - C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Base Case Assumptions</td>
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<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Scenario 1</td>
<td>$</td>
<td>$</td>
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<tr>
<td>Scenario 2</td>
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<td>Scenario 3</td>
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<tr>
<td>Scenario 4</td>
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<tr>
<td>Scenario 5</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Scenario 6</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>
## Financial Base Case Assumptions

<table>
<thead>
<tr>
<th>Cost Component</th>
<th></th>
<th>Cost Component</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>%</td>
<td>Federal Tax Rate</td>
<td>%</td>
</tr>
<tr>
<td>Capital Structure (Equity%)</td>
<td>%</td>
<td>State Tax Rate</td>
<td>%</td>
</tr>
<tr>
<td>Debt Cost</td>
<td>%</td>
<td>Property Tax Rate</td>
<td>%</td>
</tr>
<tr>
<td>O&amp;M Costs</td>
<td>$</td>
<td>AFUDC</td>
<td>Yes/No</td>
</tr>
<tr>
<td>A&amp;G</td>
<td>$</td>
<td>CWIP</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Ongoing CapEx</td>
<td>$</td>
<td>Schedule Guarantee</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Service Life</td>
<td># of Years</td>
<td></td>
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</tr>
</tbody>
</table>
Example Comparative Cost Framework
Comparison of Proposals – Scenarios Analysis

Change from Base Case

<table>
<thead>
<tr>
<th>Change from Base Case</th>
<th>HIGH</th>
<th>MODERATE</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposals:</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
</tbody>
</table>

Max Difference

Gauge Scenario Performance

Scenarios
- Base
- 1
- 2
- 3
- 4
- 5
- 6
- All

Compare Performance Across Proposals

0%
## Example Comparative Cost Framework

### Summary

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Proposal - A</th>
<th>Proposal - B</th>
<th>Proposal - C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Sponsor</td>
<td>$</td>
<td>$$</td>
<td>$</td>
</tr>
<tr>
<td>Proposed Cost Estimate</td>
<td>$</td>
<td>$$</td>
<td>$</td>
</tr>
<tr>
<td>Independent Consultant</td>
<td>$</td>
<td>$$</td>
<td>$</td>
</tr>
<tr>
<td>Cost Estimate</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>PJM Cost Estimate with Cost Containment</td>
<td>$</td>
<td>$$</td>
<td>$</td>
</tr>
</tbody>
</table>
• Comparative Cost Framework

• Overall decisional process

• Next steps
Manual 14F Language for Comparative Cost Framework Walkthrough
• Entirely new section
• Proposed Structure
• 8.4 Comparative Cost Framework
  – Applicability
  – Assessment of Project Proposals With Cost Containment Provisions
  – Assessment of Project Proposals Without Cost Containment Provisions
  – Financial Analysis Used In the Comparative Cost Framework
  – Review Cost Containment Election
8.4 Comparative Cost Framework

- Applicability
- Assessment of Project Proposals With Cost Containment Provisions
- Assessment of Project Proposals Without Cost Containment Provisions
- Financial Analysis Used In the Comparative Cost Framework
- Review Cost Containment Election
• Process applies to anything that went through a window
  – For window eligibility, see Operating Agreement Schedule 6 – Section 1.5.8
  – Examples: reliability, market efficiency, long-term or nearer term
• Determine Applicability
  – Identify deficiencies
  – Engagement of process
• Projects WITH cost containment provisions
  – PJM assessment
    • Review project specific risks, scope of project, reasonableness of construction cost, risk of cost increasing beyond cap, risk of cost exceeding defined limit, risk of sponsor inability to complete
  – Review inclusion/exclusion of defined cost elements
Assessment of Project Proposals Without Cost Containment Provisions

- Projects WITHOUT cost containment provisions
  - PJM will assess: project specific risks, scope of the project and reasonableness of the construction costs.

• PJM identifies projects addressing the same violation(s) or constraint(s) – a.k.a. “competing projects”
• PJM applies financial analysis using defined inputs

Manual 14F – Section 8.4.1 - 8.4.5 Financial Analysis Used In the Comparative Cost Framework

Applicability
Assessment of Project Proposals With Cost Containment Provisions
Assessment of Project Proposals Without Cost Containment Provisions

Financial Analysis Used In the Comparative Cost Framework
Review Cost Containment Election
Financial Analysis Used In the Comparative Cost Framework

Key inputs to the financial analysis include but are not limited to:

- Feedback from the detailed feasibility review
- Data and information from the project proposals submitted to PJM
- Financial input assumptions

Manual 14F – Section 8.4.1 - 8.4.5 Financial Analysis Used In the Comparative Cost Framework
Financial Analysis Used In the Comparative Cost Framework

• Key inputs to the financial analysis include but are not limited to:
  – Develop and perform scenario analysis
  – Project cost comparison

• Independent Market Monitor

Manual 14F – Section 8.4.1 - 8.4.5 Financial Analysis Used In the Comparative Cost Framework
Review Cost Containment Election

• PJM will evaluate

  – Any exceptions, exclusions or limitations to the proposed cost containment.

Manual 14F – Section 8.4.1 – Review Cost Containment Election

Applicability

Assessment of Project Proposals With Cost Containment Provisions

Assessment of Project Proposals Without Cost Containment Provisions

Financial Analysis Used In the Comparative Cost Framework

Cost Containment Language Review
Next Steps
Next Steps

• September PC
  – First read of M14F

• September MRC
  – First read of M14F

• October PC
  – Second read and request for endorsement of M14F

• October MRC
  – Second read and request for endorsement of M14F
Revision History

- 8/26/2019 – Original version posted to PJM.com
- 8/28/2019
  - Updated text on slide 13
  - Added slide 16
  - Fixed typographical error on slide 18
  - Removed a row from the table on slide 19