



RPPTF Teleconference Meeting

Toll-free call-in number 1 (866) 398-2885

Session password: rpp0227pjm

February 27, 2013

9:30 am, Eastern Standard Time

- **Market Efficiency**
 - Tim Horger (40 min)
- **Order 1000 Interregional Update**
 - Paul McGlynn, Chuck Liebold (15 min)
- **Multi-Driver Dialog**
 - Steve Herling (45 min)
- **Multi-Driver Process Review**
 - Q&A period (15 min)



RPPTF – *Market Efficiency*

Previous polls and discussions have shown support for three packages.

- Package 4 showed most support and, as polled, would pass both the majority and sector weighted.
- Package 8 and 10 also showed some support but, as polled, neither would pass both majority and sector weighted.

Design Element		Package 4	Package 8 - Benefit determination using only Load Payments(Lower Voltage use only zones with decreased in net load/capacity payments)	Package 10 Matches cost allocation if assume Load Ratio Share socialization comparable to Production Costs socialization
1	Benefit Determination: Regional Project	Total Benefit= Energy + Capacity Benefit		
		Energy Benefit: 50% change in production costs + 50% change in net load payments all zones	Energy Benefit: 100% change in net load payments all zones	Energy Benefit: 50% change in production costs + 50% change in net load payments (only zones with decrease in net load payments)
		Capacity Benefit: 50% change in capacity costs + 50% change in net capacity payments all zones	Capacity Benefit: 100% change in net capacity payments all zones	Capacity Benefit: 50% change in capacity costs + 50% change in net capacity payments (only zones with decrease in net capacity payments)
		Total Benefit= Energy + Capacity Benefit		
2	Benefit Determination: Lower Voltage Project	Total Benefit= Energy + Capacity Benefit		
		Energy Benefit: 50% change in production costs + 50% change in net load payments(only zones with decrease in	Energy Benefit: 100% change in net load payments (only zones with decrease in net load payments)	
		Capacity Benefit: 50% change in capacity costs + 50% change in net capacity payments (only zones with decrease in net capacity payments)	Capacity Benefit: 100% change in net capacity payments (only zones with decrease in net capacity payments)	
		Total Benefit= Energy + Capacity Benefit		

Regional Projects

- New Poll to determine support for inclusion of all zones or only zones with decrease in net load payments.

Lower Voltage Projects

- New Poll to determine if production costs should be included.

Regional project questions

- Under the assumption of either maintaining Status Quo or making a change, can you support the inclusion of all zones? Yes/no?
- Under the assumption of either maintaining Status Quo or making a change, can you support the inclusion of only zones with a decrease in net load payments? Yes/no?

Lower voltage project questions

- Under the assumption of either maintaining Status Quo or making a change, can you support Energy Benefit as 50% Production costs + 50% Change in net load payments (only zones with a decrease in load payments)? Yes/no?
- Under the assumption of either maintaining Status Quo or making a change, can you support Energy Benefit as 100% Change in net load payments (only zones with a decrease in load payments)? Yes/no?

New Poll Results			
Project Type	Poll Question	%Yes	Sector Weighted Results
High Voltage	Under the assumption of either maintaining Status Quo or making a change, can you support the inclusion of all zones?	76.2%	4.66
	Under the assumption of either maintaining Status Quo or making a change, can you support the inclusion of only zones with a decrease in net load payments?	67.0%	2.64
Low Voltage	Under the assumption of either maintaining Status Quo or making a change, can you support Energy Benefit as 100% Change in net load payments (only zones with a decrease in load payments)?	69.3%	2.79
	Under the assumption of either maintaining Status Quo or making a change, can you support Energy Benefit as 50% Production costs + 50% Change in net load payments (only zones with a decrease in load payments)?	62.4%	4.57

Total Respondents= 101

Total Voting Member Respondents= 39



Benefit Determination Final Recommendation

Package 4 will be recommended to MRC

- Most support from members and affiliates.
- All components of package show majority support from all respondents and overwhelming support from voting members.

Package 4 Description

- Regional Energy Benefit: 50% change in production costs + 50% change in net load payments all zones.
- Regional Capacity Benefit: 50% change in capacity costs + 50% change in net capacity payments all zones.
- Lower Voltage Energy Benefit: 50% change in production costs + 50% change in net load payments for zones with decrease in net load payments.
- Lower Voltage Capacity Benefit: 50% change in capacity costs + 50% change in net capacity payment for zones with decrease in net capacity payments.

Previous polls and discussions have shown support for:

- Inclusion of transmission upgrades for congestion that arises from scaling assumptions - Design Element D.
- Include ISAs and scale existing units based on location and technology to meet reserve requirements - Status Quo/Design Element A.
- Combination of Design Elements A+D had 76% support from all respondents and 4.19 Sector weighted results.

	A: Status Quo	B	C	D	E	F	G
Generation Expansion	Include all ISA. Scale existing units based on location and technology to meet Reserve Requirement	Include all ISA and FSA. Scale existing units based on location and technology to meet Reserve Requirement	Include all ISA and FSA. Add units on HV system based on location and technology to meet Reserve Requirement.	Include actual transmission upgrades for congestion that arises from scaling assumptions.	Place holder. Add Demand Response (Need proposal from Atlantic Ewind)	Include all ISA, FSA and units with Impact Study Agreements to meet Reserve Requirement. Include known network upgrades that are associated with all of these units. If necessary, scale existing units based on location and technology of remaining queued requests to meet Reserve Requirement. (Note: It is not anticipated that this option would require scaling because of the quantity of Impact Study agreements.)	Include all ISA. Add units on HV system based on location and technology to meet Reserve Requirement.

PJM recommends inclusion of FSA units in future generation determination

- Design Element B
- Transmission topology used already includes transmission upgrades associated with FSA units
- Consistent with Reliability analysis
- Slight reduction in scaling (Could move years necessary to scale further out)

Design Elements B+D will be recommended to MRC

- High support from both members and affiliates.
- Includes ISA and FSA units in scaling (Design Element B) as recommended by PJM.



Final Market Efficiency Recommendations for MRC

Benefit Determination (Package 4)

- Regional Energy Benefit: 50% change in production costs + 50% change in net load payments all zones
- Regional Capacity Benefit: 50% change in capacity costs + 50% change in net capacity payments all zones
- Lower Voltage Energy Benefit: 50% change in production costs + 50% change in net load payments for zones with decrease in net load payments
- Lower Voltage Capacity Benefit: 50% change in capacity costs + 50% change in net capacity payment for zones with decrease in net capacity payments

Generation Expansion (Design Elements B+D)

- Inclusion of ISA and FSA. Scale existing units based on location and technology to meet reserve requirement. Include transmission upgrades for congestion that arises from scaling assumptions

Production Costs definition change (*Reviewed with no objections at December RPPTF*)

- Production Costs definition: *“Estimated total annual fuel costs, variable O&M costs, and emission costs of the dispatched resources in the PJM Region. **Costs for purchases from outside of the PJM area and sales to outside the PJM area will be captured if appropriate. Purchases will be valued at the Load Weighted LMP and sales will be valued at the Generation Weighted LMP.**”*



RPPTF – *Order 1000 Interregional Update*



Interregional Coordination

REQUIREMENTS	MISO	NY/NE	NC Collaborative	SERTP
Governing Agreement	<u>MISO / PJM JOA</u>	<u>NE ISO/RTO Planning Protocol</u>	<u>Transmission Planning Data Exchange Agreement</u>	<u>JOA with TVA</u>
Status of Current Activity	Active April 11th filing target	Active April 11th filing target	Recent FERC Order indicates NCTPC Regional Filing is not compliant	Not active
Data Sharing	✓ Compliant IPSAC - updates add specificity	✓ Compliant – Annual comprehensive scope	Periodically ,as agreed - unspecific	✓ Compliant 60 days Upon request - comprehensive
Share Regional needs / potential solutions	✓ Compliant Updates to add specificity	Updates to add specificity	No provisions	Every 3rd year under current T&C. May need tuning for compliance
Identify / Joint evaluation of interregional facilities	✓ Compliant Updates add compliance	Updates add compliance	No provisions	No provisions
Stakeholder Participation	✓ Compliant IPSAC updates add specificity	✓ Compliant IPSAC updates add specificity	No provisions	No provisions
Transparency	✓ Compliant Via Web postings	✓ Compliant Via Web postings	No provisions	No provisions
Cost Allocation	✓ Compliant Current provisions are compliant	✓ Compliant NY/NE proposal under consideration	No provisions	No provisions

MARKETS EFFICIENCY CRITERIA	EXISTING MISO/PJM JOA	PJM	MISO	MISO ORIGINAL PROPOSAL
Benefit metric	Change in (70% adjusted production cost + 30% net load cost)	Change in ¹ (70% production cost + 30% net load cost)	100% adjusted production cost	None. But cost allocation by shares of 100% adjusted production cost, status quo or other
Benefit allocation	RTO share of Net sum of present value of benefits for minimum 10 yr from I/S	100% Net sum of present value of benefits for 15 yr from I/S	100 % Net sum of present value of benefits for 20 yr from I/S	100 % Net sum of present value of benefits for 20 yr from I/S
Cost threshold	\$20 million total	None	\$5 million	\$5 million
Voltage threshold	None	None	345kV (plus necessary lower voltage less than 50% of total cost)	None
B/C threshold	1.25	1.25	1.25	None
Benefit threshold	Opposite market impact of one generator on constraint >5%	None	None	Minimum 5% of benefits to either MISO or PJM

¹ Metric sums both capacity and energy benefits

RPPTF – *Multi-Driver Dialog*

The following slides continue the RPPTF dialog on the consideration of potential design and inclusion of a Multi-Driver Approach within PJM's current Planning Processes.

General Principles and Assumptions:

- The estimated cost of a combined multi-driver solution must be less than the estimated costs of independent, contemporaneous Reliability (R), Market Efficiency (ME) and Public Policy (PP) projects
- Today – we always ensure a reliability solution is available as a backstop. Going forward, the obligation to develop and build a reliability solution remains. We will always develop a reliability solution for an identified reliability violation.
- Important Note – a “combined” solution may not reflect the same discrete elements or locations and an overarching solution may replace some or all individual R, ME, & PP elements

Note: The following Use Cases are illustrative only and intended to drive dialog around the apportionment concepts and the interplay of Reliability (R), Market Efficiency (ME), and Public Policy (PP) projects.

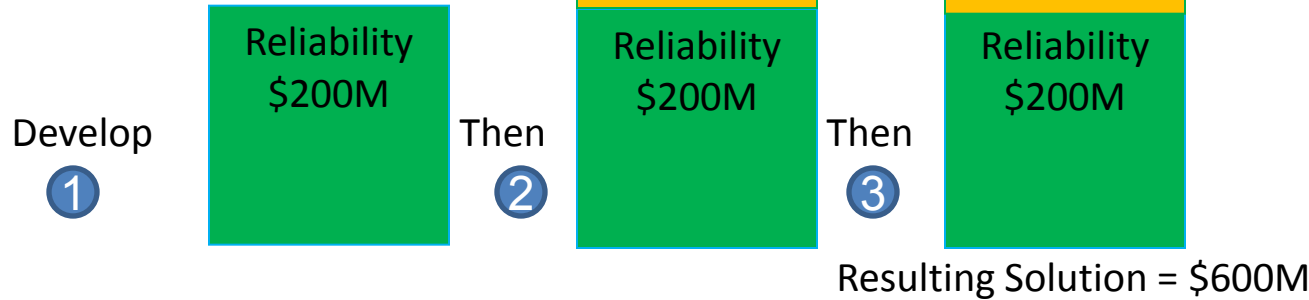
General Principles and Assumptions (continued):

- We will continuously assess whether individual reliability needs exist and if any changes will affect proposed “apportionment” of Multi-Driver Project costs. Please note – Changes could result in a/an:
 - Increase in needs
 - Reduction of needs
 - Elimination of needs
 - Change in needs; specifically, a change that may result in a different solution altogether
 - Therefore, within this context – we also desire to explore potential impacts to the following cases in today’s discussions
- Our current RTEP, R, ME, & PP modeling, needs identification and proposed apportionment concepts are “prospective” and do not contemplate retrospective identification of needs that previously did not exist.

Note: The following Use Cases are illustrative only and intended to drive dialog around the apportionment concepts and the interplay of Reliability (R), Market Efficiency (ME), and Public Policy (PP) projects.

Would you support an “incremental” assignment of benefit to contemporaneous projects of different driver type to resolve a planning objective?

*Estimated Cost of 3 Projects in isolation = \$800M
(R\$200M, ME\$100M, PP\$500M)*



Approach suggests an incremental (direct) apportionment by driver type

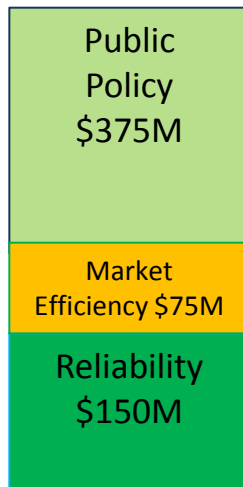
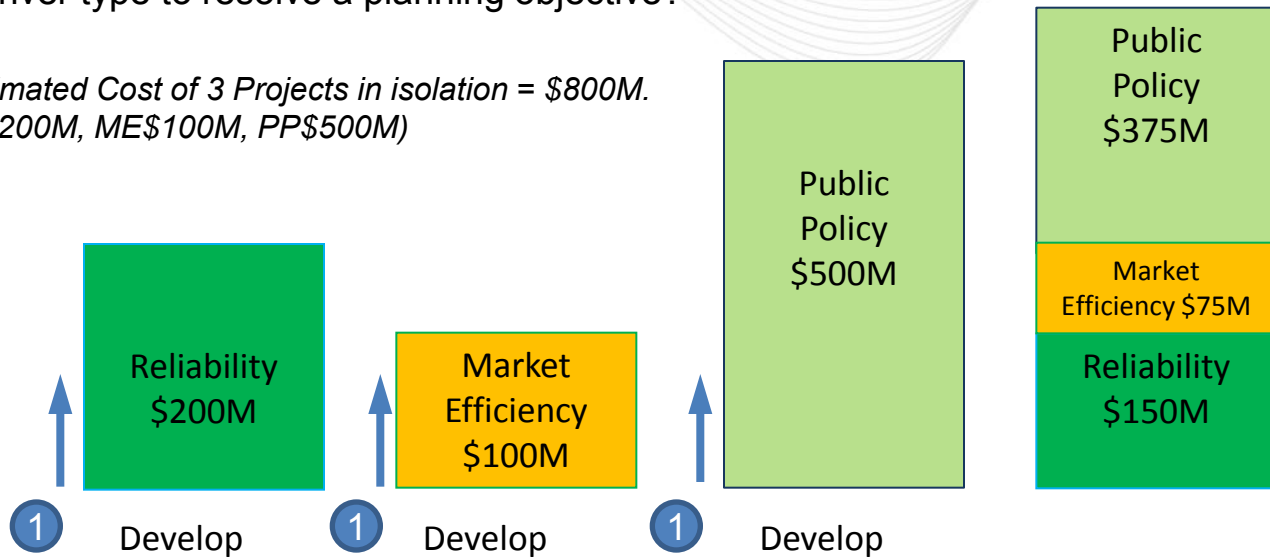
Apportioned as follows:
R = \$200M
ME = \$50M
PP = \$350M

Order of solution development and analysis of apportionment

Use Case #5 – “Parallel Only”

Would you support an assignment of benefit by “apportionment” across contemporaneous projects of differing driver type to resolve a planning objective?

*Estimated Cost of 3 Projects in isolation = \$800M.
(R\$200M, ME\$100M, PP\$500M)*



Approach suggests a parallel (proportional) apportionment by driver

Apportioned as follows:

R = \$150M

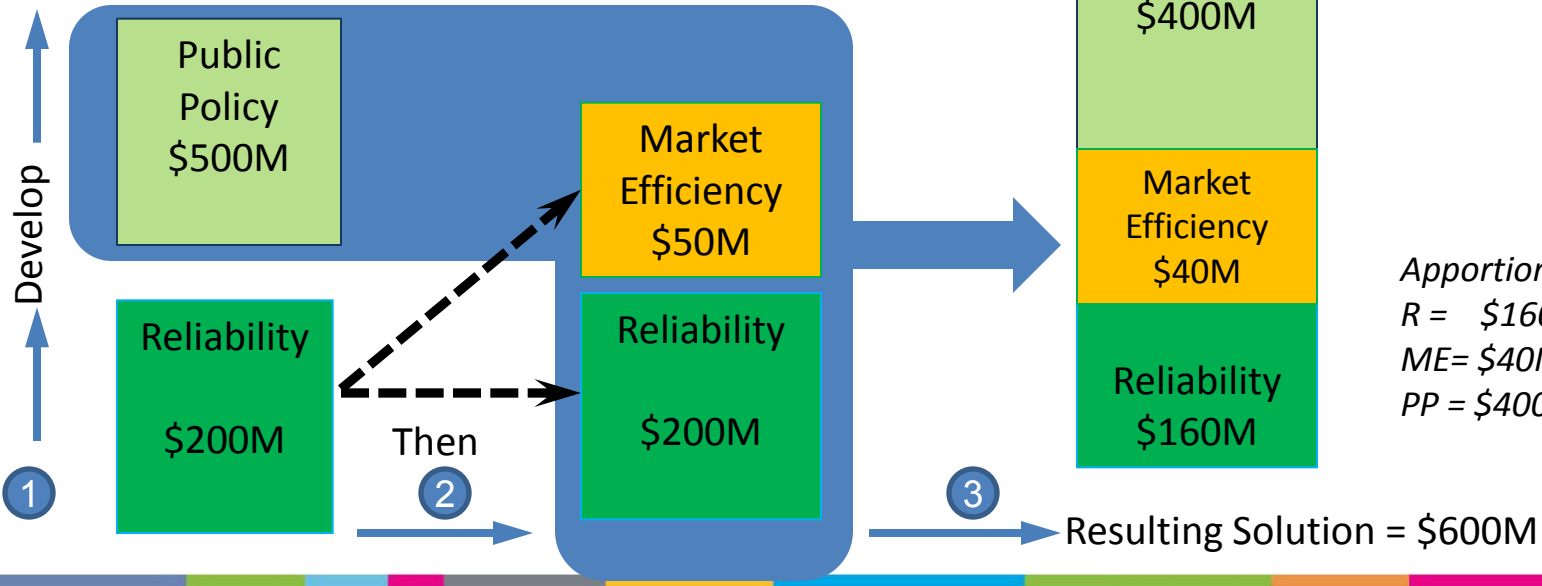
ME = \$75M

PP = \$375M

2 → Resulting Solution = \$600M

Would you support an alternative “apportionment” assignment of benefit to the combination of projects (e.g. Reliability, Market Efficiency, and Public Policy)

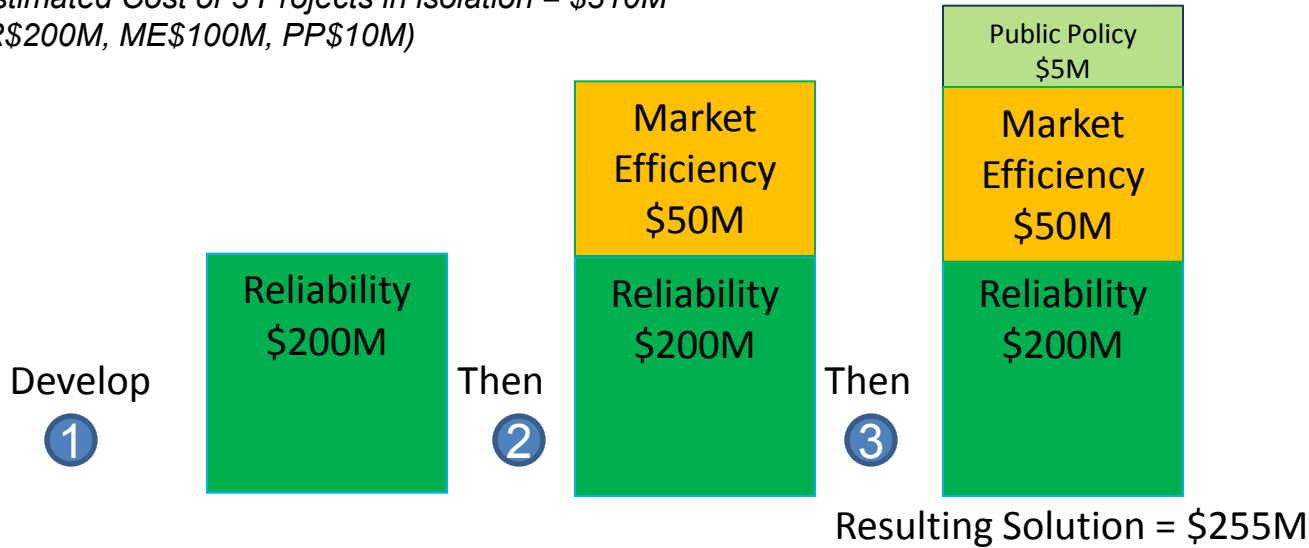
*R & PP approach developed, then R + ME developed.
 Estimated Cost of 3 Projects in isolation = \$800M.
 (R\$200M, ME\$100M, PP\$500M)*



*Apportioned as follows:
 R = \$160M
 ME= \$40M
 PP = \$400M*

Would you support an “incremental” assignment of benefit to contemporaneous projects of different driver type to resolve a planning objective?

Estimated Cost of 3 Projects in isolation = \$310M
(R\$200M, ME\$100M, PP\$10M)



Approach suggests an incremental (direct) apportionment by driver type

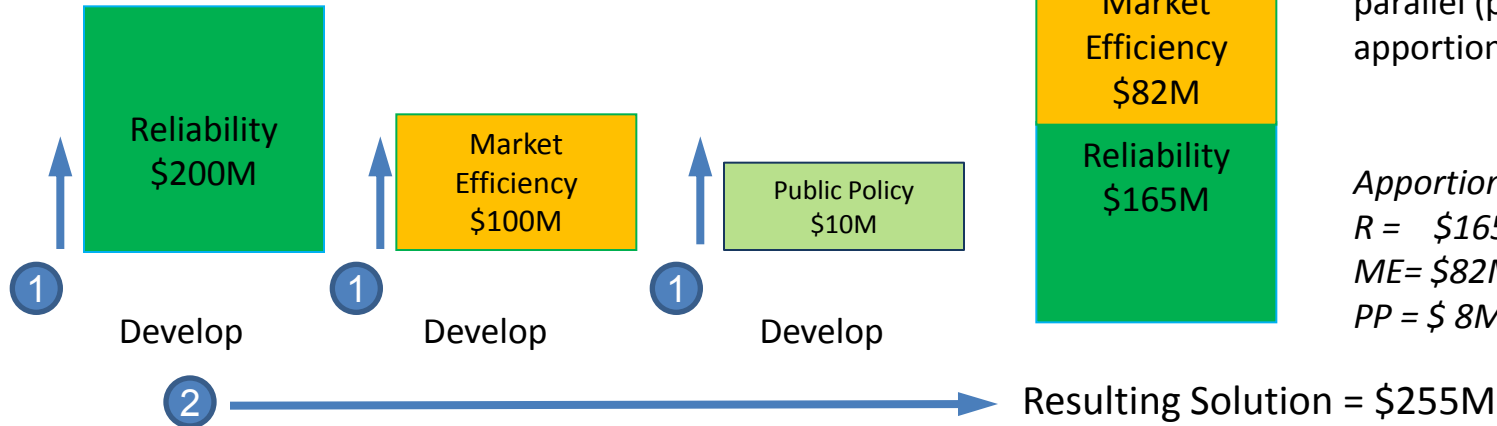
Apportioned as follows:
R = \$200M
ME = \$50M
PP = \$5M

Order of solution development and analysis of apportionment

Use Case #8 – “Parallel Only”

Would you support an assignment of benefit by “apportionment” across contemporaneous projects of differing driver type to resolve a planning objective?

*Estimated Cost of 3 Projects in isolation = \$310M
(R\$200M, ME\$100M, PP\$10M)*

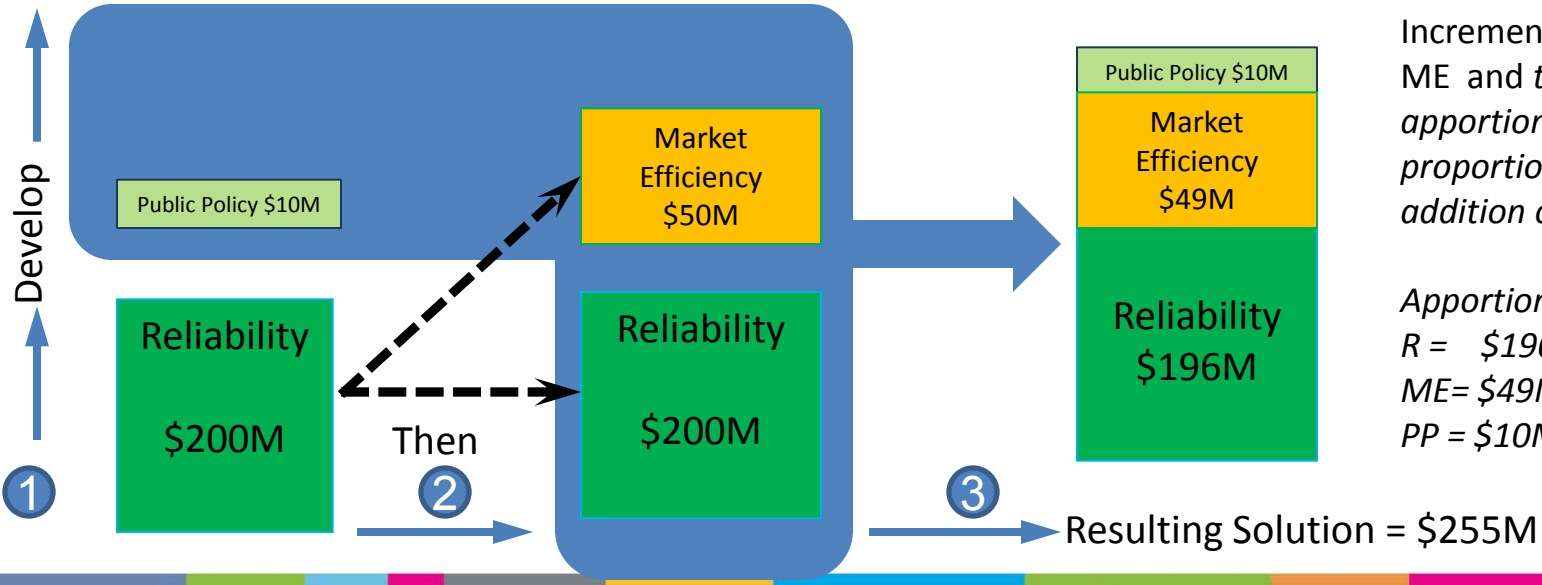


Approach suggests a parallel (proportional) apportionment by driver

Apportioned as follows:
 $R = \$165M$
 $ME = \$82M$
 $PP = \$8M$

Would you support an alternative “apportionment” assignment of benefit to the combination of projects (e.g. Reliability, Market Efficiency, and Public Policy)

*R & PP approach developed, then R + ME developed.
 Estimated Cost of 3 Projects in isolation = \$310M
 (R\$200M, ME\$100M, PP\$10M)*



*First developed
 Incrementally for R &
 ME and then
 apportioned
 proportionally upon
 addition of the PP*

*Apportioned as follows:
 R = \$196M
 ME= \$49M
 PP = \$10M*

Questions?

Anti-trust:

You may not discuss any topics that violate, or that might appear to violate, the antitrust laws including but not limited to agreements between or among competitors regarding prices, bid and offer practices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that might unreasonably restrain competition. If any of these items are discussed the chair will re-direct the conversation. If the conversation still persists, parties will be asked to leave the meeting or the meeting will be adjourned.

Code of Conduct:

As a mandatory condition of attendance at today's meeting, attendees agree to adhere to the PJM Code of Conduct as detailed in PJM Manual M-34 section 4.5, including, but not limited to, participants' responsibilities and rules regarding the dissemination of meeting discussion and materials.

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Unless otherwise noted, PJM stakeholder meetings are open to the public and to members of the media. Members of the media are asked to announce their attendance at all PJM stakeholder meetings at the beginning of the meeting or at the point they join a meeting already in progress. Members of the Media are reminded that speakers at PJM meetings cannot be quoted without explicit permission from the speaker. PJM Members are reminded that "detailed transcriptional meeting notes" and white board notes from "brainstorming sessions" shall not be disseminated. Stakeholders are also not allowed to create audio, video or online recordings of PJM meetings.