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1 process of being updated.

2 **Q. Has the Commission scheduled a workshop to discuss the Company's present**  
3 **and future hedging strategies, consistent with the 2012 TAM Order**  
4 **encouraging the Company to review its hedging policies and practices with**  
5 **Staff and stakeholders?**

6 A. Yes. The Commission scheduled a workshop with the Company, Portland  
7 General Electric, and interested parties for March 19, 2012.

8 **Other Issues Referenced the 2012 TAM Order**

9 **Q. In compliance with the 2012 TAM Order, is the Company providing further**  
10 **information and analysis on specific NPC issues?**

11 A. Yes. In the 2012 TAM Order, the Commission directed the Company to address  
12 certain NPC issues or provide further explanation on the following topics in the  
13 2013 TAM:

- 14 • GRID Market Capacity Limits
- 15 • Cal-ISO Charges
- 16 • Gadsby Unit 4-6 modeling

17 **GRID Market Capacity Limits**

18 **Q. In its 2012 TAM Order, how did the Commission resolve the issue of**  
19 **modeling market caps in GRID?**

20 A. The Commission accepted the Company's modeling of market caps on a non-  
21 precedential basis and directed Staff to conduct workshops with parties to address  
22 and attempt to resolve the Company's approach to modeling market caps. In the  
23 absence of an agreement prior to the 2013 TAM filing, the Commission directed

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1 both the Company and Staff to provide additional analysis and evidence on the  
2 issue.

3 **Q. Did the Company attend a Staff workshop on market cap modeling with**  
4 **interested parties?**

5 A. Yes. On January 11, 2012 the Company attended a workshop with Staff and  
6 interested stakeholders; however, parties were unable to reach an agreement on  
7 the appropriate methodology to use in this filing.

8 **Q. Please explain why the Company believes it is important to model market**  
9 **capacity limits in GRID.**

10 A. The GRID model assumes unlimited market depth for system balancing sales and  
11 purchases; it does not consider load requirements, transmission constraints,  
12 market illiquidity, or static assumptions about market prices that would not allow  
13 the Company to make sales at the forecast price. The Company's transmission  
14 access to a market point limits its ability to sell its generation in that market;  
15 similarly, counterparties' demand for purchases is limited by their transmission  
16 access and their own load and resource balance. Without market caps, the GRID  
17 model has no constraints to reflect counterparties' inability to make economic  
18 transactions.

19 **Q. Please explain the static assumptions of market prices in GRID.**

20 A. The Company's official forward price curve produces an hourly price that  
21 remains static in GRID in each hour, regardless of the changes in load and  
22 resource balance. The driving force behind market prices in real-time is based on  
23 the dispatch cost of additional generation, therefore an increase in load or

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1 reduction in resources will require that higher cost resources be dispatched, or  
2 vice versa. Thus, prices are impacted by changes in the loads and resources of all  
3 market participants, including the Company. Without market caps, the GRID  
4 model will overestimate sales revenues as it continues to make sales at the hourly  
5 market price, even though additional sales would push market prices down.

6 **Q. How did the Company model market caps in previous TAM proceedings?**

7 A. In Docket UE 216 and in previous TAM filings, the Company capped GRID in  
8 the four major wholesale sales markets, Mid C, California Oregon Border  
9 (“COB”), Four Corners, and PV during the graveyard hours (1 am – 6 am), and  
10 market caps at the Mona market in all hours. Within these four major market  
11 hubs the Company modeled market caps based on an average of four years of  
12 historical graveyard spot market sales at each hub.

13 **Q. How did the Company change its modeling of market caps in the 2012 TAM  
14 and in this filing?**

15 A. Consistent with the previous market cap methodology, the Company continues to  
16 model market caps at the four major market hubs—Mid-C, COB, Four Corners,  
17 and PV—and added consistent market caps at the Mead and Mona market hubs to  
18 ensure sales in all markets are treated consistently. The difference in the  
19 methodology is that the Company now specifies market depth in all hours,  
20 segregated by HLH and LLH periods, and bases the cap on a four-year historical  
21 average of both spot and short-term firm wholesales sales levels.

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1 **Q. Why did the Company change its modeling of market caps in the 2012 TAM**  
 2 **and in this filing?**

3 A. The previous market cap methodology was restricted to the graveyard hours and  
 4 the Company limited its market depth calculation based on an average of spot  
 5 market sales only. The Company's refined approach models market depth in all  
 6 hours and sets the cap using a broader range of historic market transactions. This  
 7 approach produces a more accurate and comprehensive model of the power  
 8 markets in which the Company transacts. In the 2012 TAM, the Company also  
 9 demonstrated that the refined approach reduced the impact of market caps on the  
 10 Company's final NPC.

11 **Q. How does the GRID modeling of wholesale sales compare with actual sales**  
 12 **levels?**

13 A. Table 5 below shows a comparison of the volumes of actual short-term firm  
 14 wholesale sales modeled in GRID versus actual short-term firm wholesale sales  
 15 over the last four years.

**Table 5**

	<b>GRID vs Actual (MWh)</b>				
	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>GRID Sales Volume</b>	18,344,663	31,618,999	13,229,220	10,490,633	9,212,496
<b>Actual Sales Volume</b>	8,934,640	7,892,769	8,089,341	4,754,401	6,802,152
<b>Difference</b>	(9,410,023)	(23,726,230)	(5,139,879)	(5,736,232)	(2,410,344)

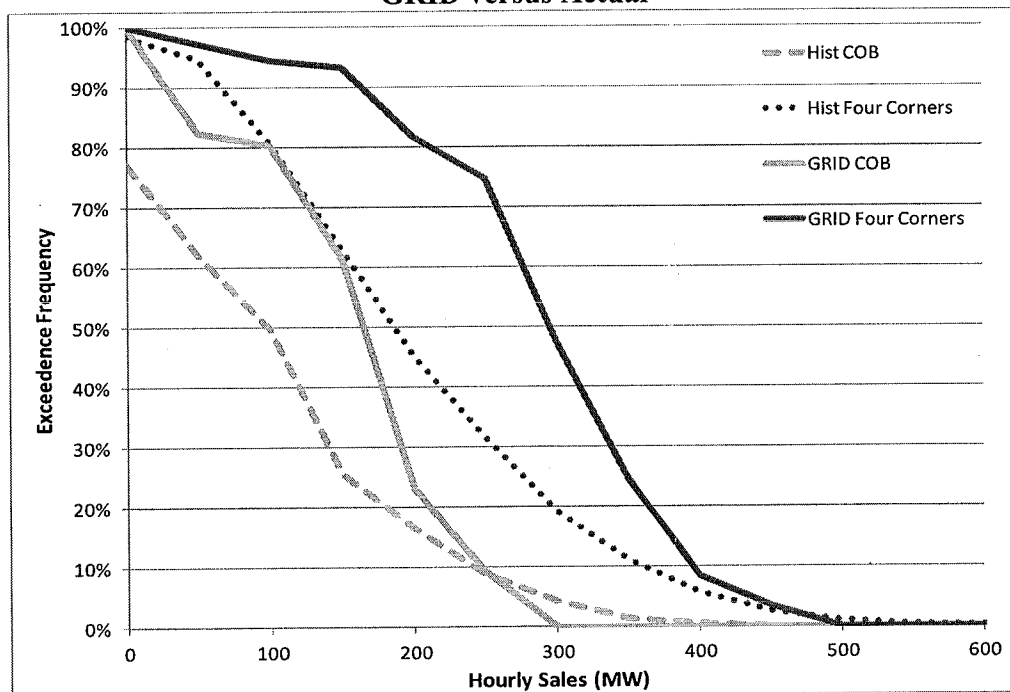
16 As shown in Table 5, GRID over forecasts wholesale power sales in every year.  
 17 Removing market caps would cause GRID to further over forecast wholesale  
 18 power sales.

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1 Q. Table 5 shows that GRID over-forecasts wholesale sales compared to actual.  
2 Does that also mean that GRID over-forecasts sales in every hour compared  
3 to actual?

4 A. No. As stated previously, GRID is a perfect foresight model with static prices; it  
5 cannot take into consideration the peak volumes of actual wholesale sales, which  
6 may have been due to unexpected wind generation, changes in prices, or off-  
7 system contingency events. While there may be specific hours in which actual  
8 operations has higher wholesale sales volumes due to real-time market conditions,  
9 on average GRID will over-forecast the volume of wholesale sales the Company  
10 is able to make without market caps in place. Table 6 below illustrates the  
11 wholesale sales modeled in GRID with market caps in place in this filing and  
12 actual sales for the 12 months ending June 2011.

**Table 6**  
**GRID versus Actual**



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1 As shown in Table 6, even with market caps in place, GRID continues to  
2 overestimate actual wholesale sales in total, and only underestimates a small  
3 frequency of sales at very high purchase levels.

4 **Q. Why does the Company continue to use a four-year historical average when**  
5 **there is a declining trend in wholesale sales volumes?**

6 A. The Company continues to use a four-year historical average because it is a  
7 conservative estimate of what the Company expects to occur in the test period.  
8 However, the Company will continue to analyze the use of a four-year historical  
9 average and its ability to accurately represent the depth of the relevant wholesale  
10 markets going forward.

11 **Q. Due to the fact that the GRID model overestimates wholesale sales as**  
12 **compared to actual wholesale sales levels, and has consistently done so for**  
13 **the past five years, is it reasonable to continue to reflect the Commission's**  
14 **trading and arbitrage adjustment from Docket UE 191, Order No. 07-446?**

15 A. No. In Order No. 07-446, the Commission decided that the GRID model results  
16 should be adjusted as necessary to incorporate revenues associated with arbitrage  
17 and wholesale trading activities. The facts in that case showed that GRID  
18 underestimated wholesale sales volumes when compared to 2006 actual wholesale  
19 sales volumes. However, as Table 5 above shows, the GRID model now  
20 consistently overestimates the volume of wholesale sales; therefore, there is no  
21 longer any justification to adjust the GRID model results by imputing trading and  
22 arbitrage margins.

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1 **Cal ISO Modeled Transactions**

2 **Q. Please explain why the Company is explicitly modeling Cal ISO transactions**  
3 **in the GRID model in the 2013 TAM.**

4 A. The Company is explicitly modeling the Cal ISO transactions in response to the  
5 2012 TAM Order in which the Commission stated that it expects “to see evidence  
6 in future TAM proceedings that more precisely quantifies the level of benefits  
7 from Cal ISO transactions, as well as evidence demonstrating that the Cal ISO is a  
8 counterparty at these market hubs.”<sup>4</sup> By explicitly modeling these transactions in  
9 the GRID model, based on historical transaction levels, the Company has  
10 demonstrated that the Cal ISO is a counterparty and quantified the associated  
11 benefits.

12 **Q. How many transactions did the Company enter into with the Cal ISO during**  
13 **the 12-month period ending June 2011?**

14 A. The Company entered into 5,726 transactions with the Cal ISO during the 12  
15 month period ending June 2011. About half of these transactions were at COB,  
16 about a third at Four-Corners, and the majority of the remaining transactions were  
17 at Mona.

18 **Q. Please explain how the Company modeled Cal ISO transactions in this filing.**

19 A. Based on the 12 months ending June 2011, the Company calculated the average  
20 amount of energy sold to and purchased from the Cal ISO on a monthly basis and  
21 by HLH and LLH. The Company modeled expected transactions with Cal ISO at  
22 three major points of delivery based on historical information: Four Corners,

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<sup>4</sup> Order No. 11-435 at 25.

1 COB, and Mona. The Company also included the expected Cal ISO wheeling  
2 fees and service fees.

3 **Gadsby Must-Run Operations**

4 **Q. Has the Company changed how it models its Gadsby units 4, 5 and 6 in the**  
5 **2013 TAM versus the 2012 TAM?**

6 A. Yes. In the 2012 TAM filing, the Company modeled Gadsby units 4, 5 and 6 as  
7 must run units during all hours, but in the 2013 TAM the Company models the  
8 Gadsby units as must run only during the HLH.

9 **Q. Did the Commission direct the Company to provide additional evidence**  
10 **showing that the Company's modeling of the Gadsby units was reasonable?**

11 A. Yes. The Commission directed the Company to provide additional information  
12 that showed that the modeled generation of Gadsby units 4, 5 and 6 was  
13 reasonable when compared to historical information. In response to the  
14 Commission's request, please refer to Table 7, which shows the historical  
15 generation levels of the Gadsby units, including the previous and current TAM  
16 filing.

**Table 7**

	<b>Actual</b>	<b>Actual</b>	<b>Actual</b>	<b>Actual</b>	<b>Modeled</b>	<b>Modeled</b>
	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>MWh</b>	250,518	349,713	255,281	125,920	335,671	222,439
<b>Capacity Factor</b>	24%	33%	24%	12%	32%	21%

17 Table 7 shows that the Company's modeled generation of Gadsby units 4, 5 and 6  
18 in this case is reasonable when compared to the actual historical operation of the  
19 units.