

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

**Docket Nos. UE-121697 and UG-121705
Puget Sound Energy, Inc. and NW Energy Coalition
Joint Petition for Approval of a Decoupling Mechanism**

PUBLIC COUNSEL DATA REQUEST NO. 069

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Re: Testimony of Dr. Michael J. Vilbert, Exhibit No. MJV-1T.

With regard to the updated studies of the impact of decoupling on electric utilities please provide the following:

- a) Please list all of the holding companies and all of the subsidiaries included in the studies.
- b) Please list all the regulatory jurisdictions in which the holding companies have subsidiaries and indicate which of those jurisdictions employ revenue decoupling and the date when decoupling was implemented.
- c) For each subsidiary, please indicate how the date of decoupling implementation was determined.
- d) Please provide the degree of decoupling at 2012 for each of the holding companies as well as the back-up data used to determine that factor. (e.g., data used to determine subsidiary share of holding company assets)
- e) Were there any companies for which decoupling was discontinued during the study period? If so, please identify any such utilities.
- f) Dr. Vilbert indicates that "Brattle" estimated the cost of capital quarterly using the multi-stage version of the discounted cash flow model (DCF). Please provide, in spreadsheet format, the cost of equity calculated by Brattle for each of the sample companies for each quarter in the study period, including all back-up data.
- g) In prior decoupling/cost of capital studies (e.g., "The Impact of Decoupling on the Cost of Capital, An Empirical Investigation." 2011 and 2012) the statistical results of the regressions were reported, not with p-values, but with confidence intervals. Please explain why confidence intervals for the regression were not reported in these studies.

- h) Please provide 95% confidence intervals for each of the variables in the regression in these studies (including the dummy variables and the constant). If Brattle is unable to comply with this request, please explain why.
- i) Please provide the p-values for each of the variables in the regression.

Response:

- a) Attached as Attachment A to Puget Sound Energy, Inc.'s ("PSE") Response to Public Counsel Data Request No. 069 is a copy of table that provides information regarding an updated studies of the impact of decoupling on electric utilities.
- b) Please see Attachment A to PSE's Response to Public Counsel Data Request No. 069.
- c) Please see Attachment A to PSE's Response to Public Counsel Data Request No. 069.
- d) Please see the workpaper spreadsheet: "Electric_Brattle_Sample Selection_Non-Protected.xlsm," in the Tab: Holding Co Decoupling Index, and the supporting tabs in the same spreadsheet.
- e) Yes, the Michigan companies discontinued decoupling during the study period.
- f) Please also see "Tab: COC Multistage" in the workpaper "Electric_Brattle_Sample Selection_Non Protected.xlsm" provided in Attachment B to Puget Sound Energy, Inc.'s Response to Public Counsel Data Request No. 070, and in the supporting tabs in the same spreadsheet and in the companion spreadsheet "Electric_Brattle_Sample Selection_Protected.xlsm" provided in Attachment B to Puget Sound Energy, Inc.'s Response to Public Counsel Data Request No. 070.
- g) Both the p-values and the confidence intervals are valid ways of determining the statistical significance of a regression equation. The data to look at both of these test results are supplied in the workpapers of the current gas analyses. Please see the workpaper "UE-121697 et al PSE Vilbert direct workpapers - Gas Model Regression (PSE) (11.05.2014).pdf" provided in Attachment A to PSE's Response to Public Counsel Data Request No. 070. For the gas regressions shown therein, there are columns containing the p-values (labeled " $P>|t|$ " (i.e., the absolute value of t) and "[95% Conf. Interval]", respectively, for every regression coefficient including the Decoupling Index. Note that the p-values in this source are for a 2-tailed test which is standard. The values must be divided by 2 to get the 1-tailed test values. The smaller p-value used at the 1-tailed test

would make it easier to reject the neutral null hypothesis at the 5% level that decoupling does not lower the cost of capital.

As is discussed in the electric utility study, a one-tailed test is more appropriate in the decoupling context. Here, the null hypothesis is that decoupling does not lower the cost of capital as opposed to an alternative hypothesis that decoupling does lower the cost of capital. The analogous confidence interval is also one-sided. Any positive estimate for the impact of decoupling on the cost of capital would be consistent with this null hypothesis. Hence, the confidence interval extends all the way to positive infinity. Because of this extreme range, one-sided confidence intervals are generally not considered useful and therefore not reported.

- h) For the two electric study regressions presented in the testimony, the information needed to calculate the confidence intervals for all variables can be found in the columns and on the p-values. The columns are the Coefficient (called "Estimate"); the Std. Error; the t-value; and the p-value ("Pr (>|t|)"). Please see the workpaper "UE-121697 et al PSE Vilbert direct workpapers - Electric Model Regressions (PSE) (11.05.2014).pdf" provided in Attachment A to PSE's Response to Public Counsel Data Request No. 070. The statistical results fail to reject the neutral hypothesis.

The two-sided confidence interval is equal to the coefficient minus/plus 1.96 times the standard error. The one-sided confidence interval corresponding to a null hypothesis of no negative impact is equal to the coefficient minus 1.64 times the standard error to positive infinity.

- i) See the response to h) above.

**ATTACHMENT A to PSE's Response to
PUBLIC COUNSEL Data Request No. 069**

No.	State	State Regulated Electric Subsidiary	Holding Company	Type of Decoupling Policy	Month that Decoupling Started	Quarter that Decoupling Started	Basis for the Start Date	Quarter that Decoupling Was No Longer in Effect
Col. => Row	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
1	Connecticut	United Illuminating	UIL Holdings Corporation	Revenue Decoupling with True-up	Feb-09	1_2009	Decision Feb. 2009 on original case Docket No. 08-07-04. Stems from CT Public Act No. 07-242. Docket No. 08-07-04, and has subsequently extended it through the utility's next general rate case. P Morgan.	
2	District of Columbia	Potomac Electric Power	Peppo Holdings, Inc.	Revenue Decoupling with True-up	Sep-09	3_2009	The Commission approved decoupling for PEPCO (Potomac Electric Company) in Case 1053 (September 2009).	
3	Hawaii	Hawaiian Electric Co.	Hawaiian Electric Industries	Revenue Decoupling with True-up	Aug-10	3_2010	The Decoupling Docket, Docket No. 2008-0274 (opening investigation into decoupling), Final Decision and Order, August 2010. Docket No. 2009-0083 (general rate case including adoption of decoupling mechanism) Final Order Dec. 2010.	
4	Hawaii	Hawaiian Electric Light Co.	Hawaiian Electric Industries	Revenue Decoupling with True-up	Dec-10	3_2010	There was a follow-on final decision in Dec. 2010. Data constraints led to consolidation with HECCO in 3_2010, as noted in spreadsheet worksheets.	
5	Hawaii	Mauit Electric	Hawaiian Electric Industries	Revenue Decoupling with True-up	Dec-10	3_2010	This was a follow-on decision in Dec. 2010. Starting date was set at 1Q2011, shown in Figure 4. Data constraints led to consolidation with HECCO in 3_2010, as noted in spreadsheet worksheets.	
6	Idaho	Idaho Power Co.	IDACORP, Inc.	Revenue Decoupling with True-up	Mar-07	1_2007	Pilot 2007-2010. Extended 2010-2012, then 2012-open. P Morgan. The initial order setting up the pilot was March, 2007.	
7	Illinois	Commonwealth Edison	Exelon Co.	Fixed Variable Rates	May-11	2_2011	ICC, Commonwealth Edison, Order for Case 10-0467 covering SEV rates, May 24, 2011.	
8	Maryland	Baltimore Gas & Electric	Exelon Co.	Revenue Decoupling with True-up	Nov-07	1_2012, finalized merger with Exelon, March 12, 2012	Baltimore Gas & Electric (Letter Order November 2007), then part of Constellation. P Morgan. As subsidiary of Exelon, the decoupling starts with the finalization of the merger with Exelon, March 12, 2012.	
9	Maryland	Delmarva Power & Light	Peppo Holdings, Inc.	Revenue Decoupling with True-up	Jul-07	3_2007	Delmarva, Case 9093, July 2007. P Morgan.	
10	Maryland	Potomac Electric Power	Peppo Holdings, Inc.	Revenue Decoupling with True-up	Jul-07	3_2007	PEPCO, Case 9092, July 2007. P Morgan.	
11	Massachusetts	Western Massachusetts Electric	Northeast Utilities System	Revenue Decoupling with True-up	Jan-11	1_2011	Docket D.P.U. 10-70 (January 2011); Revenue Decoupling Adjustment Clause, M.D.P.U. No. 1050. P Morgan.	
12	Michigan	Detroit Edison	DTE Energy	Revenue Decoupling with True-up	Jan-10	1_2010	The Michigan Commission approved a decoupling mechanism for Detroit Edison (Case No. U-15768, January 2010). The Detroit Edison decision was appealed to the Michigan Court of Appeals, which starting 1Q2011,111 creating uncertainty about the policy. Court of Appeals did reverse the Commission approval decision, issuing a final decision in April 2012. Commission did not appeal. Brattle excluded the data points for holding company DTE Energy from the regression analysis for 6 quarters starting then, due the uncertainty. Detroit Edison was treated as not decoupled starting in 3 Q, 2012.	3_2012

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13	Michigan	Consumers Energy	CMS Energy	Revenue Decoupling with True-up	Nov-09	4_2009	The Michigan Commission approved decoupling mechanisms for Consumers Energy (Case No. U-15645, November 2009, and Case No. U-16191 continuing decoupling, November 2010. P. Morgan. Same uncertainty was created for CMS Energy decoupling policy with the DTE lawsuit. Court of Appeals did reverse the Commission DTE decision, issuing a final decision in April 2012. The Commission did not appeal and stopped allowing the true-up of Consumers Energy revenues, effectively ending Consumers' decoupling. Brattle excluded the data points for holding company CMS Energy for the 6 quarters starting 1Q2011 due to the uncertainty. Consumers Energy was treated as not decoupled starting in 3 Q 2012.	3_2012
14	Michigan	Upper Peninsula Power	Integrus Energy Group	Revenue Decoupling with True-up	Apr-08	2_2008	Start date information from the company. (Internal communication). UPP did not lose decoupling along w/ Detroit EG and Cons. Energy because policy was result of settlement. Rather UPP kept the policy through 4 Q 2013. Also, UPP was sold off by the Integrus Energy Group in 1 Q 2014 and decoupling discontinued.	1_2014
15	New York	Consolidated Edison	Consolidated Edison, Inc.	Revenue Decoupling with True-up	Mar-08	1_2008	March 25, 2008, Order in 07-E-0523.	
16	New York	Orange & Rockland Utilities	Consolidated Edison, Inc.	Revenue Decoupling with True-up	Aug-08	3_2008	Settlement contained Rev Decoupling filed in April 2008. RDM recovery went into effect in August 1, 2008. The Order went into effect between thousand was set on 3Q 2008.	
17	New York	New York State Electric & Gas	Energy East (acquired by Iberdrola)	Revenue Decoupling with True-up	Sep-10	3_2010	NYSEG Case 09-E-0715, September 21, 2010	
18	New York	Rochester Gas & Electric	Energy East (acquired by Iberdrola)	Revenue Decoupling with True-up	Sep-10	3_2010	RG&E Case 09-E-0717, September 21, 2010	
19	Ohio	AEP Ohio	American Electric Power Company, Inc.	Revenue Decoupling with True-up	May-12	2_2012	The Ohio Commission recently approved decoupling mechanisms for electric utility AEP Ohio, Case No. 11-5905-EL-RDR (May 2012). P. Morgan.	
20	Ohio	Duke Energy Ohio	Duke Energy	Revenue Decoupling with True-up	May-12	2_2012	The Ohio Commission recently approved decoupling mechanisms for two of its electric utilities: AEP Ohio, Case No. 11-5905-EL-RDR (May 2012), and Duke Energy Ohio, Case No. 11-5905-EL-RDR (May 2012). P. Morgan.	
21	Oregon	Portland General Electric	Portland General Corp	Revenue Decoupling with True-up	Jan-09	1_2009	In January 2009, Docket UE 197, the Commission approved a decoupling mechanism for Portland General Electric P. Morgan.	
22	Wisconsin	Wisconsin Public Service	Integrus Energy Group	Revenue Decoupling with True-up	Jun-09	2_2009	The Wisconsin Commission approved decoupling for Wisconsin Public Service Corporation, both the electric and gas operations, in Docket No. 6690-UR-119 (June 2009).	