

PURPOSE OF MINIMUM CAPITALIZATION

PJM FRMSTF

10/15/2020

MINIMUM CAPITALIZATION SHOULD NOT BE A “CUSHION”

- Minimum capitalization is the *minimum* capitalization to participate
- We believe the purpose of minimum capitalization should be to demonstrate the minimum **motivation** and **ability** for a participant to remain a going concern.
 - A company whose principals are motivated to avoid bankruptcy will do as much as it can to manage risks and meet financial obligations
- **Motivation** can be demonstrated by having **sufficient equity at risk** (either already restricted or available to post)
- **Ability** refers to **ability to manage risk**: “those who do not have adequate risk management procedures in place” per FERC
- As PJM notes, the “either assets OR equity” problem should be fixed

WHAT IS THE PURPOSE OF MINIMUM CAPITALIZATION?

- What even a very high capitalization hurdle CANNOT accomplish:
 - Eliminate default risk due to **poor judgment or skill** of traders
 - Having more capital does not make a trader any more skilled, more scrupulous, or less unlucky.
 - Even the largest banks and funds have slips in risk management, rogue traders, or just bad bets.
 - Many small companies with low capitalization have operated in PJM FTR markets for many years without incident and the likelihood of another material default by a small company has significantly decreased with recent rule changes.
 - Eliminate default risk due to **poor financial management**
 - Capitalization does not equal creditworthiness
 - A large company with the same credit score as a small company is just as likely to default. The only difference is the large company's default will likely be for a higher dollar amount.

WHAT IS THE PURPOSE OF MINIMUM CAPITALIZATION?

- What a reasonable *minimum* capitalization hurdle CAN accomplish:
 - Lower default risk due to **lack of motivation**:
 - Ensure participants have reasonably substantial equity at risk
 - If \$1M+ is lost by a small company with one or a few principals, that is enough to hurt unless they are ultra-wealthy
 - Large companies with high capitalization may not collectively feel the pain as much, but tend to have stronger corporate governance with oversight and controls to avoid losing money (that may yet be disregarded per above)
 - Lower default risk due to **lack of adequate risk management infrastructure** (or at least lack of ability to afford risk management infrastructure):
 - Ensure the participant has adequate funding to be able to invest in risk management infrastructure
 - What amount of equity (and/or debt-financed assets) is enough to show ability to afford such infrastructure?

MINIMUM CAPITALIZATION SHOULD NOT BE CONFUSED WITH COLLATERAL RULES

- The 1% failure rate modeled in IM models does not translate to a 1% default rate
 - The **default rate is likely to be much lower**, as “failures” (collateral calls) are typically cured
- If there is a desire to provide a “cushion” beyond margin requirements, **it is better addressed through collateral haircuts or other collateral rules**
 - We could have a 10% haircut on collateral across the board (similar to default fund contribution capped at ~10% of initial margin used at some exchanges [subject to minimum])
 - Can be used in case of a collateral call, but participant cannot submit any bids that increase collateral until it is replenished
 - Not replenishing the haircut funds used for a collateral call does not constitute default
 - This is similar to the concept of maintenance margin used at exchanges
 - The “haircut fund” is like an individual default fund
 - Haircuts are based on **actual portfolio** and its **precise modeled risks** (under new IM framework)
 - No need to use minimum capital requirements as “a very rough tool” to address collateral concerns
 - No need to have a “one-size-fits-all” or even tiered cushion—every participant is different

MINIMUM CAPITALIZATION SHOULD NOT BE CONFUSED WITH COLLATERAL RULES

- **Cash held by PJM is more valuable than an annual snapshot of financial statements**
 - 10% cash cushion held by PJM is better than 100% cushion on paper that may no longer exist (or never have existed; or if it *does* exist, it may never be given to PJM)
 - If a sufficiently large enough collateral shortfall occurs (especially as a ratio to posted collateral), the participant may walk away rather than post additional collateral
 - E.g., \$3M is already posted. A participant likely would post a \$1M (33%) collateral call but maybe not \$30M (10x) regardless of ability to do so.
 - **This is why this problem needs to be solved by getting IM right.** The currently proposed IM model shows reasonable expected shortfalls ranging from 13% of IM (for IMs \$3M to \$10M) to 52% of IM (for IMs under \$1M) for BOPP failures – not even considering what may be posted for long-term positions. So a 10% cash cushion would cover much of this.
 - **Requiring a multiple on paper is inefficient and unnecessary.**
- **Minimum capital should not be “continuum capital.”** How would a constantly changing “minimum” capitalization be implemented?
 - Tail risk changes with changing portfolios and changing conditions
 - Participant capitalization changes
 - When it drops, will PJM be notified? Will PJM then declare default?
 - When it rises, will the participant have to get new financials audited to increase participation in PJM markets?

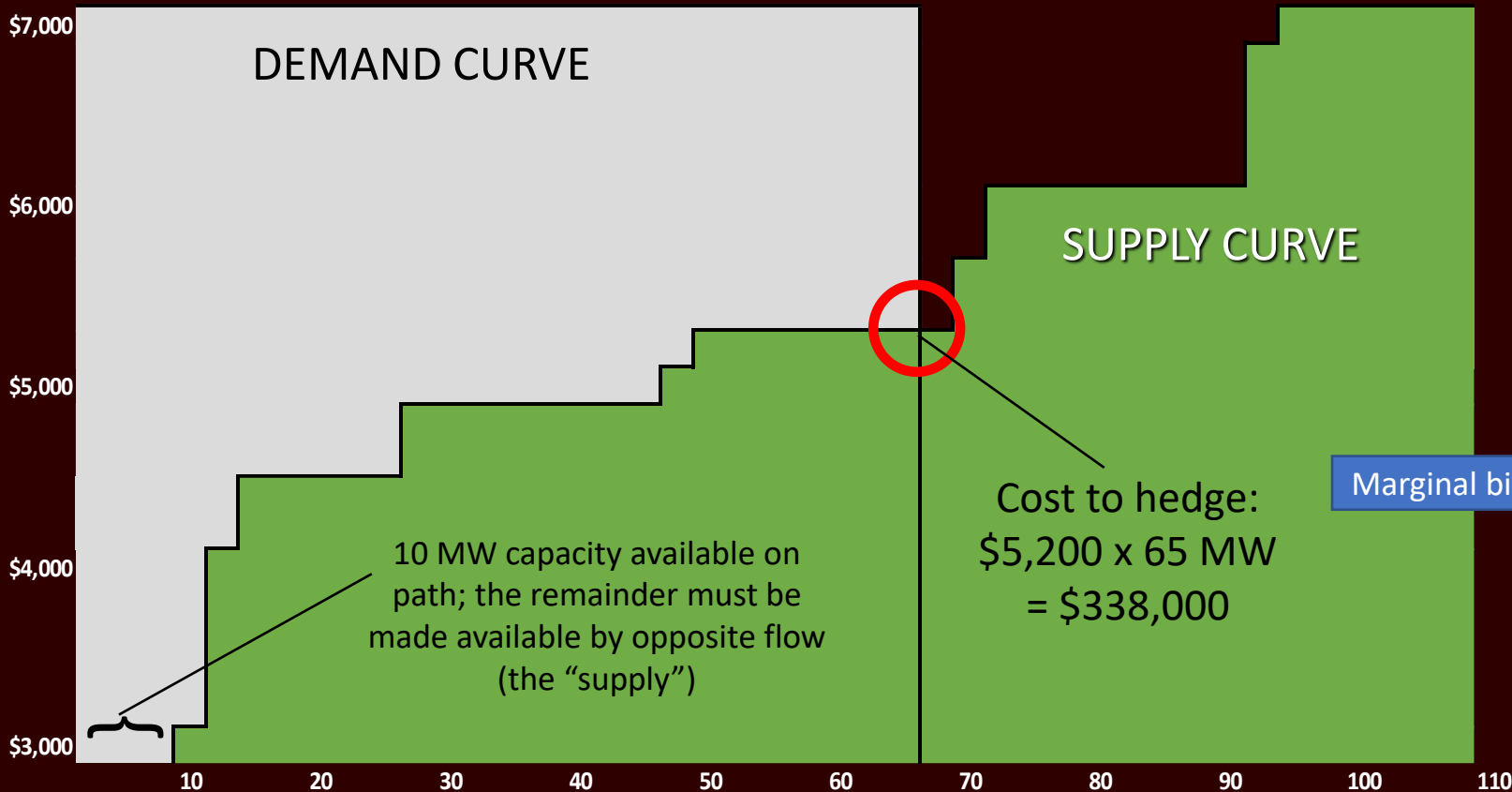
SMALL PARTICIPANTS BENEFIT THE MARKET WHILE POSING LIMITED, DIVERSIFIED RISK

- **Small participants add benefit as a group**
 - Participants that would exit the market with increased TNW requirements likely provide more than their “fair share” of liquidity to the market
 - These are more likely to be price-sensitive bidders improving market efficiency and increasing price discovery than price-taking hedgers
 - Reducing the number of participants by 20-25% necessarily will increase costs to hedge by reducing competition
- **Small participants pose limited, diversified risk**
 - Defaults by small participants are likely to be **small**, especially with new IM framework (see expected shortfall as % of IM per PJM’s IM presentation to FRMSTF on 9/29/20)
 - The 40-50 participants who may leave the market currently present **diversified** risk
 - Positions, concentrations, risk management, cash management are different for different participants
 - We would rather see 40-50 small participants, one or two of which may have small defaults over a number of years, than one or two large participants with the same aggregate volume posing a large default risk by a single rogue trader, a single poor risk manager, or simply a single unlucky price outcome

HEDGING WILL BECOME MORE EXPENSIVE - BEFORE

Hedger needs to hedge 65 MW and is willing to pay up to \$7,000/MW for an FTR

Bid and offer stack

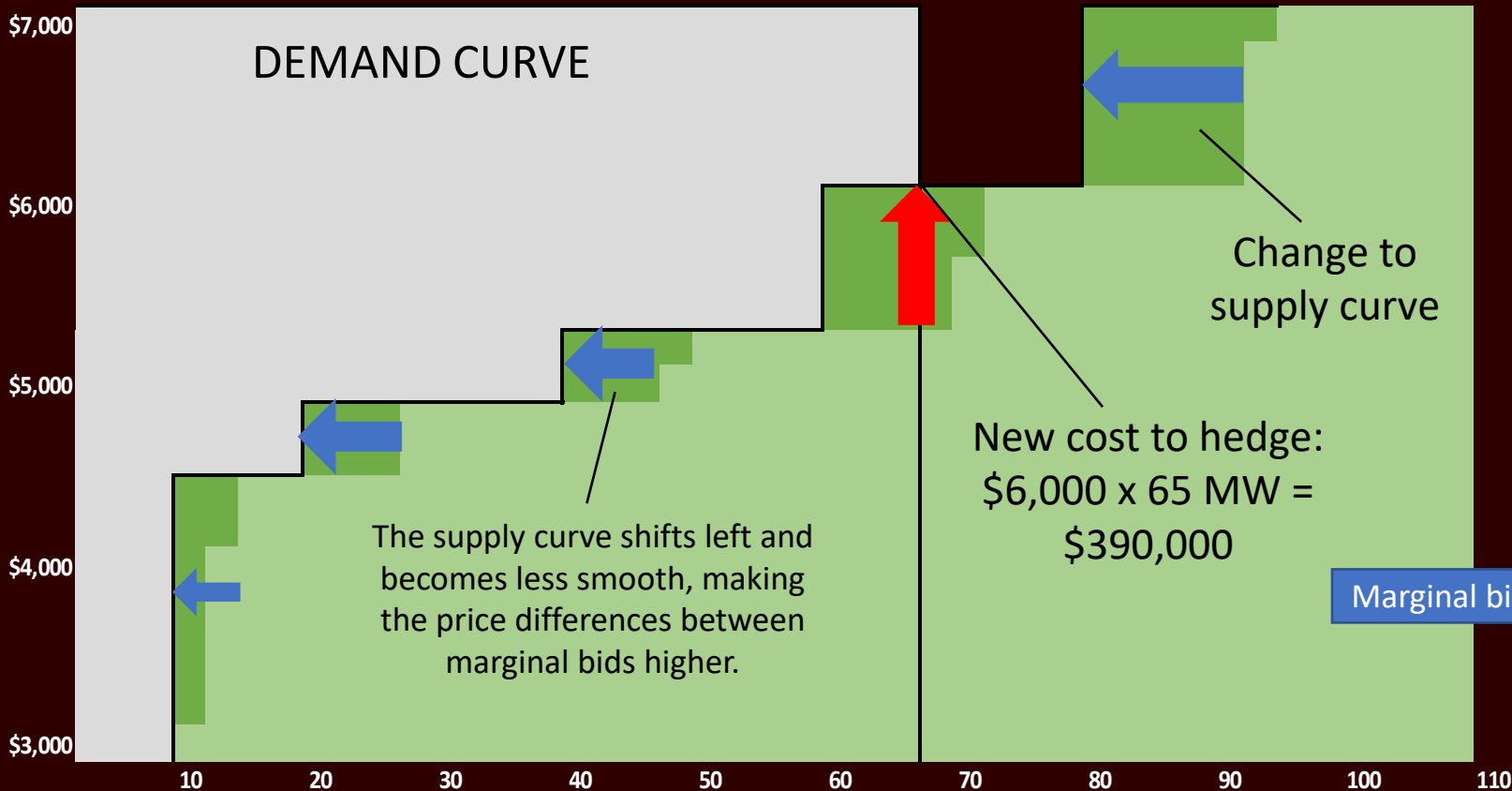


Trade type	Participant	Bid/Offer (\$/MW)	Volume (MW)	Cleared MW
BUY	A	\$7,000	65	65
SELL	B	\$3,000	3	3
SELL	C	\$4,000	2	2
SELL	D	\$4,400	10	10
SELL	E	\$4,800	20	20
SELL	F	\$5,000	5	5
SELL	E	\$5,200	20	15
SELL	G	\$5,600	5	0
SELL	E	\$6,000	20	0
SELL	H	\$6,800	5	0
SELL	D	\$7,000	15	0

HEDGING WILL BECOME MORE EXPENSIVE - AFTER

Once the “small” participants’ bids are removed from the supply stack, the curve shifts, making the supply and demand curves **meet at a higher price**:

Bid and offer stack



Trade type	Participant	Bid/Offer (\$/MW)	Volume (MW)	Cleared MW
BUY	A	\$7,000	65	65
SELL	B	\$3,000	3	
SELL	C	\$4,000	2	
SELL	D	\$4,400	10	10
SELL	E	\$4,800	20	20
SELL	F	\$5,000	5	
SELL	E	\$5,200	20	20
SELL	G	\$5,600	5	
SELL	E	\$6,000	20	5
SELL	H	\$6,800	5	
SELL	D	\$7,000	15	0

WHO BENEFITS FROM REMOVING SMALL PARTICIPANTS?

Bid and supply stack - BEFORE

Trade type	Participant	Bid/Offer (\$/MW)	Volume (MW)	Cleared MW	Total Payment
BUY	A	\$7,000	65	65	-\$338,000
SELL	B	\$3,000	3	3	+\$15,600
SELL	C	\$4,000	2	2	+\$10,400
SELL	D	\$4,400	10	10	+\$52,000
SELL	E	\$4,800	20	20	+\$104,000
SELL	F	\$5,000	5	5	+\$26,000
SELL	E	\$5,200	20	15	+\$78,000
SELL	G	\$5,600	5	0	-
SELL	E	\$6,000	20	0	-
SELL	H	\$6,800	5	0	-
SELL	D	\$7,000	15	0	-

Bid and supply stack - AFTER

Trade type	Participant	Bid/Offer (\$/MW)	Volume (MW)	Cleared MW	Total Payment
BUY	A	\$7,000	65	65	-\$390,000
SELL	B	\$3,000	3		
SELL	C	\$4,000	2		
SELL	D	\$4,400	10	10	+\$60,000
SELL	E	\$4,800	20	20	+\$120,000
SELL	F	\$5,000	5		
SELL	E	\$5,200	20	20	+\$120,000
SELL	G	\$5,600	5		
SELL	E	\$6,000	20	5	+\$30,000
SELL	H	\$6,800	5		
SELL	D	\$7,000	15		

Total payment = (clearing price in red) x (cleared MW)

D receives \$60,000 instead of \$52,000

E receives \$270,000 instead of \$182,000

Who benefits? Not the hedger, but large remaining suppliers who **gain greater market share** and **command higher prices**.
 more competition = smoother supply/demand curves = tighter bid/ask spreads = more efficient markets

WHAT IS THE PURPOSE OF MINIMUM CAPITALIZATION?



“If all you have is a hammer, everything looks like a nail”

- While the knee-jerk reaction to the GreenHat default may be to increase minimum capitalization as high as possible, this is the wrong approach
- We have better, more flexible tools to address actual risks presented:
 - Market participant risk evaluation enhancements
 - KYC, insight into principals and financials, PJM flexibility, enhanced monitoring of market
 - MTA (variation margin)
 - Minimum credit rule (\$0.10/MWh)
 - Volatility-based initial margin – increase credit for increased risk!
- What is the *minimum* capital needed to show motivation and enable risk management?