



Demand Response ELCC Education

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Resource Adequacy Planning

Market Implementation Committee
June 5, 2024

- As part of the FERC-approved Docket No. ER24-99, PJM
 - Includes Demand Resources in the ELCC/RRS model and
 - Calculates an ELCC Class Rating for the DR ELCC Class.

- Less available resources are dispatched after the more available resources to maximize the system reliability benefit
 - If during a certain hour early on in the emergency event PJM has to choose between serving load with a more available resource (e.g., Demand Resource available for more than 10 hours) and serving load with a less available resource (e.g., a four-hour Limited Duration resource), PJM will dispatch the more available resource first

General Order of Dispatch in the Model:



- Demand Resources (DR) have performance windows depending on the season

	Capacity Performance DR	Summer-Period DR
Summer Months	10:00AM to 10:00PM EPT	10:00AM to 10:00PM EPT
Winter Months	6:00AM to 9:00PM EPT	NA

- DR is dispatched prior to limited duration resources, when available during the relevant performance window
- DR availability during performance window is modeled to be scaled proportional to system load.

$$\frac{\textit{Simulated HourlyLoad}_i}{50/50 \textit{ Simulated Peak Load Forecast}} \times \textit{ICAP of DR}$$

- If,
 - The simulated hourly load is within the DR performance window and it is a 90/10 load for 2025/26 equal to 167,798 MW,
 - the 50/50 load for 2025/26 is 153,493 MW,
 - and the projected ICAP of DR for 2025/26 is 7,814 MW.
- Then, the amount of DR simulated to be available in the hour is

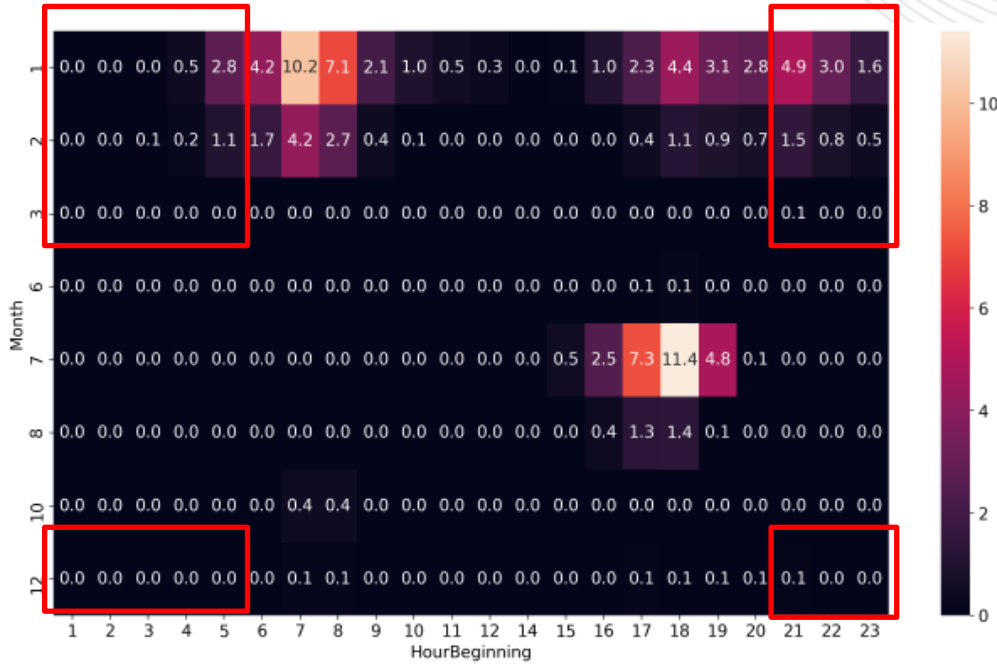
$$\frac{167,798 \text{ MW}}{153,493 \text{ MW}} \times 7,814 \text{ MW} = 8,542 \text{ MW}$$

ELCC Class	Final Rating
Onshore Wind	35%
Offshore Wind	60%
Solar Fixed Panel	9%
Solar Tracking Panel	14%
Landfill Gas Intermittent	54%
Hydro Intermittent	37%
4-hr Storage	59%
6-hr Storage	67%
8-hr Storage	68%
10-hr Storage	78%
DR	76%
Nuclear	95%
Coal	84%
Gas CC	79%
Gas CT	62%
Gas CT Dual Fuel	79%
Diesel	92%
Steam	75%

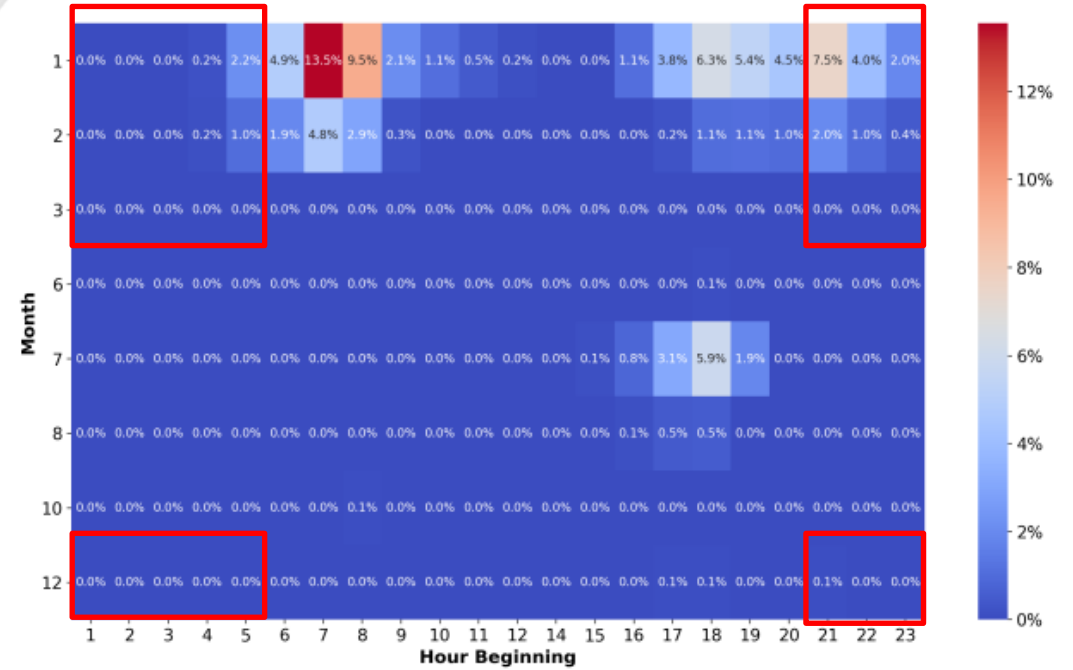


ELCC Class	Final Rating
DR	76%

LOLH HEATMAP



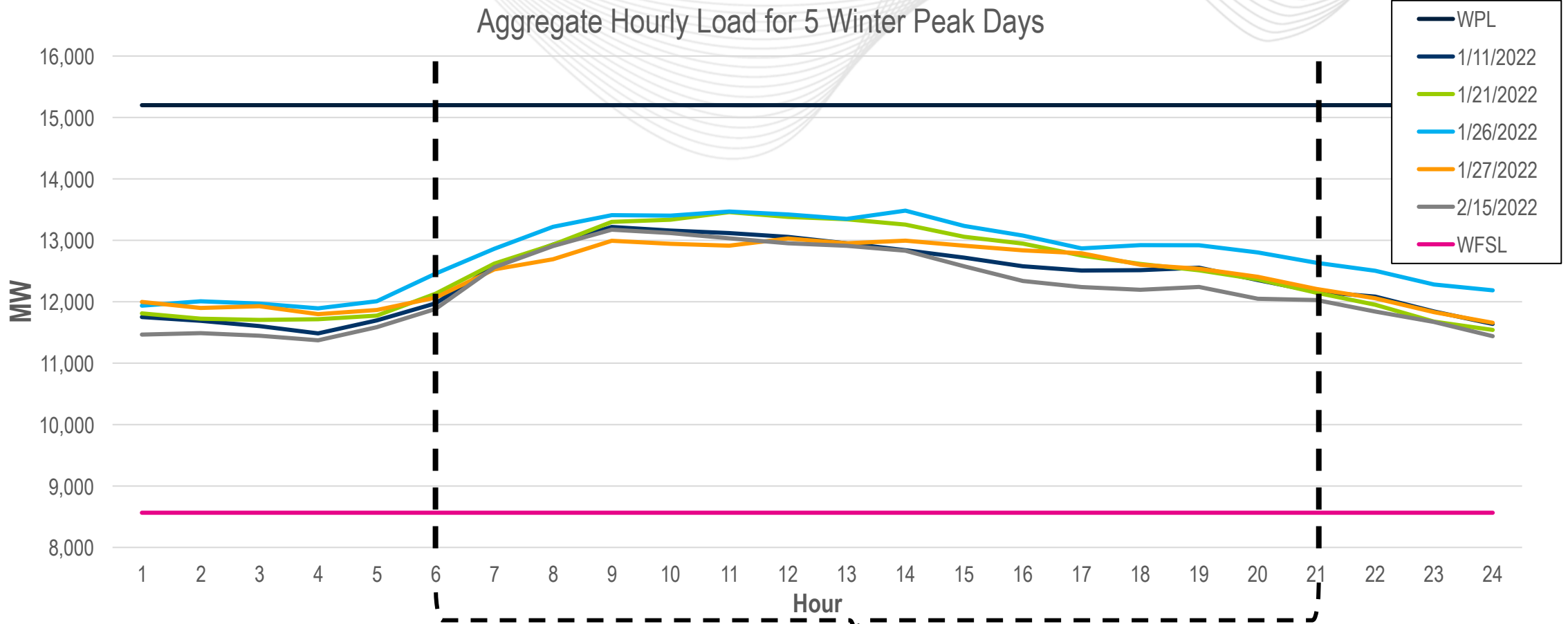
EUE HEATMAP



Sizable shares of LOLH (17%) and EUE (20%) fall outside of the DR Performance Window in winter



Aggregate Hourly Load Data from DY-2 WPL: 2023/2024 DY



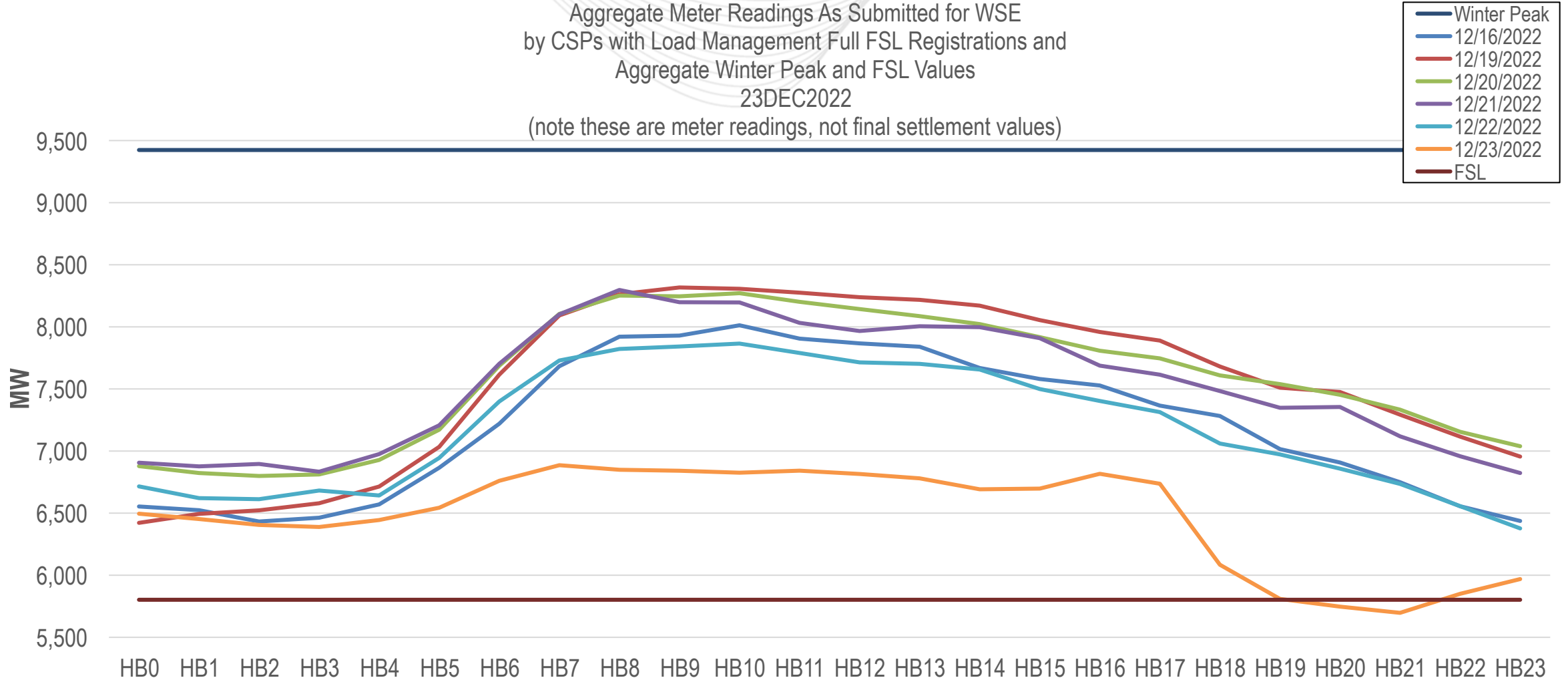
Current Winter availability window is 6am to 9pm EPT

Winter Nominated ICAP of FSL customers is 7,758.9 MW



Aggregate Meter Readings for Winter Storm Elliot

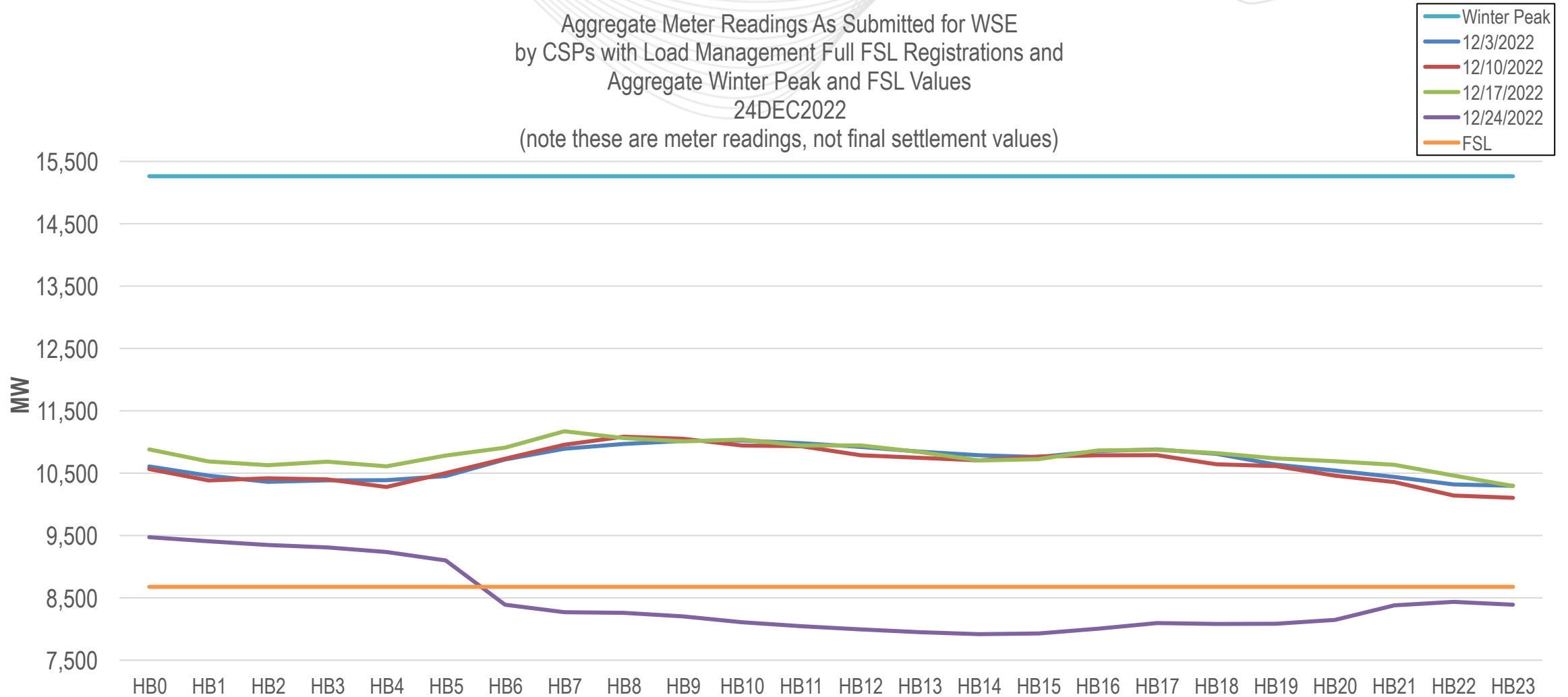
Aggregate Meter Readings As Submitted for WSE
by CSPs with Load Management Full FSL Registrations and
Aggregate Winter Peak and FSL Values
23DEC2022
(note these are meter readings, not final settlement values)





Aggregate Meter Readings for Winter Storm Elliot, continued

Aggregate Meter Readings As Submitted for WSE
by CSPs with Load Management Full FSL Registrations and
Aggregate Winter Peak and FSL Values
24DEC2022
(note these are meter readings, not final settlement values)



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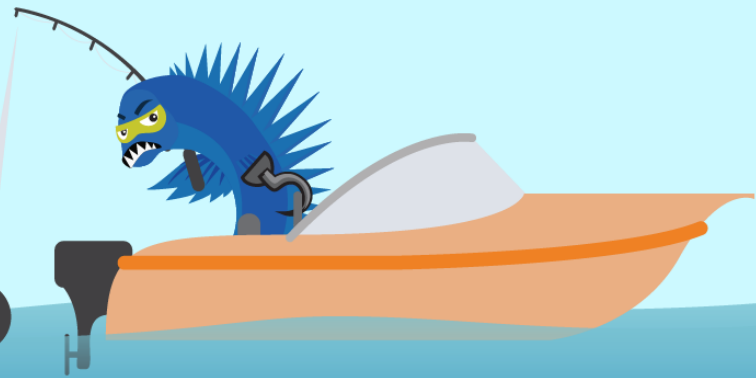
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**PROTECT THE
POWER GRID**

**THINK BEFORE
YOU CLICK!**



**BE ALERT TO
MALICIOUS PHISHING
EMAILS**



**Report suspicious email activity to PJM.
Call (610) 666-2244 or email it_ops_ctr_shift@pjm.com**

Appendix



Background: Nominated ICAP of Demand Resources

Topic	Summer Season	Winter Season
Peak MW	<p>Peak Load Contribution (PLC)</p> <ul style="list-style-type: none"> The customer's load usage during PJM system summer 5 Coincident Peak days EDC specific calculation, some details are in the Tariff 	<p>Winter Peak Load (WPL)</p> <ul style="list-style-type: none"> Calculated as the average of the customer's specific peak hourly load between hours ending 7:00 EPT through 21:00 EPT on the PJM defined 5 coincident peak days from December through February two Delivery Year prior to the Delivery Year for which the registration is submitted. Possible to exclude up to two days if a day is below 35% of the average Can use the most recent Delivery Year data to calculate this value if more than two days are below 35% of the average Alternative data may be submit to support Winter Peak Load
Firm Service Level (FSL)	$PLC - (SFSL \times LossF)$ <p>SFSL = Summer Firm Service Load level LossF = the customer's EDC-assigned loss factor</p>	$(WPL \times ZWWAF - WFSL) \times LossF$ <p>ZWWAF = Zonal Winter Weather Adjustment Factor WFSL = Winter Firm Service Level LossF = the customer's EDC-assigned loss factor</p>
Guaranteed Load Drop (GLD)	$SGLD \times LossF$ <p>SGLD = Customer's Summer GLD reduction LossF = the customer's EDC-assigned loss factor</p>	$WGLD \times LossF$ <p>WGLD = Customer's Winter GLD reduction LossF = the customer's EDC-assigned loss factor</p>



<https://pjm.com/training/-/media/988818BE5BE6458C95FFD99AD13434CF.ashx>