Market Monitor Report

MC Webinar

February 19, 2019

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Monitoring Analytics

PJM Load

	PJM Real-Time Demand (MWh)				Year-to-Year Change			
	Load		Load Plus Exports		Load		Load Plus Exports	
	Load	Standard Deviation	Demand	Standard Deviation	Load	Standard Deviation	Demand	Standard Deviation
2001	30,297	5,873	32,165	5,564	NA	NA	NA	NA
2002	35,776	7,976	37,676	8,145	18.1%	35.8%	17.1%	46.4%
2003	37,395	6,834	39,380	6,716	4.5%	(14.3%)	4.5%	(17.5%)
2004	49,963	13,004	54,953	14,947	33.6%	90.3%	39.5%	122.6%
2005	78,150	16,296	85,301	16,546	56.4%	25.3%	55.2%	10.7%
2006	79,471	14,534	85,696	15,133	1.7%	(10.8%)	0.5%	(8.5%)
2007	81,681	14,618	87,897	15,199	2.8%	0.6%	2.6%	0.4%
2008	79,515	13,758	86,306	14,322	(2.7%)	(5.9%)	(1.8%)	(5.8%)
2009	76,034	13,260	81,227	13,792	(4.4%)	(3.6%)	(5.9%)	(3.7%)
2010	79,611	15,504	85,518	15,904	4.7%	16.9%	5.3%	15.3%
2011	82,541	16,156	88,466	16,313	3.7%	4.2%	3.4%	2.6%
2012	87,011	16,212	92,135	16,052	5.4%	0.3%	4.1%	(1.6%)
2013	88,332	15,489	92,879	15,418	1.5%	(4.5%)	0.8%	(3.9%)
2014	89,099	15,763	94,471	15,677	0.9%	1.8%	1.7%	1.7%
2015	88,594	16,663	92,665	16,784	(0.6%)	5.7%	(1.9%)	7.1%
2016	88,601	17,229	93,551	17,498	0.0%	3.4%	1.0%	4.3%
2017	86,618	15,170	91,015	15,083	(2.2%)	(11.9%)	(2.7%)	(13.8%)
2018	90,307	15,982	94,351	16,142	4.3%	5.4%	3.7%	7.0%

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RT Monthly Average Hourly Load

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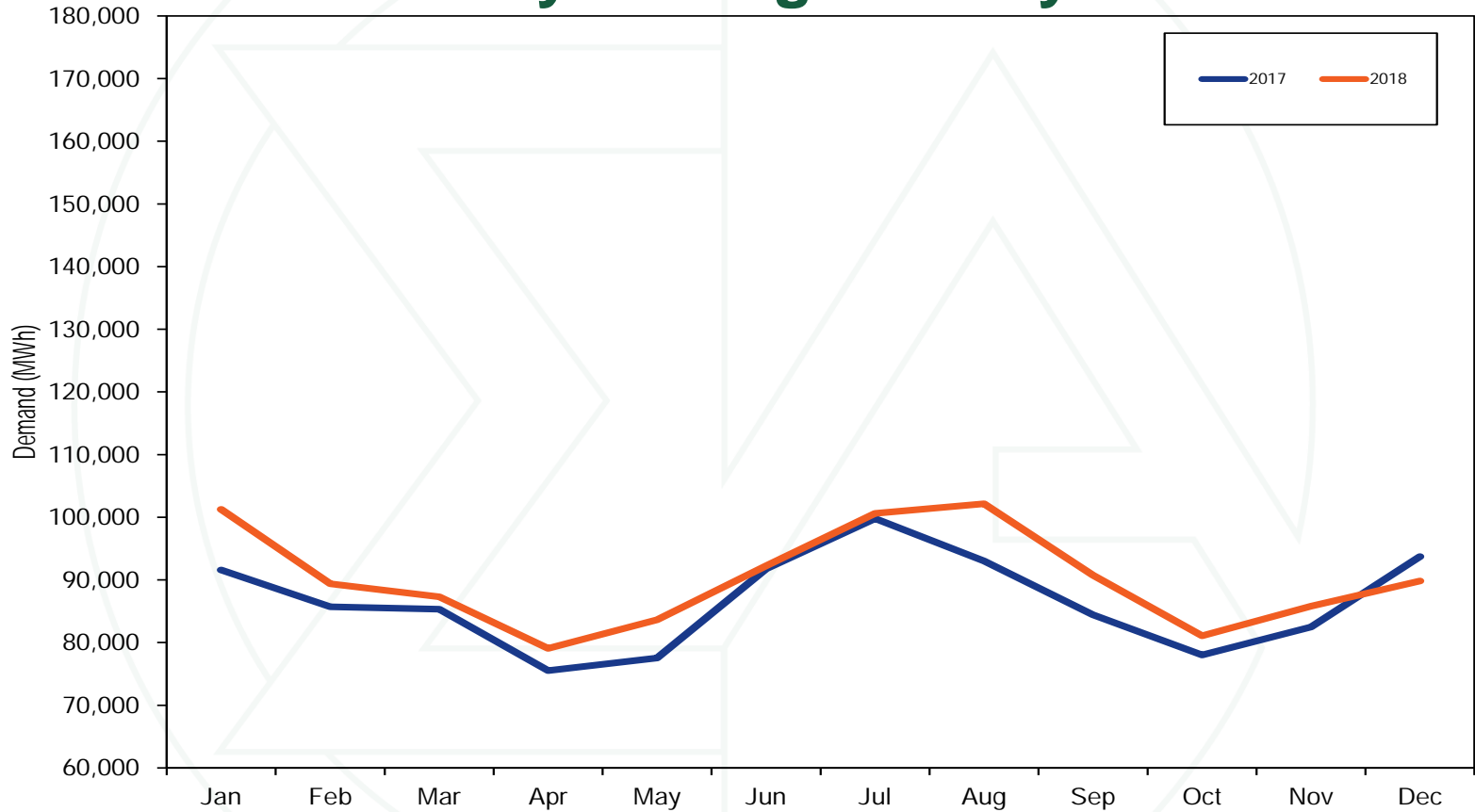
RT Generation Less RT Load
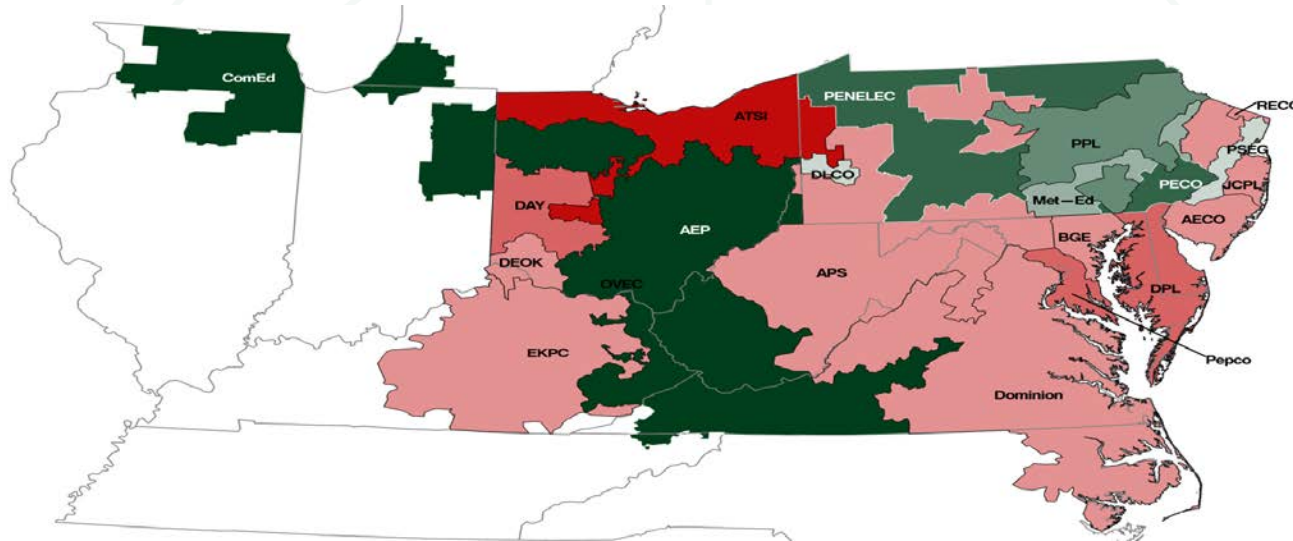
Zone	Net Gen Minus Load (GWh)	Zone	Net Gen Minus Load (GWh)	Zone	Net Gen Minus Load (GWh)	Zone	Net Gen Minus Load (GWh)
AECO	(4,581)	DAY	(13,047)	JCPL	(8,051)	PPL	16,317
AEP	31,999	DEOK	(8,005)	METED	7,011	PSEG	3,318
APS	(2,863)	DOM	(4,610)	OVEC	1,079	RECO	(1,484)
ATSI	(27,308)	DPL	(12,440)	PECO	26,325		
BGE	(10,474)	DLCO	2,030	PENELEC	25,581		
COMED	35,585	EKPC	(4,138)	PEPCO	(17,828)		

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RT, Load-Weighted, Average LMP

	Real-Time, Load-Weighted, Average LMP			Year-to-Year Change		
	Average	Median	Standard Deviation	Average	Median	Standard Deviation
1998	$24.16	$17.60	$39.29	NA	NA	NA
1999	$34.07	$19.02	$91.49	41.0%	8.1%	132.9%
2000	$30.72	$20.51	$28.38	(9.8%)	7.8%	(69.0%)
2001	$36.65	$25.08	$57.26	19.3%	22.3%	101.8%
2002	$31.60	$23.40	$26.75	(13.8%)	(6.7%)	(53.3%)
2003	$41.23	$34.96	$25.40	30.5%	49.4%	(5.0%)
2004	$44.34	$40.16	$21.25	7.5%	14.9%	(16.3%)
2005	$63.46	$52.93	$38.10	43.1%	31.8%	79.3%
2006	$53.35	$44.40	$37.81	(15.9%)	(16.1%)	(0.8%)
2007	$61.66	$54.66	$36.94	15.6%	23.1%	(2.3%)
2008	$71.13	$59.54	$40.97	15.4%	8.9%	10.9%
2009	$39.05	$34.23	$18.21	(45.1%)	(42.5%)	(55.6%)
2010	$48.35	$39.13	$28.90	23.8%	14.3%	58.7%
2011	$45.94	$36.54	$33.47	(5.0%)	(6.6%)	15.8%
2012	$35.23	$30.43	$23.66	(23.3%)	(16.7%)	(29.3%)
2013	$38.66	$33.25	$23.78	9.7%	9.3%	0.5%
2014	$53.14	$36.20	$76.20	37.5%	8.9%	220.4%
2015	$36.16	$27.66	$31.06	(32.0%)	(23.6%)	(59.2%)
2016	$29.23	$25.01	$16.12	(19.2%)	(9.6%)	(48.1%)
2017	$30.99	$26.35	$19.32	6.0%	5.4%	19.9%
2018	$38.24	$29.55	$32.89	23.4%	12.1%	70.2%

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RT, Load-Weighted, Average LMP

RT, Load-Weighted, Average LMP

(100%)	(75%)	(50%)	(25%)	SMP	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
$18.82	$32.53	$34.13	$35.91	$38.24	$38.42	$38.51	$38.62	$38.70	$38.78	$38.85	$38.94	$39.03	$39.12	$39.20	$39.30	$39.38	$39.51	$39.70	$39.93	$40.23	$40.58	$41.26	$46.02

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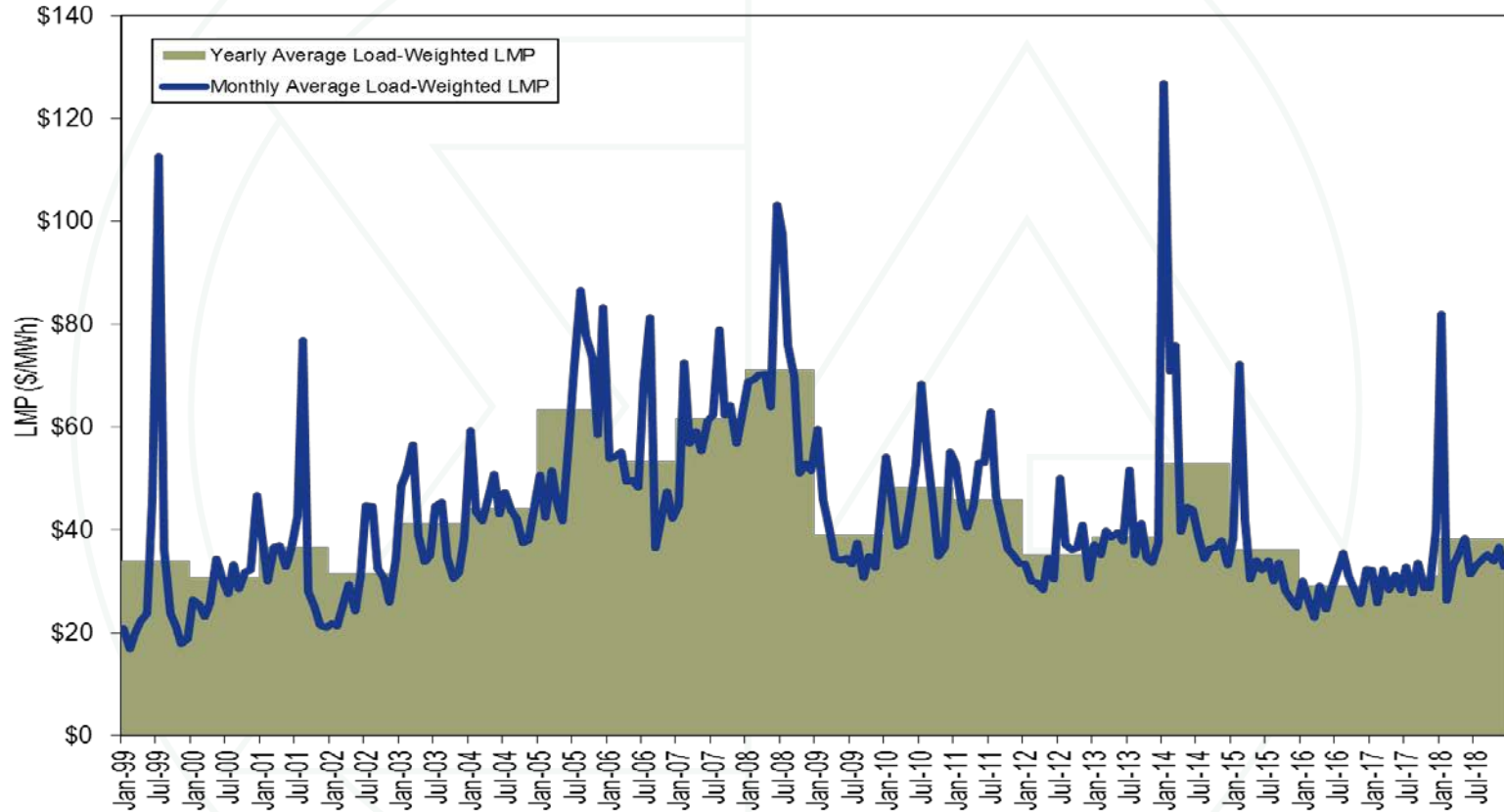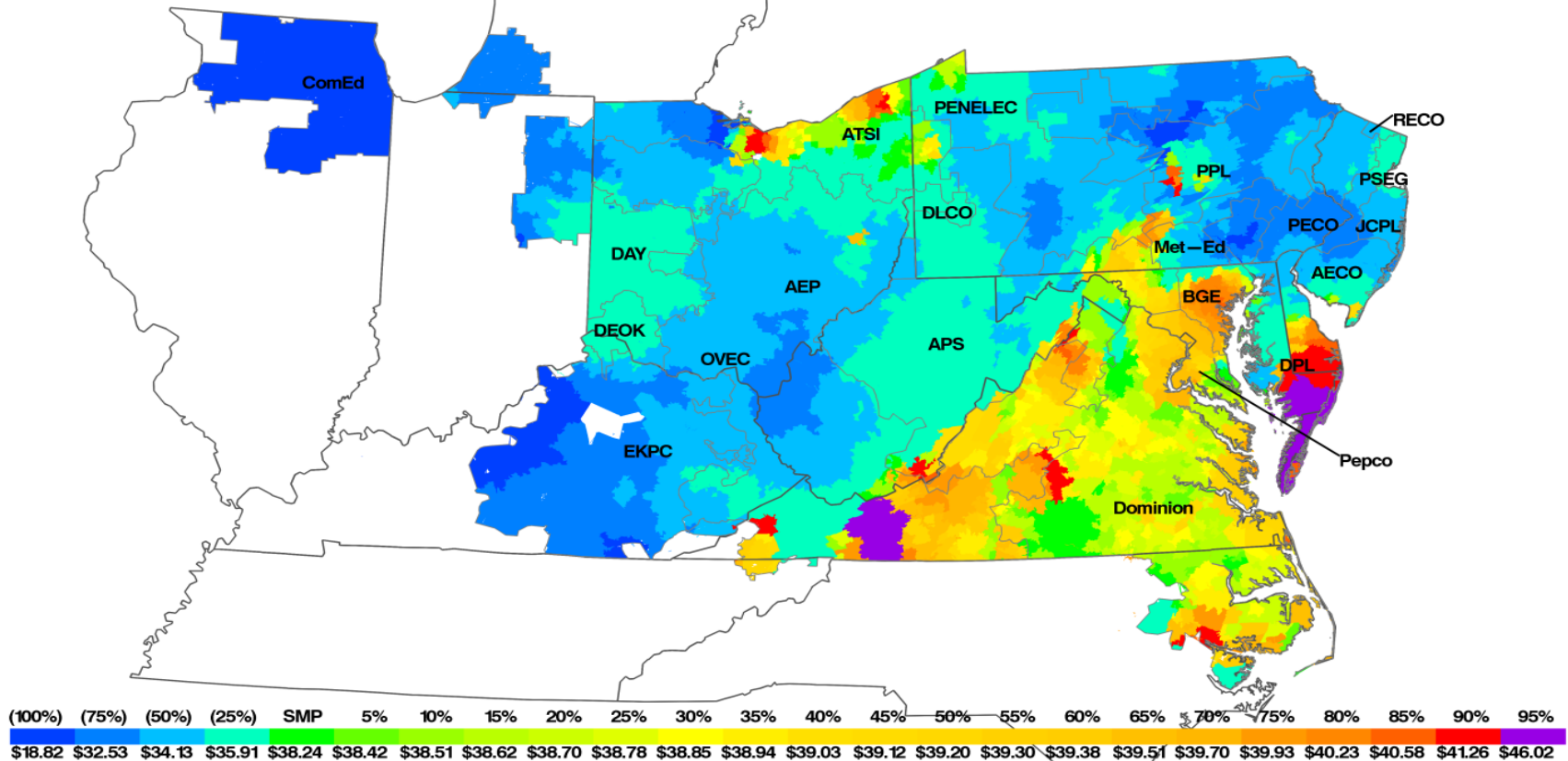
Total Energy Uplift Charges

	Total Energy Uplift Charges (Millions)	Change (Millions)	Percent Change	Energy Uplift as a Percent of Total PJM Billing
2001	$284.0	$67.0	30.9%	8.5%
2002	$273.7	($10.3)	(3.6%)	5.8%
2003	$376.5	$102.8	37.6%	5.4%
2004	$537.6	$161.1	42.8%	6.1%
2005	$712.6	$175.0	32.6%	3.1%
2006	$365.6	($347.0)	(48.7%)	1.7%
2007	$503.3	$137.7	37.7%	1.6%
2008	$474.3	($29.0)	(5.8%)	1.4%
2009	$322.7	($151.6)	(32.0%)	1.2%
2010	$623.2	$300.5	93.1%	1.8%
2011	$603.4	($19.8)	(3.2%)	1.7%
2012	$649.8	$46.4	7.7%	2.2%
2013	$843.0	$193.2	29.7%	2.5%
2014	$961.2	$118.2	14.0%	1.9%
2015	$312.0	($649.2)	(67.5%)	0.7%
2016	$136.7	($175.3)	(56.2%)	0.4%
2017	$127.3	($9.4)	(6.9%)	0.3%
2018	$199.3	$72.0	56.5%	0.4%

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UTC Uplift Allocation-Rates

	Transaction	Current Average Rates	Average Rates with Proposed UTC Uplift Allocation (100% UTC Volume)	Average Rates with Proposed UTC Uplift Allocation (50% UTC Volume)
		2018 Rates for a 1 MW Transaction ($/MWh)		
East	INC	0.681	0.233	0.347
	DEC	0.722	0.268	0.384
	DA Load	0.041	0.035	0.038
	RT Load	0.029	0.029	0.029
	Deviation	0.681	0.233	0.347
West	INC	0.693	0.227	0.342
	DEC	0.735	0.262	0.379
	DA Load	0.041	0.035	0.038
	RT Load	0.027	0.027	0.027
	Deviation	0.693	0.227	0.342

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UTC Uplift Allocation-Charges to UTCs

		Uplift Charges Allocation to UTCs	
Type	2018 Total Uplift Charges	100% UTC Volume	50% UTC Volume
Day Ahead	$34.0	$5.1	$2.8
Balancing Deviation	$106.2	$69.4	$52.0

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Economic DR Payments When Injecting Power

- **DR reduces load and cannot inject power into the grid, per the PJM OATT.**

- **Without a stakeholder process or FERC approval, PJM decided to allow some Economic DR payments when DR injecting power into the grid.**

- **PJM defines a test that compares the cost of DR related generation to revenues from injection into the grid and implied retail rate savings.**

- **PJM's test includes retail rates when calculating eligibility of Economic DR payments**

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Problems With Including Retail Rate

- **The change is not documented in the manuals or OATT**

- **Economic DR offers respond to wholesale LMP**

- **Retail rates are outside of PJM's jurisdiction and irrelevant when responding to wholesale price**

- **PJM changes first discussed at 1/30/19 DRS**

- **Only documentation in PJM DR operations slides.**

- **Implications for other parts of PJM markets.**

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PJM Language

- **Eligible for Economic DR payments when**
  - **Required gen revenue (Total Gen output * marginal cost) – Gen Export Revenue (Gen Export output * LMP) – implied retail savings (Gen load reduction MWs * retail rate) < $0**
  - **Retail rate includes all avoided retail cost generation, transmission, distribution**
    - Structured as energy and/or demand charges
  - **PJM will also consider use of retail price (instead of wholesale price), for Cogen used as DR.**

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Fuel Cost Policies

- **A Fuel Cost Policy is the document that describes the "method used to price fuel for calculation of the Market Seller's cost-based offers for a generation resource."**

- **Fuel Cost Policy details are not flexible or subject to change after the fact.**

- **Fuel Cost Policy compliance is not subject to the discretion of the participant or of PJM.**

- **Market Sellers must adhere to the methods in their Fuel Cost Policies or be subject to defined penalties per Schedule 2 of the OA.**

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MIRA Upgrade

- **The Member Information Reporting Application (MIRA) is the application used by Monitoring Analytics, the Independent Market Monitor (IMM) for PJM to securely collect data from Market Participants. MIRA is the tool used to collect Fuel Cost Policies.**

- **The IMM upgraded the Fuel Cost Policy module in February 2019.**

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MIRA Upgrade

- **The upgrades allow:**
  - **PJM to access fuel cost policies in real time.**
  - **PJM to provide PJM's fuel cost policy determination in real time.**
  - **Market Participants to submit fuel cost policies per year.**
  - **Market Participants to extend approved Fuel Cost Policies for the next year.**
- **The details for the new functionalities are described in the MIRA User Guide: http://www.monitoringanalytics.com/tools/tools.shtml**
- **For any questions, please email Monitoring Analytics: mira@monitoringanalytics.com**

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