




Market Data to Support Defining Circuit Breaker Trigger

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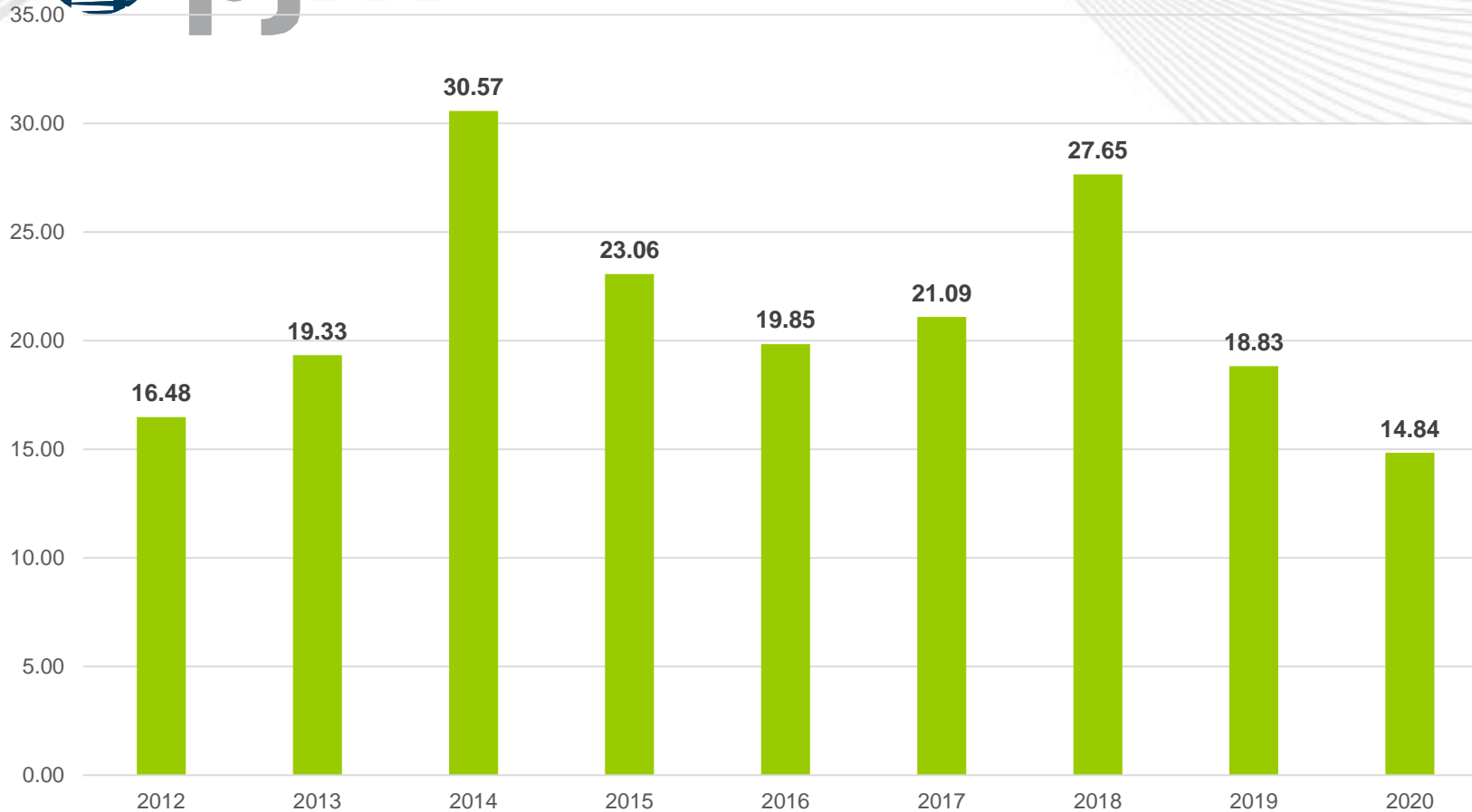
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-  What is the best value for a revenue based trigger to active a circuit breaker?
 - No way to model the ‘right’ dollar value to select to trigger
 - Potential to select value on high level analysis of potential market costs
- PJM looking to stakeholders to help best define the value for a revenue based trigger

Circuit Breaker Trigger- Revenue Based



Energy Market Billing
average = \$21.30B



- PJM annual energy market billing since 2012
- Average annual billing is ~21B
- Jan 2014 billing was 1/3 of annual billing (Polar Vortex)

Circuit Breaker Trigger- Revenue Based




Data on following slides are use to demonstrate possible (worst case) scenarios of daily energy billing at a defined daily MWh and LMP value

- Data does not have any additional assumptions such as DA hedging, etc., or any allocation of billing.

MWh	LMP	Market Total
Total MWh accumulation over 24 hours period	Assumed LMP for all 24 hours in the day	Maximum daily energy billing given the MWh and LMP assumptions

Circuit Breaker Trigger- Revenue Based

PEAK LOAD CONDITIONS



MWh	LMP	Market Total
3,500,000	\$3,700.00	\$12.9B
	\$2,000.00	\$7.0B
	\$1,000.00	\$3.5B
	\$ 500.00	\$1.7B
	\$ 50.00	\$0.17B
3,000,000	\$3,700.00	\$11.1B
	\$2,000.00	\$6.0B
	\$1,000.00	\$3.0B
	\$ 500.00	\$1.5B
	\$ 50.00	\$0.15B

Jan 5, 2018
~3M MWh

AVERAGE LOAD CONDITIONS

MWh	LMP	Market Total
2,500,000	\$3,700.00	\$9.2B
	\$2,000.00	\$5.0B
	\$1,000.00	\$2.5B
	\$ 500.00	\$1.2B
	\$ 50.00	\$0.12B
2,000,000	\$3,700.00	\$7.4B
	\$2,000.00	\$4.0B
	\$1,000.00	\$2.0B
	\$ 500.00	\$1.0B
	\$ 50.00	\$0.1B

PJM Av. Load
~2.1M MWh

Circuit Breaker Trigger- Revenue Based



LOW LOAD CONDITIONS

MWh	LMP	Market Total
1,500,000	\$3,700.00	\$5.5B
	\$2,000.00	\$3.0B
	\$1,000.00	\$1.5B
	\$ 500.00	\$0.75B
	\$ 50.00	\$0.07B

PJM Min Load
(Since 2014)
~1.6M MWh

- Average daily billing is ~75M
- January 5, 2018 was ~675M is energy market billing
 - Higher daily energy market billing in January 2014



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Market Data to Support Defining Circuit Breaker Trigger



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