



FTR Undiversified Credit Requirement

Credit Subcommittee
July 27, 2016

- PJM has been analyzing historical FTR data to see if an alternative to the portfolio-based FTR undiversified credit adder could better target the credit exposure posed by counterflow FTRs
- Objectives include:
 - Same or better exposure coverage
 - Similar or lower credit requirement
 - Primarily targets counterflow FTR exposure
 - Tail risk is of special importance
 - Low implementation risk
 - No material FTR system performance degradation

- Options analyzed included:
 - Decrease in the undiversified adder
 - Increase in existing underlying requirements
 - Modification of underlying requirements
 - Increase in requirement depending on source and sink points
 - Single node vs. aggregate
 - Portfolio minimum based on total MWH
 - Portfolio minimum based on negative bid prices
 - Combinations of the above

- PJM analyzed over three dozen FTR credit options
 - Jan 2014 – Feb 2016 “Buy - Obligation” FTRs only – no Sells or Options)
- All options (except 1x undiversified adder) included elimination of the current undiversified adder and would be implemented as part of bid screening, with continuing requirement for cleared FTRs
- Some options had high implementation risk and are not included in this presentation
- Some options required very large increases in credit requirements
- Some options showed favorable coverage/requirement tradeoff

Option Descriptions

1. 1X Undiversified Adder
 - Same as current 2X-3X Undiversified adder but reduced to 1X
2. 1¢ Min
 - Per-MWH minimum
 - Applied at portfolio total level
3. 2¢ Min (same as 1¢)
4. 3¢ Min (same as 1¢)
5. 15% Hist. Cflow
 - Increase from 10% to 15% the adder for negative historical valued historical
 - Applied at FTR level
6. 15% Hist. Cflow & 1¢ Min
 - Same as above but with 1¢ minimum also applied at account-month level

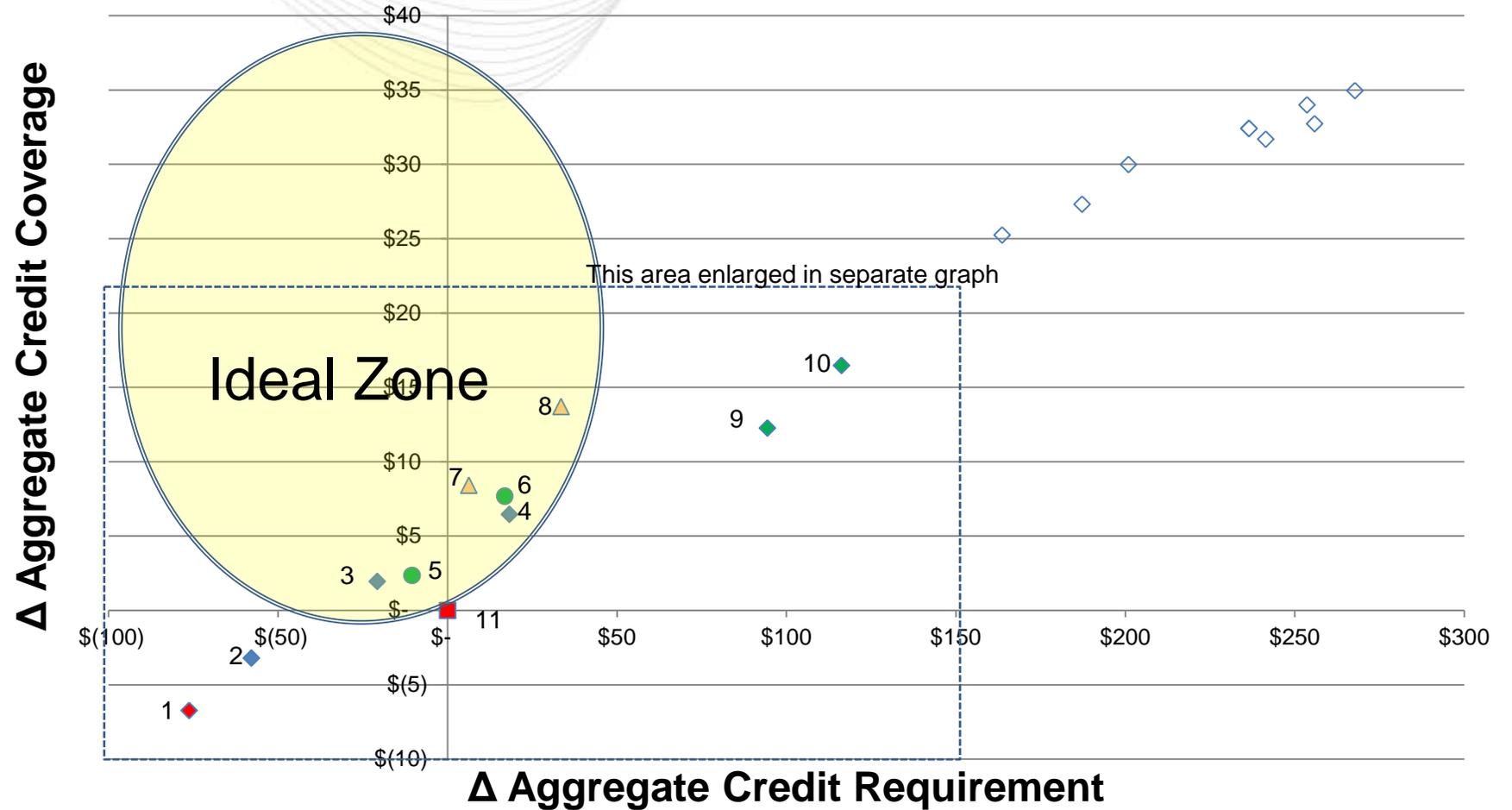
Option Descriptions (cont'd)

7. 1.1 * Pos. Credit Req.
 - All positive FTR credit requirements increased 10%
 - Applied at FTR level
8. 1.1 * Pos. Credit Req. & 1¢ Min
 - Same as above but with 1¢ minimum also applied at account-month level
9. 20% Hist. Cflow
 - Same as 15% but 20%
10. 20% Hist. Cflow & 1¢ Min
 - Same as above but with 1¢ minimum also applied at account-month level

Change From Current Aggregate Credit Requirement

Annualized amounts totaled across all account-months

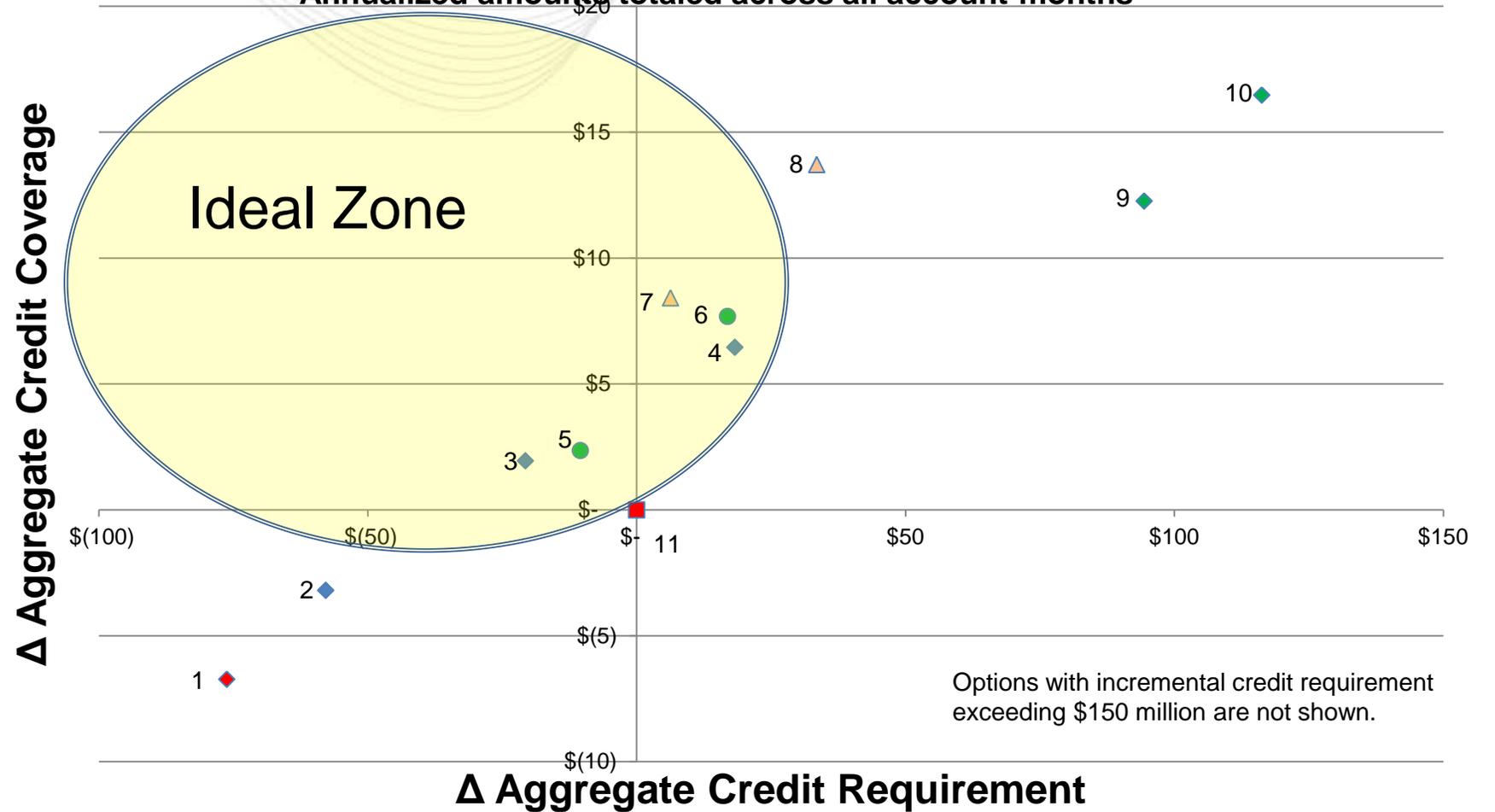
- Option
- 1 ◆ 1X Undiversified Adder
 - 2 ◆ 1¢ Min
 - 3 ◆ 2¢ Min
 - 4 ◆ 3¢ Min
 - 5 ● 15% Hist. Cflow
 - 6 ● 15% Hist. Cflow & 1¢ Min
 - 7 ▲ 1.1 * Pos. Credit Req.
 - 8 ▲ 1.1 * Pos. Credit Req. & 1¢ Min
 - 9 ◆ 20% Hist. Cflow
 - 10 ◆ 20% Hist. Cflow & 1¢ Min
 - 11 ■ Total Current Requirements



Change from Current Credit Requirement – Portion Enlarged

Change From Current Aggregate Credit Requirement

Annualized amounts totaled across all account-months



- Option
- 1 ◆ 1X Undiversified Adder
 - 2 ◆ 1¢ Min
 - 3 ◆ 2¢ Min
 - 4 ◆ 3¢ Min
 - 5 ● 15% Hist. Cflow
 - 6 ● 15% Hist. Cflow & 1¢ Min
 - 7 ▲ 1.1 * Pos. Credit Req.
 - 8 ▲ 1.1 * Pos. Credit Req. & 1¢ Min
 - 9 ◆ 20% Hist. Cflow
 - 10 ◆ 20% Hist. Cflow & 1¢ Min
 - 11 ■ Total Current Requirements

Options	Change in Aggregate Requirements and Coverage					
	Prevailing Flow		Counterflow*		Total	
	Req't	Coverage	Req't	Coverage	Req't	Coverage
1  1X Undiversified Adder	(7%)	0%	(53%)	(72%)	(16%)	(4%)
2  1¢ Min	(1%)	1%	(57%)	(58%)	(12%)	(2%)
3  2¢ Min	6%	2%	(48%)	(23%)	(4%)	1%
4  3¢ Min	14%	3%	(38%)	8%	4%	4%
5  15% Hist. Cflow	7%	3%	(42%)	(24%)	(2%)	1%
6  15% Hist. Cflow & 1¢ Min	13%	4%	(35%)	11%	3%	4%
7  1.1 * Pos. Credit Req.	12%	6%	(45%)	(9%)	1%	5%
8  1.1 * Pos. Credit Req. & 1¢ Min	18%	7%	(38%)	27%	7%	8%
9  20% Hist. Cflow	27%	5%	(13%)	48%	19%	7%
10  20% Hist. Cflow & 1¢ Min	32%	6%	(8%)	73%	24%	9%

* Counterflow defined based on target allocations

In order to implement changes for the 2017-2018 annual FTR auction, the timetable below would need to be followed

	Introduction	Endorse/ Approve
Credit Subcommittee (CS)	Jul 2016	Aug 2016
Market Implementation Committee (MIC)	Sep 14, 2016	Oct 5, 2016
Markets and Reliability Committee (MRC)	Sep 29, 2016	Oct 27, 2016
Members Committee (MC)		Nov 17, 2016
FERC Filing – FERC Approval	Dec 1, 2016	Feb 1, 2017