

FILE

16

PUCO EXHIBIT FILING

Date of Hearing: 10-15-15

Case No. 14-1693-EL-RDR, 14-1694-EL-AAM

PUCO Case Caption: In the Matter of the Application Seeking  
Approval of Ohio Power Company's Proposal to  
Enter into an Affiliated Power Purchase Agreement for  
Inclusion in the Power Purchase Agreement Rides.

In the Matter of the Application of Ohio Power Company  
for approval of certain ~~Accounting~~ Accounting Authority.

List of exhibits being filed:

Volume XI

AEP 20 - 21 - 23 - 24 - 25

SC 39

PUCO

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Date Submitted: [Signature]

OHIO POWER COMPANY'S RESPONSES TO  
OHIO CONSUMERS' COUNSEL'S DISCOVERY REQUESTS  
PUCO CASE NO. 14-1693-EL-RDR  
SUPPLEMENTAL FIFTH SET

**INTERROGATORY**

INT-5-184     How often is the Long Term North American Energy Market Forecast created?

**RESPONSE**

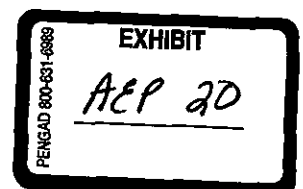
The Company's process of Long-Term Forecast development is initiated when there are substantive changes in key drivers of the existing forecast. Since 2010, there have been six Base Case Long Term North American Energy Market Forecasts created.

Prepared by: Karl R. Bletzacker

**Supplemental response September 1, 2015**

The Company's process of Long-Term Forecast development is initiated when there are substantive changes in key drivers of the existing forecast. Since 2010, there have been seven Base Case Long Term North American Energy Market Forecasts created.

Prepared by: Karl R. Bletzacker



OHIO POWER COMPANY'S RESPONSES TO  
OHIO CONSUMERS' COUNSEL'S DISCOVERY REQUESTS  
PUCO CASE NO. 14-1693-EL-RDR  
SUPPLEMENTAL FIFTH SET

**REQUEST FOR PRODUCTION OF DOCUMENTS**

RPD-5-055      Produce a copy of each Long Term North American Energy Market Forecast  
from 2010 until today.

**RESPONSE**

Please refer to attached file OCC-RPD-5-05.

Prepared by: Karl R. Bletzacker

**Supplemental response September 1, 2015**

Please see Supplemental 2015H1\_LTF\_FT\_Base\_Nominal\_2015\_04\_24.xls.

Prepared by: Karl R. Bletzacker

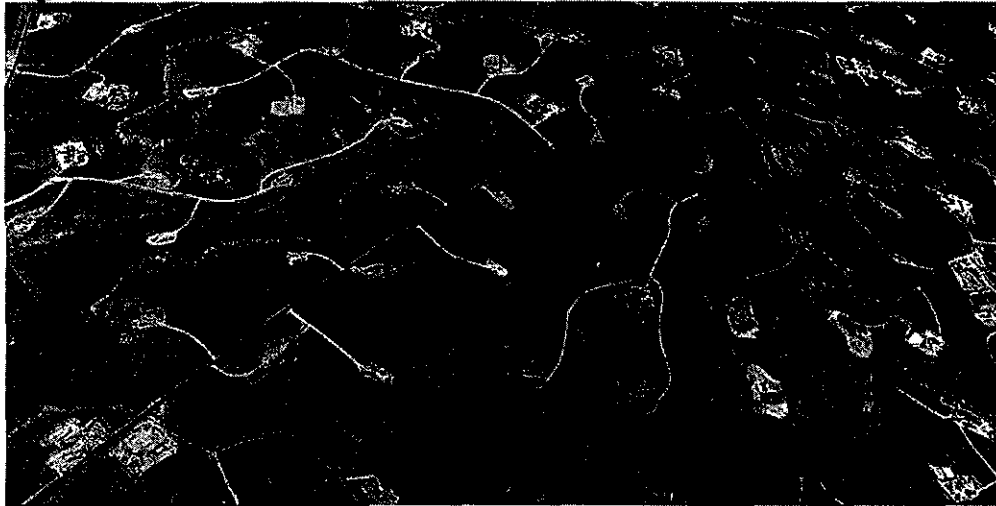


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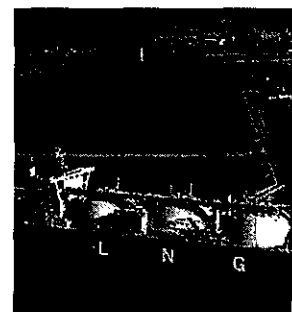
Get the Sierra Club *Insider*, our email newsletter. News, green lifestyle tips, and ways to take action: right to your inbox, twice a month.

### INCREASING RELIANCE ON NATURAL GAS DISPLACES THE MARKET FOR CLEAN ENERGY AND HARMS HUMAN HEALTH AND THE ENVIRONMENT IN PLACES WHERE PRODUCTION OCCURS.

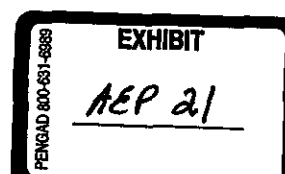
Fracking for natural gas damages the land, pollutes water and air, and causes illness in surrounding communities. It is also a major threat to our climate. It is clear that we cannot transition from one fossil fuel to another and expect to see major climate benefits. We need to move beyond natural gas.

- **Air:** Air pollution is generated at the well site by major truck traffic, diesel generators, gas venting, gas flaring, and leakage of air pollutants. The density of wells in a fracked gas field leads to hundreds of sources of air pollution. Oil and gas operations in the Barnett Shale area of Texas produced more smog during the summer of 2009 than all the motor vehicles in the Dallas-Fort Worth area. Rural Sublette County in Wyoming, the scene of 27,000 gas wells, has recorded higher levels of ozone than Houston and Los Angeles.
- **Water:** Each natural gas well requires millions of gallons of water to conduct the fracking. On average, 10 to 20 percent of the produced water (water, sand, and chemicals) is returned to the surface and must be disposed of, either by injection or surface treatment and discharge into rivers. Most of the produced water stays belowground, where it becomes increasingly toxic. Some of this water returns to the surface over time, while a large percentage -- up to 75 percent -- stays in the wells. All too often, failed well casings lead to irreversible contamination of underground aquifers -- the lifeblood of our homes, farms, and fisheries. Well-casing failure has been studied by the industry. In 2010, Pennsylvania drilled 1,454 wells, of which 90 failed (6.2 percent). In 2011, 1,937 wells were drilled and 121 failed (6.2 percent). This data -- consistent with the industry's own figures -- is for new wells, and well casings are more likely to fail with age. Equally alarming is that we did not see a decrease in well failure

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AN OPEN LETTER TO ENERGY  
SECRETARY MONIZ ON NATURAL  
GAS EXPORTS



even after the Pennsylvania Department of Environmental Protection (DEP) overhauled its well-casing requirements to make them more stringent. Additionally, ProPublica identified more than 1,000 cases of water contamination near drilling sites documented by courts, states, and local governments around the country prior to 2009. In 2010, Pennsylvania's DEP cited 451 wells with 1,544 violations that harmed water quality.

- **Climate:** Natural gas is also a major threat to our climate. Total greenhouse gas emissions from natural gas are nearly identical to coal, once methane leakage is taken into account -- and newer, more accurate data continues to be collected. Even without accounting for methane emissions, a recent International Energy Agency (IEA) study concluded that a global shift away from coal to natural gas would do little to get us off the path to climate catastrophe. While switching completely to natural gas showed better results than adding more coal to the energy mix, IEA's analysis shows that the atmosphere would still reach 650 parts per million of CO<sub>2</sub> between 2020 and 2060, warming the Earth at least 3.5 degrees Celsius.
- **Public Health:** The scope of the problems from under-regulated drilling, and a clearer understanding of the total carbon pollution that results from both drilling and burning gas, have made it plain that as we phase out coal, we need to leapfrog over gas whenever possible in favor of truly clean energy. Instead of rushing to see how quickly we can extract natural gas, we should be focusing on using less of it -- and safeguarding our health and environment in the meantime by regulating drilling more rigorously. If we can't drill safely, then we shouldn't be drilling at all.

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## Entergy to Close Pilgrim Nuclear Power Station in Massachusetts No Later than June 1, 2019

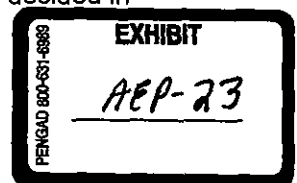
Decision driven by low energy prices, little expectation of near-term market structure improvements and increased operational costs



Entergy Corporation Logo.



NEW ORLEANS, Oct. 13, 2015 /PRNewswire/ -- Entergy Corporation (NYSE: ETR (<http://studio-5.financialcontent.com/prnews?Page=Quote&Ticker=ETR>)) announced today that it will close its Pilgrim Nuclear Power Station in Plymouth, Mass., no later than June 1, 2019, because of poor market conditions, reduced revenues and increased operational costs. The company notified the independent system operator of the electric grid, the ISO New England Inc. (ISO-NE), that as of that date, Pilgrim would not participate as a capacity resource in the market. The exact timing of the shutdown depends on several factors, including further discussion with ISO-NE, and will be decided in the first half of 2016.



"The decision to close Pilgrim was incredibly difficult because of the effect on our employees and the communities in which they work and live," said Leo Denault, Entergy's chairman and chief executive officer. "Our people at Pilgrim are dedicated and skilled, a wonderful blend of young professionals and seasoned, experienced veterans, who for decades have been generating clean power and contributing millions of dollars of economic activity to the region. But market conditions and increased costs led us to reluctantly conclude that we had no option other than to shut down the plant."

The decision to close Pilgrim was based on a number of financial factors:

- Low current and forecast wholesale energy prices – brought about by record low natural gas prices, driven by shale gas production – significantly impacted Pilgrim's revenues. The current and projected market price for delivered natural gas in New England has dropped substantially because of the influx of shale gas and policy-related issues, which in turn has driven down power prices. As a result, current and forecast power prices have fallen about \$10 per megawatt hour, an annual loss of more than \$40 million in revenues for Pilgrim.
- Wholesale energy market design flaws continue to suppress energy and capacity prices in the region, and do not provide adequate compensation to merchant nuclear plants for the benefits they provide. These benefits include reliable carbon-free, large-scale 24/7 energy generation and onsite fuel storage. Efforts over the past few years to correct these market design flaws have not been sufficiently successful. Pilgrim's economic performance is also undermined by unfavorable state energy proposals that subsidize renewable energy resources at the expense of Pilgrim and other plants. Also detrimental are a state proposal to provide above-market prices to utilities in Canada for hydro power representing about one-third of Massachusetts' electricity demand and a recent state agency's order that would further lower the price of natural gas and increase the region's reliance on it.
- We have invested hundreds of millions of dollars to improve – first and foremost – Pilgrim's safety, as well as its reliability and security but face increased operational costs and enhanced Nuclear Regulatory Commission oversight, consistent with Column 4 of the agency's Reactor Oversight Process Action Matrix. While we will always make needed investments at any plant, we also take into account the effect on our stakeholders of operating over the long-term if it is not economically viable to do so.

While making decisions based on conditions at each plant, Entergy remains committed overall to nuclear power, whose benefits include carbon-free, reliable power that is cost effective over the long term, contributes to supply diversity and energy security as part of a balanced energy portfolio and provides almost two-thirds of America's clean-air electricity.

### **Financial Implications**

The effect of the shutdown on cash flow is expected to be neutral to positive through 2020, compared to Pilgrim's continued operation, depending on uncertainty about the shutdown date, the plant's capacity supply obligation and costs related to the NRC's recent placement of Pilgrim in Column 4 of the Reactor Oversight Process Action Matrix. The preliminary estimate of direct costs of the plant's response to a planned NRC enhanced inspection ranges from \$45 million to \$60 million pre-tax in operation and maintenance expense, not including any potential capital investment or other costs to address issues that may arise in the inspection.

After shutdown, Pilgrim will transition to decommissioning. The Pilgrim nuclear decommissioning trust had a balance of approximately \$870 million as of Sept. 30, 2015, representing excess financial assurance of approximately \$240 million for license termination activities above NRC-required assurance levels. Filings with the NRC for planned shutdown activities will determine whether any other financial assurance may be required and will specifically address funding for spent fuel management, which will be required until the federal government takes possession of the fuel and removes it from the site, per its current obligation. No additional funding is anticipated at this time.

Because of the developments in third quarter 2015, including the NRC's decision to place Pilgrim in Column 4 of the Reactor Oversight Process Action Matrix and management's evaluations with respect to the future operations of Pilgrim and the James A. FitzPatrick Nuclear Power Plant, the company is required to test the plants for impairment under generally accepted accounting principles. The effects of any impairment would be reflected in third quarter results and any applicable regulatory disclosures. Any impairment would be classified as a special item (and therefore, excluded from operational results) and would have an effect on earnings expectations in future periods. Before considering any impairment or the decision to close the plant, Pilgrim was expected to incur annual after-tax net losses on an operational basis ranging from approximately \$10 million to \$30 million for 2015, 2016 and 2017.

The Pilgrim Nuclear Power Station generates 680 megawatts of nearly carbon-free electricity, enough to power more than 600,000 homes. Pilgrim began generating electricity in 1972.

Additional information regarding today's announcement is available on Entergy's corporate website at [www.entergy.com](http://www.entergy.com) (<http://www.entergy.com/>).

Entergy Corporation is an integrated energy company engaged primarily in electric power production and retail distribution operations. Entergy owns and operates power plants with approximately 30,000 megawatts of electric generating capacity, including nearly 10,000 megawatts of nuclear power, making it one of the nation's leading nuclear generators. Entergy delivers electricity to 2.8 million utility customers in Arkansas, Louisiana, Mississippi and Texas. Entergy has annual revenues of more than \$12 billion and approximately 13,000 employees.

#### Cautionary Note Regarding Forward-Looking Statements

*In this news release and from time to time, Entergy Corporation makes certain "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include, among other things, Entergy's statements of its plans, beliefs, estimates and expectations set forth under the caption "Financial Implications" and other statements of Entergy's plans, beliefs or expectations included in this news release. Except to the extent required by the federal securities laws, Entergy undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.*

*Forward-looking statements are subject to a number of risks, uncertainties and other factors that could cause actual results to differ materially from those expressed or implied in such forward-looking statements, including (a) those factors discussed elsewhere in this news release and in Entergy's most recent Annual Report on Form 10-K, any subsequent Quarterly Reports on Form 10-Q and Entergy's other reports and filings made under the Securities Exchange Act of 1934; (b) uncertainties associated with rate proceedings, formula rate plans and other cost recovery mechanisms; (c) uncertainties associated with efforts to remediate the effects of major storms and recover related restoration costs; (d) nuclear plant relicensing, operating and regulatory risks, including any changes resulting from the*



*nuclear crisis in Japan following its catastrophic earthquake and tsunami; (e) changes in decommissioning trust fund values or earnings or in the timing or cost of decommissioning of the Pilgrim Nuclear Power Station and the Vermont Yankee Nuclear Power Station or any of Entergy's other nuclear plant sites; (f) legislative and regulatory actions and risks and uncertainties associated with claims or litigation by or against Entergy and its subsidiaries; (g) risks and uncertainties associated with strategic transactions that Entergy or its subsidiaries may undertake, including the proposed acquisition of the Union Power Station near El Dorado, Arkansas, including the risk that any such transaction may not be completed as and when expected and the risk that the anticipated benefits of the transaction may not be realized and (h) economic conditions and conditions in commodity and capital markets during the periods covered by the forward-looking statements.*

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(<http://photos.prnewswire.com/prnh/20120913/MM74349LOGO>)

SOURCE Entergy Corporation

#### RELATED LINKS

<http://www.entergy.com> (<http://www.entergy.com>)

Comparison of Actual Net CONE's to Cherrick Forecast					
Planning Yr	\$ / MW-Day	Calendar Year	\$ / MW Day	Cherrick Net COF	Cherrick Overstatement
15/16	311.07	2016	322.4216667	330.53	8.108333333
16/17	330.53	2017	342.6983333	351.39	8.691666667
17/18	351.39	2018	321.745	365.4456	43.7006
18/19	300.57	2019		380.063424	
		2020		395.265961	
		2021		411.0765994	
		2022		427.5196634	
		2023		444.6204499	
		2024		462.4052679	

# ACP Dayton Hub Peak

Exhibit  
AEP 25

Intercontinental Exchange™ (ICE) - ichen5 @ AEP (LL: 10/13/15 9:42 AM)

ICE View Admin Help Logout

Kill All Activate All Live Only Hold All Hold Bids Hold Offers Search...

Orders Deals Positions Options UPS Gas Peak Spreads Midwest Peak Midwest Off-peak Gas Basis Off-peak Spreads

Status	Product	Hub	Strip	▽ B...	RFQ	Offer	O Qty	Buy	Last	Cha...	Sell...	OI	High	Low	Volume	Blo...	B	B Qty	Bid
Peak Futures	AD Hub DA	Jan15	1... 3...								43.85	3030							
Peak Futures	AD Hub DA	Feb15	1... 2...								41.45	2829							
Peak Futures	AD Hub DA	Mar15	1... 3...								38.05	2899							
Peak Futures	AD Hub DA	Apr15	1... 3...								37.05	3153							
Peak Futures	AD Hub DA	May15	1... 3...								39.25	3176							
Peak Futures	AD Hub DA	Jun15	1... 3...								39.05	2831							
Peak Futures	AD Hub DA	Jul16	1... 3...								47.40	2826							
Peak Futures	AD Hub DA	Aug15	1... 3...								40.50	2826							
Peak Futures	AD Hub DA	Sep15	1... 3...								35.00	2786							
Peak Futures	AD Hub DA	Oct15	1... 3...								34.65	2811							
Peak Futures	AD Hub DA	Nov15	1... 3...								35.30	2566							
Peak Futures	AD Hub DA	Dec16	1... 3...								35.00	2566							
Peak Futures	AD Hub DA	Jan17	1... 3...								38.00	903							
Peak Futures	AD Hub DA	Feb17	1... 3...								45.85	903							
Peak Futures	AD Hub DA	Mar17	1... 3...								40.55	903							
Peak Futures	AD Hub DA	Apr17	1... 3...								35.10	853							
Peak Futures	AD Hub DA	May17	1... 3...								32.75	853							
Peak Futures	AD Hub DA	Jun17	1... 3...								33.25	738							
Peak Futures	AD Hub DA	Jul18	1... 3...								35.90	738							
Peak Futures	AD Hub DA	Aug18	1... 3...								46.35	380							
Peak Futures	AD Hub DA	Sep18	1... 3...								42.60	380							
Peak Futures	AD Hub DA	Oct18	1... 3...								38.35	380							
Peak Futures	AD Hub DA	Nov18	1... 3...								31.80	380							
Peak Futures	AD Hub DA	Dec18	1... 3...								33.15	365							
Peak Futures	AD Hub DA	Jan19	1... 3...								34.60	170							
Peak Futures	AD Hub DA	Feb19	1... 3...								44.75	170							
Peak Futures	AD Hub DA	Mar19	1... 3...								39.25	170							
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Peak Futures	AD Hub DA	May19	1... 3...								30.60	170							
Peak Futures	AD Hub DA	Jun19	1... 3...								31.90	170							
Peak Futures	AD Hub DA	Jul19	1... 3...								35.55	170							
Peak Futures	AD Hub DA	Aug19	1... 3...								48.95	97							
Peak Futures	AD Hub DA	Sep19	1... 3...								44.35	97							
Peak Futures	AD Hub DA	Oct19	1... 3...								35.20	93							
Peak Futures	AD Hub DA	Nov19	1... 3...								30.45	91							
Peak Futures	AD Hub DA	Dec19	1... 3...								32.45	93							
Peak Futures	AD Hub DA	Jan20	1... 3...								33.95	98							
Peak Futures	AD Hub DA	Feb20	1... 3...								42.95	101							

Ex. Time	Options	Alarms	Hub	Product	Strip	Description	Price	Qty	TT	Ad
15:45:39 EDT			TETCO-M3	NG Basis LD1 for IF Futures	Apr16-Oct16	NG Basis LD1 for IF Futures - TETCO-M3 - Apr16-Oct16	-0.9750	5000 BLK		QC
15:43:42 EDT			TETCO-M3	NG Basis LD1 for IF Futures	Nov15	NG Basis LD1 for IF Futures - TETCO-M3 - Nov15	-0.7700	2500		QC
15:43:41 EDT			TETCO-M3	NG Basis LD1 for IF Futures	Nov15	NG Basis LD1 for IF Futures - TETCO-M3 - Nov15	-0.7700	2500		QC

Status	Product	Hub	Strip	RFQ	Buy	Offer	O Qty	Buy	Last	Cha...	Settl...	OI	High	Low	Volume	Blo...	B	B Qty	Bid
Peak Futures	AD Hub DA	Aug19	1...	3...							37.90	100			0	0			
Peak Futures	AD Hub DA	Sep19	1...	3...							32.95	95			0	0			
Peak Futures	AD Hub DA	Oct19	1...	3...							29.50	92			0	0			
Peak Futures	AD Hub DA	Nov19	1...	3...							30.30	93			0	0			
Peak Futures	AD Hub DA	Dec19	1...	3...							33.75	96			0	0			
Peak Futures	AD Hub DA	Jan20	1...	3...							45.35	65			0	0			
Peak Futures	AD Hub DA	Feb20	1...	2...							42.45	65			0	0			
Peak Futures	AD Hub DA	Mar20	1...	3...							35.05	65			0	0			
Peak Futures	AD Hub DA	Apr20	1...	3...							30.00	65			0	0			
Peak Futures	AD Hub DA	May20	1...	3...							30.65	65			0	0			
Peak Futures	AD Hub DA	Jun20	1...	3...							32.00	65			0	0			
Peak Futures	AD Hub DA	Jul20	1...	3...							42.45	65			0	0			
Peak Futures	AD Hub DA	Aug20	1...	3...							37.20	65			0	0			
Peak Futures	AD Hub DA	Sep20	1...	3...							33.35	65			0	0			
Peak Futures	AD Hub DA	Oct20	1...	3...							29.40	65			0	0			
Peak Futures	AD Hub DA	Nov20	1...	3...							29.95	65			0	0			
Peak Futures	AD Hub DA	Dec20	1...	3...							33.55	65			0	0			
Peak Futures	AD Hub DA	Jan21	1...	3...							43.40	50			0	0			
Peak Futures	AD Hub DA	Feb21	1...	2...							39.45	50			0	0			
Peak Futures	AD Hub DA	Mar21	1...	3...							34.40	50			0	0			
Peak Futures	AD Hub DA	Apr21	1...	3...							30.15	50			0	0			
Peak Futures	AD Hub DA	May21	1...	3...							29.10	50			0	0			
Peak Futures	AD Hub DA	Jan17	1...	3...							44.10	1155			0	0			
Peak Futures	AD Hub DA	Feb17	1...	2...							41.30	1155			0	0			
Peak Futures	AD Hub DA	Mar17	1...	3...							38.75	1140			0	0			
Peak Futures	AD Hub DA	Apr17	1...	3...							36.15	1235			0	0			
Peak Futures	AD Hub DA	May17	1...	3...							36.85	1235			0	0			
Peak Futures	AD Hub DA	Jun21	1...	3...							31.20	50			0	0			
Peak Futures	AD Hub DA	Jul21	1...	3...							44.05	50			0	0			
Peak Futures	AD Hub DA	Aug21	1...	3...							38.20	50			0	0			
Peak Futures	AD Hub DA	Sep21	1...	3...							33.80	50			0	0			
Peak Futures	AD Hub DA	Oct21	1...	3...							29.85	50			0	0			
Peak Futures	AD Hub DA	Nov21	1...	3...							30.35	50			0	0			
Peak Futures	AD Hub DA	Dec21	1...	3...							33.90	50			0	0			
Peak Futures	AD Hub DA	Custom Monthly	1...	1...							0.00	0			0	0			
Peak Futures	AD Hub DA	Custom 7 X 15	1...	1...							0.00	0			0	0			
Peak Futures	AD Hub DA	Custom Daily	1...	1...							0.00	0			0	0			
Peak Futures	AD Hub DA	Jan16-Feb16	1...	2...							42.62	0			0	0			

Ex. Time	Hub	Product	Strip	Description	Price	Qty	TT	Ad
15:54:11 EDT	Henry	NG Basis LD1 for IF Futures	Apr16-Oct16	NG Basis LD1 for IF Futures - Henry - Apr16-Oct16	0.0000	10000 BLK		QC
15:45:39 EDT	TETCO-M3	NG Basis LD1 for IF Futures	Apr16-Oct16	NG Basis LD1 for IF Futures - TETCO-M3 - Apr16-Oct16	-0.9750	5000 BLK		QC
15:43:42 EDT	TETCO-M3	NG Basis LD1 for IF Futures	Nov15	NG Basis LD1 for IF Futures - TETCO-M3 - Nov15	-0.7700	2500		QC

Kill All Activate All Live Only Hold Bids Hold All Hold Offers Search

Orders Deals Positions Options UPS Gas Peak Spreads Midwest Peak Midwest Off-peak Gas Basis Off-peak Spreads

Search Live Only

Status	Product	Hub	Strip	Y	B	RFO	+	S	B	Qty	Bid	Offer	O	Qty	Buy	Last	Cha	Sell	OI	High	Low	Volume	Blo	B	B	Qty	Bid
Peak Futures	AD Hub RT	Jan17	1	3														44.25	735								
Peak Futures	AD Hub RT	Feb17	1	2														41.45	700								
Peak Futures	AD Hub RT	Mar17	1	3														38.85	782								
Peak Futures	AD Hub RT	Apr17	1	3														35.50	680								
Peak Futures	AD Hub RT	May17	1	3														36.90	748								
Peak Futures	AD Hub RT	Jun17	1	3														38.10	594								
Peak Futures	AD Hub RT	Jul17	1	3														46.05	500								
Peak Futures	AD Hub RT	Aug17	1	3														40.85	575								
Peak Futures	AD Hub RT	Sep17	1	3														34.95	540								
Peak Futures	AD Hub RT	Oct17	1	3														32.80	572								
Peak Futures	AD Hub RT	Nov17	1	3														33.30	546								
Peak Futures	AD Hub RT	Dec17	1	3														36.00	520								
Peak Futures	AD Hub RT	Jan18	1	2														46.50	308								
Peak Futures	AD Hub RT	Feb18	1	3														42.75	280								
Peak Futures	AD Hub RT	Mar18	1	3														38.45	308								
Peak Futures	AD Hub RT	Apr18	1	3														31.90	294								
Peak Futures	AD Hub RT	May18	1	3														33.25	308								
Peak Futures	AD Hub RT	Jun18	1	3														34.70	231								
Peak Futures	AD Hub RT	Jul18	1	3														45.00	231								
Peak Futures	AD Hub RT	Aug18	1	3														39.45	253								
Peak Futures	AD Hub RT	Sep18	1	3														32.20	209								
Peak Futures	AD Hub RT	Oct18	1	3														30.65	253								
Peak Futures	AD Hub RT	Nov18	1	3														31.95	231								
Peak Futures	AD Hub RT	Dec18	1	3														35.65	220								
Peak Futures	AD Hub RT	Jan19	1	2														49.00	88								
Peak Futures	AD Hub RT	Feb19	1	3														44.50	80								
Peak Futures	AD Hub RT	Mar19	1	3														36.30	84								
Peak Futures	AD Hub RT	Apr19	1	3														30.55	88								
Peak Futures	AD Hub RT	May19	1	3														32.55	88								
Peak Futures	AD Hub RT	Jun19	1	3														34.05	60								
Peak Futures	AD Hub RT	Jul19	1	3														43.15	66								
Peak Futures	AD Hub RT	Aug19	1	3														38.10	66								
Peak Futures	AD Hub RT	Sep19	1	3														33.05	60								
Peak Futures	AD Hub RT	Oct19	1	3														29.55	69								
Peak Futures	AD Hub RT	Nov19	1	3														30.35	60								
Peak Futures	AD Hub RT	Dec19	1	3														33.85	63								
Peak Futures	AD Hub RT	Jan20	1	3														46.50	44								
Peak Futures	AD Hub RT	Feb20	1	2														42.60	40								

Ticker Options Alarms

Ex. Time	Hub	Product	Strip	Y	B	Description	Price	Qty	TT	Ad
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15:54:11 EDT	Henry	NG Basis LD1 for IF Futures	Apr16-Oct16			NG Basis LD1 for IF Futures - Henry - Apr16-Oct16	0.0000	10000 BLK		QC
15:45:39 EDT	TETCO-M3	NG Basis LD1 for IF Futures	Apr16-Oct16			NG Basis LD1 for IF Futures - TETCO-M3 - Apr16-Oct16	-0.9750	5000 BLK		QC
15:43:42 EDT	TETCO-M3	NG Basis LD1 for IF Futures	Nov15			NG Basis LD1 for IF Futures - TETCO-M3 - Nov15	-0.7700	2500		QC

Status	Product	Hub	Strip	B...	RFO	+/-	S...	B Qty	Bid	Offer	O Qty	Buy	Last	Cha...	Sell...	OI	High	Low	Volume	Blo...	B...	B Qty	Bid
Peak Futures	AD Hub RT	Feb20	1...	2...											42.50	40							
Peak Futures	AD Hub RT	Mar20	1...	3...											35.15	44							
Peak Futures	AD Hub RT	Apr20	1...	3...											30.10	44							
Peak Futures	AD Hub RT	May20	1...	3...											30.75	40							
Peak Futures	AD Hub RT	Jun20	1...	3...											32.10	44							
Peak Futures	AD Hub RT	Jul20	1...	3...											42.55	46							
Peak Futures	AD Hub RT	Aug20	1...	3...											37.40	42							
Peak Futures	AD Hub RT	Sep20	1...	3...											33.45	42							
Peak Futures	AD Hub RT	Oct20	1...	3...											29.45	44							
Peak Futures	AD Hub RT	Nov20	1...	3...											30.00	40							
Peak Futures	AD Hub RT	Dec20	1...	3...											33.65	44							
Peak Futures	AD Hub RT	Jan21	1...	3...											43.55	0							
Peak Futures	AD Hub RT	Feb21	1...	2...											39.50	0							
Peak Futures	AD Hub RT	Mar21	1...	3...											34.50	0							
Peak Futures	AD Hub RT	Apr21	1...	3...											30.25	0							
Peak Futures	AD Hub RT	May21	1...	3...											29.20	0							
Peak Futures	AD Hub RT	Jun21	1...	3...											31.30	0							
Peak Futures	AD Hub RT	Jul21	1...	3...											44.25	0							
Peak Futures	AD Hub RT	Aug21	1...	3...											38.40	0							
Peak Futures	AD Hub RT	Sep21	1...	3...											33.90	0							
Peak Futures	AD Hub RT	Oct21	1...	3...											29.90	0							
Peak Futures	AD Hub RT	Nov21	1...	3...											30.40	0							
Peak Futures	AD Hub RT	Dec21	1...	3...											34.00	0							
Peak Futures	AD Hub RT	Custom Monthly	1...	1...											0.00	0							
Peak Futures	AD Hub RT	Custom Daily	1...	1...											0.00	0							
Peak Futures	AD Hub RT	Custom 7 X 16	1...	1...											0.00	0							
Peak Futures	AD Hub RT	Jan16-Feb16	1...	2...											42.70	0							
Peak Futures	AD Hub RT	Mar16-Apr16	1...	3...											37.65	0							
Peak Futures	AD Hub RT	Jun16-Aug16	1...	3...											43.91	0							
Peak Futures	AD Hub RT	Jan17-Feb17	1...	2...											42.88	0							
Peak Futures	AD Hub RT	Mar17-Apr17	1...	3...											37.29	0							
Peak Futures	AD Hub RT	Jun16-May17	1...	3...											38.83	0							
Peak Futures	AD Hub RT	Jul17-Aug17	1...	3...											43.27	0							
Peak Futures	AD Hub RT	Jan18-Feb18	1...	2...											44.71	0							
Peak Futures	AD Hub RT	Mar18-Apr18	1...	3...											35.25	0							
Peak Futures	AD Hub RT	Jun17-May18	1...	3...											37.90	0							
Peak Futures	AD Hub RT	Jul18-Aug18	1...	3...											42.10	0							
Peak Futures	AD Hub RT	Jan19-Feb19	1...	2...											45.85	0							

Ex. Time	Hub	Product	Strip	Description	Price	Qty	TT	Ad
16:04:22 EDT	TETCO-M3	NG Basis LD1 for IF Futures	Feb16	TETCO-M3 - Feb16	2.0700	2500		OC
15:54:11 EDT	Henry	NG Basis LD1 for IF Futures	Apr16-Oct16	Henry - Apr16-Oct16	0.0000	10000 BLK		OC
15:45:39 EDT	TETCO-M3	NG Basis LD1 for IF Futures	Apr16-Oct16	TETCO-M3 - Apr16-Oct16	-0.9750	5000 BLK		OC



Kill All Activate All Live Only Hold Bids Hold All Hold Offers Search/

Orders Deals Positions Options UPS Gas Peak Spreads Midwest Peak Midwest Off-peak Gas Basis Off-peak Spreads

Ideas

Status	Product	Hub	Strip	B...	RFQ	+/	S...	B Qty	Bid	Offer	O Qty	Buy	Last	Cha...	Sell...	OI	High	Low	Volume	Blk...	B...	B Qty	Bid	...	...
Peak Futures	AD Hub RT	Jan19-Feb19	1...	2...											46.86	0									
Peak Futures	AD Hub RT	Mar19-Apr19	1...	3...											33.36	0									
Peak Futures	AD Hub RT	Jun18-Jul19	1...	3...											36.85	0									
Peak Futures	AD Hub RT	Jul19-Aug19	1...	3...											40.63	0									
Peak Futures	AD Hub RT	Jan20-Feb20	1...	2...											44.64	0									
Peak Futures	AD Hub RT	Mar20-Apr20	1...	3...											32.63	0									
Peak Futures	AD Hub RT	Jun19-Jul20	1...	3...											35.64	0									
Peak Futures	AD Hub RT	Jan20-Aug20	1...	2...											40.14	0									
Peak Futures	AD Hub RT	Jan21-Feb21	1...	3...											41.58	0									
Peak Futures	AD Hub RT	Mar21-Apr21	1...	3...											32.42	0									
Peak Futures	AD Hub RT	Jun20-Jul21	1...	3...											34.65	0									
Peak Futures	AD Hub RT	Jul21-Aug21	1...	3...											41.26	0									
Peak Futures	AD Hub RT	Q4 15	1...	3...											34.81	0									
Peak Futures	AD Hub RT	Q1 16	1...	3...											41.04	0									
Peak Futures	AD Hub RT	Q2 16	1...	3...											38.55	0									
Peak Futures	AD Hub RT	Q3 16	1...	3...											41.11	0									
Peak Futures	AD Hub RT	Q4 16	1...	3...											35.45	0									
Peak Futures	AD Hub RT	Q1 17	1...	3...											41.43	0									
Peak Futures	AD Hub RT	Q2 17	1...	3...											36.88	0									
Peak Futures	AD Hub RT	Q3 17	1...	3...											40.63	0									
Peak Futures	AD Hub RT	Q4 17	1...	3...											33.98	0									
Peak Futures	AD Hub RT	Q1 18	1...	3...											42.56	0									
Peak Futures	AD Hub RT	Q2 18	1...	3...											33.28	0									
Peak Futures	AD Hub RT	Q3 18	1...	3...											39.11	0									
Peak Futures	AD Hub RT	Q4 18	1...	3...											32.64	0									
Peak Futures	AD Hub RT	Q1 19	1...	3...											43.34	0									
Peak Futures	AD Hub RT	Q2 19	1...	3...											32.33	0									
Peak Futures	AD Hub RT	Q3 19	1...	3...											38.26	0									
Peak Futures	AD Hub RT	Q4 19	1...	3...											31.21	0									
Peak Futures	AD Hub RT	Q1 20	1...	3...											41.38	0									
Peak Futures	AD Hub RT	Q2 20	1...	3...											30.99	0									
Peak Futures	AD Hub RT	Q3 20	1...	3...											37.98	0									
Peak Futures	AD Hub RT	Q4 20	1...	3...											31.07	0									
Peak Futures	AD Hub RT	Q1 21	1...	3...											38.99	0									
Peak Futures	AD Hub RT	Q2 21	1...	3...											30.28	0									
Peak Futures	AD Hub RT	Q3 21	1...	3...											31.51	0									
Peak Futures	AD Hub RT	Q4 21	1...	3...											39.06	0									
Peak Futures	AD Hub RT	Cal 16	1...	3...												0									

Ticker Options Alarms

Filter

Ex Time	Hub	Product	Strip	Description	Price	Qty	TT	Ad
16:04:22 EDT	TETCO-M3	NG Basis LD1 for IF Futures	Feb16	TETCO-M3 - Feb16	2.0700	2500		QC
15:54:11 EDT	Henry	NG Basis LD1 for IF Futures	Apr16-Oct16	Henry - Apr16-Oct16	0.0000	10000 BLK		QC
15:45:39 EDT	TETCO-M3	NG Basis LD1 for IF Futures	Apr16-Oct16	TETCO-M3 - Apr16-Oct16	-0.9750	5000 BLK		QC

# Corrections to Direct Testimony of Paul Chernick Case Nos. 14-1693-EL-RDR and 14-1694-EL-AAM

## Redacted Version

Page 13, Table 2: One value was copied incorrectly, and the last two lines include OVEC in the Simple Sum column and exclude OVEC in the NPV column. The corrected table (provided to AEP about 9/30/2015) is as follows (highlighted cells are changed):

**Table 2 (Corrected): AEP Base Case Net Benefits by Unit (\$M)**

Unit	Simple Sum	NPV Benefit	Profitable Years
Cardinal 1			
Conesville 4			
Conesville 5			
Conesville 6			
Stuart 1			
Stuart 2			
Stuart 3			
Stuart 4			
Zimmer			
OVEC Combined			
PPA + OVEC	\$31	(\$13)	
PPA Only			
Excluding Units that AEP Shows as Uneconomic for Ratepayers			
PPA + OVEC			
PPA Only			

Page 16, line 7: Penalties will cost between \$127 and \$283 million through 2024, *excluding OVEC*.

Page 18, fn 9: "Performance Assessment Hours for 2011–2014," PJM, (3/23/2015);

Page 24, Table 5: the CP Penalties column should read "CP Penalties *excluding OVEC*"

Page 25, line 1: bilaterals

