

5 de julio de 2018

VÍA CORREO ELECTRÓNICO:
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Hon. Larry Seilhamer Rodríguez
Presidente
Comisión Especial de Asuntos de Energía
Senado de Puerto Rico

MEMORIAL EXPLICATIVO DE LA COMISIÓN DE ENERGÍA DE PUERTO RICO SOBRE LA RESOLUCIÓN DEL SENADO 219

Estimado señor Presidente:

Comparece la Comisión de Energía de Puerto Rico ("Comisión") ante esta Comisión Legislativa para proveer información según solicitada en la comunicación de 29 de junio de 2018, sobre la Resolución del Senado 219 ("R. del S. 219").

La R. del S. 219 tiene como propósito obtener información sobre las unidades generatrices 5 y 6 de la Central Costa Sur ("CCS") en relación con los trabajos de conversión para la utilización de gas natural como combustible para la generación eléctrica. Los trabajos de conversión en la CCS comenzaron para el año 2011, según información obtenida por la Comisión. Sin embargo, la Comisión fue creada y comenzó sus labores para finales del año 2014. La Comisión, como parte de sus funciones y responsabilidades, ha llevado a cabo diversos procedimientos en los cuales ha obtenido información sobre la infraestructura de la Autoridad de Energía Eléctrica de Puerto Rico ("Autoridad"). A continuación se detalla la información que la Comisión tiene disponible:

- 1. El porcentaje en que se ha reducido el costo de producción de energía luego de la gasificación de las unidades 5 y 6 de la Central Costa Sur (CCS) y la evidencia documental que lo sustente.**

La Comisión no tiene información sobre la reducción en el costo de producción de energía luego de la gasificación de las unidades 5 y 6 de la CCS, debido a que esta información no consta en los expedientes administrativos de nuestros procedimientos. La mayoría de los procedimientos que ha llevado a cabo la Comisión, como el Plan Integrado de Recursos y la Revisión de Tarifas de la Autoridad, entre otros, se han enfocado principalmente en proyecciones a

mediano y largo plazo, así como en la determinación del requisito de ingreso necesario para la operación eficiente de la Autoridad.

2. El porcentaje de la disminución de emisiones luego de la gasificación de las unidades 5 y 6 de la CCS y la evidencia documental que lo sustente.

La Comisión no tiene información en los expedientes administrativos sobre la disminución de emisiones luego de la gasificación de las unidades 5 y 6 de la CCS. Según expuesto anteriormente, la información que tiene la Comisión se relaciona a pronósticos de generación y consumo de combustible, entre otros. La información histórica disponible en estos momentos es limitada.

3. El porcentaje de energía producida en la CCS a base de gas natural luego de la gasificación de las unidades 5 y 6 y la evidencia, que lo sustente.

Como parte de los expedientes administrativos, sí consta que desde el 2012, las unidades 5 y 6 de la CCS utilizan una mezcla de combustibles según descritas a continuación. Aproximadamente 75% - 80% gas natural y aproximadamente 20% - 25% combustible Residual No. 6.¹ La Tabla 1 contiene información detallada relacionada con el consumo de combustible en dichas unidades entre abril de 2012 y septiembre de 2016.² Los datos sobre el combustible Residual No. 6 son presentados en Barriles, y en el caso del gas natural, los datos son presentados en barriles equivalentes.³

Tabla 1. Consumo de Unidades 5 y 6 de la CCS. (BBLs)

Mes	Unidad 5		Unidad 6		Total Unidades 5&6	
	Gas Natural	Residual FO No. 6	Gas Natural	Residual FO No. 6	Gas Natural	Residual FO No. 6
Apr-12	83,372.27	234,945.05	109,215.35	258,419.07	192,587.62	493,364.12
May-12	230,371.70	161,939.90	169,290.36	233,028.68	399,662.06	394,968.58
Jun-12	198,232.99	167,889.64	216,200.34	181,660.30	414,433.33	349,549.94
Jul-12	133,576.31	192,848.70	50,209.40	15,394.42	183,785.71	208,243.12
Aug-12	243,274.24	135,527.20	0.00	0.00	243,274.24	135,527.20
Sep-12	238,605.03	134,332.96	18,292.53	135.46	256,897.56	134,468.42
Oct-12	156,242.96	209,551.62	299,655.61	35,774.57	455,898.57	245,326.19
Nov-12	156,857.67	181,747.27	300,320.80	24,366.00	457,178.47	206,113.27
Dec-12	26,463.09	25,047.99	376,564.68	7,060.91	403,027.77	32,108.90
Jan-13	0.00	0.00	377,403.81	8,231.29	377,403.81	8,231.29
Feb-13	0.00	0.00	153,004.44	52,892.11	153,004.44	52,892.11

¹ Véase Testimonio de Gregory Rivera Chico, Grabación de Vista Técnica, Caso Núm. CEPR-AP-2017-0001, 28 de junio de 2017 a los minutos 2:20:18 – 2:21:08.

² Véase Respuesta de la Autoridad a Requerimiento Núm. CEPR-AH-06-01, 14º Requerimiento de Información, Caso Núm. CEPR-AP-2015-0001.

³ Se utilizó un factor de 6.3 MMBTU/BBL para obtener la cantidad de barriles equivalentes de gas natural.

Mes	Unidad 5		Unidad 6		Total Unidades 5&6	
	Gas Natural	Residual FO No. 6	Gas Natural	Residual FO No. 6	Gas Natural	Residual FO No. 6
Mar-13	0.00	0.00	360,435.56	112.35	360,435.56	112.35
Apr-13	0.000	0.00	358,707.78	30,381.28	358,707.78	30,381.28
May-13	419.21	0.00	371,957.30	6,658.02	372,376.51	6,658.02
Jun-13	1,958.45	0.00	408,617.26	0.00	410,575.71	0.00
Jul-13	238,913.30	83,514.17	254,221.62	123,380.63	493,134.92	206,894.80
Aug-13	209,590.22	95,580.32	258,867.88	127,177.60	468,458.10	222,757.92
Sep-13	200,878.30	70,530.49	256,892.97	76,826.84	457,771.27	147,357.33
Oct-13	284,278.32	112,318.00	270,337.08	133,136.00	554,615.40	245,454.00
Nov-13	268,850.42	97,344.00	224,653.71	137,974.00	493,504.13	235,318.00
Dec-13	284,693.73	73,911.00	242,162.94	105,349.05	526,856.67	179,260.05
Jan-14	192,811.71	185,163.00	179,157.18	189,498.00	371,968.89	374,661.00
Feb-14	230,504.85	121,458.00	217,177.69	121,342.00	447,682.54	242,800.00
Mar-14	290,809.45	111,672.20	214,130.23	133,273.69	504,939.68	244,945.89
Apr-14	324,327.09	73,550.30	0.00	0.00	324,327.09	73,550.30
May-14	369,225.69	52,161.00	43,278.28	14,250.00	412,503.97	66,411.00
Jun-14	182,224.48	79,849.00	279,909.01	90,711.00	462,133.49	170,560.00
Jul-14	273,157.63	126,431.00	222,785.23	166,191.00	495,942.86	292,622.00
Aug-14	322,737.64	75,992.00	190,338.86	95,580.27	513,076.50	171,572.27
Sep-14	261,402.32	115,894.20	182,978.63	114,488.10	444,380.95	230,382.30
Oct-14	285,710.98	120,202.00	268,866.16	136,360.00	554,577.14	256,562.00
Nov-14	116,478.79	53,271.00	260,236.92	108,812.00	376,715.71	162,083.00
Dec-14	0.00	0.00	257,935.87	83,862.44	257,935.87	83,862.44
Jan-15	0.00	0.00	295,190.63	78,683.30	295,190.63	78,683.30
Feb-15	149,613.46	148,754.00	195,581.30	115,675.00	345,194.76	264,429.00
Mar-15	233,126.17	122,100.39	235,415.42	113,777.08	468,541.59	235,877.47
Apr-15	236,107.21	147,993.00	278,778.98	103,253.42	514,886.19	251,246.42
May-15	236,107.21	149,351.00	284,323.91	93,610.15	520,431.12	242,961.15
Jun-15	194,183.98	170,809.00	276,479.67	109,081.00	470,663.65	279,890.00
Jul-15	202,542.82	158,515.00	295,689.09	109,906.00	498,231.91	268,421.00
Aug-15	220,898.74	150,545.06	278,656.97	108,438.51	499,555.71	258,983.57
Sep-15	223,513.37	139,637.88	264,321.71	98,258.73	487,835.08	237,896.61
Oct-15	250,223.64	185,554.34	299,340.17	80,055.90	549,563.81	265,610.24
Nov-15	229,465.86	104,869.06	270,114.62	69,211.63	499,580.48	174,080.69
Dec-15	365,796.02	57,321.34	0.00	0.00	365,796.02	57,321.34
Jan-16	322,825.11	70,602.15	131,785.05	39,329.97	454,610.16	109,932.12
Feb-16	246,977.29	120,498.69	215,972.40	97,860.56	462,949.69	218,359.25
Mar-16	258,824.44	135,244.02	230,393.33	112,952.13	489,217.77	248,196.15
Apr-16	281,823.29	107,172.61	267,689.89	75,822.61	549,513.18	182,995.22
May-16	280,742.19	119,425.17	283,934.32	88,347.87	564,676.51	207,773.04
Jun-16	289,999.27	117,411.05	176,879.78	80,135.61	466,879.05	197,546.66
Jul-16	433,382.95	1,340.15	9,481.18	1,057.21	442,864.13	2,397.36
Aug-16	300,849.07	115,307.54	232,843.15	64,622.12	533,692.22	179,929.66
Sep-16	177,603.16	91,156.45	269,245.41	55,459.88	446,848.57	146,616.33

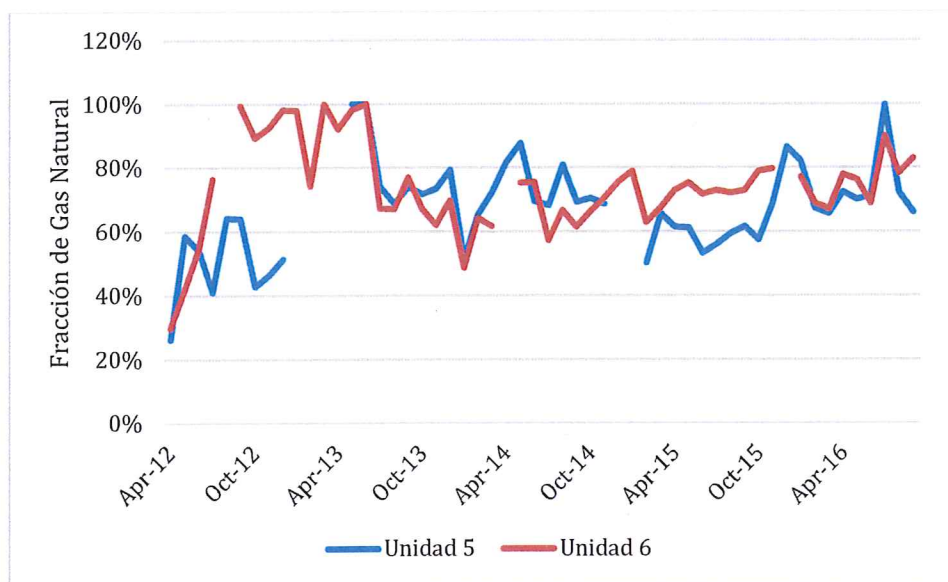


Figura 1. Fracción de Gas Natural de combustible utilizado en Unidades 5 y 6 de la CCS.

La Figura 1 detalla el uso de gas natural en las unidades 5 y 6 de CSS entre abril de 2012 y septiembre de 2016. Se puede observar una variabilidad en el uso de gas natural en las referidas unidades, según descrito anteriormente.

4. Los ahorros obtenidos en compra de combustible luego de la gasificación de la CCS y la evidencia que lo sustente.

En los expedientes administrativos de la Comisión no existe información relacionada a esta solicitud, dado que la misma no ha formado parte de nuestros procedimientos.

5. Todos los efectos o resultados de la gasificación de CCS.

En los expedientes administrativos de la Comisión no existe información relacionada a esta solicitud, dado que la misma no ha formado parte de nuestros procedimientos.

6. Copia de todos los contratos relacionados a CCS.

La Comisión incluye como anejo a este memorial explicativo, información sobre los contratos de la Autoridad con el proveedor de gas natural a la CCS, Gas Natural Aprovisionamientos SDG S.A. En dicho anejo se encuentran tres (3) enmiendas del contrato 2012-P00107, de las cuales las primeras dos (2)

enmiendas surgen de documentos disponibles en los expedientes de la Comisión⁴ y la tercera se encuentra disponible en la página web de la Autoridad.

7. Copias de los planos, diseños, estudios, auditorías, etc. relacionados a la CCS.

En los expedientes administrativos de la Comisión no existe información relacionada a esta solicitud, dado que la misma no ha formado parte de nuestros procedimientos.

8. Capacidad de generación de la CCS.

Según nuestros expedientes administrativos, la CCS se compone de cuatro (4) unidades termoeléctricas. Las unidades 3 y 4 de la CCS tienen capacidad de generación de 85 MW cada una y utilizan combustible Residual No. 6 para su operación. Por otro lado, las unidades 5 y 6 de la CCS tienen una capacidad instalada de 410 MW cada una, y utilizan una combinación de combustible Residual No. 6 y gas natural para su operación.

9. Generación promedio de la CCS.

No consta en los expedientes de la Comisión información histórica sobre la generación promedio de la CCS. No obstante, durante el procedimiento de la Evaluación Económica del Complejo de Aguirre⁵ se obtuvo la proyección más actualizada de generación de estas unidades a largo plazo. La Tabla 2 contiene información sobre la proyección de energía a ser generada por las unidades 5 y 6 de la CCS y el factor de capacidad de las mismas.

Tabla 2. Proyección de Energía y Factor de Capacidad de las Unidades 5 y 6 de la CCS.⁶

FY	Energía (MWh)		Factor de Capacidad	
	Costa Sur 5	Costa Sur 6	Costa Sur 5	Costa Sur 6
2017	885,645.46	1,063,193.35	49%	59%
2018	2,003,991.43	1,870,030.45	56%	52%
2019	1,946,831.65	1,946,428.95	54%	54%
2020	1,926,982.37	1,891,641.51	54%	53%
2021	1,492,086.58	1,947,268.92	42%	54%

⁴ Véase PREPA Response ROI DDR CEPR-JF-01-15_Attach 01.pdf y PREPA Response ROI DDR CEPR-JF-01-15_Attach 02.pdf, 6^{to} Requerimiento de Información, Caso Núm. CEPR-AP-2015-0001.

⁵ In Re: Análisis Económico del Complejo de Aguirre, Caso Núm. CEPR-AP-2017-0001.

⁶ Véase PREPA P3MF1M Final Reference Case rev 17 apr 2017.xlsx, Caso Núm. CEPR-AP-2017-0001. Se consideró que las unidades 5 y 6 de la CCS serían retiradas para el Año Fiscal 2026.

FY	Energía (MWh)		Factor de Capacidad	
	Costa Sur 5	Costa Sur 6	Costa Sur 5	Costa Sur 6
2022	1,925,586.79	1,272,953.04	54%	35%
2023	1,740,192.26	1,732,305.41	48%	48%
2024	1,864,262.38	1,778,461.55	52%	50%
2025	1,812,296.58	1,756,732.37	50%	49%
2026	2,003,511.57	1,771,158.41	56%	49%

10.El efecto de la gasificación de la CCS en la tarifa de la AEE desde 2013 al presente.

En la segunda mitad del año natural 2016, la Comisión llevó a cabo el primer procedimiento de Revisión de Tarifas de la Autoridad con el propósito de establecer el requisito de ingreso y las tarifas para el Año Fiscal 2017. Por lo tanto, los expedientes administrativos de la Comisión no tienen información relacionada al efecto de la gasificación de la CCS en las tarifas cobradas a los consumidores desde el 2013 hasta ese momento.

Ahora bien, los costos asociados a la compra de combustible, el cual incluye la compra de gas natural para la generación eléctrica en CCS, fueron analizados durante el proceso de revisión tarifaria basado en la proyección de consumo y la proyección de los costos asociados a los distintos combustibles utilizados por la Autoridad. Los costos proyectados serían recobrados directamente de los clientes a través de la fórmula de compra de combustible.⁷

No obstante lo anterior, las proyecciones fueron analizadas de forma globalizada por lo que la Comisión no tiene disponible la proyección de costos por unidad generatriz. Por lo tanto, no es posible determinar el efecto de la gasificación de las unidades 5 y 6 de la CCS en estos momentos.

11.Cualquier otra información que sea de utilidad para esta investigación.

La Tabla 3 contiene información sobre los costos relacionados a la conversión de las unidades 5 y 6 de la CCS. El proceso de conversión se dividió en cuatro (4) proyectos.⁸

⁷ Véase en términos generales, Resolución Final y Orden, Caso Núm. CEPR-AP-2015-0001, ¶¶ 154 – 161, pp. 65 – 67.


⁸ Véase Respuesta de la Autoridad a Requerimiento Núm. CEPR-RS-02-07, 5^{to} Requerimiento de Información, Caso Núm. CEPR-AP-2015-0001.

Tabla 3. Distribución de Costos para los Proyectos de Conversión de Unidades 5 y 6 de la CCS.

Descripción	Fecha de Capitalización	Costo de Construcción	Costos de Remoción	Total
Conversion U 5 & 6 to Natural Gas	Jun-11	\$ 36,033,141.00	\$ -	\$ 36,033,141.00
Boiler Rehabilitation U 6	May-11	\$ 15,258,861.00	\$ 872,663.00	\$ 16,131,524.00
Boiler Rehabilitation U 5	Dec-14	\$ 21,254,660.00	\$ 193,537.00	\$ 21,448,197.00
Replacement Superheaters U5-6 CS	Jul-15	\$ 27,664,635.00	\$ 1,937,356.00	\$ 29,601,991.00
Total		\$ 100,211,297.00	\$ 3,003,556.00	\$ 103,214,853.00

Agradecemos esta oportunidad y esperamos que la información presentada sea útil para esta Comisión Legislativa. Una vez más, estamos a su disposición para compartir ideas y propuestas que, en unidad de propósito, aporten al bienestar del país y de sus habitantes.

Cordialmente,



Edison Avilés Deliz
Presidente

2012-P00107 A

AMENDMENT NO. 1 TO THE NATURAL GAS SALE AND PURCHASE AGREEMENT BETWEEN GAS NATURAL APROVISIONAMIENTOS SDG, S.A. AND PUERTO RICO POWER AUTHORITY DATED MARCH 28TH, 2012

This Amendment (hereinafter referred to as "Amendment No.1") is made on March 10th, 2014 by and between:

- (1) **GAS NATURAL APROVISIONAMIENTOS SDG S.A. (GNA)**, a company incorporated under the laws of the Kingdom of Spain, with a place of business at Avenida de America 38, Madrid 28028, Spain (hereinafter called the "**Seller**"), and
- (2) **PUERTO RICO ELECTRIC POWER AUTHORITY (PREPA)**, a public corporation and governmental instrumentality of the Commonwealth of Puerto Rico, created by an Act of 2 May 1941, No. 83, as amended, with its principal place of business at P.O. Box 363928, San Juan, Puerto Rico 00936-3928 (hereinafter called the "**Buyer**").

The Seller and the Buyer shall each be a "**Party**" and, together, the "**Parties**".

WHEREAS:

(A) Buyer and Seller are Parties to the Natural Gas Sale and Purchase Agreement dated March 28th, 2012 for the supply of NG to Costa Sur (the "**Agreement**").

(B) The Parties have agreed to extend the Contract Term and amend the Agreement as follows:

AGREEMENT

1. CAPITALIZED TERMS

1. Capitalized terms used but not defined herein shall have the meaning specified in the Agreement.

2. AMENDMENTS

- 2.1. Contract Term: Clause 3.1 (a) shall be amended as follows:

"This Agreement shall enter into full force and effect on the Effective Date and shall, subject to the terms hereof, continue in force and effect until September 30, 2015 plus three (3) months if at the time the Annual Delivery Programme for the last Contract Year is developed the sum of (x) the Annual Contract Quantity for all prior Contract Years, plus (y) the Minimum Annual Contract Quantity for the last Contract Year would be less than the Minimum Total Contract Quantity absent such three-month extension (the "**Initial Contract Term**"), plus

- (A) any Make-up Extension Period
- (B) any extension pursuant to Clause 8.7; and
- (C) any extension agreed to pursuant to Clause 3.1. (b)

(the Initial Contract Term and the extension above shall hereinafter be referred to as the “**Contract Term**”).

2.2. Minimum Total Contract Quantity: Clause 6.6 shall be amended as follows:

“The “**Minimum Total Contract Quantity**” shall be an amount, expressed in TBtu, calculated by multiplying two point five (2.5) TBtu times the number of months contained in the Initial Contract Term (excluding the three-month extension period, if applicable, mentioned in the first paragraph of Clause 3.1 (a) of this Agreement), subject to reduction pursuant to Clause 6.3 (b).

The sum of the ACQs for all Contract Years in the aggregate shall be equal to or greater than the Minimum Total Contract Quantity”.

2.3. Firm Supply Period: Clause 7.3 shall be amended as follows:

“

- (a) The second and subsequent Contract Years, except for the last Contract Year, shall begin on January 1 of such relevant Contract Year at 00:00 local time and end on December 31 at 24:00 local time of the same Contract Year;
- (b) The last Contract Year shall begin on January 1, 00:00 local time of such relevant Contract Year and end on the last Day of the Contract Term at 24:00 local time as per Clause 3.1 (a).”

2.4. Contract Price: Clause 12.1. shall be amended as follows:

“The Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month up and until May 3, 2014 (including, for purposes of this calculation, any NG quantities taken during the Transitional Supply Period), expressed in US Dollars / MMBtu shall be calculated quarterly in January, April, July and October as follows:

$$\text{Contract Price Tier 1 (US\$/MMBtu)} = (11.9\% F\#6603 + .75) * f'$$

F#6603 (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places.

“f” is a parameter equal to (a) zero point ninety seven (0.97) for the first twelve (12) months of the Firm Supply Period; (b) one (1) for the Transitional Supply Period; and (c) one point zero three (1.03) for the period of time from the finalization of the first twelve (12) months of the Firm Supply Period up to May 3, 2014.

The Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month from May 4, 2014 until the end of the Contract Term, expressed in US Dollars / MMBtu shall be calculated quarterly in January, April, July and October as follows:

Contract Price Tier 2 (US\$/MMBtu) = (12.4% F#6603 + 1.5)

F#6603 (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places".

3. MISCELLANEOUS

- 3.1. Except as expressly modified by this Amendment No.1 the Agreement shall remain in full force and effect. This Amendment No.1, together with the Agreement, constitutes the entire agreement of the Parties, superseding all prior agreements, written or oral, between the Parties in relation to the subject matter.
- 3.2. This Amendment No. 1 shall be construed, enforced and governed in accordance with Clause 19 and 20 of the Agreement.
- 3.3. This Amendment No.1 shall be binding upon and inure to the benefit of each Party's respective successors and assigns.

IN WITNESS WHEREOF the Parties hereto have caused this Agreement to be executed by their respective duly authorised representative as of the day and year first written above.

For and on behalf of

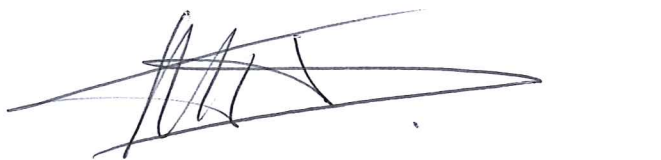
SELLER:

**GAS NATURAL
APROVISIONAMIENTOS SDG, S.A.**


For and on behalf of

BUYER:

**PUERTO RICO ELECTRIC
POWER AUTHORITY**



Manuel Fernández
Managing Director
Wholesale Energy Business
981-02-4387



March 17, 2014
Juan F. Alicea Flores
Executive Director
660-43-3747

2012-P00107B

**AMENDMENT NO. 2 TO THE NATURAL GAS SALE AND PURCHASE
AGREEMENT BETWEEN GAS NATURAL APROVISIONAMIENTOS SDG,
S.A. AND PUERTO RICO POWER AUTHORITY DATED 28TH MARCH 2012**

This Amendment (hereinafter referred to as "Amendment No.2") is made on May 11th, 2015 by and between:

- (1) **GAS NATURAL APROVISIONAMIENTOS SDG S.A. (GNA)**, a company incorporated under the laws of the Kingdom of Spain, with a place of business at Avenida de America 38, Madrid 28028, Spain (hereinafter called the "**Seller**"), and
- (2) **PUERTO RICO ELECTRIC POWER AUTHORITY (PREPA)**, a public corporation and governmental instrumentality of the Commonwealth of Puerto Rico, created by an Act of 2 May 1941, No. 83, as amended, with its principal place of business at P.O. Box 363928, San Juan, Puerto Rico 00936-3928 (hereinafter called the "**Buyer**").

The Seller and the Buyer shall each be a "**Party**" and, together, the "**Parties**".

WHEREAS:

- (A) Buyer and Seller are Parties to the Gas Sale and Purchase Agreement dated 28th March 2012 for the supply of NG to Costa Sur (the "**Agreement**").
- (B) On March 10th 2014, the Parties extended the Contract Term and amended the Agreement as per the Amendment No.1.
- (C) The Parties have further agreed to extend the Contract Term and amend the Agreement as follows:

AGREEMENT

1. CAPITALIZED TERMS

1. Capitalized terms used but not defined herein shall have the meaning specified in the Agreement.

2. AMENDMENTS

- 2.1. Contract Term: Clause 3.1 (a) shall be amended as follows:

"This Agreement shall enter into full force and effect on the Effective Date and shall, subject to the terms hereof, continue in force and effect until December 31, 2018 unless one of the Parties provides written notice to the other Party at least six (6) months before December 31, 2017, in which case this Agreement shall remain in force and effect until December 31, 2017) plus in any event, three (3) months if, at the time the Annual Delivery Programme for the last Contract Year is developed, the sum of (x) the Annual Contract Quantity actually delivered for all prior Contract Years, plus (y) the Minimum Annual Contract Quantity for the

last Contract Year would be less than the Minimum Total Contract Quantity absent such three-month extension (the "**Initial Contract Term**"), plus

- (A) any Make-up Extension Period
- (B) any extension pursuant to Clause 8.7; and
- (C) any extension agreed to pursuant to Clause 3.1. (b)

(the Initial Contract Term and the extension above shall hereinafter be referred to as the "**Contract Term**").

2.2. Contract Quantity:

2.2.1. Clause 6.1 shall be amended as follows:

"The "**Maximum Annual Contract Quantity**" for each Contract Year shall be thirty-six (36) TBtu, provided that the Maximum Annual Contract Quantity shall be prorated downward ratably for each Contract Year of less than three hundred and sixty five (365) Days. The "**Minimum Annual Contract Quantity**" for each Contract Year (other than the first Contract Year) shall be (i) thirty (30) TBtu up and until December 31, 2015, and (ii) twenty-seven (27) TBtu for the period beginning on January 1, 2016 up and until the end of the Initial Contract Term, provided that the Minimum Annual Contract Quantity shall be prorated downward ratably for each Contract Year (including the last Contract Year) of less than three hundred and sixty five (365) Days. The Minimum Annual Contract Quantity for the first Contract Year shall be established in accordance with Annex C. For the avoidance of doubt, neither any Scheduled Maintenance nor any Environmental Testing Period will reduce the Minimum Annual Contract Quantity for any Contract Year."

2.2.2. Clause 6.6 shall be amended as follows:

"The "**Minimum Total Contract Quantity**" shall be (i) an amount, expressed in TBtu, calculated by multiplying two point five (2.5) TBtu times the number of months contained in the period beginning on May 4, 2012 (first Day of the Firm Supply Period) up and until December 31 2015, plus (ii) the amount, expressed in TBtu, calculated by multiplying two point twenty-five (2.25) TBtu times the number of months contained in the period beginning on January 1, 2016 up and until the end of the Initial Contract Term (excluding the three-month extension period, if applicable, mentioned in the first paragraph of Clause 3.1 (a) of this Agreement).

The sum of the ACQs for all Contract Years in the aggregate shall be equal to or greater than the Minimum Total Contract Quantity".

2.2.3. Clause 6.3 b) shall be amended as follows:

"The NG quantities taken (or paid for if not taken) during the Transitional Supply Period shall reduce the Minimum Annual Contract Quantity established in Clause 6.1 for the first Contract Year but shall not reduce the Minimum Total Contract Quantity.


2.3. Contract Price: Clause 12.1. shall be amended as follows:

"The contract price applicable to the quantities of NG to be sold, purchased and delivered in any month up and until May 3, 2014 (including, for purposes of this calculation, any NG quantities taken during the Transitional Supply Period), expressed in US Dollars / MMBtu ("Contract Price") shall be calculated quarterly in January, April, July and October as follows:

$$\text{Contract Price Tier 1 (US\$/MMBtu)} = (11.9\% F\#6603 + .75) * f'$$

F#6603 (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places.

"f" is a parameter equal to (a) zero point ninety seven (0.97) for the first twelve (12) months of the Firm Supply Period; (b) one (1) for the Transitional Supply Period; and (c) one point zero three (1.03) for the period of time from the finalization of the first twelve (12) months of the Firm Supply Period up to May 3, 2014

 The Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month from May 4, 2014 up and until September 30, 2015, expressed in US Dollars / MMBtu shall be calculated quarterly in January, April, July and October as follows:

$$\text{Contract Price Tier 2 (US\$/MMBtu)} = (12.4\% F\#6603 + 1.5)$$

F#6603 (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places".

The Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month from October 1, 2015 until the end of the Contract Term, expressed in US Dollars / MMBtu shall be calculated as follows:

$$\text{Contract Price Tier 3 (US\$/MMBtu)} = 50\% P1 + 50\% P2$$

Where:

$$P1 = 12.15\% F\#6603 + 1.125$$


F#6603 (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places".

$$P2 = 115\% HH + 5.95$$

HH (in US\$/MMBtu) is the final settlement price for the New York Mercantile Exchange's Henry Hub natural gas futures contracts for the month previous to the month of delivery, rounded to two (2) decimal places".

2.4. Invoicing and Payment

2.4.1. Clause 13.2 shall be amended as follows:

 The Seller shall prepare and shall give to the Buyer by not later than the tenth (10th) Day after the end of each calendar month an invoice (the "Monthly Invoice") which shall show in respect of the preceding calendar month the following information:

- (a) The applicable Contract Price;
- (b) The total quantity of NG delivered to the Buyer at the Delivery Point;
- (c) Any applicable Taxes due for payment by the Buyer; and
- (d) The net amount payable by the Buyer to the Seller shall be the Contract Price multiplied by the quantities set down in (b), plus the Applicable Taxes amounts under (c).

From October 1, 2015, the applicable Contract Price shall be displayed in the Monthly Invoice detailing separately the value resulting from P1 and P2 of the Contract Price established in Clause 12.1 as per this Amendment No.2.

2.5. **Annual Delivery Program 2015:** Regarding Contract Year 2015, the current ACQ including the Buyer's estimated consumption for the last quarter (from October 1 to December 31, 2015) is attached hereto as Annex 1 to this Amendment No 2.

No later than fifteen (15) days after the execution of this Amendment No 2, the Buyer shall provide the Seller the current ADP including the consumption monthly detail for the last quarter of 2015 which shall be binding.

3. MISCELLANEOUS

- 3.1. Except as expressly modified by this Amendment No.2, the Agreement (as modified by the Amendment N° 1) shall remain in full force and effect. This Amendment No. 2, together with the Agreement and the Amendment No. 1, constitute the entire agreement of the Parties, superseding all prior agreements, written or oral, between the Parties in relation to the subject matter.
- 3.2. This Amendment No. 2 shall be construed, enforced and governed in accordance with Clause 19 and 20 of the Agreement.
- 3.3. This Amendment No.2 shall be binding upon and inure to the benefit of each Party's respective successors and assigns.

IN WITNESS WHEREOF the Parties hereto have caused this Agreement to be executed by their respective duly authorised representative as of the day and year first written above.

For and on behalf of

For and on behalf of

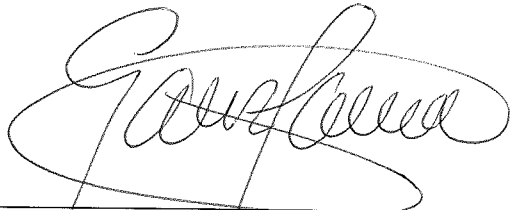
SELLER:

BUYER:

GAS NATURAL

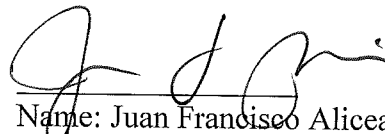
**PUERTO RICO ELECTRIC
POWER AUTHORITY**

APROVISIONAMIENTOS SDG, S.A.



Name: Rosa Maria Sanz Garcia
Title: Executive Director Global Gas

981-02-4387



Name: Juan Francisco Alicea Flores
Title: Executive Director

1660-43-3747

AMENDMENT NO. 3 TO THE NATURAL GAS SALE AND PURCHASE AGREEMENT BETWEEN GAS NATURAL APROVISIONAMIENTOS SDG, S.A. AND PUERTO RICO POWER AUTHORITY DATED 28TH MARCH, 2012

This Amendment (hereinafter referred to as "Amendment No. 3") is made on 16 ^{August} July, 2017 (the "**Execution Date**") by and between:

- (1) **GAS NATURAL APROVISIONAMIENTOS SDG S.A. (GNA)**, a company incorporated under the laws of the Kingdom of Spain, with a place of business at Avenida de America 38, Madrid 28028, Spain (hereinafter called the "**Seller**"), and
- (2) **PUERTO RICO ELECTRIC POWER AUTHORITY (PREPA)**, a public corporation and governmental instrumentality of the Commonwealth of Puerto Rico, created by an Act of 2 May 1941, No. 83, as amended, with its principal place of business at P.O. Box 363928, San Juan, Puerto Rico 00936-3928 (hereinafter called the "**Buyer**").

The Seller and the Buyer shall each be a "**Party**" and, together, the "**Parties**".

WHEREAS:

(A) Buyer and Seller are Parties to the Gas Sale and Purchase Agreement dated 28th March, 2012 for the supply of NG to Costa Sur (the "**Agreement**").

(B) On March 10th, 2014, the Parties extended the Contract Term and amended the Agreement as per the Amendment No. 1.

(C) On May 11th, 2015, the Parties extended the Contract Term and amended the Agreement as per the Amendment No. 2.

(D) The Parties have further agreed to modify some terms of the Agreement, among others, to extend the Contract Term and to increase the Annual Contract Quantities.

(F) In consideration of the foregoing, the Parties have agreed to amend the Agreement as follows:

AGREEMENT

1. CAPITALIZED TERMS

1. Capitalized terms used but not defined herein shall have the meaning specified in the Agreement.

2. DEFINITIONS

1. The Agreement is amended by including the following definitions:

- a) Environmental Testing Period is hereby deleted in its entirety and replaced by the following:

“Environmental Testing Period” means any testing period which the Buyer removes from service or reduces its generation in any of the two (2) units at Costa Sur in order to comply with the Applicable Law, and which include the consecutive eight (8) week period during which Buyer removes from service one (1) unit at Costa Sur in order to comply with the Applicable law.

- b) *“Forced Outages” means a shutdown condition of any of the two units at Costa Sur which makes them unavailable to produce power due to an unexpected breakdown. It can be caused, but not limited to, by equipment failures, disruption of the fuel supply, operator error, etc.*
- c) *“Prudent Utility Practices” means practices, methods, conduct and actions (including the practices, methods, conduct and acts engaged in or approved by a significant portion of the power industry in the United States or Puerto Rico) that, at a particular time, in the exercise of reasonable discretion at the time a decision was made, could have been expected to accomplish the desired result in a manner consistent with applicable laws and applicable standards for reliability, safety and economy of the electric system operation and its economic dispatch program. Prudent Utility Practice is not limited to the optimum practice, method or act to the exclusion of all others, but rather is a spectrum of possible practices, methods or acts which can fall within this description.*
- d) *“Routine Maintenance” means any interruption of service which is not part of any Schedule Maintenance or an interruption prearranged on a relatively short notice in any of the two units at Costa Sur.*
- e) *“Unit Limitations” means any condition or event that affect any facility or equipment outside Costa Sur facilities that does not allow any of the two units at Costa Sur to generate at their maximum capacity.*



3. APPROVALS

- 3.1. The Parties acknowledge and agree, that Seller is accomplishing the expansion of capacity at the LNG Facilities, this expansion shall include but not limited to the technical modifications at the LNG Facilities and the necessary permits from the relevant Competent Authorities, required to enable the Seller to deliver the additional natural gas quantities as agreed under this Amendment No. 3 (the “**Expansion Capacity Works**”).
- 3.2. The Seller shall keep Buyer duly informed of the status of the relevant approvals and the development of the Expansion Capacity Works.
- 3.3. The Gas Expansion Commencement Date shall mean the date on which the Expansion Capacity Works shall be completed. Such date shall be determined by Seller as set forth below:
- (a) Not later than five (5) Days from the Execution Date Seller shall give notice to Buyer of the date on which it anticipates the Gas Expansion Commencement Date.
 - (b) Seller shall keep Buyer informed about any modification on the date proposed as per 3.3 (a), and in any case Seller shall confirm the final Gas Expansion Commencement Date not less than thirty (30) Days prior to such anticipated date.

4. TERM EXTENSION

- 4.1. The Parties agree to extend the Term of the Agreement and in consequence Clause 3.1 of the Agreement shall be amended as follows:

“3.1 Contract Term

- (a) This Agreement shall enter into full force and effect on the Effective Date and shall, subject to the terms hereof, continue in force and effect until and including December 31st, 2020 unless any Party serves a written notice to the other Party by no later than June 30th, 2019 terminating the Agreement with effect December 31st, 2019, plus, three (3) additional months if, at the time the Annual Delivery Programme for the last Contract Year is developed, the sum of (x) the Annual Contract Quantity actually delivered for all prior Contract Years, plus (y) the Minimum Annual Contract Quantity for the last Contract Year would be less than the Minimum Total Contract Quantity absent such three-month extension (the “**Initial Contract Term**”), plus*

- (A) any Make-up Extension Period*
- (B) any extension pursuant to Clause 8.7; and*

(C) any extension agreed to pursuant to Clause 3.1. (b)

(the Initial Contract Term and the extension above shall hereinafter be referred to as the "**Contract Term**")

(b) The Parties may extend the Contract Term on such terms and conditions as they may agree to in writing."

5. CONTRACT QUANTITIES

5.1. The Parties agree that from the Gas Commencement Date and until the end of the Initial Contract Term the NG quantities under the Agreement shall be increased progressively in accordance to the rules establish in the new Clause 6.1 of the Agreement.

5.1.1. Clause 6.1 shall be amended as follows:

"A. The "**Maximum Annual Contract Quantity**" for each Contract Year shall be as follows;

(a) from the Effective Date and up and until December 31st 2016, thirty six (36) TBtu (the "**Base Quantity**").

2017 - 2020 (b) for the period beginning on January 1st 2017 up and until the end of the Initial Contract Term, the Base Quantity plus thirty six (36) TBtu (the "**Additional Quantity**")

The Additional Quantity shall commence to apply on a prorated basis during the Contract Year on which the Gas Expansion Commencement Date has occurred.

The Maximum Annual Contract Quantity shall be prorated downward rateably for each Contract Year of less than three hundred and sixty five (365) Days.

B. The "**Minimum Annual Contract Quantity**" for each Contract Year (other than the first Contract Year) shall be:

(a) thirty (30) TBtu up and until December 31st, 2015,

(b) twenty-seven (27) TBtu for the Contract Year beginning on January 1st, 2016 up and until the end of the Initial Contract Term, plus the Minimum Additional Contract Quantity.

The "**Minimum Additional Contract Quantity**" shall be eighteen (18) TBtus for any Contract Year within the period beginning on the Gas Expansion Commencement Date and up and until the end of the Initial Contract Term.

During the Contract Year in which the Gas Expansion Commencement Date has occurred the Minimum Additional Contract Quantity shall apply on a prorated basis.

Provided that in any event:

- (i) the Minimum Annual Contract Quantity shall be prorated downward for each Contract Year in the Initial Contract Term of less than three hundred and sixty five (365) Days;*
- (ii) The Minimum Annual Contract Quantity for the first Contract Year shall be established in accordance with Annex C and*
- (iii) After the Gas Expansion Commencement Date, any Scheduled Maintenance, Forced Outages, Routine Maintenance, Unit Limitations or any Environmental Testing Period will reduce the Minimum Additional Annual Contract Quantity for any Contract Year on a prorated basis*
- (iv) After the Gas Expansion Commencement Date, the Minimum Additional Annual Contract Quantity will be reduced for any Contract Year on a prorated basis by any criteria established by the Buyer to guarantee a reliable electric system operation and its economic dispatch program, based and implemented in a manner consistent with Prudent Utility Practices and as duly previously justified by Buyer to Seller."*

5.1.2. Clause 6.6 shall be amended as follows:

*"The "**Minimum Total Contract Quantity**" shall be:*

- (i) an amount, expressed in TBtu, calculated by multiplying two point five (2.5) TBtu times the number of months contained in the period beginning on May 4th, 2012 (first Day of the Firm Supply Period) up and until December 31st, 2015, plus*
- (ii) the amount, expressed in TBtu, calculated by multiplying two point twenty-five (2.25) TBtu times the number of months contained in the period beginning on January 1st, 2016 up and until the end of the Initial Contract Term, plus*
- (iii) the amount, if any, expressed in TBtu, calculated by multiplying one point five zero (1.50) TBtu times the number of months contained in the period beginning at the Gas Expansion Commencement Date and up and until the end of the Initial Contract Term, less*
- (iv) the amount, if any, expressed in TBtu, of the aggregate of Buyer's reduced quantities as per Clause 6.1(B)(b)(iii) and Clause 6.1(B)(b)(iv) of this Agreement (as amended and incorporated by Clause 5.1.1 of Amendment No. 3), in the months contained in the period beginning at the Gas Expansion Commencement Date and up and until the end of the Initial Contract Term.*

The sum of the ACQs for all Contract Years in the aggregate shall be equal to or greater than the Minimum Total Contract Quantity”.

5.1.3. Clause 6.7 shall be amended as follows:

“In respect of each Day of every Contract Year, the Daily Contract Quantity (“DCQ”) shall be the daily nomination for each Day of the Binding Monthly Schedule. The “Maximum DCQ” that Buyer may nominate for any Day shall be (i) 93 Mmscf per Day prior to the Gas Expansion Commencement Date and (ii) 186 Mmscf per Day from the Gas Expansion Commencement Date, provided, however, that Seller shall use reasonable efforts to comply with Buyer’s request to deliver a Maximum DCQ in excess of the applicable Maximum DCQ”.

6. CONTRACT PRICE

6.1. The Parties agree to modify the Contract Price and in consequence Clause 12.1 of the Agreement shall be amended as follows:

“A) The Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month up and until May 3rd, 2014 (including, for purposes of this calculation, any NG quantities taken during the Transitional Supply Period), expressed in US Dollars / MMBtu (“Contract Price”) shall be calculated quarterly in January, April, July and October as follows:

*Contract Price Tier 1 (US\$/MMBtu) = (11.9% F#6603 + .75) * f”*

F#6603 (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts’s Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places.

“f” is a parameter equal to (a) zero point ninety seven (0.97) for the first twelve (12) months of the Firm Supply Period; (b) one (1) for the Transitional Supply Period; and (c) one point zero three (1.03) for the period of time from the finalization of the first twelve (12) months of the Firm Supply Period up to May 3rd, 2014

B) The Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month from May 4th, 2014 up and until September 30th, 2015, expressed in US Dollars / MMBtu shall be calculated quarterly in January, April, July and October as follows:

$$\text{Contract Price Tier 2 (US\$/MMBtu)} = (12.4\% F\#6_{603} + 1.5)$$

F#6₆₀₃ (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places".

C) The Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month from October 1st, 2015 up and until December 31st, 2017, expressed in US Dollars / MMBtu shall be calculated as follows:

$$\text{Contract Price Tier 3 (US\$/MMBtu)} = 50\% P1 + 50\% P2$$

Where:

$$P1 = 12.15\% F\#6_{603} + 1.125$$

F#6₆₀₃ (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places".

$$P2 = 115\% HH + 5.95$$

HH (in US\$/MMBtu) is the final settlement price for the New York Mercantile Exchange's Henry Hub natural gas futures contracts for the month previous to the month of delivery, rounded to two (2) decimal places".

D) The Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month from January 1st, 2018 until the end of the Contract Term, expressed in US Dollars / MMBtu shall be the Contract Price Tier 3 provided that if the Gas Expansion Commencement date has occurred the following formula shall apply:

- If $(F\#61-11 + 1.29 \text{ \$/MMBtu}) * HRN_F < (50\% P1 + 50\% P2) * HRN_F$ then Contract Price shall be in US\$/MMBtu = $(F\#61-11 + 1.29) * HRN_F$*

- If $(F\#61-11 + 1.29 \text{ \$/MMBtu}) * HRN_F > (50\% P1 + 50\% P2) * HRN_F$ then Contract Price shall be in $\text{US\$/MMBtu} = (50\% P1 + 50\% P2) * HRN_F$

Where:

$F\#61-11$ (in $\text{US\$/MMBtu}$) is the unweighted average for the relevant month of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platt's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places, and divided by 6.03 (conversion factor from $\text{\$/bbl}$ to $\text{\$/MMBtu}$)

HRN_F equals to 0.97 and represents the agreed Heat Rate Normalization Factor”.

6.2. The Parties agree to amend Clause 13.2 of the Agreement as follows:

“The Seller shall prepare and shall give to the Buyer by not later than the tenth (10th) Day after the end of each calendar month an invoice (the "Monthly Invoice") which shall show in respect of the preceding calendar month the following information:

- (a) The applicable Contract Price;
- (b) The total quantity of NG delivered to the Buyer at the Delivery Point;
- (c) Any applicable Taxes due for payment by the Buyer; and
- (d) The net amount payable by the Buyer to the Seller shall be the Contract Price multiplied by the quantities set down in (b), plus the Applicable Taxes amounts under (c).

From October 1st, 2015, the applicable Contract Price shall be displayed in the Monthly Invoice detailing separately the value resulting from P1 and P2 of the Contract Price established in Clause 12.1 as per Amendment No.2 and this Amendment No. 3.”

7. SCHEDULING

7.1. The Parties agree to modify Clause 7.3 of the Agreement as follows:

“Firm Supply Period – except for first Contract Year: each Contract Year shall begin on January 1st, of the Contract Year at 00:00 local time and end on December 31st, of the Contract Year at 24:00 local time.”

8. MISCELLANEOUS

8.1. This Amendment No. 3 shall enter into force at the Execution Date.

- 8.2. Except as expressly modified by this Amendment No. 3 the Agreement (as modified by the Amendment No. 1 and Amendment No. 2) shall remain in full force and effect. This Amendment No. 3, constitute the entire agreement of the Parties, superseding all prior agreements, written or oral, between the Parties in relation to the subject matter.
- 8.3. This Amendment No. 3 shall be construed, enforced and governed in accordance with Clause 19 and 20 of the Agreement.
- 8.4. This Amendment No. 3 shall be binding upon and inure to the benefit of each Party's respective successors and assigns.
- 8.5. The Parties acknowledge that the filing of the Title III proceedings on July 2, 2017 for Buyer does not constitute an event of Termination under Clause 18.1(b)(ii) or Clause 18.1(b)(iii) of the Agreement.

IN WITNESS WHEREOF the Parties hereto have caused this Agreement to be executed by their respective duly authorised representative as of the day and year first written above.

For and on behalf of

SELLER:

**GAS NATURAL
APROVISIONAMIENTOS SDG, S.A.**



Name: Ines Diez Rodriguez
Title: Authorized Representative
S.S.
981-02-4387

For and on behalf of

BUYER:

**PUERTO RICO ELECTRIC POWER
AUTHORITY**



Name: Ricardo L. Ramos Rodríguez
Title: Executive Director
S.S.
660-43-3747



No. CEPR-AP-2015-0001

In re: Review of Rates of the Puerto Rico Electric Power Authority

Puerto Rico Electric Power Authority's Response to the
Requirement of Information No. 14
of the Staff of the Puerto Rico Energy Commission

REQUEST NO. CEPR-AH-06-01:

Please refer to Schedule A-6 REV. Refer to the line headed "Natural Gas".

- a. Does PREPA currently, or has PREPA at any time since FY2010, purchased natural gas from a supplier other than EcoEléctrica? If so, for each delivery of natural gas between FY 2010 and the most recent data available that was not supplied by EcoEléctrica, provide:
 - i. The date of the delivery
 - ii. The name of the supplier
 - iii. The form (liquefied or gaseous) of the delivery
 - iv. The location of the delivery
 - v. The total heat content of the delivery
 - vi. The price of the delivery
 - vii. The unit or units which were fueled using natural gas from the delivery
- b. Describe the current pricing structure under which PREPA pays for natural gas supplied by EcoEléctrica for use at the Costa Sur plant.
- c. If this pricing structure has changed in the last five years, identify the date of the change and describe the previous structure(s).
- d. For FYs 2010 through 2016, provide the following. Monthly data should be provided if available.
 - i. Heat content of gas deliveries to Costa Sur
 - ii. Expenditures on gas deliveries to Costa Sur
 - iii. Fuel mix, by unit of fuel burned at Costa Sur
- e. Did PREPA prepare budgets or expected spending levels for expenditures on natural gas at Costa Sur for FYs 2010 through 2016?
 - i. If so, provide these budgeted amounts, by month if available.

No. CEPR-AP-2015-0001

In re: Review of Rates of the Puerto Rico Electric Power Authority

Puerto Rico Electric Power Authority's Response to the
Requirement of Information No. 14
of the Staff of the Puerto Rico Energy Commission

- ii. If not, describe why not and the process used, if any, to track or monitor spending on natural gas at Costa Sur.

RESPONSE:

The responses to subparts a., b., and c. were provided by Cesar Torres, Executive Advisor, Fuel Office, PREPA. The responses to subparts d. i. and ii. were provided by Joseline N. Estrada Rivera, Projections and Statistics Department Manager at PREPA. The responses to subparts d. iii. and e. i. were provided by Maribel Franco, Generation Planning Manager, PREPA.

- a. Since April 2012 the natural gas contract has been with Gas Natural Aprovisionamiento SDG S.A, which is owned by Gas Natural Fenosa, EcoEléctrica's majority owner.
- b. The current price structure is as follows:

Contract price (US\$/MMBtu) = 50% P1 + 50% P2

$P1 = 12.15\%F\#6603 + 1.125$

F#6603 (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with 0.5% sulfur as interpolated from the means of 0.3% sulfur low pour and 0.7% sulfur fuels, as published by the Platt's Oilgram Price report, Price Average Supplement, Estimated New York spot No.6 Fuel Oil Cargo columns, rounded to two decimal places.

$P2 = 115\%HH + 5.95$

HH (in US\$/MMBtu) is the final settlement price for the New York Mercantile Exchange's Henry Hub natural gas futures contracts for the month previous to the month of the delivery, rounded to two decimal places.

- c. The previous contract price structure was as follows:

Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month up and until May 3, 2014 (including, for purposes of this calculation, any NG quantities taken during the Transitional Supply Period), expressed in US Dollars / MMBtu shall be calculated quarterly in January, April, July and October as follows:

Contract Price Tier 1 (US\$/MMBtu) = $(11.9\% F\#6603 + .75) * f'$

F#6603 (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as

No. CEPR-AP-2015-0001

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Puerto Rico Electric Power Authority's Response to the
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interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places.

"f" is a parameter equal to (a) zero point ninety seven (0.97) for the first twelve (12) months of the Firm Supply Period; (b) one (1) for the Transitional Supply Period; and (c) one point zero three (1.03) for the period of time from the finalization of the first twelve (12) months of the Firm Supply Period up to May 3, 2014.

The Contract Price applicable to the quantities of NG to be sold, purchased and delivered in any month from May 4, 2014 until the end of the Contract Term, expressed in US Dollars / MMBtu shall be calculated quarterly in January, April, July and October as follows:

Contract Price Tier 2 (US\$/MMBtu) = (12.4% F#6603 + 1.5)

F#6603 (in US\$/bbl) is the unweighted average for the 6-month period prior to the relevant quarter of the mean dated fuel with zero point five percent (0.5%) sulfur as interpolated from the means of zero point three percent (0.3%) sulfur LP and zero point seven percent (0.7%) sulfur fuels, as published by the Platts's Oilgram Price Report PRICE AVERAGE SUPPLEMENT, Estimated New York spot No. 6 Fuel Oil Cargo columns, rounded to two (2) decimal places".

d.

i. The following table provides the heat content, Fenosa Bill (MMBtu):

Moht/year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	May	Jun
2012													2,610,930
2013	1,157,850	1,536,080	1,621,824	2,865,303	2,884,756	2,542,621	2,377,644	963,928	2,270,744	2,259,859	240,621	2,105,351	2,586,627
2014	3,106,750	2,951,286	2,883,959	3,494,077	3,109,076	3,319,197	2,343,404	2,820,400	3,181,120	2,043,261	2,598,775		2,911,411
2015	3,124,440	3,232,382	2,799,600	3,493,836	2,373,309	1,624,996	1,859,701	2,174,727	2,951,812	3,243,783	3,194,351		2,965,181
2016	3,138,861	3,147,201	3,073,361	3,462,252	3,147,357	2,325,206	2,864,044	2,916,583	3,082,072	3,461,933	3,557,462		2,941,338
2017	2,790,044	3,362,261	2,815,146										

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ii. The following table provides the Natural Gas Expenditures (\$):

Month/year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	May
2012												36,977,035
2013	16,434,060	21,802,505	23,019,521	38,889,612	39,153,639	34,509,978	31,614,815	12,817,061	30,193,402	30,499,954	33,419,724	37,069,469
2014	43,594,227	41,412,740	40,468,001	45,911,297	41,265,510	43,821,035	31,963,796	38,469,974	43,390,159	29,305,369	40,352,654	44,826,584
2015	47,365,886	49,002,265	42,441,376	49,305,014	33,492,137	22,931,944	22,679,054	26,520,796	35,997,347	31,058,898	30,585,591	28,391,312
2016	26,463,109	26,750,579	26,122,954	27,624,344	24,599,899	18,232,173	21,091,393	21,171,476	21,672,451	22,948,115	23,769,538	19,598,723
2017	20,105,615	23,755,383	20,182,908									

iii. The following table provides the mix of fuel (natural gas and residual fuel oil number 6) consumed at Costa Sur units 5 and 6 since the units started burning a fuel mix in April 2012. The information is provided monthly and grouped and totalized by fiscal year. The consumption of natural gas was converted from British Thermal Units (BTU) to equivalent residual fuel oil number 6 barrels (BBL) using a conversion factor of 6.3 MMBTU/BBL.

Costa Sur Power Plant
Fuel Consumption
BBLs¹

Month	Unit 5		Unit 6		Total Units 5 & 6	
	Natural Gas	Residual FO No. 6	Natural Gas	Residual FO No. 6	Natural Gas	Residual FO No. 6
April 2012	83,372.27	234,945.05	109,215.35	258,419.07	192,587.62	493,364.12
May	230,371.70	161,939.90	169,290.36	233,028.68	399,662.06	394,968.58
June	198,232.99	167,889.64	216,200.34	181,660.30	414,433.33	349,549.94
FY 2012	511,976.96	564,774.59	494,706.05	673,108.05	1,006,683.01	1,237,882.64
July	133,576.31	192,848.70	50,209.40	15,394.42	183,785.71	208,243.12
August	243,274.24	135,527.20	0.00	0.00	243,274.24	135,527.20
September	238,605.03	134,332.96	18,292.53	135.46	256,897.56	134,468.42
October	156,242.96	209,551.62	299,655.61	35,774.57	455,898.57	245,326.19
November	156,857.67	181,747.27	300,320.80	24,366.00	457,178.47	206,113.27
December	26,463.09	25,047.99	376,564.68	7,060.91	403,027.77	32,108.90
January 2013	0.00	0.00	377,403.81	8,231.29	377,403.81	8,231.29
February	0.00	0.00	153,004.44	52,892.11	153,004.44	52,892.11
March	0.00	0.00	360,435.56	112.35	360,435.56	112.35

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Costa Sur Power Plant
Fuel Consumption
BBLs¹

Month	Unit 5		Unit 6		Total Units 5 & 6	
	Natural Gas	Residual FO No. 6	Natural Gas	Residual FO No. 6	Natural Gas	Residual FO No. 6
April	0.00	0.00	358,707.78	30,381.28	358,707.78	30,381.28
May	419.21	0.00	371,957.30	6,658.02	372,376.51	6,658.02
June	1,958.45	0.00	408,617.26	0.00	410,575.71	0.00
FY 2013	957,396.96	879,055.74	3,075,169.17	181,006.41	4,032,566.13	1,060,062.15
July	238,913.30	83,514.17	254,221.62	123,380.63	493,134.92	206,894.80
August	209,590.22	95,580.32	258,867.88	127,177.60	468,458.10	222,757.92
September	200,878.30	70,530.49	256,892.97	76,826.84	457,771.27	147,357.33
October	284,278.32	112,318.00	270,337.08	133,136.00	554,615.40	245,454.00
November	268,850.42	97,344.00	224,653.71	137,974.00	493,504.13	235,318.00
December	284,693.73	73,911.00	242,162.94	105,349.05	526,856.67	179,260.05
January 2014	192,811.71	185,163.00	179,157.18	189,498.00	371,968.89	374,661.00
February	230,504.85	121,458.00	217,177.69	121,342.00	447,682.54	242,800.00
March	290,809.45	111,672.20	214,130.23	133,273.69	504,939.68	244,945.89
April	324,327.09	73,550.30	0.00	0.00	324,327.09	73,550.30
May	369,225.69	52,161.00	43,278.28	14,250.00	412,503.97	66,411.00
June	182,224.48	79,849.00	279,909.01	90,711.00	462,133.49	170,560.00
FY 2014	3,077,107.56	1,157,051.48	2,440,788.58	1,252,918.81	5,517,896.14	2,409,970.29
July	273,157.63	126,431.00	222,785.23	166,191.00	495,942.86	292,622.00
August	322,737.64	75,992.00	190,338.86	95,580.27	513,076.51	171,572.27
September	261,402.32	115,894.20	182,978.63	114,488.10	444,380.95	230,382.30
October	285,710.98	120,202.00	268,866.16	136,360.00	554,577.14	256,562.00
November	116,478.79	53,271.00	260,236.92	108,812.00	376,715.71	162,083.00
December	0.00	0.00	257,935.87	83,862.44	257,935.87	83,862.44
January 2015	0.00	0.00	295,190.63	78,683.30	295,190.63	78,683.30
February	149,613.46	148,754.00	195,581.30	115,675.00	345,194.76	264,429.00
March	233,126.17	122,100.39	235,415.42	113,777.08	468,541.59	235,877.47

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Costa Sur Power Plant
Fuel Consumption
BBLs¹

Month	Unit 5		Unit 6		Total Units 5 & 6	
	Natural Gas	Residual FO No. 6	Natural Gas	Residual FO No. 6	Natural Gas	Residual FO No. 6
April	236,107.21	147,993.00	278,778.98	103,253.42	514,886.19	251,246.42
May	222,715.93	149,351.00	284,323.91	93,610.15	507,039.84	242,961.15
June	194,183.98	170,809.00	276,479.67	109,081.00	470,663.65	279,890.00
FY 2015	2,295,234.11	1,230,797.59	2,948,911.59	1,319,373.76	5,244,145.71	2,550,171.35
July	202,542.82	158,515.00	295,689.09	109,906.00	498,231.90	268,421.00
August	220,898.74	150,545.06	278,656.97	108,438.51	499,555.71	258,983.57
September	223,513.37	139,637.88	264,321.71	98,258.73	487,835.08	237,896.61
October	250,223.64	185,554.34	299,340.17	80,055.90	549,563.81	265,610.24
November	229,465.86	104,869.06	270,114.62	69,211.63	499,580.48	174,080.69
December	365,796.02	57,321.34	0.00	0.00	365,796.02	57,321.34
January 2016	322,825.11	70,602.15	131,785.05	39,329.97	454,610.16	109,932.12
February	246,977.29	120,498.69	215,972.40	97,860.56	462,949.68	218,359.25
March	258,824.44	135,244.02	230,393.33	112,952.13	489,217.78	248,196.15
April	281,823.29	107,172.61	267,689.89	75,822.61	549,513.17	182,995.22
May	280,742.19	119,425.17	283,934.32	88,347.87	564,676.51	207,773.04
June	289,999.27	117,411.05	176,879.78	80,135.61	466,879.05	197,546.66
FY 2016	3,173,632.03	1,466,796.37	2,714,777.33	960,319.52	5,888,409.35	2,427,115.89
July	433,382.95	1,340.15	9,481.18	1,057.21	442,864.13	2,397.36
August	300,849.07	115,307.54	232,843.15	64,622.12	533,692.22	179,929.66
September	177,603.16	91,156.45	269,245.41	55,459.88	446,848.57	146,616.33

¹ A factor of 6.3 MMBTU/BBL was used to obtain the equivalent barrels of natural gas.

e.

- i. The following table provides the expenditures estimated for natural gas in Costa Sur in the fuel budgets prepared annually for fiscal years 2010 through 2016.

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Fuel Budgets for Natural Gas Expenditures at Costa Sur units 5 and 6

FISCAL YEAR	2010	2011	2012	2013	2014	2015
JUL	-	-	-	\$17,348,412	\$44,769,174	\$47,207,590
AUG	-	-	-	\$23,680,704	\$44,457,514	\$47,395,356
SEP	-	-	-	\$22,917,746	\$42,482,466	\$46,055,934
OCT	-	-	\$35,747,601	\$24,114,976	\$44,176,506	\$47,347,716
NOV	-	-	\$34,571,700	\$23,338,025	\$41,832,732	\$47,517,914
DEC	-	-	\$35,724,096	\$17,806,308	\$40,054,032	\$25,723,643
JAN	-	-	\$36,121,934	\$17,267,386	\$43,546,506	\$48,445,214
FEB	-	-	\$33,791,849	\$16,380,466	\$36,259,248	\$41,726,206
MAR	-	-	\$33,095,697	\$35,211,416	\$21,982,663	\$50,663,480
APR	-	-	\$30,009,416	\$43,532,350	\$39,993,990	\$47,446,164
MAY	-	-	\$23,561,504	\$44,982,394	\$24,466,141	\$31,833,838
JUN	-	-	\$22,264,546	\$43,532,344	\$43,612,688	\$46,109,108
TOTAL	-	-	\$284,888,343	\$330,112,526	\$467,633,660	\$527,472,163