

# Reliability Pricing Model LSE Obligations

RPM Training  
October 2011

- Unforced Capacity (UCAP) Obligations are obligations assessed to load to satisfy the reliability requirements during the delivery year.
- UCAP Obligations are determined for the RTO and Zones as a result of the Base Residual and Second Incremental Auctions (prior to 12/13 DY)
- UCAP Obligations are determined for the RTO and Zones as a result of the Base Residual and all Incremental Auctions (effective with 12/13 DY)
- Zonal UCAP Obligations are allocated to and paid for by individual LSEs who serve load in the zone.

# How are Final RTO UCAP Obligations Determined?

Effective Date	When Determined?	Final RTO UCAP Obligation
Prior to 12/13 DY	After clearing of 2 <sup>nd</sup> IA and posted with 2 <sup>nd</sup> IA results.	Total amount of capacity procured in BRA and 2 <sup>nd</sup> IA plus the forecasted obligation to be served by ILR resources.
Effective with 12/13 DY	After clearing of the final IA for the DY.	Total amount of MWs cleared in Buy Bids submitted by PJM across all RPM Auctions less the total amount of MWs cleared in Sell Offers submitted by PJM across all Incremental Auctions.

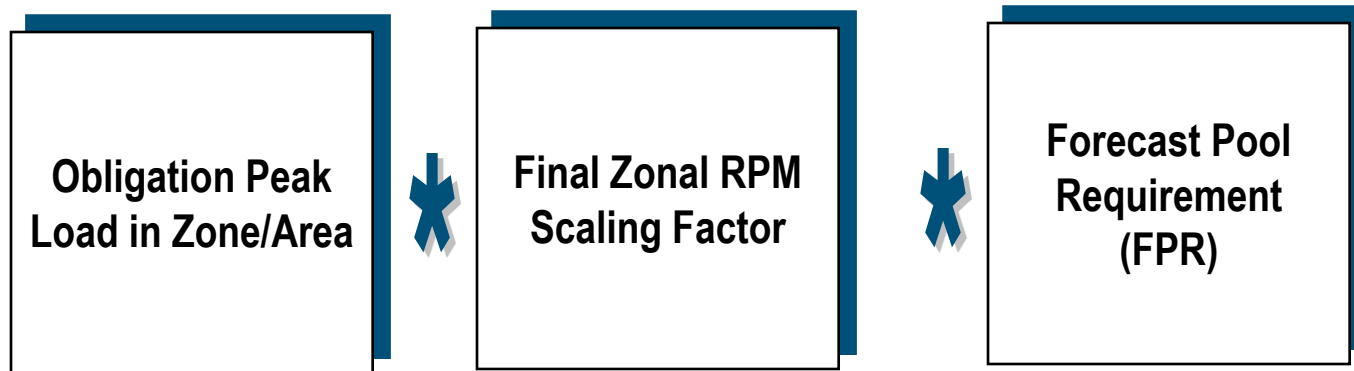
# How are Final Zonal UCAP Obligations Determined?

Effective Date	When Determined?	Final Zonal UCAP Obligation
Prior to 09/10 DY	After clearing of 2 <sup>nd</sup> IA and posted with 2 <sup>nd</sup> IA results.	<p>Base Zonal UCAP Obligation plus zonal allocation of total capacity procured in 2<sup>nd</sup> IA (for zones where Final Zonal Peak Load Forecast is greater than Preliminary Zonal).</p> <p>Since no 2<sup>nd</sup> IAs were conducted, Base Zonal UCAP Obligation = Final Zonal UCAP Obligation.</p>
09/10 DY – 11/12 DY	After clearing of the 3 <sup>rd</sup> IA and posted with 3 <sup>rd</sup> IA results.	<p>Zonal allocation of the total amount of capacity procured in BRA and 2<sup>nd</sup> IA plus the Zonal Forecast ILR Obligation.</p> <p>(Includes allocation of AEP excess ILR Forecast Obligation to zones.)</p>
Effective with 12/13 DY	After clearing of the final IA for the DY.	Zonal allocation of the Final RTO UCAP Obligation

Effective with the 09/10 DY, zonal allocations based on the Final Zonal Peak Load Forecasts.

- PJM procured capacity on behalf of LSEs through RPM Auctions to satisfy their daily UCAP obligations during the DY
- LSEs will automatically be assessed a Locational Reliability Charge for load served during the DY
- LSEs are not required to participate in RPM Auctions
  - An LSE may choose to offer resources in RPM Auctions and use any Auction Credits received to offset the Locational Reliability Charges

# LSE Daily UCAP Obligation in a Zone/Area =



- LSE UCAP Obligations are assessed daily based on load served during Delivery Year
- Daily UCAP Obligation is locked 36 hours prior to the start of the operating day.
- Effective 2012/2013 DY, FPR used is the final value updated prior to the Third Incremental Auction.

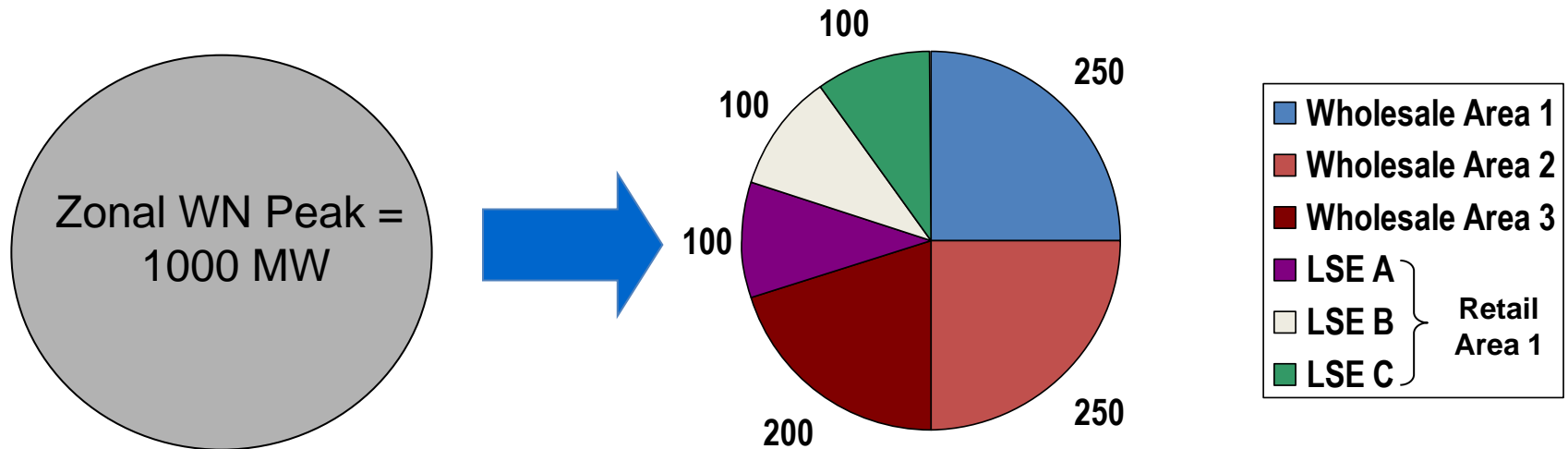
## What is purpose of Final Zonal RPM Scaling Factor?

- Final Zonal RPM Scaling Factors are used to calculate an LSE's Daily UCAP Obligation
- The factor accounts for:
  - 1) Load growth from prior-year summer to the Delivery Year
  - 2) Any excess resources procured (in all RPM Auctions) above those required to exactly meet the final Forecast Pool Requirement; and
  - 3) Zonal ILR Forecast Obligation Values (prior to 12/13 DY)
  - 4) Any resources released in Incremental Auctions (Effective 12/13 DY)
- Final Zonal RPM Scaling Factors are posted by February 1 prior to the start of the DY (prior to 12/13 DY) and are posted after the final Incremental Auction (effective 12/13 DY).

Final Zonal RPM Scaling Factor =  
Final Zonal UCAP Obligation / (FPR \* Zonal Weather Normalized Peak for summer prior to DY)

- Each PJM Electric Distribution Company (EDC) is responsible for allocating the previous summer's weather normalized peak to end-use customers in the zone (both retail and wholesale) by Dec. 31 prior to the start of the Delivery Year.

Often referred to as a "PLC" or "capacity ticketing" process.



•Obligation Peak Load allocation for a zone/area is constant and effective for the entire Delivery Year.

- Areas with Retail Choice can modify LSE share on a daily basis by uploading XML files to eRPM.
- XML Uploads must be submitted by EDC **at least** 36 hours prior to the start of the operating day.

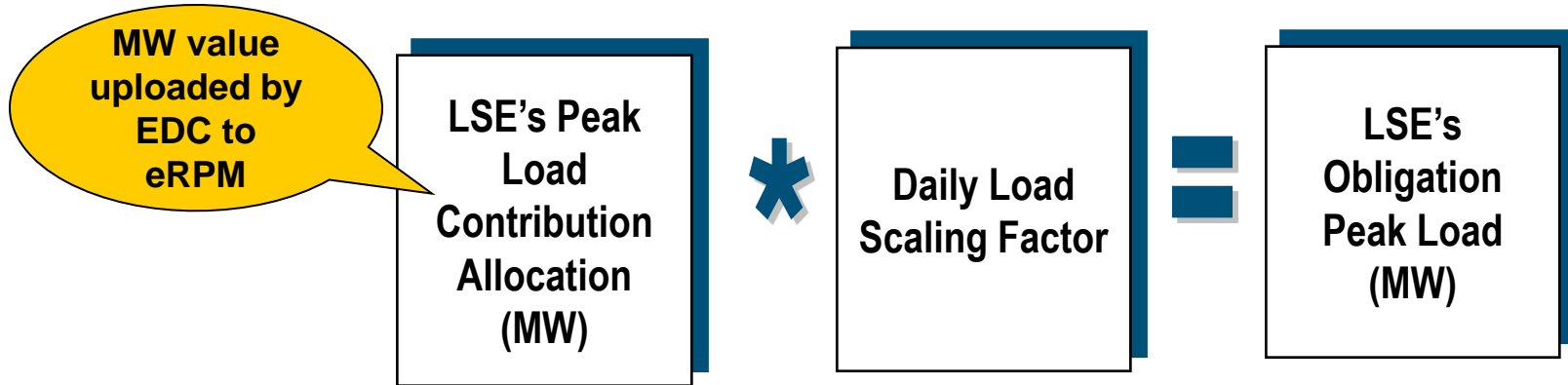


- The daily sum of all the uploaded LSE peak load contribution data in a zone/area will be scaled to equal the Annual Obligation Peak Load Allocation for the zone/area

$$\text{Daily Load Scaling Factor} = \frac{\text{EDC Obligation Peak Load annual allocation to the zone/area}}{\Sigma \text{ Uploaded LSE Peak Load Contribution Values to zone/area}}$$

**The Daily Load Scaling Factor will equal 1.0 in cases where the sum of the uploaded LSE Peak Load Contribution values equal the Annual Allocation for that zone/area.**

An LSE's Daily Obligation Peak Load in a zone/area =



**Changes to an LSE's Daily Obligation Peak Load DO NOT require any action on part of the LSE.**

**Peak Load**

Company: TEST    Zone/Area: ALL    Date: 10/24/2007    Refresh

Pages: 12 | Next | Last    Records: 1

Zone	Prelim. Zonal Peak LF	Base Zonal WN Summer Peak	Final Zonal WN Summer Peak	Base Zonal RPM Scaling Factor	Base Zonal UCAP Obl.	2nd Inc. Auction Zonal UCAP Obl.	Zonal Peak LF Increase	Final Zonal UCAP Obl.	Final Zonal RPM Scaling Factor	Final Zonal Peak LF	Zonal Capacity Price
AECO	2678.0	2710.0	2710.0	1.01652	2972.4	0.0	0.0	2972.4	1.01652	2678.0	197.158
AEP	2945.1	2869.0	2869.0	1.05595	3483.8	0.0	0.0	3483.8	1.12539	2945.1	40.694
AFS	8338.0	8500.0	8500.0	1.00906	9265.5	0.0	0.0	9265.5	1.01025	8338.0	40.694
BGE	7062.0	7090.0	7090.0	1.02460	8062.8	0.0	0.0	8062.8	1.05656	7062.0	108.051
COMED	22220.1	22310.0	22310.0	1.02452	25046.3	0.0	0.0	25046.3	1.04045	22220.1	40.694
DAY	3374.0	3370.0	3370.0	1.02989	3747.9	0.0	0.0	3747.9	1.03071	3374.0	40.694
DCM	18567.8	18370.0	18370.0	1.03974	20608.9	0.0	0.0	20608.9	1.03974	18567.8	40.694
DPL	3950.0	3960.0	3960.0	1.02607	4458.4	0.0	0.0	4458.4	1.04343	3950.0	197.158
DUO	2837.0	2860.0	2860.0	1.02039	3153.2	0.0	0.0	3153.2	1.02180	2837.0	40.694
JCPL	6115.0	6080.0	6080.0	1.03459	6857.7	0.0	0.0	6857.7	1.04533	6115.0	197.158
Totals	116592.0	116359.0	116359.0		131069.7	0.0	0.0	131069.7		116592.0	

Pages: 1    Records: 1 - 4 of 4 matches

LSE	Zone/Area	10/24/2007 Obligation Peak Load	10/24/2007 Daily UCAP Obligation	10/25/2007 Obligation Peak Load	10/25/2007 Daily UCAP Obligation	10/26/2007 Obligation Peak Load	10/26/2007 Daily UCAP Obligation	10/27/2007 Obligation Peak Load	10/27/2007 Daily UCAP Obligation	10/28/2007 Obligation Peak Load	10/28/2007 Daily UCAP Obligation
TEST	JCPL/JCPL_TEST	30.700	34.627	30.700	34.627	30.700	34.627	30.700	34.627	30.700	34.627
TEST	METED/METED_TEST	76.800	86.184	76.800	86.184	76.800	86.184	76.800	86.184	76.800	86.184
TEST	PENELEC/PENELEC_TEST	335.100	373.371	335.100	373.371	335.100	373.371	335.100	373.371	335.100	373.371
TEST	PPL/PPL_TEST	5.600	6.419	5.600	6.419	5.600	6.419	5.600	6.419	5.600	6.419
Totals		448.200	500.601	448.200	500.601	448.200	500.601	448.200	500.601	448.200	500.601

\*\*All numbers are preliminary until the auction is approved\*\*

Zonal RPM Scaling Factors are available in eRPM and are posted publicly on the RPM Auction User Information web page.

Obligation Peak Load and UCAP Obligation assigned to the participant is not final until 36 hours prior to the delivery day.

Load & Obligation
Wholesale Load
PY Parameters
CTR
Zone Areas

Peak Load
Peak Load Summary
NSPL

### Peak Load Summary

Company:  Zone/Area:  Date:

Refresh

Download XML

Download CSV

Status	
BASE :	CLEARED
FIRST :	CANCELLED
SECOND :	CANCELLED
THIRD :	CLEARED

Pages: 1 Records: 1 - 3 of 3 matches.

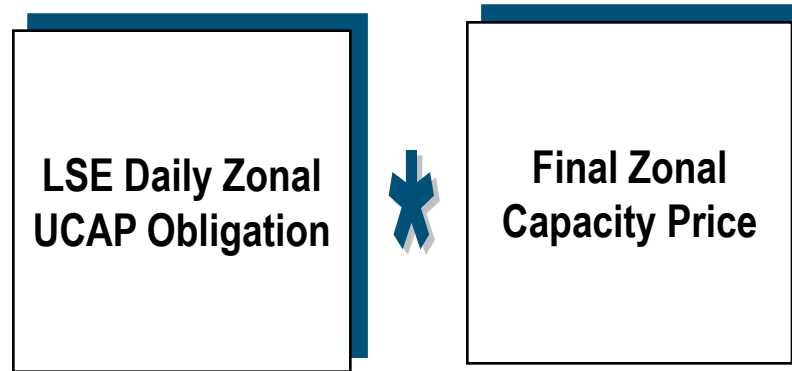
### Peak Load Summary

LSE	Zone	Area	Uploaded MW	Scaling Factor	Obligation Peak Load MW
TEST2	TEST	TEST	25.0	1.05263	26.316
TEST4	TEST	TEST	30.0	1.05263	31.579
TEST3	TEST	TEST	40.0	1.05263	42.105
Totals			95.0		100.000

Daily Load Scaling Factor

$$\text{Uploaded PLC MW} * \text{Daily Scaling Factor} = \text{LSE Obligation Peak Load}$$

## Locational Reliability Charge =



- Each RPM LSE that serves load in a PJM Zone or load outside PJM using PJM resources (i.e., Non-Zone Network Load) during the Delivery Year must pay a Locational Reliability Charge.
- Charges calculated daily and billed weekly during Delivery Year.

- UCAP Obligations are determined for the RTO and Zones as a result of the Base Residual and Second Incremental Auctions (prior to 12/13 DY).
- UCAP Obligations are determined for the RTO and Zones as a result of the Base Residual and all Incremental Auctions (effective with 12/13 DY).
- Zonal UCAP Obligations are allocated to LSEs in a zone through the LSE Daily UCAP Obligation calculation.
- LSE Daily UCAP Obligations are not final until 36 hours prior to the delivery day.
- All RPM LSEs will be assessed a Locational Reliability Charge for load served during the Delivery Year.