

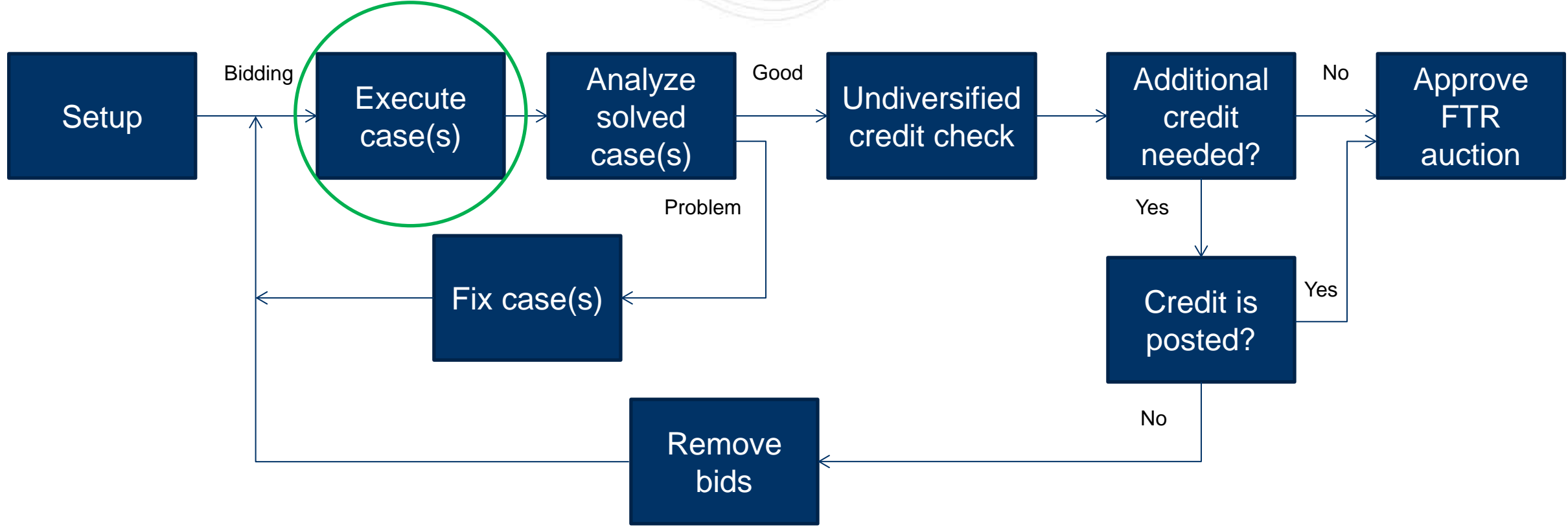
FTR Case Performance Education

Kevin Bazar
Sr. Engineer, Market Simulation Department
Special MIC - FTRMPS
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- March 2017 monthly FTR auction results were posted late
- FTR auction process
- Contributing factors to posting delays
- FTR auction characteristics and historical performance
- Scenario testing





Contributing factors to posting delays

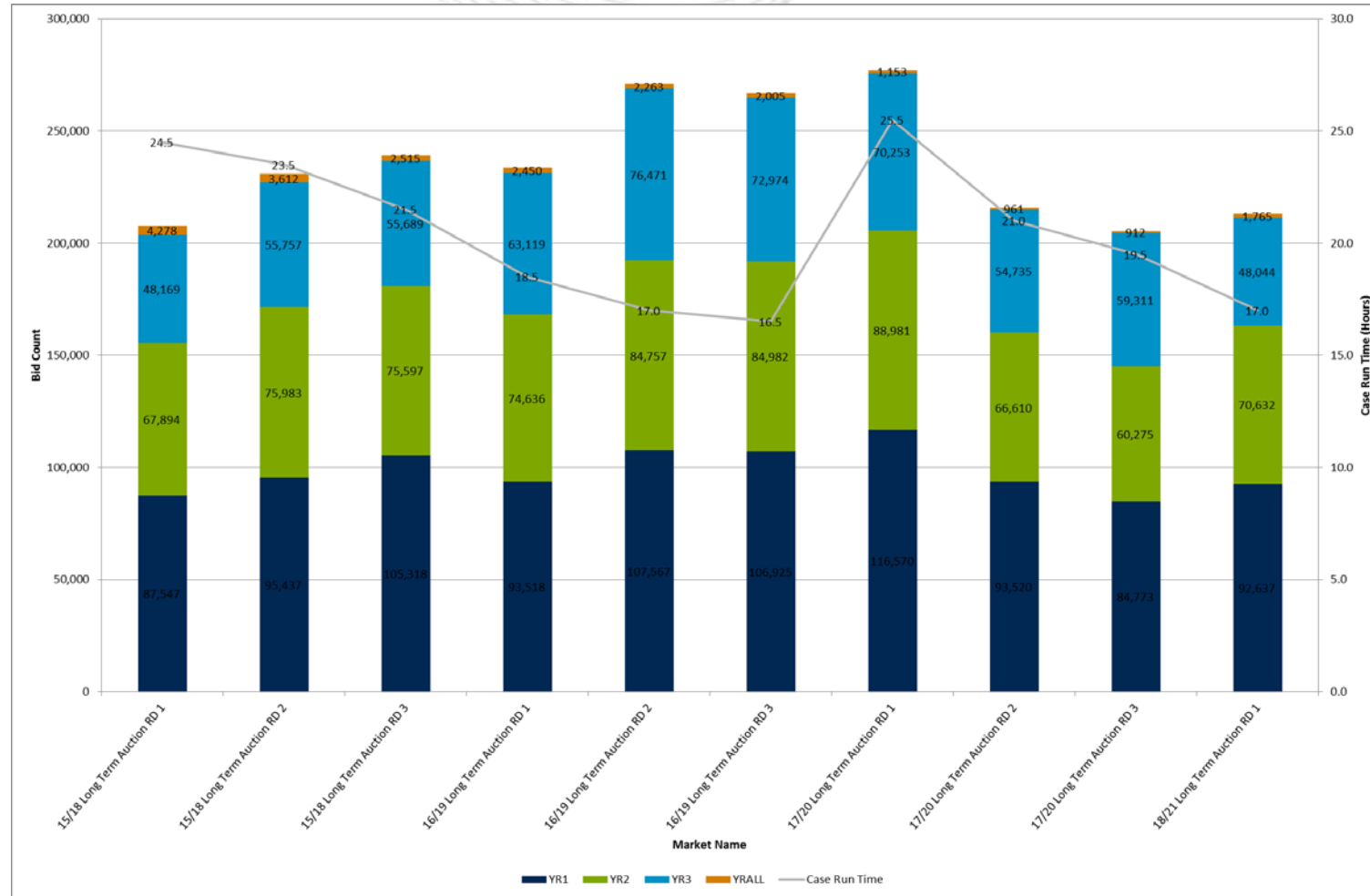
Reason	Impact	Overall Assessment
Primary - Overlapping Periods	High	Overlapping periods cause the optimization engine to run longer which increase case run time
Other - Bid Volume	Medium	Higher bid counts increase case run time
Other - Outages	Medium	Higher number of outages taken create more constrained cases which increase case run time
Other - Options	Medium	Allowing option bids and calculating option prices increase case run time
Other - Hardware	Low	New production application servers are put in service every two to three years
Other - Software	Low	Currently investigating software improvements with our vendor



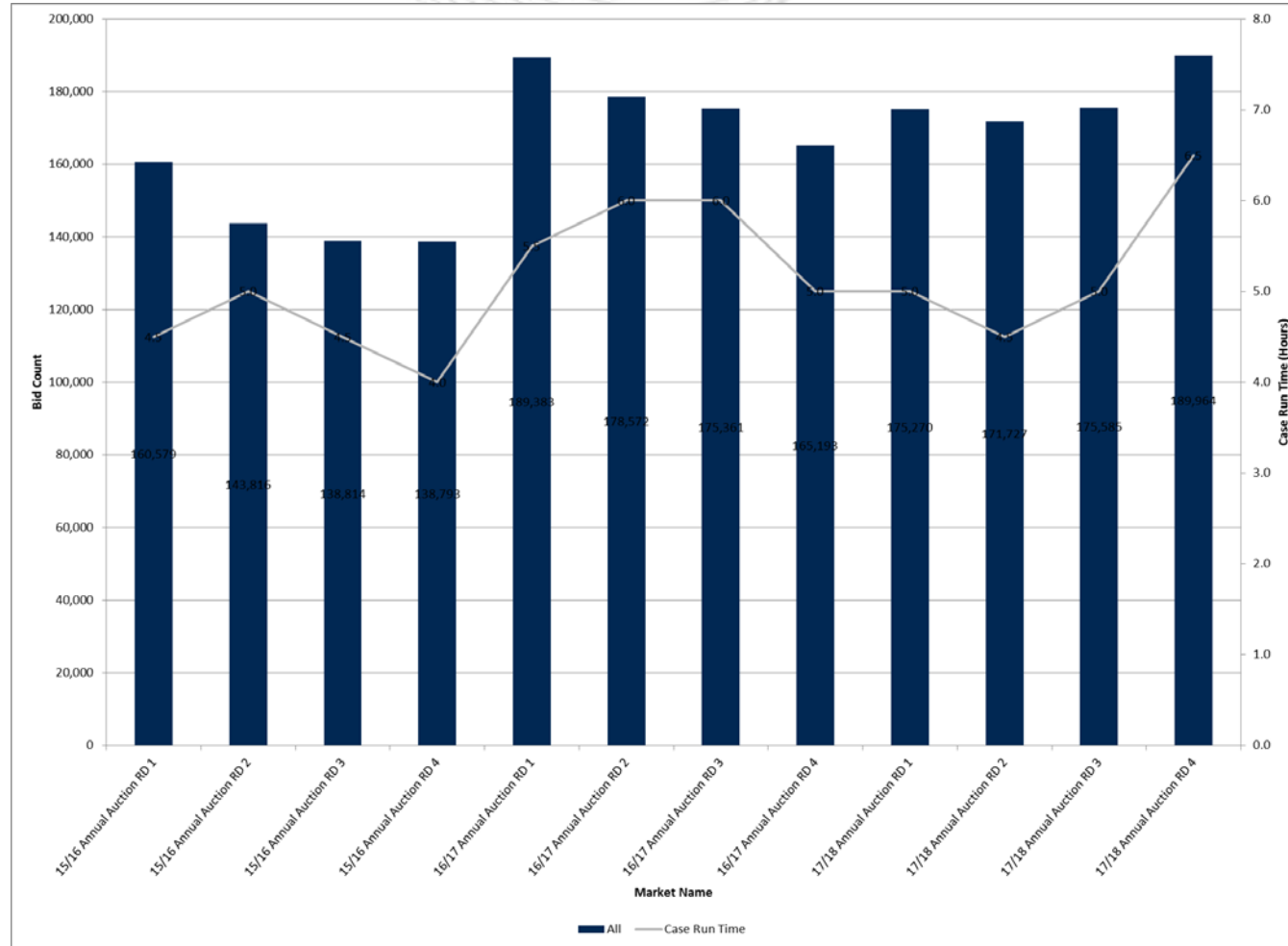
Market Type ¹	# of Auction Rounds	Monthly Period	Valid Pnodes	Options Biddable ²	Business Days to Clear
Long Term	3		Available aggregates, generators, hubs, interfaces, zones	No	5
Annual	4		Available aggregates, generators, hubs, interfaces, zones	Yes	2
Monthly	1	Prompt Month	Available aggregates, EHV buses, generators, hubs, interfaces, load buses, zones	Yes	5
Monthly	1	Non Prompt Month	Available aggregates, generators, hubs, interfaces, zones	Yes	5
¹ the bidding limit for all FTR auctions is 10,000 bids per subaccount per auction round per period					
² option bids are only available on a subset of paths					



Market Type	Market Name	Biddable Periods
		Case 1
Long Term	18/21 Long Term Auction	YR1, YR2, YR3, YRALL

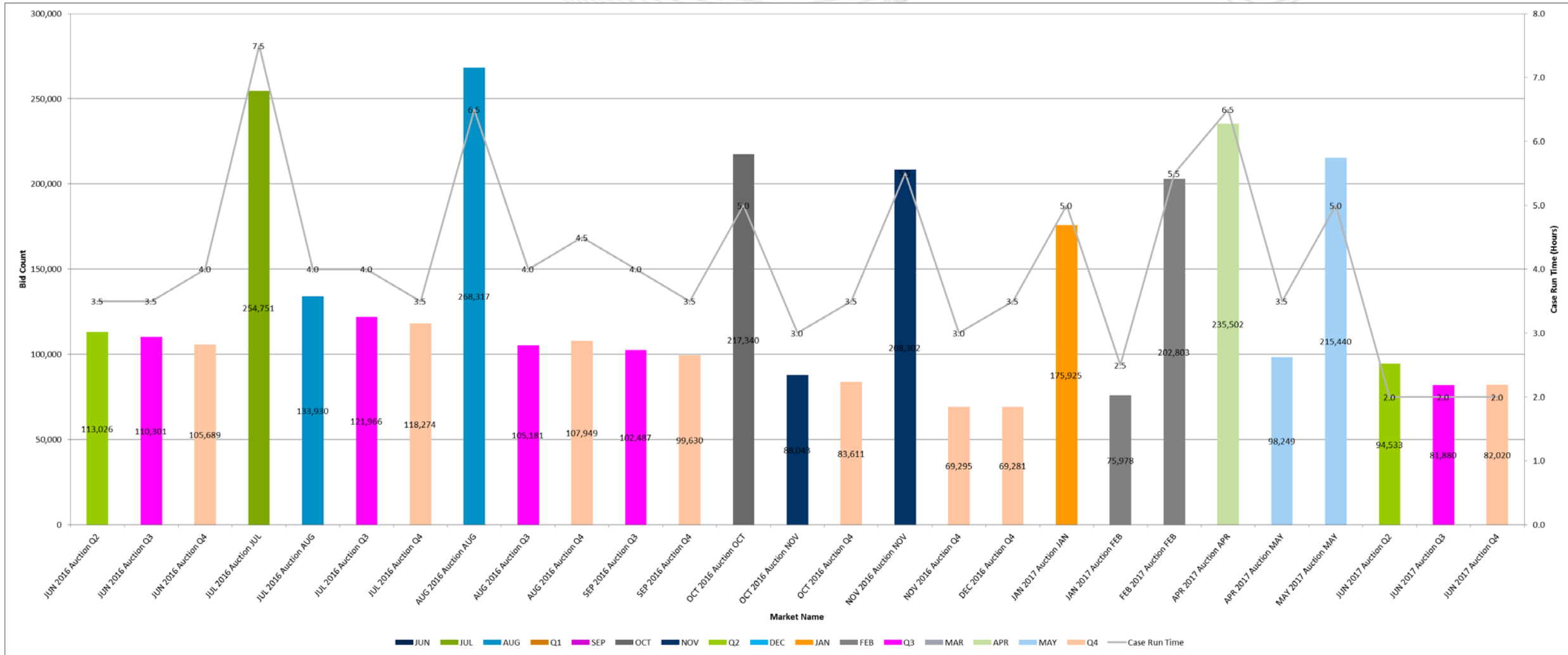


Market Type	Market Name	Biddable Periods
		Case 1
Annual	17/18 Annual Auction	All



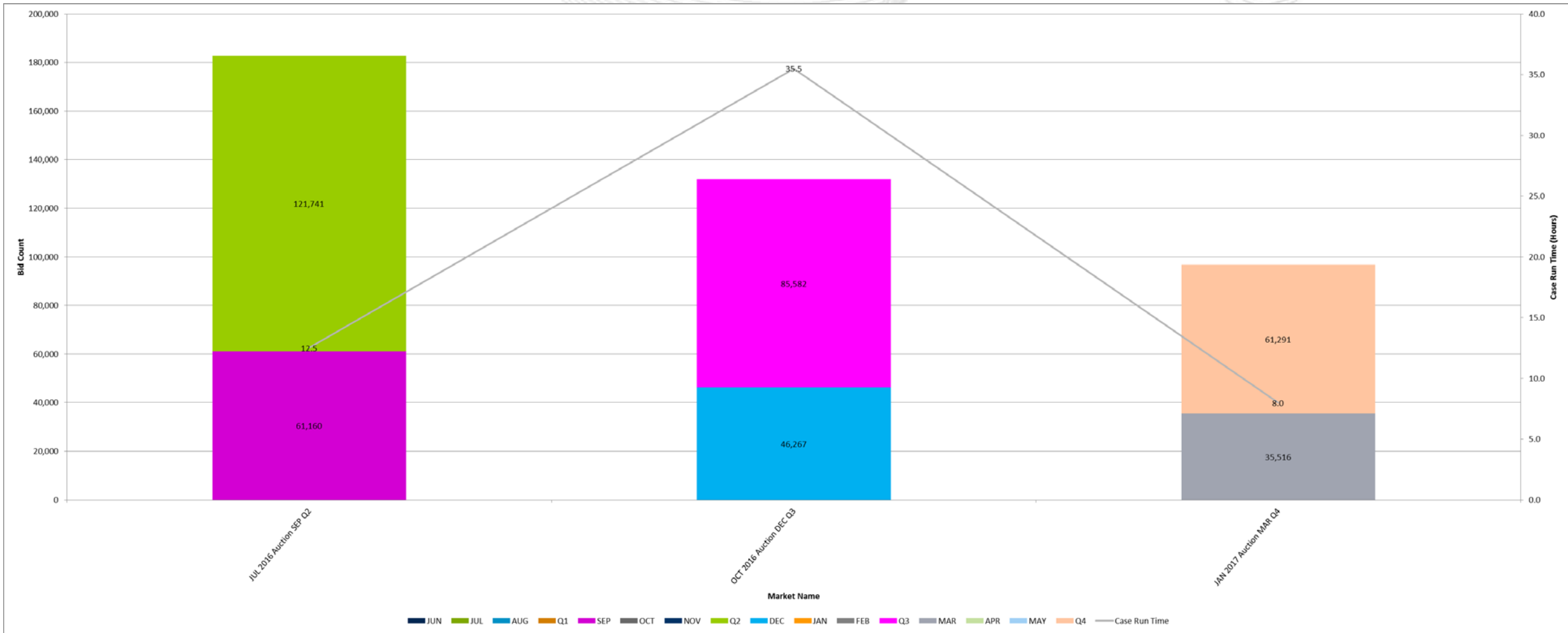
Market Type	Market Name	Biddable Periods				
		Case 1	Case 2	Case 3	Case 4	Case 5
Monthly	JUN 2017 Auction	JUN, JUL, AUG, Q1	Q2	Q3	Q4	
Monthly	JUL 2017 Auction	JUL	AUG	SEP, Q2	Q3	Q4
Monthly	AUG 2017 Auction	AUG	SEP, OCT, Q2	Q3	Q4	
Monthly	SEP 2017 Auction	SEP, OCT, NOV, Q2	Q3	Q4		
Monthly	OCT 2017 Auction	OCT	NOV	DEC, Q3	Q4	
Monthly	NOV 2017 Auction	NOV	DEC, JAN, Q3	Q4		
Monthly	DEC 2017 Auction	DEC, JAN, FEB, Q3	Q4			
Monthly	JAN 2018 Auction	JAN	FEB	MAR, Q4		
Monthly	FEB 2018 Auction	FEB	MAR, APR, Q4			
Monthly	MAR 2018 Auction	MAR, APR, MAY, Q4				
Monthly	APR 2018 Auction	APR	MAY			
Monthly	MAY 2018 Auction	MAY				

Monthly FTR Auctions Single Period Cases



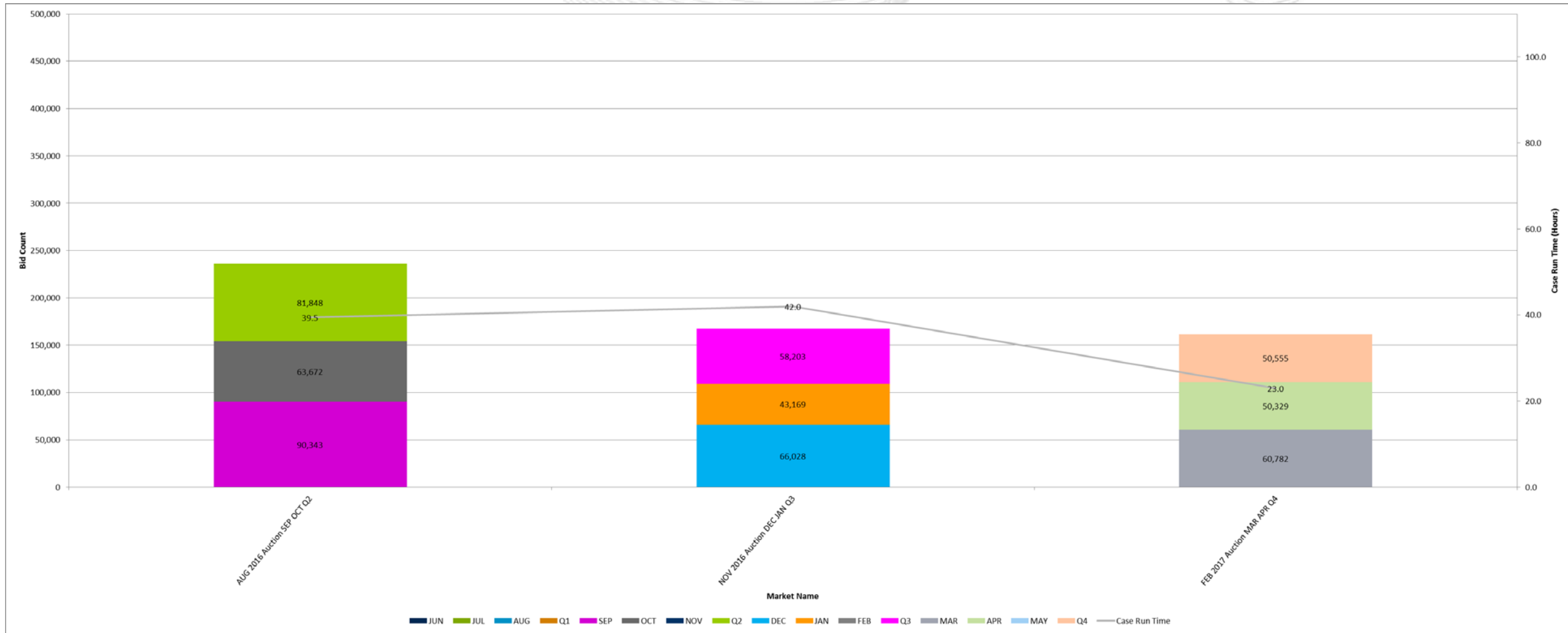


Monthly FTR Auctions Two Period Overlap Cases



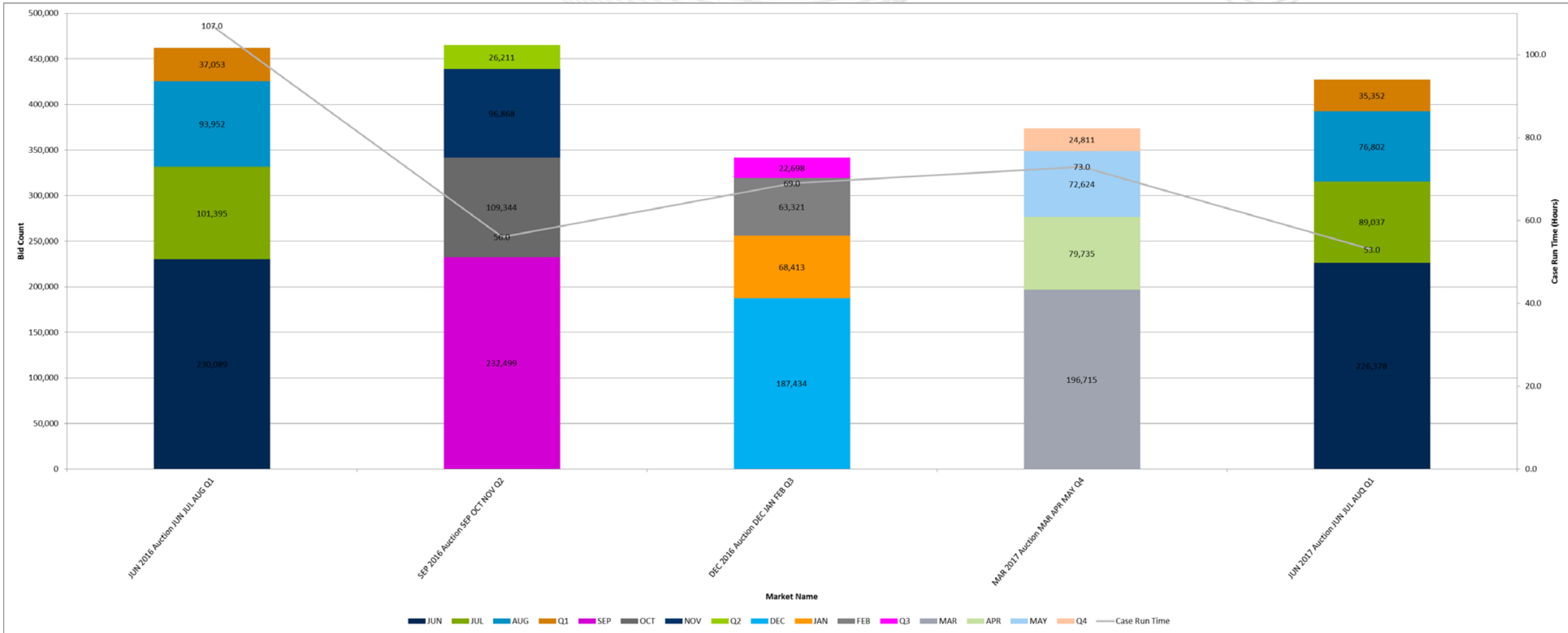


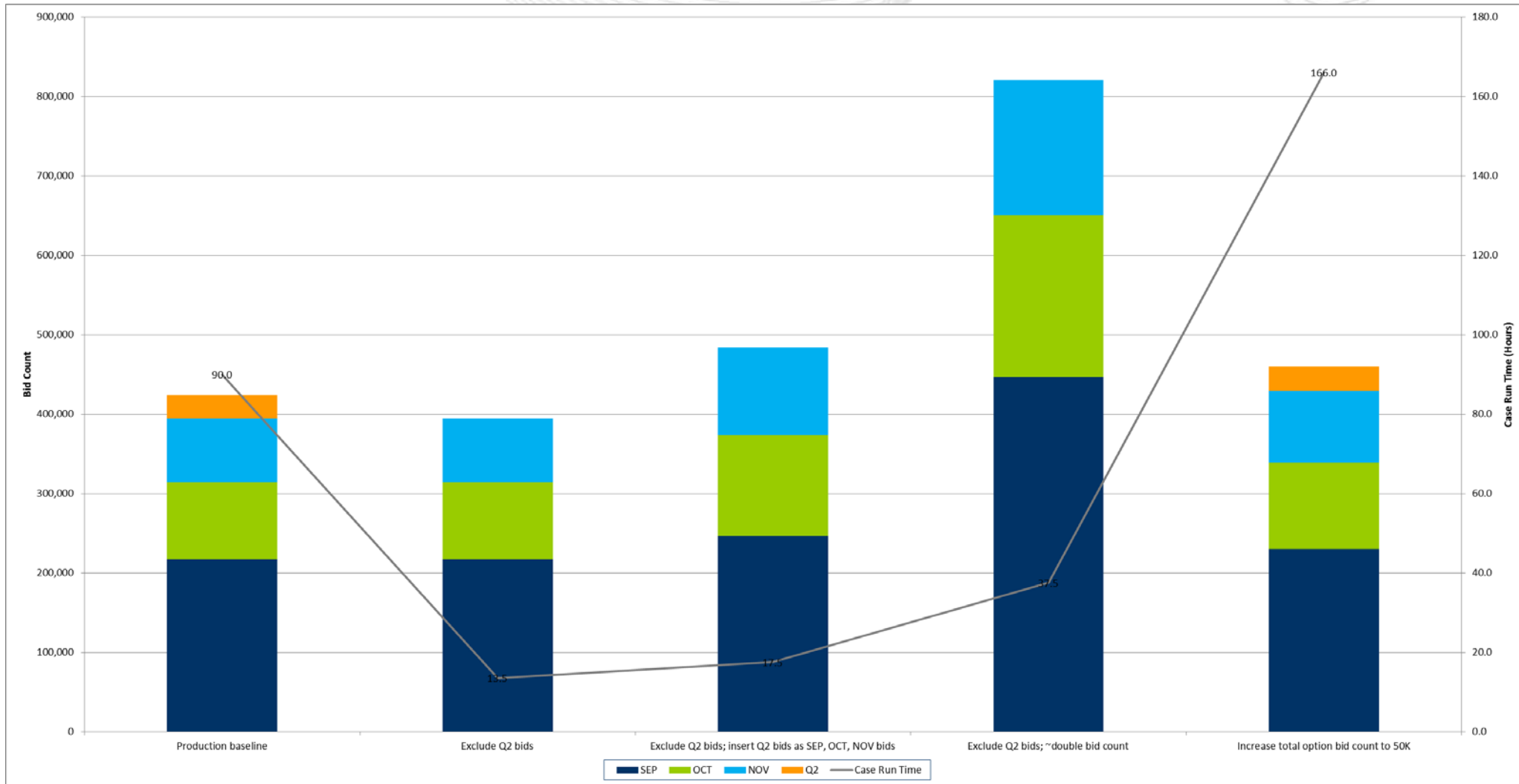
Monthly FTR Auctions Three Period Overlap Cases





Monthly FTR Auctions Four Period (Super) Overlap Cases





Email FTRGroup@pjm.com

or

Email Kevin.Bazar@pjm.com

610-635-3496

