



CONSEQUENCES OF USING ECONOMIC CBL TO DETERMINE NON-SUMMER DR CAPACITY COMPLIANCE

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**PJM Industrial Customer Coalition
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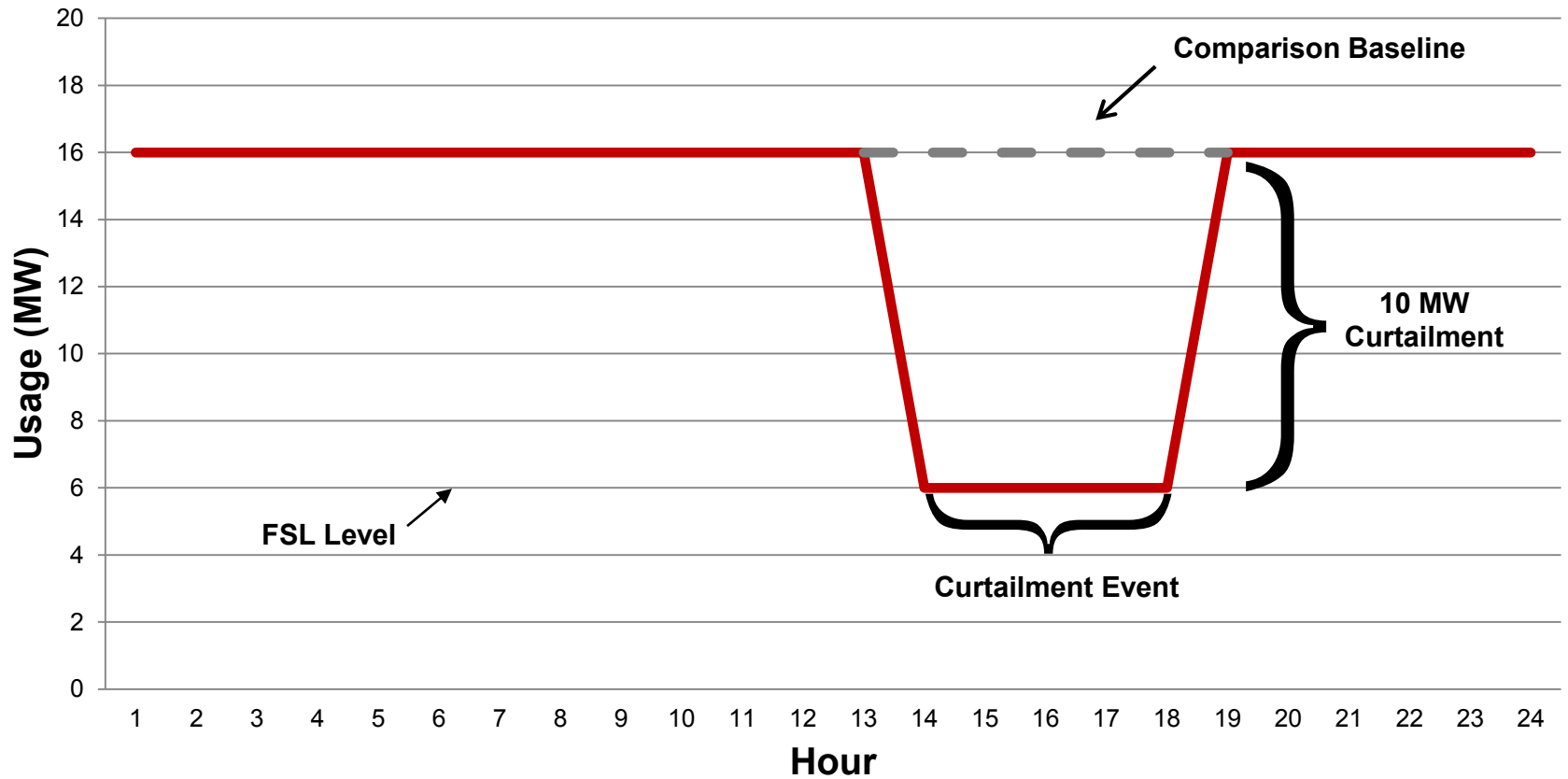


BACKGROUND

- **Vast majority of DR resources use Firm Service Level (“FSL”) option for compliance measurement**
- **FSL represents the MW value that the DR Resource agrees to limit its usage to during a curtailment event**
 - Represents the amount of non-interruptible load at the customer site
- **Historically, for capacity market participants, difference between PLC value and FSL equals DR curtailment commitment**
 - 16 MW PLC and 6 MW FSL results in DR curtailment of 10 MW
- **Actual curtailment is measured as difference between comparison baseline and actual consumption**
 - PLC is the comparison baseline for all products other than CP
 - For CP product, Economic CBL is the comparison baseline for non-summer events while PLC is the comparison baseline for summer events
- **DR Compliance is the difference between curtailment obligation and actual curtailment**

DR CURTAILMENT MEASUREMENT

Customer Usage Profile

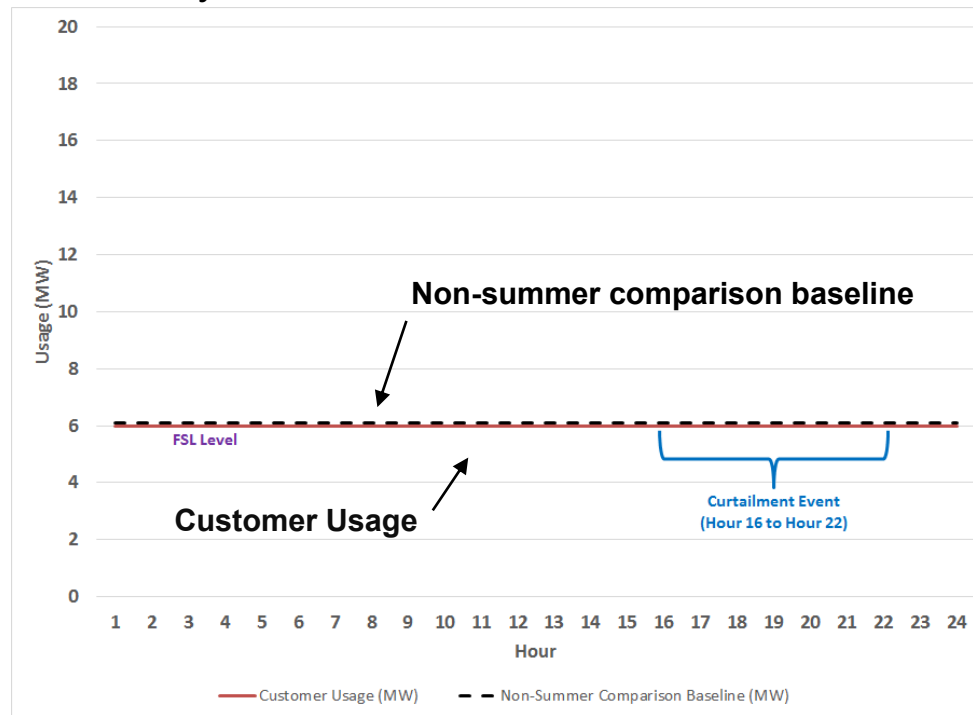


BACKGROUND

- **Full compliance is achieved when event consumption equals FSL level**
 -except for CP product during non-summer event
- **During non-summer events, CP DR compliance depends on CBL calculation just as much as customer usage being at non-interruptible load level**
 - Even if customer has all non-interruptible load turned off, customer now faces the possibility of being subject to CP Penalties
- **Reminder: Customer participates in DR to offset capacity costs; capacity costs generally linked to customer's PLC ticket**
- **In the following examples, consider a DR Resource that normally consumes 16 MW. During a DR event, customer has the capability to shutdown one specific production line to achieve the 10 MW curtailment**

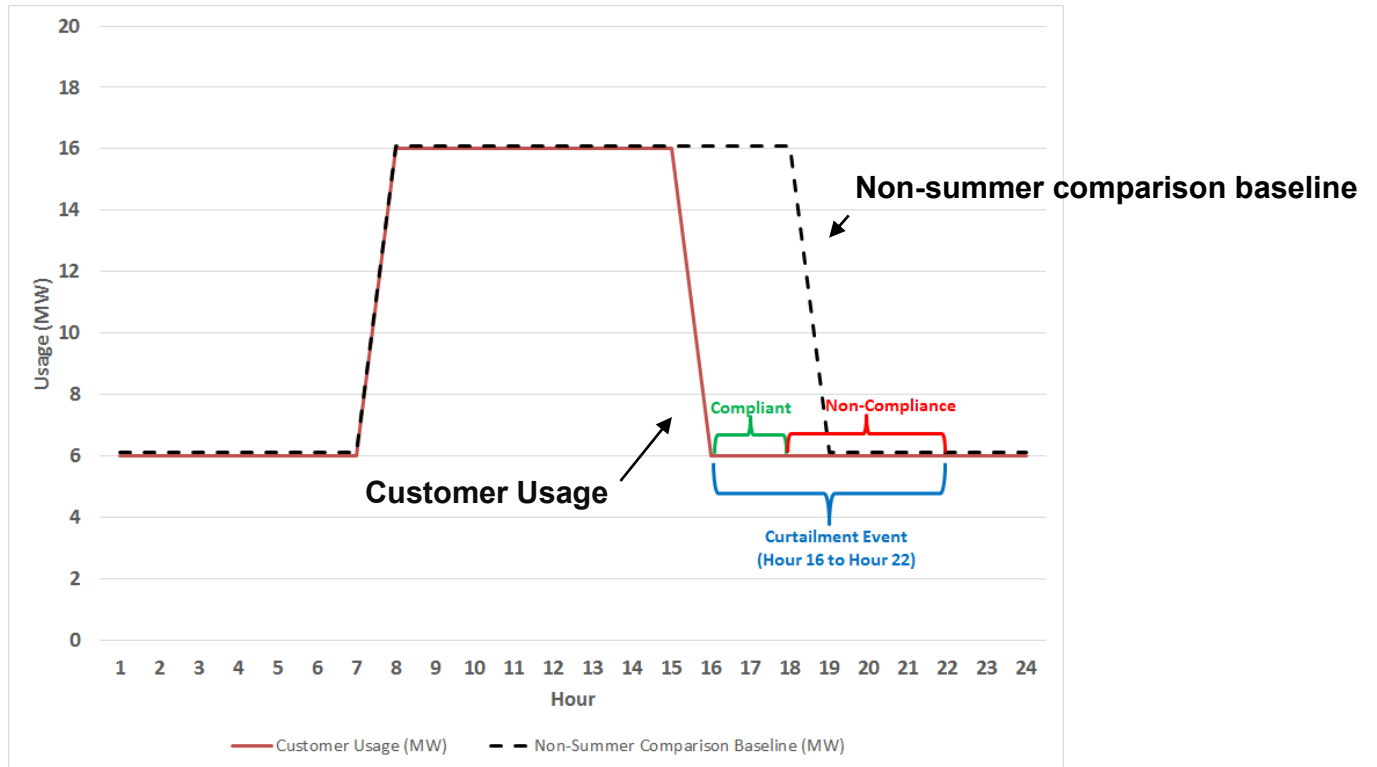
NON-COMPLIANCE SITUATION #1

- **Use of Economic CBL can result in CP DR resource being shown as non-compliant even when all of customer's interruptible load has been turned off**
 - Can occur if event happens on a normal "off day" for DR resource
 - Some DR participants operate only Monday-Friday or operate on a four-day work week



NON-COMPLIANCE SITUATION #2

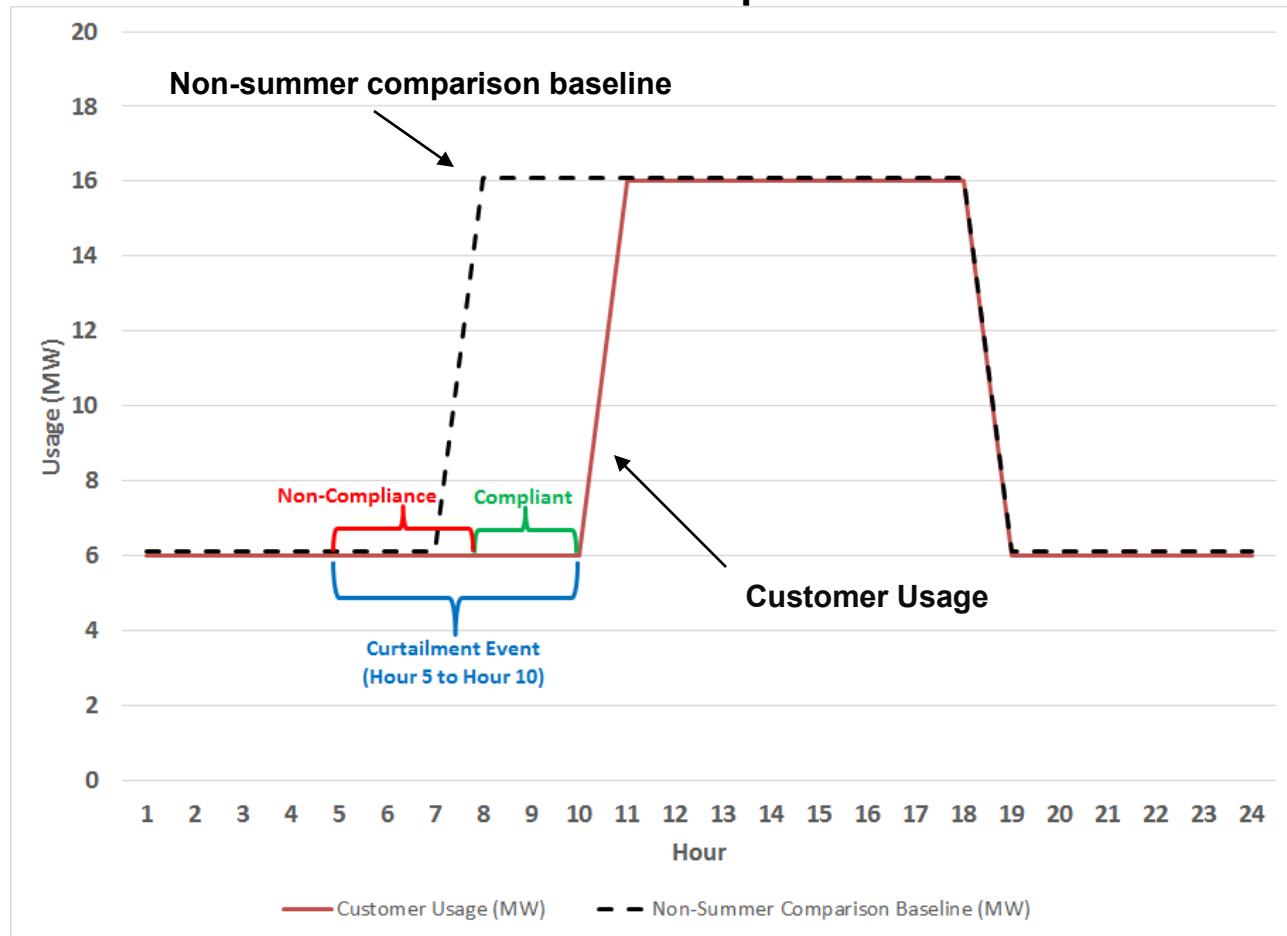
- **Use of Economic CBL can result in CP DR Resource compliance status changing...even if customer usage remains consistent at FSL value**
 - Can occur if DR Event continues after normal closing hours of participating customer or other normal periods of low usage within the event day



NON-COMPLIANCE SITUATION #3

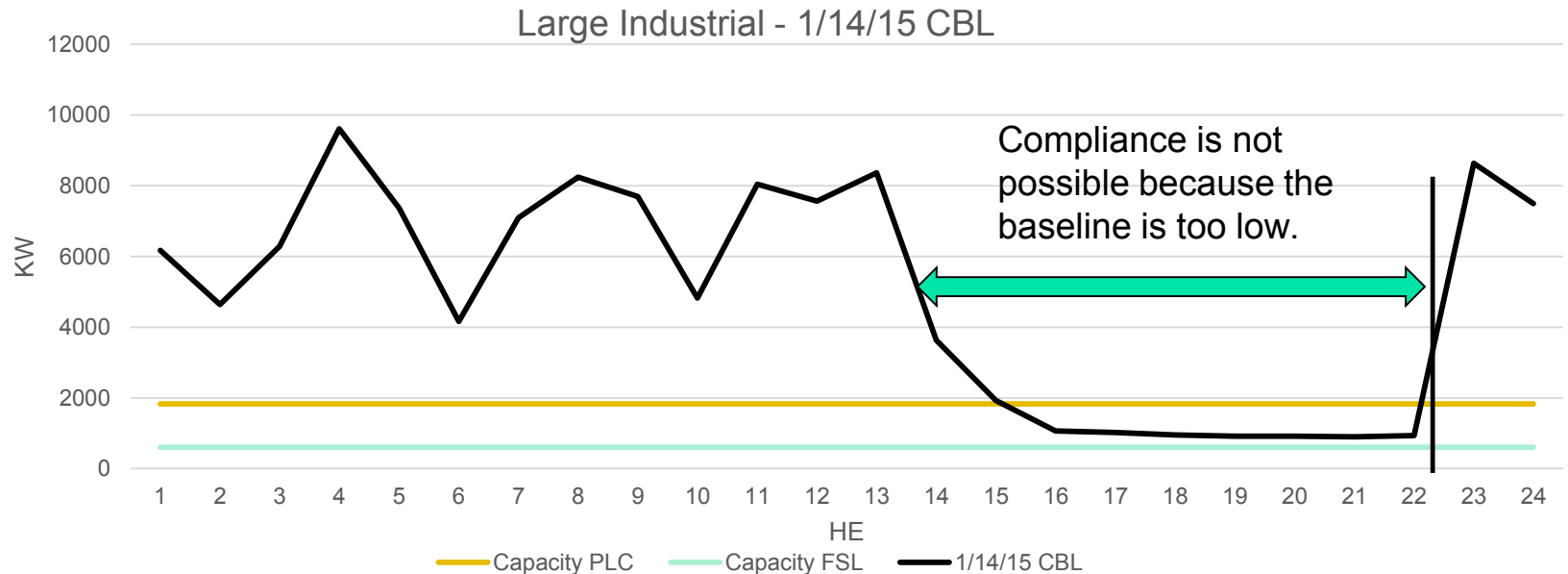
- Or....Event starts prior to DR Resource's normal start-up time

CBL = FSL value → Non-compliance



NON-COMPLIANCE SITUATION #4

- **Economic CBL will be used to measure capacity compliance during hours when customer is not permitted to submit Economic Load Response curtailments**
 - Under Economic Load Response Program rules, periods when low usage occurs due to 'normal operation' may not be submitted for energy market compensation
 - Under CP, low usage periods also can also now result in assessment of performance penalties

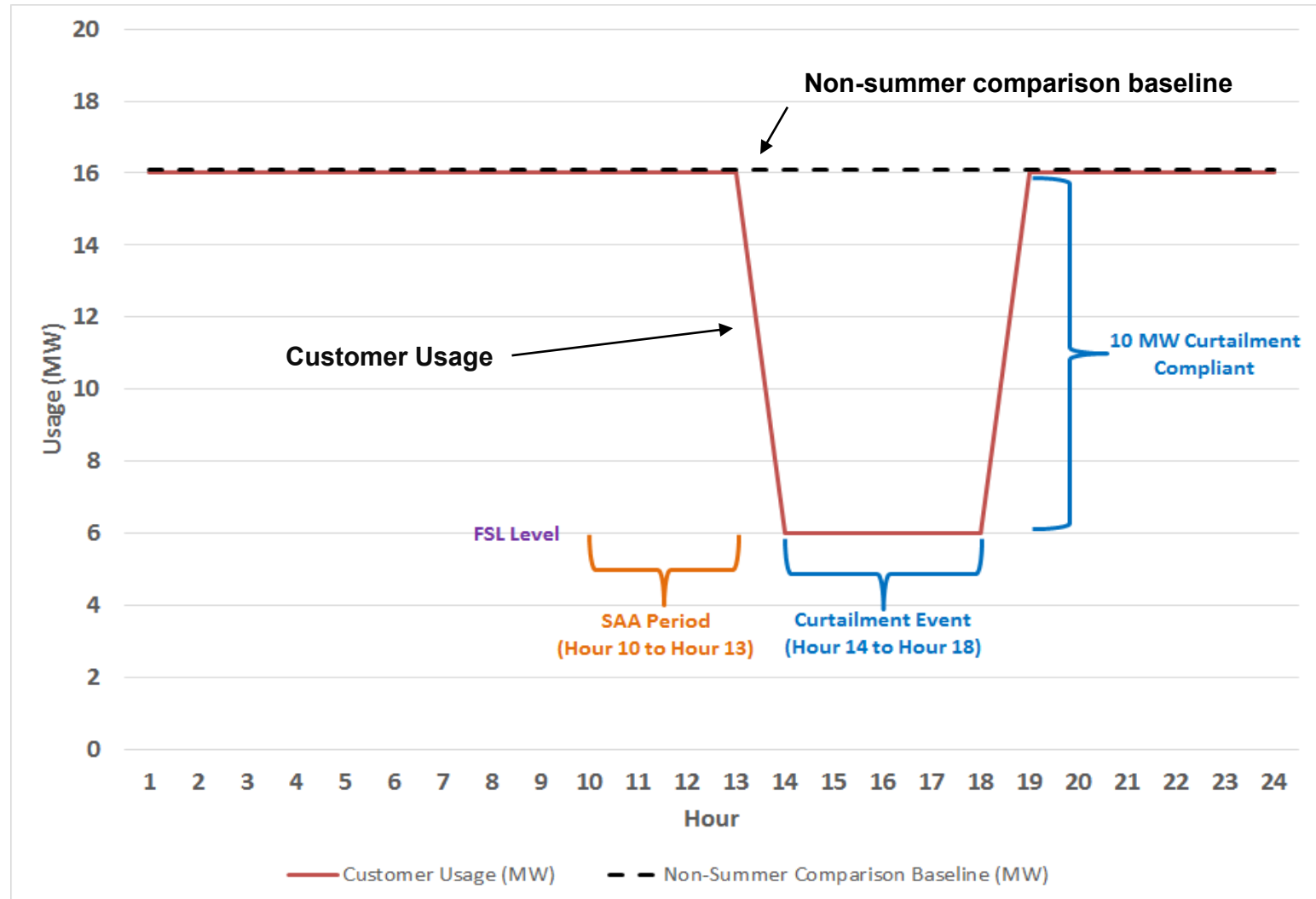


PJM DEFAULT NON-SUMMER CBL CALCULATION DETAIL

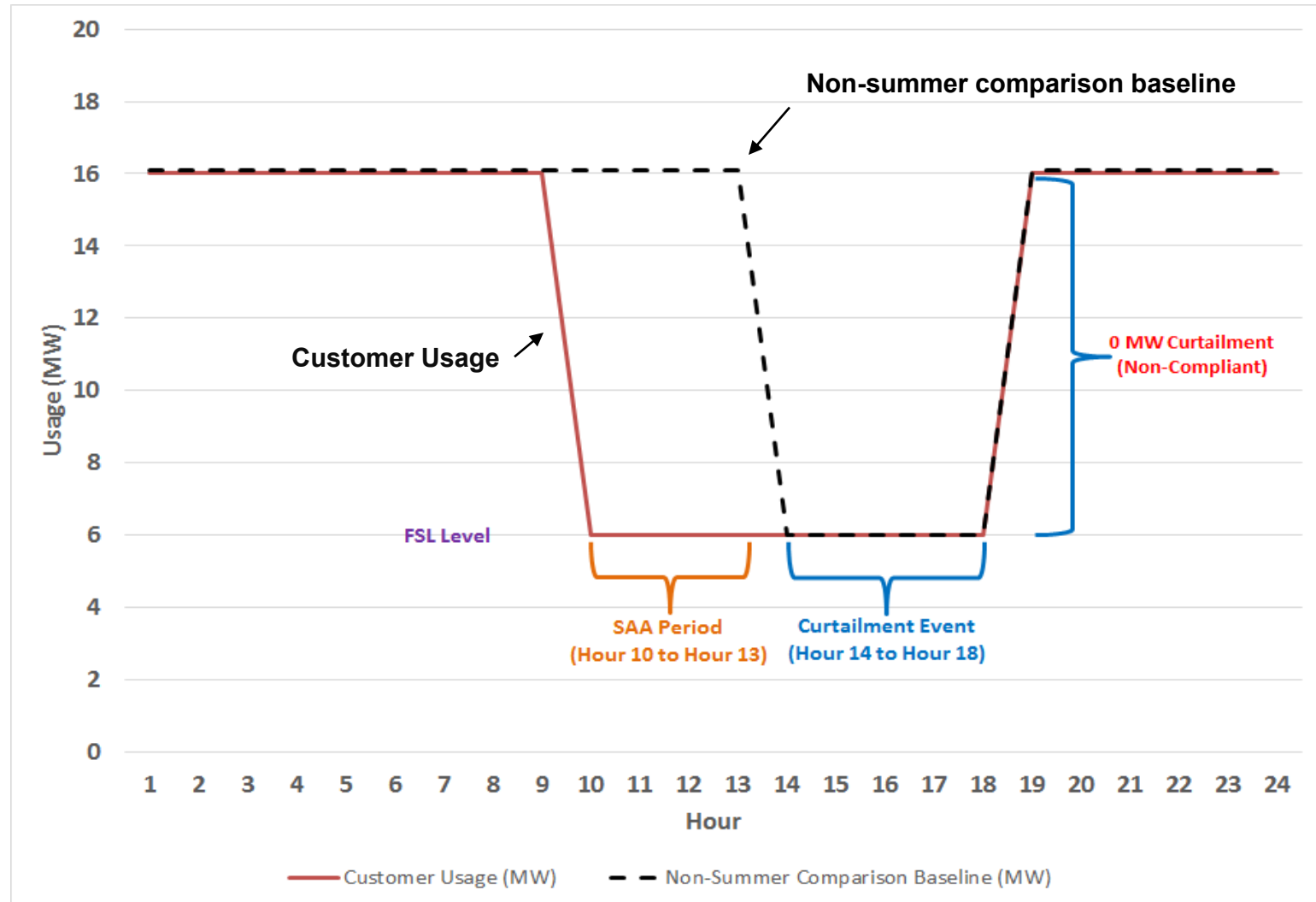
Default CBL includes two components

- **Using determined CBL days, individual hourly CBLs are calculated for each hour of the curtailment event**
 - Separate CBL for weekdays, Saturdays and Sundays/Holidays
 - Weekday CBL: Based on average of *four* highest usage days from last *five* weekdays
 - Saturday (Sunday/Holidays) CBL: Based on average of *two* highest usage days from last *three* Saturdays (Sundays and Holidays)
- **Symmetric Additive Adjustment ("SAA") is applied**
 - Purpose is to adjust CBL to current usage conditions prior to load reduction event
 - Supposed to be a 'true-up' mechanism that raises or lowers the CBL value
- **SAA process**
 1. Skipping hour just prior to curtailment, average the three next most recent hours
 2. Compare pre-curtailment hour usage of event day to pre-curtailment hour usage of the prior days used in CBL calculation
 3. Difference is applied to curtailment CBLs
 - Higher pre-curtailment hour usage during event day increases overall CBL
 - Lower pre-curtailment hour usage during event day reduces overall CBL

INCORPORATING SAA INTO DR CURTAILMENT MEASUREMENT



NON COMPLIANCE SITUATION #5



PJM DEFAULT NON-SUMMER CBL IMPLICATIONS

Atypical or low usage during the prior days or SAA period can result in assessment of CP penalties

- **DR customer implements “self-curtailment” in anticipation of curtailment event**
 - If any curtailment occurs before or during the SAA window, SAA component will reduce CBL and result in CP penalty assessment
- **Customer not running production line in days prior to curtailment event due to low customer orders, production line shutdown for maintenance/re-tooling, or anticipated energy market conditions**
 - Lower usage days are included in CBL
 - Can occur even during periods when PJM has approved DR maintenance outage
- **If equipment used to implement DR curtailment is shutdown prior to DR event, CP non-compliance during non-summer events likely results**
 - Even though customer is at the same consumption level where it would be during a compliant event

TAKE-AWAYS

- **Fundamental Question: What is a customer purchasing with its capacity ticket?**
- **Should be no difference in the nature of capacity between summer and winter**
- **Reasonable to insure that Weather-Sensitive customers are not unfairly capitalizing on seasonal differences when it comes to measurement and verification**
 - Non-weather sensitive customers should not be impacted by the different seasonal M&V approaches PJM intends to use,,but they can be

