

Phase 2 Proposals

EMUSTF

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Jan 2013 – Jun 2014 Energy Uplift Charges

Energy Uplift Category	Charges		Charges excluding Jan	
	(\$MM)	Share	2014 (\$MM)	Share
Day-Ahead Operating Reserve	\$151.9	9.0%	\$116.1	10.7%
Balancing Operating Reserve (Reliability)	\$493.0	29.1%	\$106.1	9.8%
Balancing Operating Reserve (Deviations)	\$614.9	36.2%	\$437.8	40.2%
Reactive	\$333.5	19.7%	\$329.7	30.3%
Black Start	\$101.0	6.0%	\$97.0	8.9%
Synchronous Condensing	\$0.5	0.0%	\$0.4	0.0%
Local	\$1.5	0.1%	\$0.9	0.1%
Total	\$1,696.3	100.0%	\$1,088.1	100.0%

Allocation Recap

- **Day-Ahead Operating Reserve** paid by DA Load, DA Exports and DECs.
- **Balancing Operating Reserve (Reliability)** paid by RT Load + RT Exports.
- **Balancing Operating Reserve (Deviations)** paid by transactions/resources that deviate.
- **Reactive** paid by RT Load.
- **Black Start** paid by RT Load + RT Interchange.
- **Synchronous Condensing** paid by RT Load + RT Exports.
- **Local** paid by TO requesting service.

Jan 2013 – Jun 2014 Energy Uplift Charges

- 74.3% (Jan 2013 – Jun 2014) or 60.7% (excluding Jan 2014) of total charges were DAOR and BOR charges.
- The majority of charges were allocated as BOR Deviation charges.

Energy Uplift Category	Charges		Charges excluding Jan	
	(\$MM)	Share	2014 (\$MM)	Share
Day-Ahead Operating Reserve	\$151.9	12.1%	\$116.1	17.6%
Balancing Operating Reserve (Reliability)	\$493.0	39.1%	\$106.1	16.1%
Balancing Operating Reserve (Deviations)	\$614.9	48.8%	\$437.8	66.3%
Total	\$1,259.8	100.0%	\$660.0	100.0%

Allocation Breakdown

- **Day-Ahead Operating Reserve**

Denominator	Daily Average (MWh)	Share
Day-Ahead Load	2,077,265	91.3%
Day-Ahead Exports	33,606	1.5%
DECs	164,597	7.2%
Total	2,275,467	100.0%

- **Balancing Operating Reserve (Reliability)**

Denominator	Daily Average (MWh)	Share
Real-Time Load	2,137,415	97.0%
Real-Time Exports	66,929	3.0%
Total	2,204,344	100.0%

Allocation Breakdown

- **Balancing Operating Reserve (Deviations)**

Deviations	Daily Average (MWh)	Share
Load Only	134,101	38.9%
Generators	87,698	25.5%
Imports/Exports Only	38,592	11.2%
DECs/INCs Only	39,282	11.4%
IBTs Only	5,015	1.5%
Combination with DEC/INC	27,140	7.9%
Combination without DEC/INC	12,665	3.7%
Total	344,493	100.0%

Allocation Breakdown

- Day-Ahead and Balancing Operating Reserve Charges**

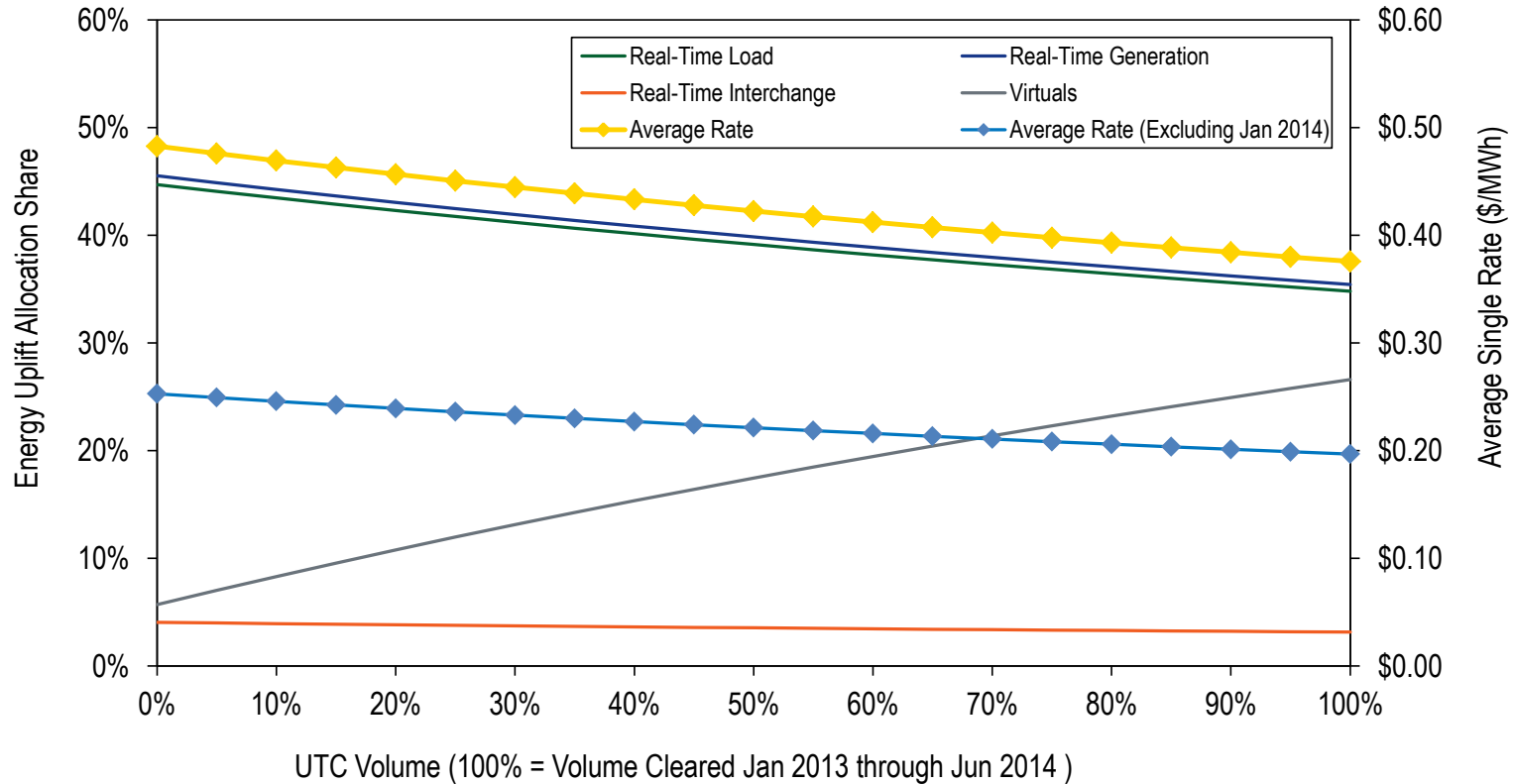
Transaction/Resource	Share	Share excluding Jan 2014
Load	68.0%	57.5%
Generators	12.4%	16.9%
Interchange	6.8%	8.2%
DECs/INCs	6.4%	8.8%
IBTs	0.7%	1.0%
Combination with DEC/INC	3.8%	5.2%
Combination without DEC/INC	1.8%	2.4%
Total	100.0%	100.0%

Daily Single Rate

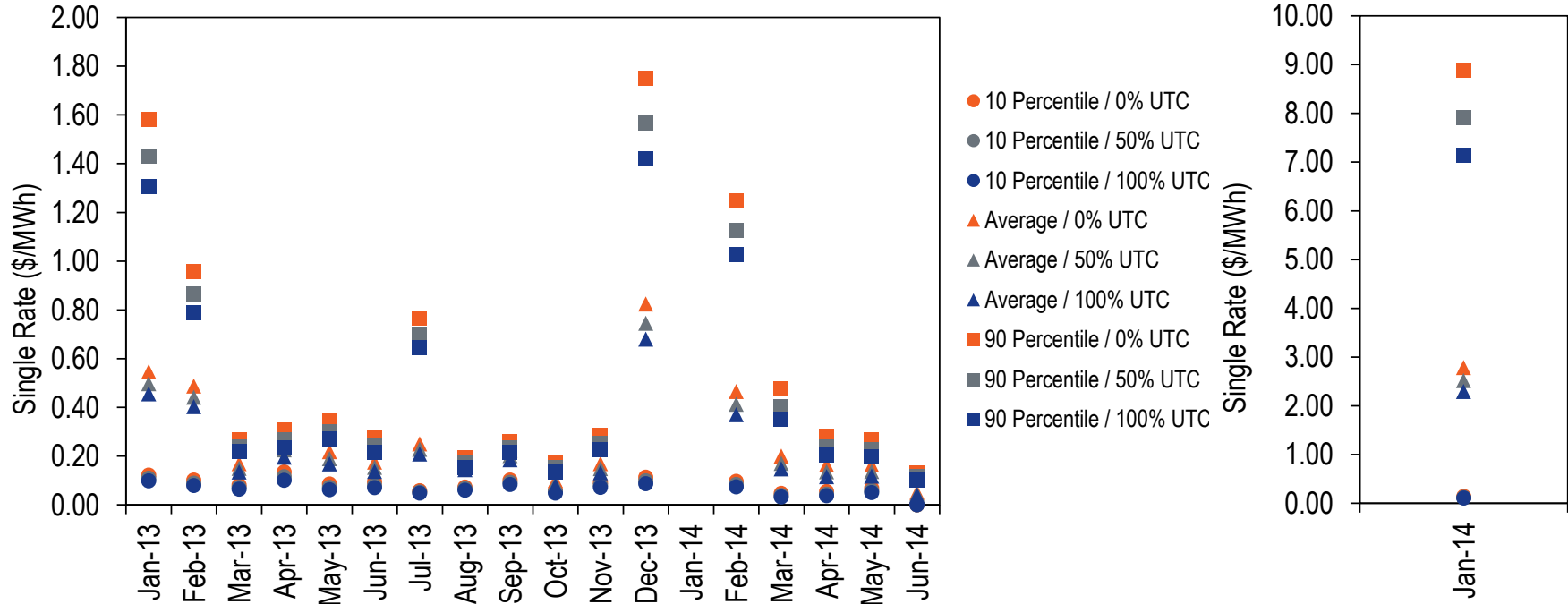
- **The proposed single rate by PJM includes all transactions/resources in denominator.**
- **Single rate allocation breakdown:**

Denominator	Daily Average (MWh)	Share
Real-Time Load	2,137,415	34.8%
Real-Time Generation	2,175,677	35.4%
Real-Time Interchange	193,713	3.2%
DECs/INCs	272,684	4.4%
UTCs (One Side)	1,361,160	22.2%
Total	6,140,649	100.0%

Daily Single Rate (Using Current Credits)



Daily Single Rate Distribution



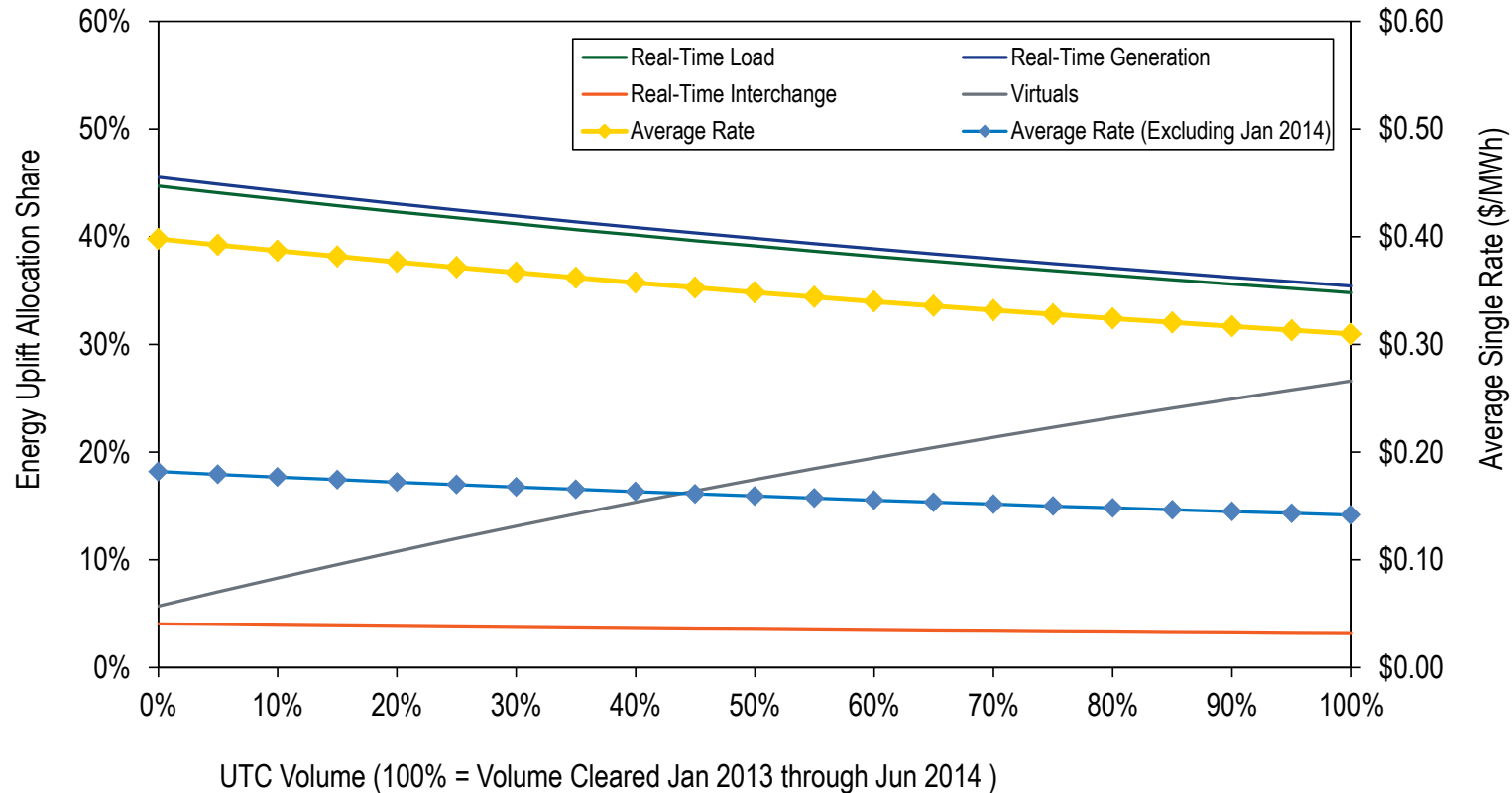
Issues with single rate

- **Even with a daily rate, single rate creates incentive issues:**
 - **Reduces incentive to load to bid in the Day-Ahead Energy Market.**
 - **Reduces incentive to generators to follow dispatch.**
 - **Reduces incentive to virtuals to bid/offer transactions that reflect real time conditions.**
 - **Reduces incentive to interchange transactions to participate in the Day-Ahead Energy Market.**

MMU Recommendations

- **Applying phase 1 and reallocation recommendations reduces energy uplift charges (DAOR and BOR) from \$1,260 million to \$1,039 million (\$221 million or 17.5 percent).**
- **The significant phase 1 changes are:**
 - Elimination of DAOR.
 - LOC no load and startup cost issue.
 - Net regulation revenues offset.
- **The significant reallocation changes are:**
 - Reallocation of energy uplift costs associated with supporting the PSEG – Con Edison wheeling contracts.
 - Reallocation of negative congestion charges.
 - Reallocation of no load and startup costs associated with reactive.

Daily Single Rate with MMU recommendations



MMU Allocation Proposal

- **Maintain/improve current incentives.**
- **Maintain three allocation categories:**
 - **Day-ahead**
 - **Reliability**
 - **Deviations**
- **Create new category:**
 - **Physical deviations**
- **Maintain regional allocation.**



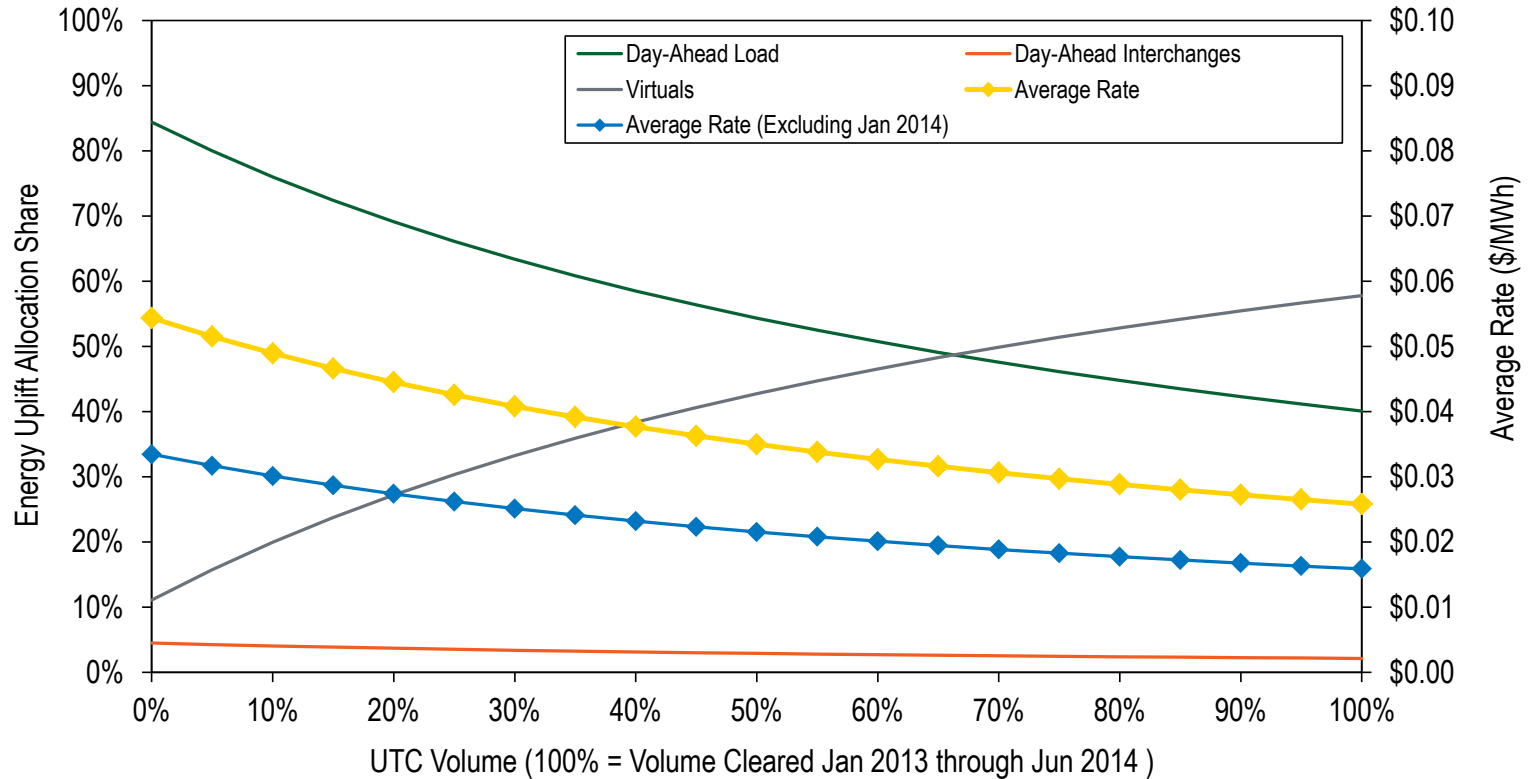
MMU Allocation Proposal

New Energy Uplift Category	Charges (\$MM)	Share	Charges excluding Jan	
			2014 (\$MM)	Share
Day-Ahead Segment	\$73.0	7.0%	\$44.9	9.5%
Reliability	\$346.3	33.4%	\$14.8	3.1%
Before Operating Day Deviation	\$259.8	25.0%	\$200.2	42.2%
During Operating Day Deviation	\$358.8	34.6%	\$214.2	45.2%
Total	\$1,038.0	100.0%	\$474.2	100.0%

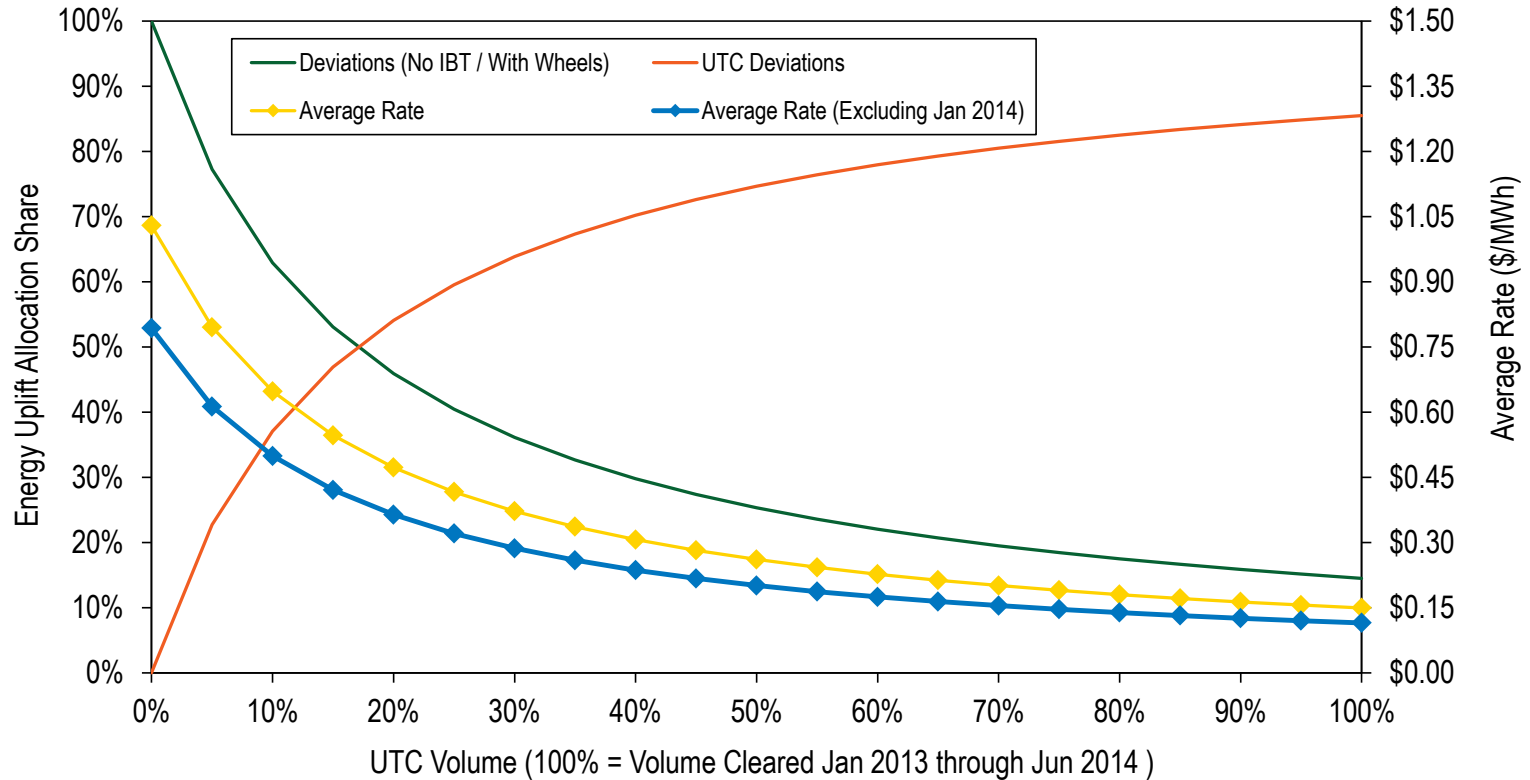
Allocated to an improved deviation definition: Excluding IBTs, including wheels and UTCs.

Allocated to a new deviation definition (physical): Load, generators and interchange deviations.

Day-Ahead Rate (MMU)



Deviation Rate (MMU)



Reliability Rate (MMU)

- **Energy uplift associated with units committed for reliability remains allocated to real-time load plus real-time exports, with the addition of the withdrawal side of real-time wheels.**
 - **Average Rate (Jan 2013 – Jun 2014): \$0.22 / MWh**
 - **Average Rate (excluding Jan 2014): \$0.01 / MWh**



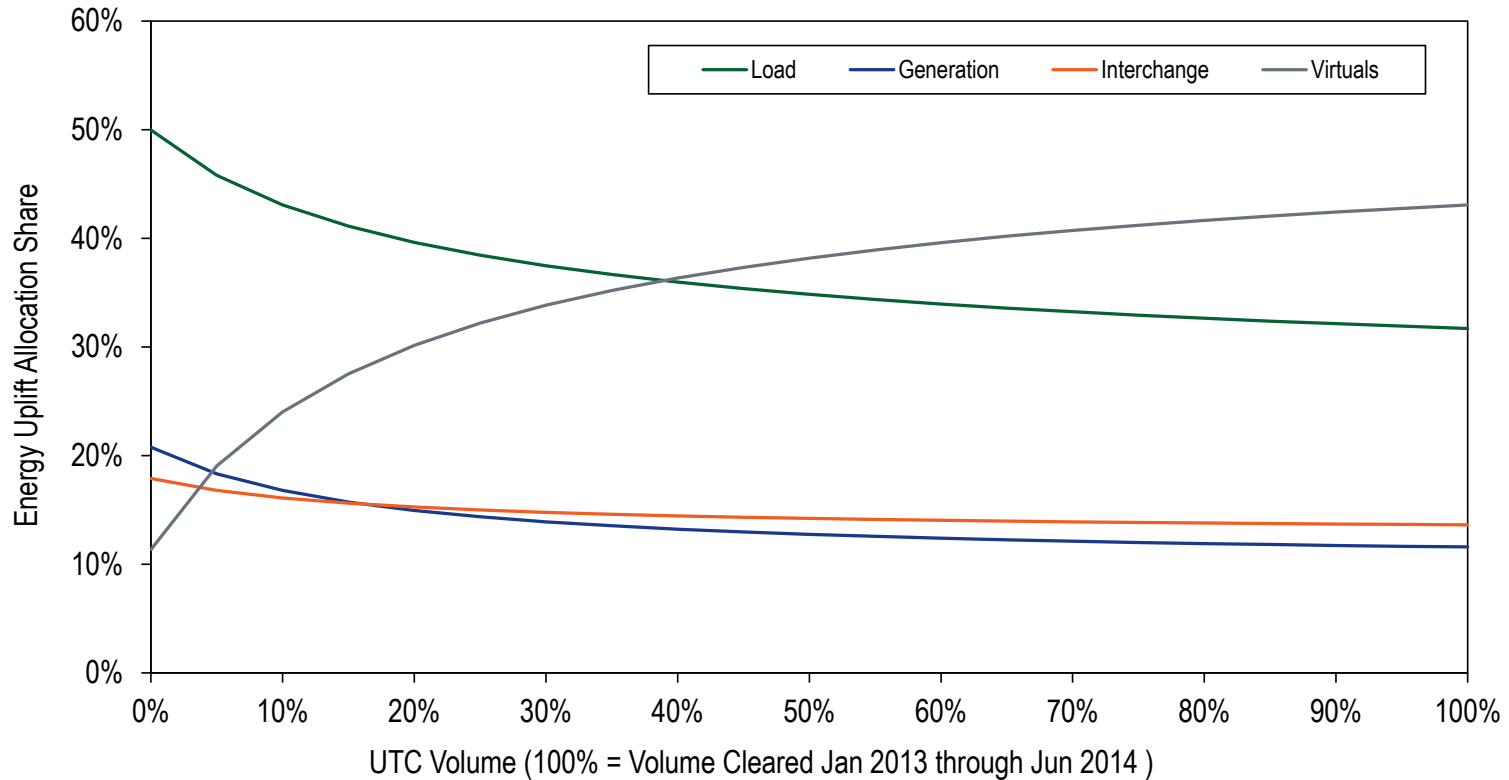
Physical Deviation Rate (MMU)

- **Allocation breakdown:**

Physical Deviations	Daily Average (MWh)	Share
Load	197,041	49.9%
Generators	87,698	22.2%
Interchange	110,360	27.9%
Total	395,098	100.0%

- **Average Rates (Jan 2013 – Jun 2014) range**
 - **\$1.28 to \$1.43 / MWh**
- **Average Rate (excluding Jan 2014) range**
 - **\$0.87 to \$1.04 / MWh**

Proposed Allocation Breakdown

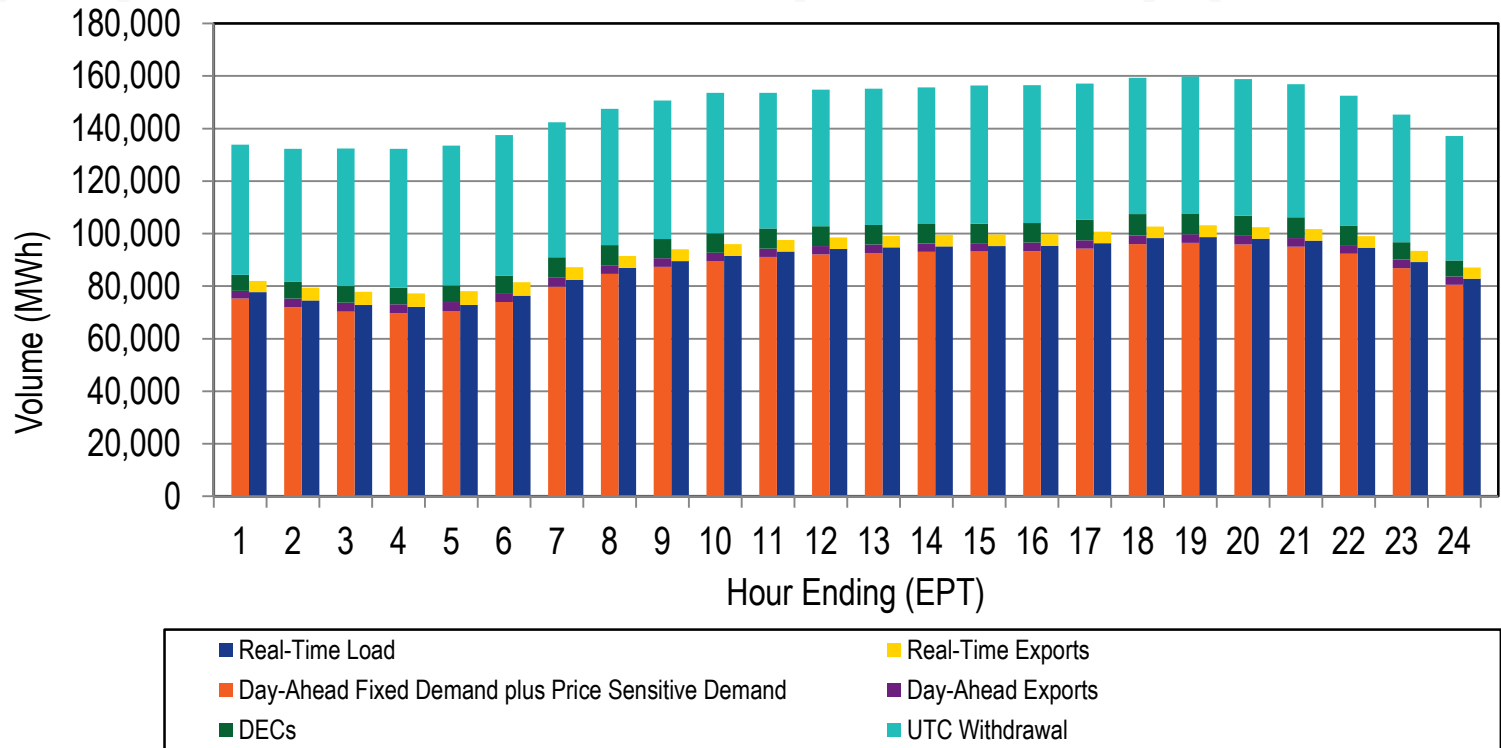


Summary

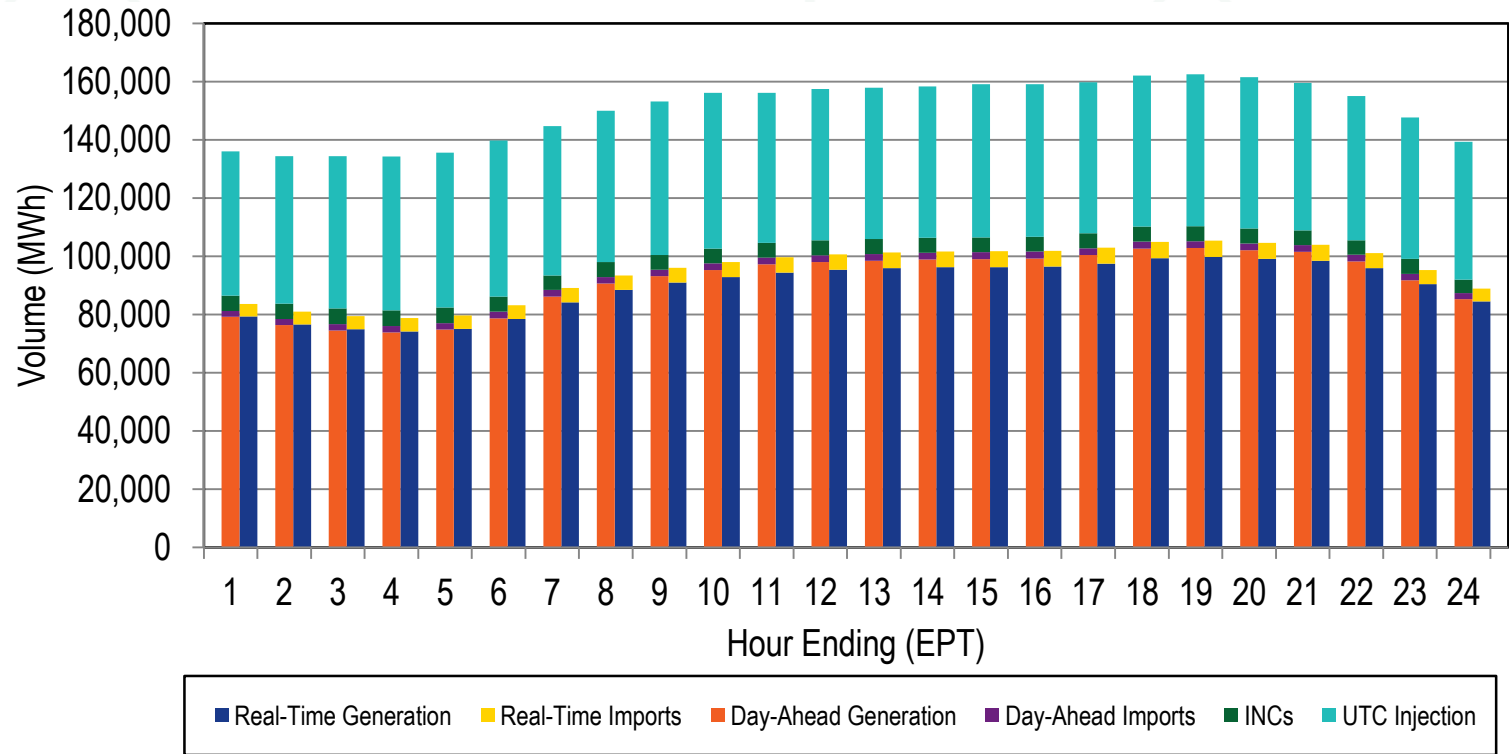
- **Energy uplift charge allocation share under the two proposals at different UTC volumes:**

Proposal	Transaction/Resource	Share of Charges at % of UTC Cleared Volume				
		0%	25%	50%	75%	100%
Single Rate	Load	44.7%	41.7%	39.1%	36.8%	34.8%
	Generators	45.5%	42.5%	39.8%	37.5%	35.4%
	Interchange	4.1%	3.8%	3.5%	3.3%	3.2%
	Virtuals	5.7%	12.0%	17.5%	22.3%	26.6%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%
MMU	Load	50.0%	38.4%	34.8%	32.9%	31.7%
	Generators	20.8%	14.4%	12.8%	12.0%	11.6%
	Interchange	17.9%	15.0%	14.2%	13.9%	13.6%
	Virtuals	11.4%	32.2%	38.2%	41.2%	43.1%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%

PJM Demand



PJM Supply



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