

## **Fuel Price Forecast Results for an Alternative “Low Oil Price” Case/Scenario**

### ***Introduction***

A detailed fuel price forecast was prepared and used as one of the primary inputs in the IRP development, and presented in the “Integrated Resource Plan Volume III Demand and Fuel Forecasts and Demand Side Management” (IRP Volume III). This fuel price consisted of a most likely scenario of prices in constant 2015 US\$ based on the recent behavior of energy markets and was contrasted versus forecast exercises developed by the U.S. Energy Information Administration (EIA).

Specifically, the price scenario presented in the IRP Volume III corresponds to the “Reference Case” presented in the Annual Energy Outlook 2015 (AEO2015), document prepared by the EIA.

However, after considering the relatively low current level of oil prices, and the subsequent impact on other fuel types, PREPA has asked Siemens to prepare a revision of the fuel price forecast. The proposed strategy consists of developing an alternative scenario corresponding to a potential future of lower oil prices.

The first attempt for producing a low oil price scenario was based on information contained in the AEO2015, specifically on the values corresponding to the “Low Oil Price” case included the document. However, the obtained results were considered unsatisfactory as they do not reflect the low values in the short term. For this reason, a revised scenario of low oil prices was developed based on different assumptions and is described in this document; this revised scenario intends to be a lower bound to any crude oil prices, especially in the short term.

A brief description of the elements in the development of this revised low fuel price forecast scenario and subsequent results are presented in this document.

### ***Brief Note on the Fuel Price Forecast Methodology***

As described in the IRP Volume III, the methodology originally followed for fuel price forecasting consisted of the following steps:

1. Developing an econometric model of price for the West Texas Intermediate (WTI), which may include lagged variables, and obtaining a forecast of average monthly prices until December 2035,
2. Linking the price of the different fuels used for power generation to the WTI; the link consisted of regression models, usually with lagged variables, that depict relationship of prices between the WTI and the fuel used for power generation,
3. Use the forecast of WTI and the models linking WTI and other fuels to develop a forecast of average monthly prices of the fuels used for power generation.

The analysis described in this document is focused on the revision of the econometric model and forecast for the WTI, as it is the marker used to generate the price projections of the different fuels considered.

## **Potential reasons for oil prices decline**

Different factors can be proposed as causes of current oil prices downturn. These factors could be systemic or correspond to shocks on supply or demand.

An example of a systemic mechanism is that an increase in the price of a good or service is followed by a decrease on its consumption. By definition, high prices are prone to inhibit consumption. There is a minimum level under which consumption cannot go under, known as autonomous consumption. In the contemporary world where almost any activity is energy dependent, the autonomous oil consumption may be high. The way energy demand reacts to high prices is reflected in price-demand elasticity.

Nations can also act intentionally in order to reduce consumption and save resources, for example by enforcing policies for the development and implementation of energy efficient technologies.

The examples presented above correspond to “demand side” reactions to high prices.

On the other hand, the hydraulic fracturing or “fracking” technology is an example of a supply shock, which has had a major impact on oil market prices. The now relatively abundant oil resources have put pressure to lower the prices. Because of its nature, the fracking will be observed as a permanent factor and the market long-term equilibrium, including price, will depend also on the demand growing path.

Other reason for a decrease in the consumption is that the economies could grow slower than expected. This could be described as “demand destruction”. It has been generally accepted that slower economic growth pushes the prices of commodities down by demand reduction. However, the current economic downturn may be linked to a phenomenon never observed before which is a economic recession caused by low prices<sup>1</sup>.

In any case, consumption reduction as a result of high demand elasticity, intentional actions or slower growth, do not occur overnight. There are rigidities that make the price correction to happen only after some market actors have been affected by the high prices.

Finally, the role of the OPEC and the Iran Nuclear Deal are also mentioned as potential causes of the current oil prices decline<sup>2</sup>.

## **Relevance of oil production costs in the short and medium term**

Recent analysis indicates that \$42 per barrel would be enough to cover the costs, in average, of North American independent oil producers<sup>3</sup>. Other sources indicate that the cost to produce oil in the U.S. is \$36 per barrel<sup>4</sup>. Also, \$42 would cover the average production of almost all of the 20 biggest production nations, with the only exception of the United Kingdom (\$52.30) and Brazil (\$48.80)<sup>5</sup>, which means that in the long term the production on these countries could be limited to fields/wells with lower costs (see Figure 1).

<sup>1</sup> Donald L. Luskin, “The Recession Caused by Low Oil Prices”, published in <http://www.wsj.com/articles/the-recession-caused-by-low-oil-prices-1452211556>, January 7, 2016, accessed on February 8, 2016

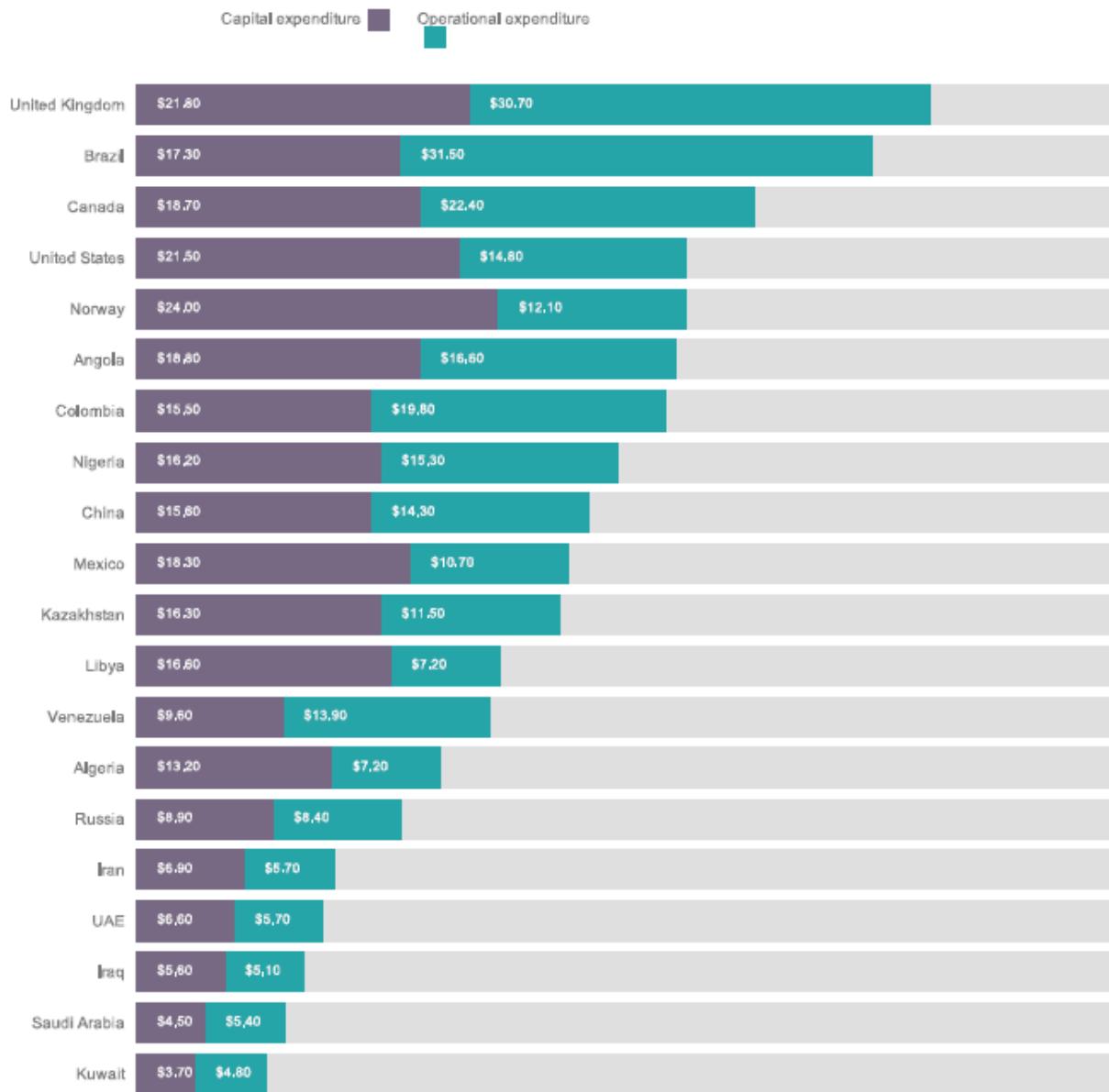
<sup>2</sup> Evan Tarver, “4 Reasons Why the Price of Crude Oil Dropped”, published in <http://www.investopedia.com/articles/investing/102215/4-reasons-why-price-crude-oil-dropped.asp>, October 22, 2015, accessed on February 8, 2016

<sup>3</sup> “Moody’s: \$42 per barrel is enough to cover costs”, published in <http://fuelfix.com/blog/2015/08/13/moodys-42-per-barrel-is-enough-to-cover-costs/>, accessed on February 2, 2016.

<sup>4</sup> “US Cost to Produce Oil Is \$36 a Barrel”, published in <http://247wallst.com/energy-economy/2015/11/24/us-cost-to-produce-oil-is-36-a-barrel/>, accessed on February 2, 2016.

<sup>5</sup> “What it costs to produce oil”, published in <http://money.cnn.com/interactive/economy/the-cost-to-produce-a-barrel-of-oil/> with input from UCube by Rystad Energy; Interactive published Nov. 23, 2015, accessed on February 2, 2016

**Figure 1: Average Oil Production Cost in the Biggest Oil Producing Nations**  
**Source: UCube by Rystad Energy, November 23, 2015**



Even though there is a surplus in the supply/demand balance worldwide and the oil prices have decreased, production adjustments are not immediate. This could be for different reasons:

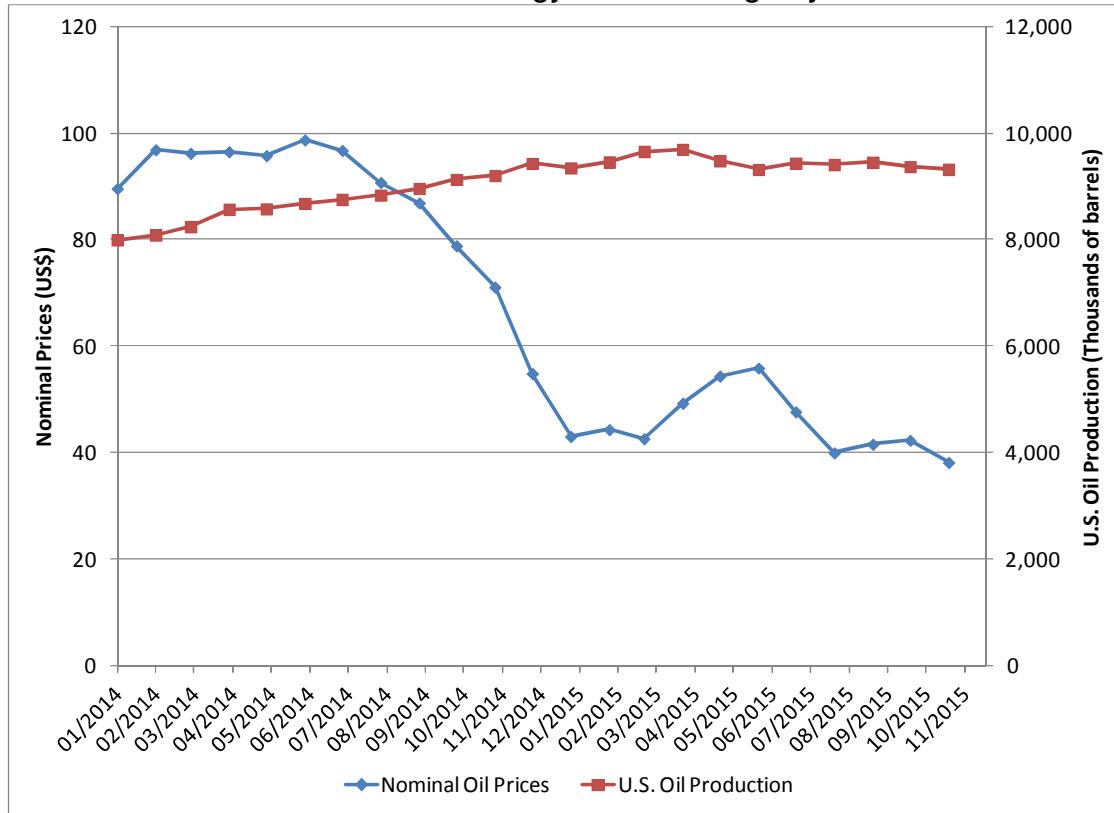
1. Companies actually can operate under their total average costs for a certain period of time, waiting for a change on the prices trend. Companies essentially need to cover their variable costs (i.e. operational expenditures) in the short term. For example, even though the alleged equilibrium price of \$42 dollars is insufficient to cover average costs in UK and Brazil, both countries would be able to keep their production level for a short period as the operational expenditures per barrel are lower than \$42 dollars (\$30.70 in the UK and \$31.50 in Brazil).
2. Even though margins are squeezing, some contractors may prefer keep operating as they have limited revenue sources: there are new modes of oil field development and new technologies, like the aforementioned fracking, which have incentivized the participation of small or medium private operators. Unlike traditional big oil companies, these private operators may have a relatively small number of revenue sources or most of their capital

costs are already sunk or investment loans that still need to be paid which means to them that keeping operating is better even on a low price scenario.

3. There may be contracts in place, which enforce especially private operators to continue operation even under the current low price scenario.

The aspects described in items 2 and 3 above are showed in the Figure 2 below. As can be observed, the prices have been declining almost uninterruptedly since June, 2014, however the average peak production reached its maximum in April, 2015 and has been pretty stable since then.

**Figure 2: U.S. Crude Oil First Purchase Price (Nominal US\$) and U.S. Field Production of Crude Oil (Thousand Barrels per Day)**  
Source: U.S. Energy Information Agency



Oil prices are not fully flexible, so they do not adjust immediately as a result of changes on supply, demand, and stocks. Among different causes, uncertainty on the production side may cause an overshooting in the price adjustment because the stocks/inventories are extremely high and the prices are declining rapidly, producers accept settling at even lower prices to keep production to free storage space and production ongoing.

### ***Super-Cycles of oil prices***

As described in the two previous sections, the potential reasons for the oil price drop are multiple. Moreover, the actual impact of these reasons is difficult to quantify and predict, as can be observed in the forecast scenarios prepared by the EIA: none of the oil price scenarios presented in the AEO2015 represents a decent fit to the prices observed during the last few

months. With the price structure of the last 6-7 years and mathematical models built on it, short term price forecast cannot be conducted effectively.

For this reason, in order to formulate an alternative scenario of low oil prices, which is materializing indeed, it is suggested to develop the analysis in the framework of economic super-cycles as described below. Under the oil super-cycle structure, price drop can be explained in reasonable fashion, at least to generate an “ultra pessimistic” lowest price scenario.

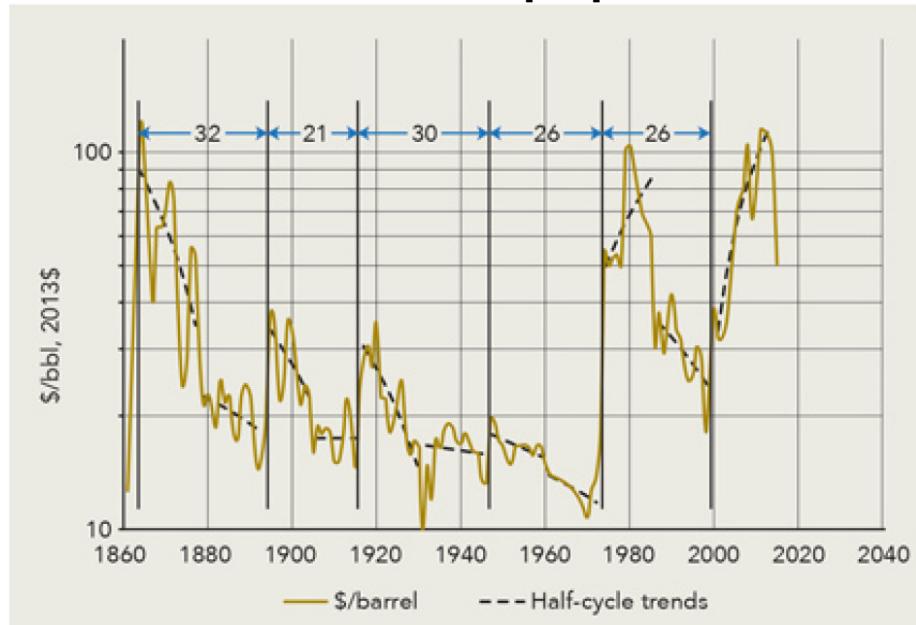
It is important to underline the following:

- The concept of super-cycles in economics is not exclusive of oil prices; it applies, for example, to commodities prices,
- Even though there is abundant empirical evidence of super-cycles and other types of economic cycles and they have been studied thoroughly, preventing them or mitigating their effects has been elusive, and recessions still occur in economy.

Oil price super-cycles have existed since the dawn of the "Age of Oil". These super-cycles have historically lasted an average of 27 years, with a minimum period of 21 years and a maximum of 32 years<sup>6</sup>.

A plot of inflation-adjusted oil prices from 1859 until present shows that there have been definite price cycles of similar length and similar character. A plot of inflation-adjusted annual average oil prices since 1859 is presented in Figure 3, with the beginning of each super-cycle marked with a vertical line and the super-cycle length shown in years. The point at which a new super-cycle begins is defined as where the steepest increase in oil price occurs making what is now often referred to as a V-shaped recovery, from the lowest price at the end of the super-cycle.

**Figure 3: Historical Inflation-Adjusted Oil Prices, Showing the Five Completed Historical Super-Cycles and their Duration in Years**  
Source: Guillot [2015]



These super-cycles exhibit the following characteristics:

- Sharp upward price spikes at the beginning of each super-cycle,
- One or two additional upward spikes in the first half of each super-cycle, within 8-9 years of the first spike,

<sup>6</sup> Stephen Guillot, "Oil price super-cycles", published in <http://www.oegi.com/articles/print/volume-12/issue-11/features/oil-price-super-cycles.html>, November 12, 2015, accessed on February 3, 2016.

- A mid-cycle price crash,
- Price collapse at the end of each cycle followed by rapid recovery and the upward spike marking the beginning of the next super-cycle,
- Lower price volatility and declining real prices in the second-half of each super-cycle.

Whether the global economy is currently experiencing the price crash of a super-cycle may be intense may lead to a endless discussion. However, as mentioned before the models based on the until-recently valid price structure cannot properly reflect the current situation. Thus, it was proposed to use the super-cycle concept to define a set of reference prices which would be considered to generate the low oil price scenario. These reference prices are presented in the Table 1 below.

**Table 1: Proposed Reference Prices for the Generation of the Low Oil Price Scenario According to Super-Cycle Characteristics**

Year	Description	Average oil barrel price (2015 US\$)
2016	Intense price correction	25-30
2017		45
2018		45
2019		45
2020		40
2021		40
2022		40
2023	Most efficient production Mature energy efficiency technologies	45
2024		45
2025		45
2026		49
2027		53
2028	Demand overcomes production Bottlenecks comence to appear	57
2029		61
2030		65
2031		69
2032		73
2033	Upwarding prices start a new cycle	77
2034		81
2035		85

As can be observed, the proposal considers 2016 as a year of price correction, and then approximately 10 years of stable, just above-the-cost-of-production oil barrel price. Prices would start increasing again approximately in year 2026.

### **Validation of Forecast Assumptions**

Besides the selection of an alternative scenario for the WTI price, the assumptions considered in the preparation of the IRP Volume III remain unmodified, including those relative to the conversion from nominal to constant 2015 US\$ fuel prices, as well as the models developed and used on the forecast preparation.

In particular, it was verified that the model for WTI forecast based on crude oil stocks is still valid and appropriate, once additional historical data of prices and stocks was considered. As indicated in the IRP Volume III, the equation for WTI is the following:

$$\begin{aligned}
 LN\_AVERAGE\_PRICE\_WTI_t = & \\
 1.392660 \cdot LN\_AVERAGE\_PRICE\_WTI_{t-1} + 0.507670 \cdot LN\_AVERAGE\_PRICE\_WTI_{t-2} - & \\
 8.537391e^{-7} \cdot STOCKS_t - 1.428720
 \end{aligned}$$

Where:

$LN\_AVERAGE\_PRICE\_WTI_t$	:	Natural logarithm of WTI average price for month t, in dollars per barrel
$LN\_AVERAGE\_PRICE\_WTI_{t-1}$	:	Natural logarithm of WTI average price for month t-1, in dollars per barrel
$LN\_AVERAGE\_PRICE\_WTI_{t-2}$	:	Natural logarithm of WTI average price for month t-2, in dollars per barrel
$STOCKS$	:	Estimated ending U.S. crude oil stocks for month t, in barrels

The comparative analysis of this model and one obtained with the additional price and stocks data indicates that the differences in the models' coefficients are not statistically significant; therefore the original model can be used.

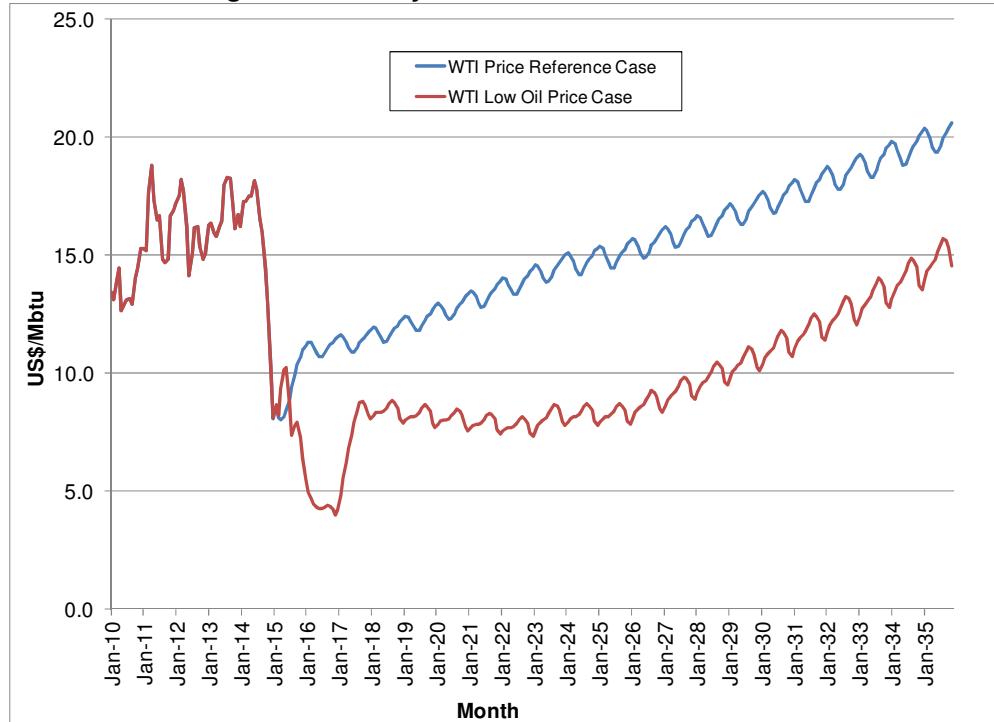
Finally, the price adders also remained unchanged on this alternative scenario.

## **Results for WTI Price Cases**

The Figure 4 below shows the results for the WTI average monthly price (per MBTU) forecast for the period 2015-2035 for both the "Reference" and "Low Oil Price" cases. The values from January to November 2015 for the Low Oil Price case correspond to the actual values.

As can be observed, after a severe price correction in 2016 and almost steady prices for a 10-year period, the WTI prices for the "Low Oil Price" case are approximately 30% lower than for the "Reference" case in the long term.

**Figure 4: Monthly WTI Price Forecast 2015-2035**



## **Results for Fuel Price Forecast**

The Table 2 and Table 3 below summarize the full set of results of fuel price forecast for both scenarios.

Table 2: Fuel Price Forecast Results 2015-2035, Reference Case

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)										Ecolectrica									
							No. 6			No. 2			Natural Gas @ HH			No. 6			No. 2			Natural Gas @ HH		Coal AES		Nat Gas Aguirre		Nat Gas CS 5&6				
	WTI	No. 6	No. 2	Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	San Juan / Palo Seco	Aguirre	Souico	Aguirre / San Juan CC	Mayaguez / Arecibo	Trucks	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Arecibo	Future 1,3,&4	US\$/kWh	US\$/MMBTU	Base Fuel	Energy Charge	US\$/MMBTU	Future 1,3 & 4 Spot Fuel Price	US\$/MMBTU	Future 2 Spot Fuel Price			
Apr-15	8.0282	7.9186	13.2736	8.6864	2.7620	2.0754	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	9.3868	9.3868	9.2281	9.2281	14.6065	14.6065	14.6065	9.5464	7.2620	4.0631	9.5464	9.5464	4.3931	0.0430	5.7360	14.6065	14.6065
May-15	8.1616	8.0513	13.4303	8.5521	2.7060	2.0614	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	9.5195	9.5195	9.3608	9.3608	14.7632	14.7632	14.7632	9.5464	7.2060	4.0564	9.5464	9.5464	4.3931	0.0430	5.7360	14.7632	14.7632
Jun-15	8.4420	8.3303	13.7637	8.6089	2.6892	2.0575	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	9.7986	9.7986	9.6399	9.6399	15.0967	15.0967	15.0967	9.5464	7.1892	4.0497	9.5464	9.5464	4.3931	0.0430	5.7360	15.0967	15.0967
Jul-15	8.8724	8.7586	14.2725	8.7901	2.7106	2.0602	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	10.2269	10.2269	10.0682	10.0682	15.6054	15.6054	15.6054	8.3199	7.2106	4.0430	8.3199	8.3199	4.3931	0.0430	5.7360	15.6054	15.6054
Aug-15	9.4092	9.2931	14.8990	9.0666	2.7314	2.0695	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	10.7614	10.7614	10.6026	10.6026	16.2320	16.2320	16.2320	8.3199	7.2314	4.0364	8.3199	8.3199	4.3931	0.0430	5.7360	16.2320	16.2320
Sep-15	9.9541	9.8359	15.5249	9.4035	2.7689	2.0829	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	11.3042	11.3042	11.1454	11.1454	16.8579	16.8579	16.8579	8.3199	7.2689	4.0297	8.3199	8.3199	4.3931	0.0430	5.7360	16.8579	16.8579
Oct-15	10.3630	10.2434	15.9866	9.7333	2.8140	2.0963	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	11.7117	11.7117	11.5530	11.5530	17.3196	17.3196	17.3196	8.6149	7.3140	4.0231	8.6149	8.6149	4.3931	0.0430	5.7360	17.3196	17.3196
Nov-15	10.6763	10.5559	16.3353	10.0089	2.8616	2.1044	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	12.0241	12.0241	11.8654	11.8654	17.6683	17.6683	17.6683	8.6379	7.3616	4.0164	8.6379	8.6379	4.3931	0.0430	5.7360	17.6683	17.6683
Dec-15	10.9934	10.8721	16.6851	10.2300	2.9092	2.1092	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	12.3404	12.3404	12.1816	12.1816	18.0181	18.0181	18.0181	8.6667	7.4092	4.0098	8.6667	8.6667	4.3931	0.0430	5.7360	18.0181	18.0181
Jan-16	11.1823	11.0606	16.8891	10.4009	2.9525	2.1142	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	12.5288	12.5288	12.3701	12.3701	18.2220	18.2220	18.2220	8.9671	7.4525	4.1598	8.9671	8.9671	2.8043	0.0352	4.6992	18.2220	18.2220
Feb-16	11.3227	11.2007	17.0381	10.5330	2.9893	2.1149	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	12.6690	12.6690	12.5102	12.5102	18.3711	18.3711	18.3711	8.9901	7.4893	4.1529	8.9901	8.9901	2.8043	0.0352	4.6992	18.3711	18.3711
Mar-16	11.2833	11.1616	16.9870	10.5860	3.0173	2.1142	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	12.6299	12.6299	12.4711	12.4711	18.3200	18.3200	18.3200	9.0131	7.5173	4.1461	9.0131	9.0131	2.8043	0.0352	4.6992	18.3200	18.3200
Apr-16	11.0988	10.9778	16.7741	10.5558	3.0365	2.1076	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	12.4460	12.4460	12.2873	12.2873	18.1071	18.1071	18.1071	9.3099	7.3099	4.1393	9.3099	9.3099	2.8043	0.0352	4.6992	18.1071	18.1071
May-16	10.8645	10.7443	16.5047	10.4426	3.0478	2.0960	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	12.2125	12.2125	12.0538	12.0538	17.8377	17.8377	17.8377	9.3214	7.5478	4.1324	9.3214	9.3214	2.8043	0.0352	4.6992	17.8377	17.8377
Jun-16	10.6942	10.5747	16.3062	10.3007	3.0520	2.0826	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	12.0429	12.0429	11.8842	11.8842	17.6391	17.6391	17.6391	9.3272	7.5520	4.1256	9.3272	9.3272	2.8043	0.0352	4.6992	17.6391	17.6391
Jul-16	10.6920	10.5727	16.2967	10.1997	3.0535	2.0710	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	12.0409	12.0409	11.8822	11.8822	17.6297	17.6297	17.6297	9.4138	7.5535	4.1188	9.4138	9.4138	2.8043	0.0352	4.6992	17.6297	17.6297
Aug-16	10.8467	10.7270</td																														

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)										Ecolectrica															
							No. 6			No. 2			Natural Gas @ Henry Hub			Natural Gas Indexed to No. 6			Aguirre / San Juan CC			Mayaguez / Arecibo			Trucks			Natural Gas @ HH			No. 6			No. 2			Coal AES	
	WTI	No. 6	No. 2	Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	San Juan / Palo Seco	Aguirre	Souco	Aguirre	San Juan CC	Mayaguez / Arecibo	Trucks	Natural Gas Indexed to No. 6	Capacity charge and others	Shipping Cost Adder	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Arecibo	Natural Gas Indexed to No. 6	Natural Gas Indexed to HH	Future 1,3,&4	Nat Gas CS 5&6 Future 1,3,&4	Nat Gas Future 2	US\$/MMBTU	US\$/kWh	US\$/MMBTU	Energy Charge	Future 1,3 & 4 Spot Fuel Price	Future 2 Spot Fuel Price			
Oct-18	11.9062	11.7879	17.4402	10.6301	3.3158	1.9845	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.0379	13.0379	12.7379	12.7379	18.6902	18.6902	18.6902	9.5909	7.8158	3.9661	7.8158	7.8158	9.5909	3.1735	0.0371	4.9401	7.8158	18.6902				
Nov-18	12.0189	11.9005	17.5543	10.7324	3.3309	1.9855	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.1505	13.1505	12.8505	12.8505	18.8043	18.8043	18.8043	9.5966	7.8309	3.9661	7.8309	7.8309	9.5966	3.1735	0.0371	4.9401	7.8309	18.8043				
Dec-18	12.1976	12.0791	17.7392	10.8223	3.3508	1.9856	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.3291	13.3291	13.0291	13.0291	18.9892	18.9892	18.9892	9.6024	7.8508	3.9661	7.8508	7.8508	9.6024	3.1735	0.0371	4.9401	7.8508	18.9892				
Jan-19	12.3160	12.1974	17.8585	10.9059	3.3721	1.9877	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.4474	13.4474	13.1474	13.1474	19.1085	19.1085	19.1085	9.6336	7.8721	3.9164	7.8721	7.8721	9.6336	3.2974	0.0377	5.0209	7.8721	19.1085				
Feb-19	12.4335	12.3149	17.9764	10.9909	3.3924	1.9881	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.5649	13.5649	13.2649	13.2649	19.2264	19.2264	19.2264	9.6451	7.8924	3.9164	7.8924	7.8924	9.6451	3.2974	0.0377	5.0209	7.8924	19.2264				
Mar-19	12.3882	12.2698	17.9203	11.0290	3.4086	1.9887	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.5198	13.5198	13.2198	13.2198	19.1703	19.1703	19.1703	9.6566	7.9086	3.9164	7.9086	7.9086	9.6566	3.2974	0.0377	5.0209	7.9086	19.1703				
Apr-19	12.2024	12.0845	17.7137	11.0028	3.4198	1.9846	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.3345	13.3345	13.0345	13.0345	18.9637	18.9637	18.9637	9.7704	7.9198	3.9164	7.9198	7.9198	9.7704	3.2974	0.0377	5.0209	7.9198	18.9637				
May-19	11.9687	11.8513	17.4550	10.9026	3.4259	1.9765	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.1013	13.1013	12.8013	12.8013	18.7050	18.7050	18.7050	9.7762	7.9259	3.9164	7.9259	7.9259	9.7762	3.2974	0.0377	5.0209	7.9259	18.7050				
Jun-19	11.8044	11.6875	17.2702	10.7774	3.4268	1.9667	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	12.9375	12.9375	12.6375	12.6375	18.5202	18.5202	18.5202	9.7819	7.9268	3.9164	7.9268	7.9268	9.7819	3.2974	0.0377	5.0209	7.9268	18.5202				
Jul-19	11.8200	11.7032	17.2796	10.6949	3.4264	1.9587	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	12.9532	12.9532	12.6532	12.6532	18.5296	18.5296	18.5296	9.8134	7.9264	3.9164	7.9264	7.9264	9.8134	3.2974	0.0377	5.0209	7.9264	18.5296				
Aug-19	12.0026	11.8857	17.4689	10.6998	3.4270	1.9559	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.1357	13.1357	12.8357	12.8357	18.7189	18.7189	18.7189	9.8134	7.9270	3.9164	7.9270	7.9270	9.8134	3.2974	0.0377	5.0209	7.9270	18.7189				
Sep-19	12.2502	12.1330	17.7267	10.7912	3.4319	1.9582	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.3830	13.3830	13.0830	13.0830	18.9767	18.9767	18.9767	9.8134	7.9319	3.9164	7.9319	7.9319	9.8134	3.2974	0.0377	5.0209	7.9319	18.9767				
Oct-19	12.4047	12.2874	17.8838	10.9121	3.4416	1.9624	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.5374	13.5374	13.2374	13.2374	19.1338	19.1338	19.1338	9.7662	7.9416	3.9164	7.9416	7.9416	9.7662	3.2974	0.0377	5.0209	7.9416	19.1338				
Nov-19	12.5209	12.4037	17.9997	11.0195	3.4563	1.9642	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.6537	13.6537	13.3537	13.3537	19.2497	19.2497	19.2497	9.7719	7.9563	3.9164	7.9563	7.9563	9.7719	3.2974	0.0377	5.0209	7.9563	19.2497				
Dec-19	12.7055	12.5882	18.1875	11.1142	3.4760	1.9649	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.8382	13.8382	13.5382	13.5382	19.4375	19.4375	19.4375	9.7834	7.9760	3.9164	7.9760	7.9760	9.7834	3.2974	0.0377	5.0209	7.9760	19.4375				
Jan-20	12.8277	12.7104	18.3087	11.2026	3.4971	1.9677	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.9604	13.9604	13.6604	13.6604	19.5587	19.5587	19.5587	9.8186	7.9971	3.9971	7.9971	7.9971	9.8186	3.2954	0.0383	5.1045	7.9971	19.5587				
Feb-20	12.9490	12.8318	18.4284	11.2924	3.5173	1.9689	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	14.0818	14.0818	13.7818	13.7818	19.6784	19.6784	19.6784	9.8301	8.0173	3.8852	8.0173	8.0173	9.8301	3.4254	0.0383	5.1045	8.0173	19.6784				
Mar-20	12.9020	12.7849	18.3710	11.3344	3.5331	1.9702	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	14.0349	14.0349	13.7349	13.7349	19.6210	19.6210	19.6210	9.8416	8.0331	3.8852	8.0331	8.0331	9.8416	3.4254	0.0383	5.1045	8.0331	19.6210				
Apr-20	12.7097	12.5931	18.1606	11.3108	3.5438	1.9670	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.0000	3.5000	13.8431	13.8431	13.5431	13.5431	19.4106	19.4106	19.4106	9.9576	8.0438	3.8852	8.0438	8.0438	9.957									

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)								Ecolectrica											
	WTI	No. 6		No. 2		Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	No. 6		No. 2		Natural Gas @ HH	Capacity charge and others	Shipping Cost Adder	No. 6		No. 2		Natural Gas Indexed to No. 6	Natural Gas Indexed to HH	Coal AES	Nat Gas Aguirre	Nat Gas CS 5&6 Future 1,3,&4		Nat Gas Future 2	US\$/MMBTU	Base Fuel	Energy Charge	Future 1,3 & 4 Spot Fuel Price	Future 2 Spot Fuel Price	
		San Juan / Palo Seco	Aguirre	Souco	Aguirre / San Juan CC				Mayaguez / Arecibo	Trucks	Costa Sur	San Juan				Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Arecibo	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez
Jun-22	13.3297	13.2171	18.6012	11.8324	3.7771	1.9434	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	14.4671	14.4671	14.1671	14.1671	19.8512	19.8512	19.8512	10.3809	8.2771	3.8715	8.2771	8.2771	10.3809	3.6640	0.0395	5.2602	8.2771	19.8512
Jul-22	13.3464	13.2339	18.6103	11.7525	3.7743	1.9376	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	14.4839	14.4839	14.1839	14.1839	19.8603	19.8603	19.8603	10.4281	8.2743	3.8715	8.2743	8.2743	10.4281	3.6640	0.0395	5.2602	8.2743	19.8603
Aug-22	13.5475	13.4352	18.8090	11.7664	3.7727	1.9369	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	14.6852	14.6852	14.3852	14.3852	20.0590	20.0590	20.0590	10.4224	8.2727	3.8715	8.2727	8.2727	10.4224	3.6640	0.0395	5.2602	8.2727	20.0590
Sep-22	13.8202	13.7080	19.0796	11.8733	3.7758	1.9410	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	14.9580	14.9580	14.6580	14.6580	20.3296	20.3296	20.3296	10.4224	8.2758	3.8715	8.2758	8.2758	10.4224	3.6640	0.0395	5.2602	8.2758	20.3296
Oct-22	13.9900	13.8779	19.2442	12.0120	3.7840	1.9470	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.1279	15.1279	14.8279	14.8279	20.4942	20.4942	20.4942	10.3848	8.2840	3.8715	8.2840	8.2840	10.3848	3.6640	0.0395	5.2602	8.2840	20.4942
Nov-22	14.1176	14.0058	19.3654	12.1362	3.7975	1.9506	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.2558	15.2558	14.9558	14.9558	20.6154	20.6154	20.6154	10.3848	8.2975	3.8715	8.2975	8.2975	10.3848	3.6640	0.0395	5.2602	8.2975	20.6154
Dec-22	14.3205	14.2090	19.5622	12.2469	3.8164	1.9533	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.4590	15.4590	15.1590	15.1590	20.8122	20.8122	20.8122	10.3963	8.3164	3.8715	8.3164	8.3164	10.3963	3.6640	0.0395	5.2602	8.3164	20.8122
Jan-23	14.4547	14.3433	19.6889	12.3508	3.8369	1.9579	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.5933	15.5933	15.2933	15.2933	20.9389	20.9389	20.9389	10.4433	8.3369	3.8865	8.3369	8.3369	10.4433	3.7745	0.0400	5.3323	8.3369	20.9389
Feb-23	14.5877	14.4766	19.8140	12.4563	3.8563	1.9610	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.7266	15.7266	15.4266	15.4266	21.0640	21.0640	21.0640	10.4548	8.3563	3.8865	8.3563	8.3563	10.4548	3.7745	0.0400	5.3323	8.3563	21.0640
Mar-23	14.5354	14.4244	19.7530	12.5103	3.8710	1.9641	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.6744	15.6744	15.3744	15.3744	21.0030	21.0030	21.0030	10.4663	8.3710	3.8865	8.3710	8.3710	10.4663	3.7745	0.0400	5.3323	8.3710	21.0030
Apr-23	14.3231	14.2122	19.5310	12.4934	3.8803	1.9628	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.4622	15.4622	15.1622	15.1622	20.7810	20.7810	20.7810	10.6019	8.3803	3.8865	8.3803	8.3803	10.6019	3.7745	0.0400	5.3323	8.3803	20.7810
May-23	14.0562	13.9455	19.2532	12.3948	3.8839	1.9576	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.1955	15.1955	14.8955	14.8955	20.5032	20.5032	20.5032	10.6077	8.3839	3.8865	8.3839	8.3839	10.6077	3.7745	0.0400	5.3323	8.3839	20.5032
Jun-23	13.8682	13.7577	19.0545	12.2683	3.8820	1.9507	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.0077	15.0077	14.7077	14.7077	20.3045	20.3045	20.3045	10.6077	8.3820	3.8865	8.3820	8.3820	10.6077	3.7745	0.0400	5.3323	8.3820	20.3045
Jul-23	13.8853	13.7749	19.0636	12.1886	3.8785	1.9455	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.0249	15.0249	14.7249	14.7249	20.3136	20.3136	20.3136	10.6549	8.3785	3.8865	8.3785	8.3785	10.6549	3.7745	0.0400	5.3323	8.3785	20.3136
Aug-23	14.0928	13.9826	19.2653	12.2054	3.8762	1.9453	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	15.2326	15.2326	14.9326	14.9326	20.5153	20.5153	20.5153	10.6549	8.3762	3.8762	8.3762	8.3762	10.6549	3.7745	0.0400	5.3323	8.3762	20.5153
Sep-23	14.3741	14.2642	19.5402	12.3179	3.8786	1.950																										

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)						Ecolectrica																			
	WTI	No. 6		No. 2		Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	San Juan / Palo Seco		Aguirre		No. 6		Natural Gas @ HH		No. 6		Natural Gas @ HH		No. 2		Natural Gas @ HH		Coal AES		Nat Gas Aguirre		Nat Gas CS 5&6		Nat Gas Future 2		Base Fuel		Future 1,3 & 4 Spot Fuel Price		Future 2 Spot Fuel Price	
		No. 6	No. 2	Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	San Juan / Palo Seco	Aguirre	Souco	Aguirre / San Juan CC	Mayaguez / Arecibo	Trucks	Natural Gas Indexed to No. 6	Capacity charge and others	Shipping Cost Adder	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Arecibo	Natural Gas Indexed to No. 6	Natural Gas Indexed to HH	Coal AES	Nat Gas Aguirre	Nat Gas CS 5&6 Future 1,3,&4	Nat Gas Future 2	US\$/MMBTU	US\$/kWh	US\$/MMBTU	Energy Charge	US\$/MMBTU	US\$/MMBTU	Future 1,3 & 4 Spot Fuel Price	Future 2 Spot Fuel Price	
Feb-26	15.7138	15.6110	20.6104	13.5855	4.0918	1.9938	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.8610	16.8610	16.5610	16.5610	21.8604	21.8604	21.8604	11.0201	8.5918	3.9580	8.5918	8.5918	11.0201	4.0331	0.0413	5.5011	8.5918	21.8604				
Mar-26	15.6380	15.5353	20.5280	13.6367	4.1043	1.9976	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.7853	16.7853	16.4853	16.4853	21.7780	21.7780	21.7780	11.0316	8.6043	3.9580	8.6043	8.6043	11.0316	4.0331	0.0413	5.5011	8.6043	21.7780				
Apr-26	15.3955	15.2927	20.2837	13.6113	4.1110	1.9969	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.5427	16.5427	16.2427	16.2427	21.5337	21.5337	21.5337	11.1713	8.6110	3.9580	8.6110	8.6110	11.1713	4.0331	0.0413	5.5011	8.6110	21.5337				
May-26	15.0989	14.9959	19.9856	13.4993	4.1117	1.9923	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.2459	16.2459	15.9459	15.9459	21.2356	21.2356	21.2356	11.1770	8.6117	3.9580	8.6117	8.6117	11.1770	4.0331	0.0413	5.5011	8.6117	21.2356				
Jun-26	14.8892	14.7862	19.7717	13.3591	4.1064	1.9861	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.0362	16.0362	15.7362	15.7362	21.0217	21.0217	21.0217	11.1770	8.6064	3.9580	8.6064	8.6064	11.1770	4.0331	0.0413	5.5011	8.6064	21.0217				
Jul-26	14.8989	14.7961	19.7727	13.2709	4.0996	1.9816	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.0461	16.0461	15.7461	15.7461	21.0227	21.0227	21.0227	11.2282	8.5996	3.9580	8.5996	8.5996	11.2282	4.0331	0.0413	5.5011	8.5996	21.0227				
Aug-26	15.1118	15.0094	19.9724	13.2878	4.0944	1.9822	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.2594	16.2594	15.9594	15.9594	21.2224	21.2224	21.2224	11.2224	8.5944	3.9580	8.5944	8.5944	11.2224	4.0331	0.0413	5.5011	8.5944	21.2224				
Sep-26	15.4042	15.3024	20.2484	13.4085	4.0942	1.9877	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.5524	16.5524	16.2524	16.2524	21.4984	21.4984	21.4984	11.2167	8.5942	3.9580	8.5942	8.5942	11.2167	4.0331	0.0413	5.5011	8.5942	21.4984				
Oct-26	15.5858	15.4845	20.4157	13.5654	4.0998	1.9952	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.7345	16.7345	16.4345	16.4345	21.6657	21.6657	21.6657	11.1694	8.5998	3.9580	8.5998	8.5998	11.1694	4.0331	0.0413	5.5011	8.5998	21.6657				
Nov-26	15.7225	15.6217	20.5389	13.7072	4.1111	2.0003	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	16.8717	16.8717	16.5717	16.5717	21.7889	21.7889	21.7889	11.1752	8.6111	3.9580	8.6111	8.6111	11.1752	4.0331	0.0413	5.5011	8.6111	21.7889				
Dec-26	15.9417	15.8414	20.7411	13.8347	4.1283	2.0044	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	17.0914	17.0914	16.7914	16.7914	21.9911	21.9911	21.9911	11.1809	8.6283	3.9580	8.6283	8.6283	11.1809	4.0331	0.0413	5.5011	8.6283	21.9911				
Jan-27	16.0722	15.9724	20.8574	13.9522	4.1470	2.0105	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	17.2224	17.2224	16.9224	16.9224	22.1074	22.1074	22.1074	11.2318	8.6470	3.9580	8.6470	8.6470	11.2318	4.1022	0.0416	5.5462	8.6470	22.1074				
Feb-27	16.1959	16.0966	20.9669	14.0677	4.1643	2.0148	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	17.3466	17.3466	17.0466	17.0466	22.2169	22.2169	22.2169	11.2433	8.6643	3.9580	8.6643	8.6643	11.2433	4.1022	0.0416	5.5462	8.6643	22.2169				
Mar-27	16.1181	16.0188	20.8834	14.1223	4.1765	2.0190	0.9500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	1.2500	17.2688	17.2688	16.9688	16.9688	22.1334	22.1334	22.1334	11.2491	8.6765	3.9580	8.6765	8.6765	11.2491	4.1022	0.0416	5.5462	8.6765	22.1334				

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)						Ecolectrica													
	WTI	No. 6		No. 2		Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	No. 6		No. 2		Natural Gas @ HH	Capacity charge and others	Shipping Cost Adder	No. 6		No. 2		Natural Gas Indexed to No. 6	Natural Gas Indexed to HH	Coal AES	Nat Gas Aguirre	Nat Gas CS 5&6 Future 1,3,&4	Nat Gas Future 2	US\$/MMBTU	Base Fuel	Energy Charge	Future 1,3 & 4 Spot Fuel Price	Future 2 Spot Fuel Price		
		San Juan / Palo Seco	Aguirre	Souco	Aguirre / San Juan CC				Mayaguez / Arecibo	Trucks	Aguirre	Aguirre CC				San Juan CC	Mayaguez	Arecibo														
Oct-29	17.0428	16.9525	21.4729	15.1500	4.2888	2.0805	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.2025	18.2025	17.9025	17.9025	22.7229	22.7229	22.7229	11.8890	8.7888	4.1198	8.7888	8.7888	11.8890	4.2373	0.0423	5.6343	8.7888	22.7229
Nov-29	17.1887	17.0991	21.5993	15.3099	4.2990	2.0867	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.3491	18.3491	18.0491	18.0491	22.8493	22.8493	22.8493	11.8948	8.7990	4.1198	8.7990	8.7990	11.8948	4.2373	0.0423	5.6343	8.7990	22.8493
Dec-29	17.4231	17.3344	21.8070	15.4542	4.3151	2.0920	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.5844	18.5844	18.2844	18.2844	23.0570	23.0570	23.0570	11.9005	8.8151	4.1198	8.8151	8.8151	11.9005	4.2373	0.0423	5.6343	8.8151	23.0570
Jan-30	17.5624	17.4743	21.9262	15.5877	4.3328	2.0993	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.7243	18.7243	18.4243	18.4243	23.1762	23.1762	23.1762	11.9632	8.8328	4.1909	8.8328	8.8328	11.9632	4.2967	0.0425	5.6731	8.8328	23.1762
Feb-30	17.6944	17.6070	22.0383	15.7189	4.3491	2.1047	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.8570	18.8570	18.5570	18.5570	23.2883	23.2883	23.2883	11.9689	8.8491	4.1909	8.8491	8.8491	11.9689	4.2967	0.0425	5.6731	8.8491	23.2883
Mar-30	17.6104	17.5230	21.9516	15.7834	4.3601	2.1101	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.7730	18.7730	18.4730	18.4730	23.2016	23.2016	23.2016	11.9804	8.8601	4.1909	8.8601	8.8601	11.9804	4.2967	0.0425	5.6731	8.8601	23.2016
Apr-30	17.3434	17.2554	21.6959	15.7612	4.3651	2.1108	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.5054	18.5054	18.2054	18.2054	22.9459	22.9459	22.9459	12.1476	8.8651	4.1909	8.8651	8.8651	12.1476	4.2967	0.0425	5.6731	8.8651	22.9459
May-30	17.0168	16.9281	21.3841	15.6411	4.3637	2.1074	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.1781	18.1781	17.8781	17.8781	22.6341	22.6341	22.6341	12.1534	8.8637	4.1909	8.8637	8.8637	12.1534	4.2967	0.0425	5.6731	8.8637	22.6341
Jun-30	16.7856	16.6964	21.1600	15.4891	4.3563	2.1025	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	17.9464	17.9464	17.6464	17.6464	22.4100	22.4100	22.4100	12.1476	8.8563	4.1909	8.8563	8.8563	12.1476	4.2967	0.0425	5.6731	8.8563	22.4100
Jul-30	16.7954	16.7065	21.1599	15.3955	4.3473	2.0993	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	17.9565	17.9565	17.6565	17.6565	22.4099	22.4099	22.4099	12.2106	8.8473	4.1909	8.8473	8.8473	12.2106	4.2967	0.0425	5.6731	8.8473	22.4099
Aug-30	17.0283	16.9403	21.3671	15.4206	4.3399	2.1013	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.1903	18.1903	17.8903	17.8903	22.6171	22.6171	22.6171	12.2049	8.8399	4.1909	8.8399	8.8399	12.2049	4.2967	0.0425	5.6731	8.8399	22.6171
Sep-30	17.3483	17.2615	21.6537	15.5631	4.3378	2.1084	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.5115	18.5115	18.2115	18.2115	22.9037	22.9037	22.9037	12.1991	8.8378	4.1909	8.8378	8.8378	12.1991	4.2967	0.0425	5.6731	8.8378	22.9037
Oct-30	17.5468	17.4608	21.8269	15.7466	4.3415	2.1175	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.7108	18.7108	18.4108	18.4108	23.0769	23.0769	23.0769	12.1558	8.8415	4.1909	8.8415	8.8415	12.1558	4.2967	0.0425	5.6731	8.8415	23.0769
Nov-30	17.6959	17.6106	21.9543	15.9131	4.3513	2.1241	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	18.8606	18.8606	18.5606	18.5606	23.2043	23.2043	23.2043	12.1558	8.8513	4.1909	8.8513	8.8513	12.1558	4.2967	0.0425	5.6731	8.8513	23.2043
Dec-30	17.9353	17.8511	22.1638	16.0635	4.3671	2.1298	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	19.1011	19.1011	18.8011	18.8011	23.4138	23.4138	23.4138	12.1616	8.8671	4.1909	8.8671	8.8671	12.1616	4.2967	0.0425	5.6731	8.8671	23.4138
Jan-31	18.0776	17.9941	22.2839	16.2026	4.3844	2.1375	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	19.2441	19.2441	18.9441	18.9441	23.5339	23.5339	2											

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)						Ecolectrica																				
	WTI	No. 6	No. 2	Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	San Juan / Palo Seco	Aguirre	Souco	Aguirre / San Juan CC	Mayaguez / Arecibo	Trucks	No. 6	Natural Gas @ HH	Capacity charge and others	Shipping Cost Adder	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Arecibo	No. 2	Natural Gas Indexed to No. 6	Natural Gas Indexed to HH	Coal AES	Nat Gas CS 5&6 Future 1,3,&4	Nat Gas Aguirre	Nat Gas CS 5&6 Future 1,3,&4	Nat Gas Future 2	Base Fuel	US\$/MMBTU	Energy Charge	US\$/MMBTU	Future 1,3 & 4 Spot Fuel Price	US\$/MMBTU	Future 2 Spot Fuel Price
Jun-33	18.3025	18.2268	22.2089	17.4510	4.4916	2.2335	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	19.4768	19.4768	19.1768	19.1768	23.4589	23.4589	23.4589	12.9920	8.9916	4.4527	8.9916	8.9916	12.9920	4.4452	0.0433	5.7700	8.9916	23.4589						
Jul-33	18.3124	18.2370	22.2082	17.3513	4.4813	2.2310	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	19.4870	19.4870	19.1870	19.1870	23.4582	23.4582	23.4582	13.0611	8.9813	4.4527	8.9813	8.9813	13.0611	4.4452	0.0433	5.7700	8.9813	23.4582						
Aug-33	18.5608	18.4866	22.4206	17.3827	4.4726	2.2340	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	19.7366	19.7366	19.4366	19.4366	23.6706	23.6706	23.6706	13.0553	8.9726	4.4527	8.9726	8.9726	13.0553	4.4452	0.0433	5.7700	8.9726	23.6706						
Sep-33	18.9022	18.8297	22.7147	17.5439	4.4693	2.2422	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.0797	20.0797	19.7797	19.7797	23.9647	23.9647	23.9647	13.0496	8.9693	4.4527	8.9693	8.9693	13.0496	4.4452	0.0433	5.7700	8.9693	23.9647						
Oct-33	19.1135	19.0422	22.8922	17.7504	4.4720	2.2526	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.2922	20.2922	19.9922	19.9922	24.1422	24.1422	24.1422	13.0023	8.9720	4.4527	8.9720	8.9720	13.0023	4.4452	0.0433	5.7700	8.9720	24.1422						
Nov-33	19.2722	19.2018	23.0225	17.9381	4.4807	2.2604	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.4518	20.4518	20.1518	20.1518	24.2725	24.2725	24.2725	13.0023	8.9807	4.4527	8.9807	8.9807	13.0023	4.4452	0.0433	5.7700	8.9807	24.2725						
Dec-33	19.5273	19.4583	23.2372	18.1079	4.4955	2.2671	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.7083	20.7083	20.4083	20.4083	24.4872	24.4872	24.4872	13.0081	8.9955	4.4527	8.9955	8.9955	13.0081	4.4452	0.0433	5.7700	8.9955	24.4872						
Jan-34	19.6785	19.6105	23.3599	18.2654	4.5118	2.2760	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.8605	20.8605	20.5605	20.5605	24.6099	24.6099	24.6099	13.0865	9.0118	4.5556	9.0118	9.0118	13.0865	4.4856	0.0435	5.7964	9.0118	24.6099						
Feb-34	19.8218	19.7547	23.4753	18.4204	4.5268	2.2829	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	21.0047	21.0047	20.7047	20.7047	24.7253	24.7253	24.7253	13.0923	9.0268	4.5556	9.0268	9.0268	13.0923	4.4856	0.0435	5.7964	9.0268	24.7253						
Mar-34	19.7293	19.6621	23.3843	18.4991	4.5364	2.2897	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.9121	20.9121	20.6121	20.6121	24.6343	24.6343	24.6343	13.1038	9.0364	4.5556	9.0364	9.0364	13.1038	4.4856	0.0435	5.7964	9.0364	24.6343						
Apr-34	19.4370	19.3687	23.1179	18.4789	4.5399	2.2916	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.6187	20.6187	20.3187	20.3187	24.3679	24.3679	24.3679	13.2985	9.0399	4.5556	9.0399	9.0399	13.2985	4.4856	0.0435	5.7964	9.0399	24.3679						
May-34	19.0795	19.0098	22.7932	18.3468	4.5370	2.2892	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.2598	20.2598	19.9598	19.9598	24.0432	24.0432	24.0432	13.2985	9.0370	4.5556	9.0370	9.0370	13.2985	4.4856	0.0435	5.7964	9.0370	24.0432						
Jun-34	18.8261	18.7556	22.5595	18.1779	4.5280	2.2851	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.0056	20.0056	19.7056	19.7056	23.8095	23.8095	23.8095	13.2985	9.0280	4.5556	9.0280	9.0280	13.2985	4.4856	0.0435	5.7964	9.0280	23.8095						
Jul-34	18.8360	18.7658	22.5585	18.0757	4.5173	2.2828	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	20.0158	20.0158	19.7158	19.7158	23.8085	23.8085	23.8085	13.3715	9.0173	4.5556	9.0173	9.0173	13.3715	4.4856	0.0435	5.7964	9.0173	23.8085						
Aug-34																																							

Table 3: Fuel Price Forecast Results 2015-2035, Revised Low Oil Price Case

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)										Ecoelectrica												
							No. 6			No. 2			Natural Gas @ HH			No. 6			No. 2			Coal AES		Nat Gas Aguirre		Nat Gas CS 5&6									
	WTI	No. 6	No. 2	Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	San Juan / Palo Seco	Aguirre	Souico	Aguirre / San Juan CC	Mayaguez / Arecibo	Trucks	Natural Gas Indexed to No. 6	Capacity Charge and others	Shipping Cost Adder	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Arecibo	Future 1,3,&4	Future 1,3,4 & 5,6	US\$/MMBTU	Base Fuel	US\$/kWh	Energy Charge	US\$/MMBTU	Future 1,3 & 4 Spot Fuel Price	US\$/MMBTU	Future 2 Spot Fuel Price		
Apr-15	9.3401	8.7317	13.7858	8.9303	2.6090	1.9883	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	10.1999	10.1999	10.0412	10.0412	15.1188	15.1188	15.1188	9.5542	7.1090	4.0631		9.5542	9.5542	4.3931	0.0430	5.7360	15.1188	15.1188		
May-15	10.1655	9.0231	14.7808	9.1899	2.8500	1.8558	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	10.4913	10.4913	10.3326	10.3326	16.1137	16.1137	16.1137	9.5542	7.3500	4.0564		9.5542	9.5542	4.3931	0.0430	5.7360	16.1137	16.1137		
Jun-15	10.2606	8.7850	14.0422	8.9101	2.7836	1.6996	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	10.2533	10.2533	10.0946	10.0946	15.3752	15.3752	15.3752	9.5542	7.2836	4.0497		9.5542	9.5542	4.3931	0.0430	5.7360	15.3752	15.3752		
Jul-15	8.7758	7.6874	12.6326	7.7719	2.8396	1.6113	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	9.1557	9.1557	8.9970	8.9970	13.9656	13.9656	13.9656	8.4839	7.3396	4.0430		8.4839	8.4839	4.3931	0.0430	5.7360	13.9656	13.9656		
Aug-15	7.3529	6.3537	11.3564	6.4882	2.7738	1.7197	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	7.8220	7.8220	7.6633	7.6633	12.6894	12.6894	12.6894	8.4839	7.2738	4.0364		8.4839	8.4839	4.3931	0.0430	5.7360	12.6894	12.6894		
Sep-15	7.8052	6.2368	11.3585	6.3377	2.6609	1.6277	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.5000	1.0000	3.5000	7.7050	7.7050	7.5463	7.5463	12.6915	12.6915	12.6915	8.4839	7.1609	4.0297		8.4839	8.4839	4.3931	0.0430	5.7360	12.6915	12.6915		
Oct-15	7.9286	6.6646	11.1064	6.7488	2.3409	1.6838	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	8.1328	8.1328	7.9741	7.9741	12.4394	12.4394	12.4394	8.1934	8.1934	4.0231		8.1934	8.1934	4.3931	0.0430	5.7360	12.4394	12.4394		
Nov-15	7.2702	6.3746	10.5980	6.4330	2.0924	1.6878	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	7.8428	7.8428	7.6841	7.6841	11.9309	11.9309	11.9309	8.0094	6.5924	4.0164		8.0094	8.0094	4.3931	0.0430	5.7360	11.9309	11.9309		
Dec-15	6.3819	4.8643	8.6267	4.9256	1.9296	1.7287	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	6.3325	6.3325	6.1738	6.1738	9.9597	9.9597	9.9597	7.8656	7.8656	4.0098		7.8656	7.8656	4.3931	0.0430	5.7360	9.9597	9.9597		
Jan-16	5.4812	4.1236	7.5324	4.1419	2.2875	1.7337	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	5.5919	5.5919	5.4331	5.4331	8.8654	8.8654	8.8654	7.1869	7.1869	2.6322		0.0344	4.5869	8.8654	8.8654	2.6322	0.0344	4.5869	7.8815	7.8815
Feb-16	4.9556	3.7696	7.4029	3.7201	2.2032	1.6411	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	5.2378	5.2378	5.0791	5.0791	8.7359	8.7359	8.7359	6.7032	6.7032	4.1529		7.3939	7.3939	2.6322	0.0344	4.5869	8.7359	8.7359		
Mar-16	4.6818	3.5324	7.0381	3.4729	2.1556	1.6072	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	5.0007	5.0007	4.8420	4.8420	8.3710	8.3710	8.3710	7.3422	7.3422	2.6322		0.0344	4.5869	8.3710	8.3710	2.6322	0.0344	4.5869	8.3710	8.3710
Apr-16	4.4676	3.3485	6.7509	3.3225	2.1027	1.5797	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	4.8168	4.8168	4.6580	4.6580	8.0838	8.0838	8.0838	6.7128	6.7128	2.6322		0.0344	4.5869	8.0838	8.0838	2.6322	0.0344	4.5869	8.0838	8.0838
May-16	4.3176	3.2207	6.5485	3.2116	2.0567	1.5549	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	4.6889	4.6889	4.5302	4.5302	7.8815	7.8815	7.8815	6.6783	6.6783	2.6322		0.0344	4.5869	7.8815	7.8815	2.6322	0.0344	4.5869	7.8815	7.8815
Jun-16	4.2469	3.1610	6.4522	3.1333	2.0236	1.5338	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	4.6293	4.6293	4.4706	4.4706	7.7852	7.7852	7.7852	6.6553	6.6553	2.6322		0.0344	4.5869	7.7852	7.7852	2.6322	0.0344	4.5869	7.7852	7.7852
Jul-16	4.2715	3.1828	6.4840	3.0947	2.0073	1.5174	1.3095	1.4683	1.4683	1.3330	1.3330	1.3753	1.1250	1.0000	3.5000	4.6510	4.6510	4.4923	4.4923	7.8170	7.8170	7.8170	6.0771	6											

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)						Ecolectrica																					
	WTI	No. 6		No. 2		Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	San Juan / Palo Seco		Aguirre	Souco	No. 6	Natural Gas Indexed to No. 6	Capacity charge and others	Natural Gas Indexed to No. 6	Shipping Cost Adder	No. 6	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	No. 2	Mayaguez	Arecibo	Natural Gas Indexed to No. 6	Natural Gas Indexed to HH	Coal AES	Nat Gas CS 5&6 Future 1,3,&4	Nat Gas Future 2	US\$/MMBTU	Energy Charge	US\$/MMBTU	Energy Charge	US\$/MMBTU	Future 1,3 & 4 Spot Fuel Price	US\$/MMBTU	Future 2 Spot Fuel Price
		No. 6	No. 2	Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	San Juan / Palo Seco	Aguirre	Souco	Aguirre / San Juan CC	Mayaguez / Arecibo	Trucks	No. 2	Natural Gas Indexed to No. 6	Capacity charge and others	Natural Gas Indexed to No. 6	Shipping Cost Adder	No. 6	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	No. 2	Mayaguez	Arecibo	Natural Gas Indexed to No. 6	Natural Gas Indexed to HH	Coal AES	Nat Gas CS 5&6 Future 1,3,&4	Nat Gas Future 2	US\$/MMBTU	Energy Charge	US\$/MMBTU	Energy Charge	US\$/MMBTU	Future 1,3 & 4 Spot Fuel Price	US\$/MMBTU	Future 2 Spot Fuel Price
Oct-18	8.7433	7.2862	12.1670	5.1756	2.6734	1.5282	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.5362	8.5362	8.2362	8.2362	13.4170	13.4170	13.4170	13.4170	7.0397	7.1734	3.8577	7.1734	7.1734	7.1734	2.2911	0.0327	4.3643	7.1734	13.4170							
Nov-18	8.5476	7.1012	11.9233	5.1633	2.6842	1.5218	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.3512	8.3512	8.0512	8.0512	13.1733	13.1733	13.1733	13.1733	7.0454	7.1842	3.8577	7.1842	7.1842	7.1842	2.2911	0.0327	4.3643	7.1842	13.1733							
Dec-18	8.0543	6.6347	11.3095	5.0607	2.6860	1.5120	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.8847	7.8847	7.5847	7.5847	12.5595	12.5595	12.5595	12.5595	7.0512	7.1860	3.8577	7.1860	7.1860	7.1860	2.2911	0.0327	4.3643	7.1860	12.5595							
Jan-19	7.8546	6.4479	11.0587	4.9426	2.6819	1.4920	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.6979	7.6979	7.3979	7.3979	12.3087	12.3087	12.3087	12.3087	7.0924	7.1819	3.7364	7.1819	7.1819	7.1819	2.6306	0.0344	4.5858	7.1819	12.3087							
Feb-19	7.9953	6.5823	11.2320	4.8738	2.6778	1.4809	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.8323	7.8323	7.5323	7.5323	12.4820	12.4820	12.4820	12.4820	7.0866	7.1778	3.7364	7.1778	7.1778	7.1778	2.6306	0.0344	4.5858	7.1778	12.4820							
Mar-19	8.1162	6.6981	11.3801	4.8898	2.6737	1.4812	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.9481	7.9481	7.6481	7.6481	12.6301	12.6301	12.6301	12.6301	7.0866	7.1737	3.7364	7.1737	7.1737	7.1737	2.6306	0.0344	4.5858	7.1737	12.6301							
Apr-19	8.1533	6.7349	11.4240	4.9394	2.6717	1.4809	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.9849	7.9849	7.6849	7.6849	12.6740	12.6740	12.6740	12.6740	7.0494	7.1717	3.7364	7.1717	7.1717	7.1717	2.6306	0.0344	4.5858	7.1717	12.6740							
May-19	8.1594	6.7423	11.4294	4.9697	2.6727	1.4780	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.9923	7.9923	7.6923	7.6923	12.6794	12.6794	12.6794	12.6794	7.0494	7.1727	3.7364	7.1727	7.1727	7.1727	2.6306	0.0344	4.5858	7.1727	12.6794							
Jun-19	8.2036	6.7859	11.4821	4.9894	2.6825	1.4742	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.0359	8.0359	7.7359	7.7359	12.7321	12.7321	12.7321	12.7321	7.0494	7.1825	3.7364	7.1825	7.1825	7.1825	2.6306	0.0344	4.5858	7.1825	12.7321							
Jul-19	8.3495	6.9262	11.6606	5.0250	2.6981	1.4716	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.1762	8.1762	7.8762	7.8762	12.9106	12.9106	12.9106	12.9106	7.0197	7.1981	3.7364	7.1981	7.1981	7.1981	2.6306	0.0344	4.5858	7.1981	12.9106							
Aug-19	8.5155	7.0861	11.8635	5.0836	2.7140	1.4724	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.3361	8.3361	8.0361	8.0361	13.1135	13.1135	13.1135	13.1135	7.0312	7.2140	3.7364	7.2140	7.2140	7.2140	2.6306	0.0344	4.5858	7.2140	13.1135							
Sep-19	8.6510	7.2174	12.0283	5.1555	2.7301	1.4739	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.4674	8.4674	8.1674	8.1674	13.2783	13.2783	13.2783	13.2783	7.0369	7.2301	3.7364	7.2301	7.2301	7.2301	2.6306	0.0344	4.5858	7.2301	13.2783							
Oct-19	8.5670	7.1387	11.9225	5.1947	2.7442	1.4746	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.3887	8.3887	8.0887	8.0887	13.1725	13.1725	13.1725	13.1725	7.0878	7.2442	3.7364	7.2442	7.2442	7.2442	2.6306	0.0344	4.5858	7.2442	13.1725							
Nov-19	8.3772	6.9593	11.6861	5.1827	2.7548	1.4686	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.2093	8.2093	7.9093	7.9093	12.9361	12.9361	12.9361	12.9361	7.0936	7.2548	3.7364	7.2548	7.2548	7.2548	2.6306	0.0344	4.5858	7.2548	12.9361							
Dec-19	7.8950	6.5033	11.0861	5.0797	2.7561	1.4593	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.																											

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)												Ecolectrica								
							No. 6			No. 2			No. 6			No. 2			No. 6			No. 2			Coal AES	Nat Gas Aguirre	Nat Gas CS 5&6	Base Fuel	Energy Charge	Future 1,3 & 4 Spot Fuel Price			
	WTI	No. 6	No. 2	Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	San Juan / Palo Seco	Aguirre	Souco	Aguirre / San Juan CC	Mayaguez / Arecibo	Trucks	Natural Gas Indexed to No. 6	Capacity charge and others	Shipping Cost Adder	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Arecibo	Natural Gas Indexed to HH	Natural Gas Indexed to No. 6	Natural Gas Indexed to HH	Natural Gas Future 2	Future 1,3,&4	Nat Gas CS 5&6	Base Fuel	Energy Charge	Future 1,3 & 4 Spot Fuel Price	
Jun-22	7.7307	6.3947	10.8201	5.0050	2.8539	1.3318	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.6447	7.6447	7.3447	7.3447	12.0701	12.0701	12.0701	7.1647	7.3539	3.4757	7.3539	7.3539	7.1647	2.8274	0.0354	4.7143	7.3539	12.0701
Jul-22	7.8682	6.5269	10.9884	5.0383	2.8680	1.3298	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.7769	7.7769	7.4769	7.4769	12.2384	12.2384	12.2384	7.1293	7.3680	3.4757	7.3680	7.3680	7.1293	2.8274	0.0354	4.7143	7.3680	12.2384
Aug-22	8.0245	6.6776	11.1794	5.0946	2.8825	1.3308	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.9276	7.9276	7.6276	7.6276	12.4294	12.4294	12.4294	7.1408	7.3825	3.4757	7.3825	7.3825	7.1408	2.8274	0.0354	4.7143	7.3825	12.4294
Sep-22	8.1522	6.8012	11.3347	5.1643	2.8972	1.3325	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.0512	8.0512	7.7512	7.7512	12.5847	12.5847	12.5847	7.1465	7.3972	3.4757	7.3972	7.3972	7.1465	2.8274	0.0354	4.7143	7.3972	12.5847
Oct-22	8.0730	6.7271	11.2349	5.2013	2.9096	1.3335	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.9771	7.9771	7.6771	7.6771	12.4849	12.4849	12.4849	7.1895	7.4096	3.4757	7.4096	7.4096	7.1895	2.8274	0.0354	4.7143	7.4096	12.4849
Nov-22	7.8941	6.5580	11.0121	5.1868	2.9185	1.3284	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.8080	7.8080	7.5080	7.5080	12.2621	12.2621	12.2621	7.1953	7.4185	3.4757	7.4185	7.4185	7.1953	2.8274	0.0354	4.7143	7.4185	12.2621
Dec-22	7.4397	6.1283	10.4467	5.0814	2.9174	1.3203	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.3783	7.3783	7.0783	7.0783	11.6967	11.6967	11.6967	7.2010	7.4174	3.4757	7.4174	7.4174	7.2010	2.8274	0.0354	4.7143	7.4174	11.6967
Jan-23	7.3267	6.0231	10.3042	4.9718	2.9114	1.3033	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.2731	7.2731	6.9731	6.9731	11.5542	11.5542	11.5542	7.2364	7.4114	3.4146	7.4114	7.4114	7.2364	2.8763	0.0356	4.7462	7.4114	11.5542
Feb-23	7.5583	6.2435	10.5901	4.9269	2.9073	1.2963	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.4935	7.4935	7.1935	7.1935	11.8401	11.8401	11.8401	7.2307	7.4073	3.4146	7.4073	7.4073	7.2307	2.8763	0.0356	4.7462	7.4073	11.8401
Mar-23	7.7795	6.4551	10.8621	4.9836	2.9053	1.3002	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.7051	7.7051	7.4051	7.4051	12.1121	12.1121	12.1121	7.2307	7.4053	3.4146	7.4053	7.4053	7.2307	2.8763	0.0356	4.7462	7.4053	12.1121
Apr-23	7.9138	6.5848	11.0261	5.0790	2.9074	1.3038	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.8348	7.8348	7.5348	7.5348	12.2761	12.2761	12.2761	7.2031	7.4074	3.4146	7.4074	7.4074	7.2031	2.8763	0.0356	4.7462	7.4074	12.2761
May-23	8.0030	6.6715	11.1339	5.1526	2.9144	1.3050	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.9215	7.9215	7.6215	7.6215	12.3839	12.3839	12.3839	7.2031	7.4144	3.4146	7.4144	7.4144	7.2031	2.8763	0.0356	4.7462	7.4144	12.3839
Jun-23	8.1118	6.7774	11.2658	5.2092	2.9321	1.3048	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.0274	8.0274	7.7274	7.7274	12.5158	12.5158	12.5158	7.2031	7.4321	3.4146	7.4321	7.4321	7.2031	2.8763	0.0356	4.7462	7.4321	12.5158
Jul-23	8.3049	6.9644	11.5008	5.2750	2.9557	1.3054	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.2144	8.2144	7.9144	7.9144	12.7508	12.7508	12.7508	7.2107	7.4557	3.4146	7.4557	7.4557	7.2107	2.8763	0.0356	4.7462	7.4557	12.7508
Aug-23	8.5047	7.1587	11.7433	5.3579	2.9783	1.3084	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.4087	8.4087	8.1087	8.1087	12.9933	12.9933	12.9933	7.2279	7.4783	3.4146	7.4783	7.4783	7.2279	2.8763	0.0356	4.7462	7.4783	12.9933
Sep-23	8.6637	7.3142	11.9354	5.4488	2.9995	1.3118	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.5642	8.5642	8.2642	8.2642	13.1854	13.1854	13.1854	7.2394	7.4995	3.4146	7.4995	7.4995	7.2394	2.8763	0.0356	4.7462	7.4995	13.1854
Oct-23	8.5963	7.2507	11.8508	5.5006	3.0169	1.3141	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.5007	8.5007	8.2007	8.2007	13.1008	13.1008	13.1008	7.3297	7.5169	3.4146	7.5169	7.5169	7.3297	2.8763	0.0356	4.7462	7.5169	13.1008
Nov-23	8.4171	7.0793	11.6296	5.4947	3.0292	1.3103	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.3293	8.3293	8.0293	8.0293	12.8796	12.8796	12.8796	7.3412	7.5292	3.4146	7.5292	7.5292	7.3412	2.8763	0.0356	4.7462	7.5292	12.8796
Dec-23	7.9420	6.6245	11.0442	5.3902	3.0301	1.3033	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.8745	7.8745	7.5745	7.5745	12.2942	12.2942	12.2942	7.3469	7.5301	3.4146	7.5301	7.5301	7.3469	2.8763	0.0356	4.7462	7.5301	12.2942
Jan-24	7.7686	6.4604	10.8283	5.2701	3.0240	1.2875	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.7104	7.7104	7.4104	7.4104	12.0783	12.0783	12.0783	7.4099	7.5240	3.3569	7.5240	7.5240	7.4099	2.9573	0.0360	4.7990	7.5240	12.0783
Feb-24	7.9335	6.6196	11.0295	5.2045	3.0176	1.2799	0.9500	1.2500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	7.8696	7.8696	7.5696	7.5696	12.2795	12.2795</td												

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)								Ecolectrica										
	WTI	No. 6	No. 2	Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	No. 6		No. 2		Natural Gas @ HH		No. 6		No. 2		Natural Gas Indexed to HH		Coal AES		Nat Gas CS 5&6 Future 1,3,&4		Nat Gas CS 5&6 Future 1,3,&4		Base Fuel						
							Aguirre	Souco	Aguirre / San Juan CC	Mayaguez / Arecibo	Trucks	Natural Gas Indexed to No. 6	Capacity charge and others	Shipping Cost Adder	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Arecibo	Natural Gas Indexed to No. 6	Natural Gas Indexed to HH	US\$/kWh	US\$/MMBTU	Energy Charge	US\$/MMBTU	Future 1,3 & 4 Spot Fuel Price	Future 2 Spot Fuel Price	
Feb-26	8.0852	6.8045	11.1654	5.3984	3.1169	1.2338	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.0545	8.0545	7.7545	7.7545	12.4154	12.4154	12.4154	7.5365	7.6169	3.2747	7.6169	7.6169	3.0883	0.0366	4.8845	7.6169	12.4154
Mar-26	8.3179	7.0314	11.4475	5.4609	3.1133	1.2384	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.2814	8.2814	7.9814	7.9814	12.6975	12.6975	12.6975	7.5365	7.6133	3.2747	7.6133	7.5365	3.0883	0.0366	4.8845	7.6133	12.6975
Apr-26	8.4591	7.1701	11.6172	5.5650	3.1138	1.2428	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.4201	8.4201	8.1201	8.1201	12.8672	12.8672	12.8672	7.5071	7.6138	3.2747	7.6138	7.5071	3.0883	0.0366	4.8845	7.6138	12.8672
May-26	8.5525	7.2628	11.7286	5.6455	3.1195	1.2449	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.5128	8.5128	8.2128	8.2128	12.9786	12.9786	12.9786	7.5071	7.6195	3.2747	7.6195	7.5071	3.0883	0.0366	4.8845	7.6195	12.9786
Jun-26	8.6667	7.3759	11.8650	5.7077	3.1364	1.2458	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.6259	8.6259	8.3259	8.3259	13.1150	13.1150	13.1150	7.5129	7.6364	3.2747	7.6364	7.5129	3.0883	0.0366	4.8845	7.6364	13.1150
Jul-26	8.8694	7.5760	12.1081	5.7798	3.1594	1.2474	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.8260	8.8260	8.5260	8.5260	13.3581	13.3581	13.3581	7.5244	7.6594	3.2747	7.6594	7.5244	3.0883	0.0366	4.8845	7.6594	13.3581
Aug-26	9.0792	7.7838	12.3591	5.8704	3.1815	1.2512	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	9.0338	9.0338	8.7338	8.7338	13.6091	13.6091	13.6091	7.5359	7.6815	3.2747	7.6815	7.5359	3.0883	0.0366	4.8845	7.6815	13.6091
Sep-26	9.2461	7.9501	12.5578	5.9696	3.2021	1.2554	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	9.2001	9.2001	8.9001	8.9001	13.8078	13.8078	13.8078	7.5474	7.7021	3.2747	7.7021	7.5474	3.0883	0.0366	4.8845	7.7021	13.8078
Oct-26	9.1749	7.8818	12.4698	6.0267	3.2186	1.2585	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	9.1318	9.1318	8.8318	8.8318	13.7198	13.7198	13.7198	7.6455	7.7186	3.2747	7.7186	7.6455	3.0883	0.0366	4.8845	7.7186	13.7198
Nov-26	8.9862	7.6980	12.2400	6.0214	3.2298	1.2559	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.9480	8.9480	8.6480	8.6480	13.4900	13.4900	13.4900	7.6570	7.7298	3.2747	7.7298	7.6570	3.0883	0.0366	4.8845	7.7298	13.4900
Dec-26	8.4861	7.2104	11.6325	5.9098	3.2291	1.2503	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.4604	8.4604	8.1604	8.1604	12.8825	12.8825	12.8825	7.6628	7.7291	3.2747	7.7291	7.6628	3.0883	0.0366	4.8845	7.7291	12.8825
Jan-27	8.3625	7.0918	11.4802	5.7910	3.2221	1.2364	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.3418	8.3418	8.0418	8.0418	12.7302	12.7302	12.7302	7.7297	7.7221	3.2449	7.7221	7.7297	3.1619	0.0370	4.9326	7.7221	12.7302
Feb-27	8.6205	7.3451	11.7912	5.7441	3.2165	1.2317	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.5951	8.5951	8.2951	8.2951	13.0412	13.0412	13.0412	7.7239	7.7165	3.2449	7.7165	7.7239	3.1619	0.0370	4.9326	7.7165	13.0412
Mar-27	8.8659	7.5873	12.0857	5.8119	3.2128	1.2369	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.8373	8.8373	8.5373	8.5373	13.3357	13.3357	13.3357	7.7239	7.7128	3.2449	7.7128	7.7239	3.1619	0.0370	4.9326	7.7128	13.3357
Apr-27	9.0142	7.7349	12.2622	5.9231	3.2131	1.2419	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	8.9849	8.9849	8.6849	8.6849	13.5122	13.5122	13.5122	7.6985	7.7131	3.2449	7.7131	7.6985	3.1619	0.0370	4.9326	7.7131	13.5122
May-27	9.1119	7.8331	12.3776	6.0094	3.2186	1.2446	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	9.0831	9.0831	8.7831	8.7831	13.6276	13.6276	13.6276	7.6985	7.7186	3.2449	7.7186	7.6985	3.1619	0.0370	4.9326	7.7186	13.6276
Jun-27	9.2316	7.9531	12.5191	6.0763	3.2354	1.2460	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	9.2031	9.2031	8.9031	8.9031	13.7691	13.7691	13.7										

Month	Monthly Average Price (US\$/MMBTU)						Adders (US\$/MMBTU)						Final Price (US\$/MMBTU)								Ecolectrica											
	WTI	No. 6	No. 2	Natural Gas Indexed to No. 6	Natural Gas @ Henry Hub	Coal CAPP	No. 6		No. 2		Natural Gas @ HH		No. 6		No. 2		Natural Gas @ HH		Coal AES		Nat Gas CS 5&6 Future 1,3,&4		Nat Gas CS 5&6 Future 1,3,&4		Base Fuel							
							Aguirre	Souco	Aguirre / San Juan CC	Mayaguez / Arecibo	Trucks	Natural Gas Indexed to No. 6	Capacity charge and others	Shipping Cost Adder	Aguirre	Costa Sur	San Juan	Palo Seco	Aguirre CC	San Juan CC	Mayaguez	Arecibo	Natural Gas Indexed to HH	US\$/MMBTU	US\$/kWh	US\$/MMBTU	Energy Charge	Future 1,3 & 4 Spot Fuel Price	Future 2 Spot Fuel Price			
Oct-29	11.0332	9.8244	14.5835	7.3270	3.5047	1.2859	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	11.0744	11.0744	10.7744	10.7744	15.8335	15.8335	15.8335	8.2966	8.0047	3.2052	8.0047	8.0047	2.82966	3.3567	0.0379	5.0596	8.0047	15.8335
Nov-29	10.8123	9.6013	14.3217	7.3258	3.5152	1.2850	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	10.8513	10.8513	10.5513	10.5513	15.5717	15.5717	15.5717	8.3023	8.0152	3.2052	8.0152	8.0152	2.83023	3.3567	0.0379	5.0596	8.0152	15.5717
Dec-29	10.2273	9.0101	13.6307	7.1988	3.5130	1.2810	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	10.2601	10.2601	9.9601	9.9601	14.8807	14.8807	14.8807	8.3138	8.0130	3.2052	8.0130	8.0130	2.83138	3.3567	0.0379	5.0596	8.0130	14.8807
Jan-30	10.0821	8.8657	13.4567	7.0631	3.5044	1.2688	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	10.1157	10.1157	9.8157	9.8157	14.7067	14.7067	14.7067	8.3947	8.0044	3.1940	8.0044	8.0044	2.83947	3.4491	0.0384	5.1200	8.0044	14.7067
Feb-30	10.3833	9.1724	13.8095	7.0123	3.4972	1.2657	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	10.4224	10.4224	10.1224	10.1224	15.0595	15.0595	15.0595	8.3889	7.9972	3.1940	7.9972	7.9972	2.83889	3.4491	0.0384	5.1200	7.9972	15.0595
Mar-30	10.6694	9.4652	14.1434	7.0973	3.4920	1.2725	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	10.7152	10.7152	10.4152	10.4152	15.3934	15.3934	15.3934	8.3889	7.9920	3.1940	7.9920	7.9920	2.83889	3.4491	0.0384	5.1200	7.9920	15.3934
Apr-30	10.8420	9.6433	14.3431	7.2339	3.4911	1.2791	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	10.8933	10.8933	10.5933	10.5933	15.5931	15.5931	15.5931	8.3674	7.9911	3.1940	7.9911	7.9911	2.83674	3.4491	0.0384	5.1200	7.9911	15.5931
May-30	10.9555	9.7616	14.4733	7.3410	3.4956	1.2833	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	11.0116	11.0116	10.7116	10.7116	15.7233	15.7233	15.7233	8.3674	7.9956	3.1940	7.9956	7.9956	2.83674	3.4491	0.0384	5.1200	7.9956	15.7233
Jun-30	11.0945	9.9062	14.6331	7.4251	3.5121	1.2864	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	11.1562	11.1562	10.8562	10.8562	15.8831	15.8831	15.8831	8.3732	8.0121	3.1940	8.0121	8.0121	2.83732	3.4491	0.0384	5.1200	8.0121	15.8831
Jul-30	11.3423	10.1628	14.9193	7.5217	3.5351	1.2901	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	11.4128	11.4128	11.1128	11.1128	16.1693	16.1693	16.1693	8.3908	8.0351	3.1940	8.0351	8.0351	2.83908	3.4491	0.0384	5.1200	8.0351	16.1693
Aug-30	11.5985	10.4292	15.2147	7.6415	3.5571	1.2961	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	11.6792	11.6792	11.3792	11.3792	16.4647	16.4647	16.4647	8.4080	8.0571	3.1940	8.0571	8.0571	2.84080	3.4491	0.0384	5.1200	8.0571	16.4647
Sep-30	11.8021	10.6420	15.4480	7.7722	3.5774	1.3024	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	11.8920	11.8920	11.5920	11.5920	16.6980	16.6980	16.6980	8.4195	8.0774	3.1940	8.0774	8.0774	2.84195	3.4491	0.0384	5.1200	8.0774	16.6980
Oct-30	11.7137	10.5532	15.3426	7.8503	3.5934	1.3077	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	11.8032	11.8032	11.5032	11.5032	16.5926	16.5926	16.5926	8.5452	8.0934	3.1940	8.0934	8.0934	2.85452	3.4491	0.0384	5.1200	8.0934	16.5926
Nov-30	11.4812	10.3158	15.0697	7.8505	3.6036	1.3073	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	11.5658	11.5658	11.2658	11.2658	16.3197	16.3197	16.3197	8.5509	8.1036	3.1940	8.1036	8.1036	2.85509	3.4491	0.0384	5.1200	8.1036	16.3197
Dec-30	10.8659	9.6865	14.3495	7.7173	3.6011	1.3038	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	10.9365	10.9365	10.6365	10.6365	15.5995	15.5995	15.5995	8.5567	8.1011	3.1940	8.1011	8.1011	2.85567	3.4491	0.0384	5.1200	8.1011	15.5995
Jan-31	10.7131	9.5327	14.1679	7.5747	3.5919	1.2920	0.9500	1.2500	1.2500	1.2500	1.3753	1.1250	1.0000	3.5000	11.7827	11.7827	10.4827	10.4827	15.4179	15.4179	15.4179	8.6512	8.0919	3.1880	8.0919	8.0919	2.86512	3.5383	0.0388	5.1782	8.0919	15.4179

