**GOVERNMENT OF PUERTO RICO**
**PUERTO RICO PUBLIC SERVICE REGULATORY BOARD**
**PUERTO RICO ENERGY BUREAU**

| **IN RE:** | **CASE NO. NEPR-MI-2020-0001** |
|---|---|
| IN RE: PUERTO RICO ELECTRIC POWER AUTHORITY PERMANENT RATE | **SUBJECT: Response to PREPA's "*Moción para Aclarar Asuntos Sobre Procesos de Proyección, Compra de Gas y Despacho de las Unidades de San Juan 5 y 6"*** |

**RESPONSE TO PREPA'S *MOCIÓN PARA ACLARAR ASUNTOS SOBRE PROCESOS DE PROYECCIÓN, COMPRA DE GAS Y DESPACHO DE LAS UNIDADES DE SAN JUAN 5 Y 6***

**TO THE PUERTO RICO ENERGY BUREAU:**

**COME NOW LUMA Energy, LLC** ("ManagementCo"), and **LUMA Energy Servco, LLC** ("ServCo"), (jointly referred to as the "Operator" or "LUMA"), through the undersigned counsel, and respectfully state and request the following:

1. On March 15, 2023, LUMA filed before the Puerto Rico Energy Bureau ("Energy Bureau") a *Submission of Reconciliations for December 2022 and, January and February 2023, and FCA, PPCA and FOS Calculated Factors and Request for Confidential Treatment* ("March 15th Submission"). LUMA submitted the quarterly reconciliations for the Fuel Charge Adjustment ("FCA") and Purchased Power Charge Adjustment ("PPCA") riders for September 2022 through February 2023 and the proposed factors for the FCA, PPCA, and Fuel Oil Subsidy ("FOS") riders to be in effect for the period from April 1, 2023, to June 30, 2023. As part of the filing, LUMA included Excel spreadsheets filed publicly and confidential Excel spreadsheets with formulae intact.

2. On March 23, 2023, the Energy Bureau issued a Resolution and Order ("March 23 Order") instructing the Puerto Rico Electric Power Authority ("PREPA"), through LUMA, to submit on or before March 28, 2023, at 3 p.m., a report of the status of the claims made to the

Federal Emergency Management Agency ("FEMA") and/or insurance companies due to the damages sustained as a consequence of Hurricane Fiona. Furthermore, the Energy Bureau ordered PREPA, through LUMA, to present the necessary information to validate the amount of $5,977,764.63 for PREPA's alleged excess natural gas nominations and the corresponding credits to July and August 2022. Lastly, the Energy Bureau scheduled a Technical Conference for March 29, 2023, to discuss the March 15th Submission.

3. On March 28, 2023, LUMA filed a motion to comply with the March 23 Order.[1] Therein, LUMA submitted to the Energy Bureau the information requested to PREPA in the March 23 Order. The information provided included a status report of the claims made due to the damages sustained due to Hurricane Fiona and information to validate the amount of $5,977,764.63 for PREPA's alleged excess natural gas nominations and the corresponding credits to July and August 2022.

4. During the Technical Conference, a discussion arose in which the Energy Bureau requested PREPA the provenance of the amounts for PREPA's excess gas nominations for San Juan Units 5 and 6, which are generating units owned and operated by PREPA. PREPA stated that the gas nominations comply with the contractual terms of the agreement with New Fortress Energy ("NFE") based on forecasts and/or projections.

5. On March 30, 2023, PREPA filed a *Moción para Aclarar Asuntos Sobre Procesos de Proyección, Compra de Gas y Despacho de las Unidades de San Juan 5 y 6* ("March 30 Motion"). Therein, PREPA stated that the amount of fuel it purchases results from the energy consumption projections that LUMA reports to them. PREPA also claimed that the Binding

[1] See "*Motion in Compliance with Resolution and Order of March 23, 2023"* filed by LUMA on March 28, 2023.

Monthly Schedule is established using LUMA's forecast and demand projections and that, ultimately, LUMA is responsible for the gas nomination process.

6. LUMA strongly disagrees with the portrayal PREPA made of LUMA's role in the gas nominations process in the March 30th Motion. LUMA has no responsibility for the supply, purchase, administration, or management of fuel for power generation. Each generator is responsible for this work, and in the case of PREPA's generation facilities, PREPA is currently responsible for these activities.[2] PREPA has a fuel supply contract with New Fortress Energy LLC (NFE) for the supply of natural gas to the San Juan generation facility (the "Supply Contract"). As PREPA states in its March 30th Motion, usage, delivery, and consumption of natural gas is established under the Supply Contract through the binding monthly schedule.

7. LUMA wants to make sure that the record correctly reflects the facts. First, LUMA is not a party to the Supply Contract. Second, LUMA does not act as an agent on behalf of PREPA in the Supply Contract. Third, contractually under the T&D OMA, LUMA is not responsible for procurement, supply, management, handling administration, or any other aspect of fuel supply to PREPA's generation plants. Fourth, LUMA provides forecasted values quarterly in this instant proceeding, but these values are separate from PREPA's gas nomination process. Using the PROMOD software, LUMA forecasts values for the calculation of FCA and the PPCA factors, which are presented to the Energy Bureau on a quarterly basis. PREPA's gas nominations are calculated and delivered solely by PREPA to NFE. As confirmed in PREPA's written

[2] Note that under the Puerto Rico Thermal Generation Facilities Operation And Maintenance Agreement dated as of January 24, 2023, Genera as Operator will have responsibility for fuel management after it starts operations.

correspondence with LUMA whereby, PREPA uses the PCS Software to make PREPA's calculations. LUMA granted PREPA access as requested by PREPA.

8. In addition, the Binding Monthly Schedule is the process that establishes the usage, delivery, and consumption of natural gas as established in the contract terms between PREPA and NFE. Thus, LUMA has no participation in the Binding Monthly Schedule process.

9. A detailed explanation of the aforementioned arguments and the data on PREPA's actual performance of the San Juan Combine Cycle (SJCC) facility that directly contradicts PREPA's incorrect statement is included in Exhibit 1 to this Motion. LUMA intends with this submission to clarify for the record that PREPA is fully and solely responsible for the gas nomination process.

10. For the benefit of the public in general, LUMA has also included with this Motion Exhibit 1-A, a Spanish translation of the detailed explanation provided in Exhibit 1. However, it should be noted that for this filing purposes, the English version is controlling if a discrepancy arises between the two documents.

**WHEREFORE,** LUMA respectfully requests that the Energy Bureau **take notice** of the aforementioned.

**RESPECTFULLY SUBMITTED.**

We hereby certify that we filed this Motion using the electronic filing system of this Energy Bureau and that we will send an electronic copy of this Motion to counsel for PREPA Joannely Marrero, jmarrero@diazvaz.law, and to the Independent Consumer Protection Office, through Director Hannia Rivera, hrivera@oipc.pr.com.

In San Juan, Puerto Rico, on this 5th day of May 2023.

**DLA Piper (Puerto Rico) LLC**
500 Calle de la Tanca, Suite 401
San Juan, PR 00901-1969
Tel. 787-945-9132
Fax 939-697-6102

*/s/ Yahaira De la Rosa Algarín*
Yahaira De la Rosa Algarín
RUA NÚM. 18,061
yahaira.delarosa@us.dlapiper.com

*EXHIBIT 1*

# Exhibit 1

## 1.0 Response

On March 30, 2023, the Puerto Rico Electric Power Authority (PREPA) filed with the Puerto Rico Energy Bureau (PREB) a motion titled *"Moción para Aclarar Asuntos Sobre Procesos de Proyección, Compra de Gas y Despacho de las Unidades de San Juan 5 y 6"*[1] (March 30th Motion), in which PREPA made erroneous statements and claims regarding LUMA's role in PREPA's gas nominations. LUMA takes its responsibilities under the Puerto Rico Transmission and Distribution Operations & Maintenance Agreement effective June 22, 2020 (T&D OMA) and other obligations under law and regulation seriously. It is important that the record be clear regarding PREPA's misstatements in its March 30th Motion.

To be clear, under the T&D OMA, LUMA has no responsibility for the supply, purchase, administration, or management of fuel for power generation. Each generator is responsible for this work, and in the case of PREPA's generation facilities, PREPA is currently responsible for these activities.[2] PREPA has a fuel supply contract with New Fortress Energy LLC (NFE) for the supply of natural gas to the San Juan generation facility (the "Supply Contract"). As PREPA states in its March 30th Motion, usage, delivery, and consumption of natural gas is established under the Supply Contract through the binding monthly schedule. LUMA is not a party to the Supply Contract and has no participation in this process.

In the March 30th Motion, PREPA states that *"the amount of fuel that the Authority purchases is the result of the energy consumption projections that LUMA reports to the Authority."*[3] PREPA claims that the Binding Monthly Schedule[4] is established using forecast and demand projections prepared by LUMA.[5] This is not only incorrect but also incorrectly insinuates that LUMA is responsible for the gas nominations process. LUMA takes the outage schedules and availabilities provided by PREPA to prepare a projection. To calculate the nomination amount, any prudent fuel purchaser should consider items such as the economic impact of over or under-nominating, the likelihood their projected availabilities will continue, the inventory levels in the existing tanks, and several other factors to calculate the nomination amounts.

PREPA's attempt to shift responsibility for its own actions to LUMA is not supported by the facts. The current processes used by PREPA for PREPA's gas nominations are separate from the fuel use estimates performed by LUMA. LUMA has no responsibility for PREPA's fuel nominations for the San Juan Combine Cycle (SJCC). Furthermore, actual operating data clearly shows that PREPA operational issues, such as operating limitations, longer outages than scheduled, actual availability below PREPA's commitment, and use of diesel instead of natural gas, are the main factors for PREPA's actual natural gas consumption being below forecasted levels.

[1] *See* PREPA March 30th Motion, Docket No. NEPR-MI-2020-0001.
[2] Note that under the Puerto Rico Thermal Generation Facilities Operation And Maintenance Agreement dated as of January 24, 2023 Genera as Operator will have responsibility for fuel management after it starts operations.
[3] *See* page 1 of PREPA March 30th Motion (Spanish language), Docket No. NEPR-MI-2020-0001.
[4] As describe on page 3-4 of March 30th Motion, Docket No. NEPR-MI-2020-0001, the Binding Monthly Schedule according to article 7.4(a)(iv) of [use name of contract] contract between NFEnergia LLC and PREPA, establishes that before the fifth (5) day of each calendar month, PREPA must send its natural gas requirement along with the scheduled dispatch for the next three (3) months or 90 days; this is known as Ninety-Day Schedule (NDS). Once NFEnergia accepts the NDS for months M, M+1, and M+2, it becomes the Binding Monthly Schedule. As described, the Binding Monthly Schedule establishes the monthly quantities of natural gas that NFEnergia has to sell to PREPA and the delivery and consumption schedule for each of the following three (3) months for daily natural gas requirements and the planned dispatch for the month M.
[5] *See* page 5 of PREPA March 30th Motion, Docket No. NEPR-MI-2020-0001.

# Exhibit 1

**Projections of Fuel Expenditures Estimated by LUMA**

LUMA estimates projected fuel expenditures on a quarterly basis in Docket NEPR-MI-2020-0001 (Permanent Rate) (and files them publicly in June, September, and December). These estimates are irrelevant to PREPA's gas nomination process. They are solely used by LUMA as inputs for the calculation of the Fuel Charge Adjustment (FCA) and the Purchase Power Charge Adjustment (PPCA) factors presented to PREB on a quarterly basis. The forecast fuel and purchased power expenditures for the upcoming three months are added to any prior period adjustments to calculate the net amount to be collected from ratepayers. This net amount is divided by the estimated kWh to be sold in the coming quarter to calculate the FCA and PPCA factors (on a $/kWh basis) added to the riders to recover these costs from customers over the coming quarter.

The LUMA Regulatory Team coordinates inputs from several LUMA Departments and PREPA Generation to develop the quarterly fuel forecast. This work is currently done using PROMOD, an integrated electric generation and transmission simulation software system widely used in the electric utility industry. The sequence of events is as follows:

1. LUMA's Regulatory Team updates the existing 12-month forecast for the upcoming quarter based on recent trends and seasonal factors.
2. PREPA provides LUMA's Systems Operations Team daily MW availability for each plant based on actual availability reported from the different generating units. Thus, the most recent estimate, as provided by PREPA, is the source of the reported availability, which is generally noticeably less than nameplate capacity.
3. PREPA reviews the approved maintenance outage schedules with LUMA's System Operations Team and makes any required changes to reflect their maintenance requirements for the next 12 months.
4. PREPA provides LUMA with the fuel price forecast for the upcoming quarter.
5. LUMA's Regulatory team updates all assumptions for plant availability, planned and forced outages, as well as other plant attributes and prepares the initial PROMOD Dispatch scenario, which calculates expected generation to satisfy expected demand for each hour, for each plant, for the upcoming quarter. PROMOD calculates fuel costs based on the forecasted generation using the inputs for plant efficiency and fuel costs.
6. LUMA's Regulatory team reviews the output of the initial PROMOD dispatch simulation with LUMA's Systems Operations team and PREPA Generation to review available hourly reserves and collectively make any changes to outage schedules or plant availabilities to reduce periods with inadequate reserves. Sometimes several PROMOD dispatch simulations are run to consider alternative outage schedule scenarios.
7. LUMA's Regulatory team takes the final assumptions (provided by PREPA Generation and approved by (LUMA's System Operations) and runs the final PROMOD dispatch scenario, which calculates expected generation and fuel consumption values which are then loaded into the "Reconciliation File" which is submitted to PREB and contains the proposed FCA and PPCA factors to be used for the upcoming quarter.

**Economic Dispatch Program Software**

As detailed above, LUMA's PROMOD runs consist of three (3) main inputs, two (2) of which are provided to LUMA by PREPA. The gas nomination process is performed and presented solely by PREPA using the

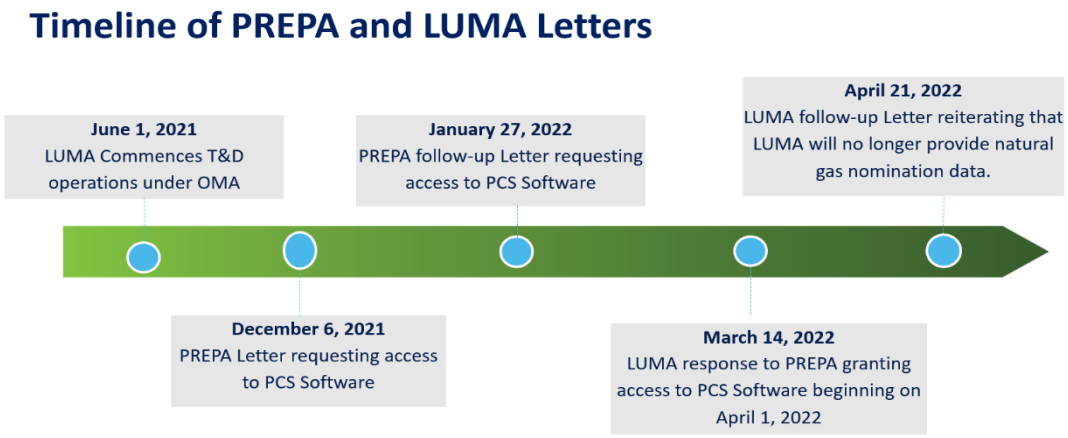
# Exhibit 1

Economic Dispatch Program Software (PCS), which LUMA granted PREPA access to, as requested by PREPA in letters to LUMA[6], not PROMOD, which is what LUMA uses to project load dispatch.

In its January 27, 2022, letter, PREPA requested LUMA grant PREPA access to the PCS software stating that "*The Generation personnel uses this software to determine fuel nominations in its power plants and, when performing this task, they need to conduct several simulations of different scenarios in order to determine fuel nominations and other parameters related mostly to environmental compliance.*"[7] PREPA further stated that "*Having access to the PCS software allows Generation to determine fuel nominations in its power plants, improving the accuracy and precision of the generating units' fuel consumption. In addition, it allows PREPA to determine parameters required for environmental compliance. Achieving these improvements and regulatory compliance represents a direct benefit to the customers supporting a reliable, safe, and affordable electricity service.*"[8]

On March 14, 2022, LUMA issued a response to PREPA's January 27, 2022, a letter granting PREPA access to the PCS software starting on April 1, 2022, and informing PREPA that once it receives the PCS software, LUMA will cease providing any monthly nomination data stating, "*Once PREPA has access to PCS, PREPA will have the information necessary to begin independently determining monthly fuel nominations. As such, LUMA will continue to provide the quarterly system dispatch forecast data as input into these calculations but will stop providing monthly fuel nomination data after PREPA gains access to PCS.*"[9]

On April 21, 2022, LUMA issued a follow-up letter in which it notified PREPA that LUMA would no longer provide gas nominations to PREPA, stating, "*In the time since the original letter was sent to PREPA on March 14, 2022, LUMA provided PREPA the PCS computer and associated login and password on April 1, 2022. LUMA has in turn, not provided the natural gas nominations on the 5th of the month, as was outlined in the original letter to PREPA. LUMA has fulfilled all requirements for access to PCS and will no longer provide natural gas nominations to PREPA. This matter will be considered closed unless PREPA gives a response to this letter by April 28, 2022.*"[10]




[6] *See* Annex A_PREPA December 6, 2021, Letter.pdf and Annex B_PREPA January 27, 2022, Letter.pdf included in this filing.
[7] *See* Annex B_PREPA January 27, 2022, Letter.pdf included in this filing.
[8] *See* Annex B_PREPA January 27, 2022, Letter.pdf included in this filing.
[9] *See* Annex C_LUMA March 14, 2022, Letter included in this filing.
[10] *See* Annex C_LUMA March 14, 2022, Letter included in this filing.

# Exhibit 1

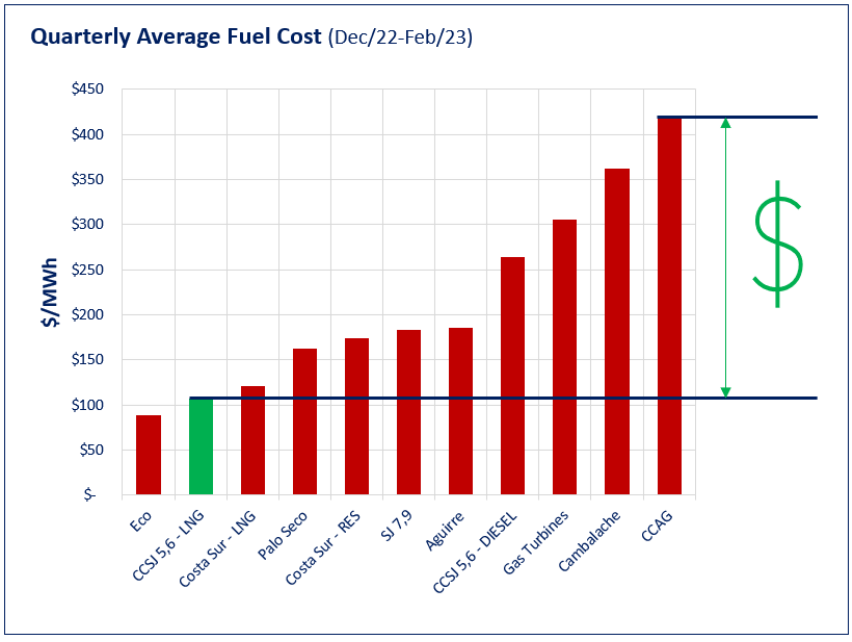
The PCS Software used by PREPA allows for more accurate forecasts because, unlike LUMA's FCA-PPCA calculation process that only allows LUMA variable inputs to PROMOD to be adjusted every three months, the gas nomination process grants PREPA the ability to adjust inputs every month, including unit availability, which especially impacts gas usage forecast.

It is unclear why PREPA made claims in its March 30th Motion contrary to the documented responsibility for gas nominations. LUMA wants to clearly state on the record that PREPA's claims that LUMA determines gas nominations are false and the documented process for FCA/PPCA calculation and for gas nominations clearly contradicts PREPA's allegations. LUMA uses PROMOD to calculate the FCA and PPCA factors and PREPA utilizes the PCS software to prepare PREPA's gas nomination.

**San Juan Combined Cycle Performance**

In its March 30th Motion, PREPA referenced several dispatch "issues" at San Juan Combined Cycle (SJCC) such as changes in load forecast, evaporation of LNG, and other factors, insinuating that LUMA, as System Operator dispatching SJCC, contributed to PREPA's erroneous gas amount nominations by not dispatching SJCC[11]. LUMA was surprised by PREPA's false statements, when in fact, none of the factors mentioned by PREPA in its March 30th Motion has any impact on SJCC dispatch. SJCC is currently the lowest cost PREPA unit on the System, as seen in Figure 1 below, and following least cost economic merit order dispatch process System Operations attempts to maximize its production. However, System Operations is unable to dispatch SJCC more frequently because of its constant operational limitations. SJCC dispatch (and total energy production) is limited by its actual performance on unit availability. Plant availability, as with all plant operations, are solely PREPA's responsibility.

***Figure 1*** *– Quarterly Average Fuel Cost*




[11] *See* page 6-7 of PREPA March 30th Motion (Spanish language), Docket No. NEPR-MI-2020-0001

# Exhibit 1

## Near-Term Plant Operational Limitations

Near-term plant operational limitations (SJCC achieving availability below its own forecast) are the reason PREPA did not consume its nominated values.

As previously stated, PREPA informs LUMA's Systems Operations team every day what current limitations exist for each unit. Approximately two weeks, or more, before the FCA-PPCA PROMOD simulation is to be conducted, LUMA confirms with PREPA the availabilities reported for each plant and inquires if there are any new availability limits that should be reflected in the analysis. However, PREPA plants have typically performed at availability levels that are lower than what PREPA commits to in the FCA and PPCA process. The record for the differences in electric production and fuel consumption compared to what PREPA commits to, which is depicted in Figure 2 below, clearly shows that operational limitations have caused SJCC to operate at less than promised availability for each of the past 5 quarters.

***Figure 2** - Difference in Electric Production and Fuel Consumption vs. PREPA Commitment*

| Quarter | Generation %Δ | | Fuel Consumption %Δ | | Comments extracted from Daily Availability Reports / System Operations |
|---|---|---|---|---|---|
| | % | MWh | % | MMBtu | |
| Q3-2021 | **+8%** | (60,065) | **17%** | (915,524) | |
| Q4-2021 | **+13%** | (69,519) | **33%** | (1,349,504) | Deliverability issues from NFE Starting 10/2021, Consuming 100% Diesel |
| Q1-2022 | **-13%** | (522,729) | **-2%** | (67,184) | "Exhaust Gas Temp", and "Broken Rotor" among operational issues that caused limitations on SJCC 6 STM. Almost all quarter consuming 100% Diesel. |
| Q2-2022 | **-8%** | (27,596) | **15%** | (392,503) | SJCC 6 STM offline 2/3 of quarter due to "Problema con valvulas de control atascadas". |
| Q3-2022 | **-4%** | (27,771) | **7%** | 348,911 | Unit 5 limitations due to "Alta temperatura en Rotor, Air cooler y Exhaust" after coming online from Major Maintenance. SJCC5 STM not available since Fiona. |
| Q4-2022 | **-23%** | (122,401) | **-2%** | (92,004) | SJCC 5 Steam Turbine offline most of the quarter due to "Turbina averaida". December consuming 100% Diesel due to longer-than-expected NFE terminal maintenance on NFE. |
| Q1-2023 | **-15%** | (109,460) | **-15%** | (562,659) | Operational issues that resulted in limitations and forced outages include: "Pérdida de Sistema Servo-Hidráulico", "Baja eficiencia Recuperador", "Bajo Vacío", and "Avería en armadura de exitadora". |

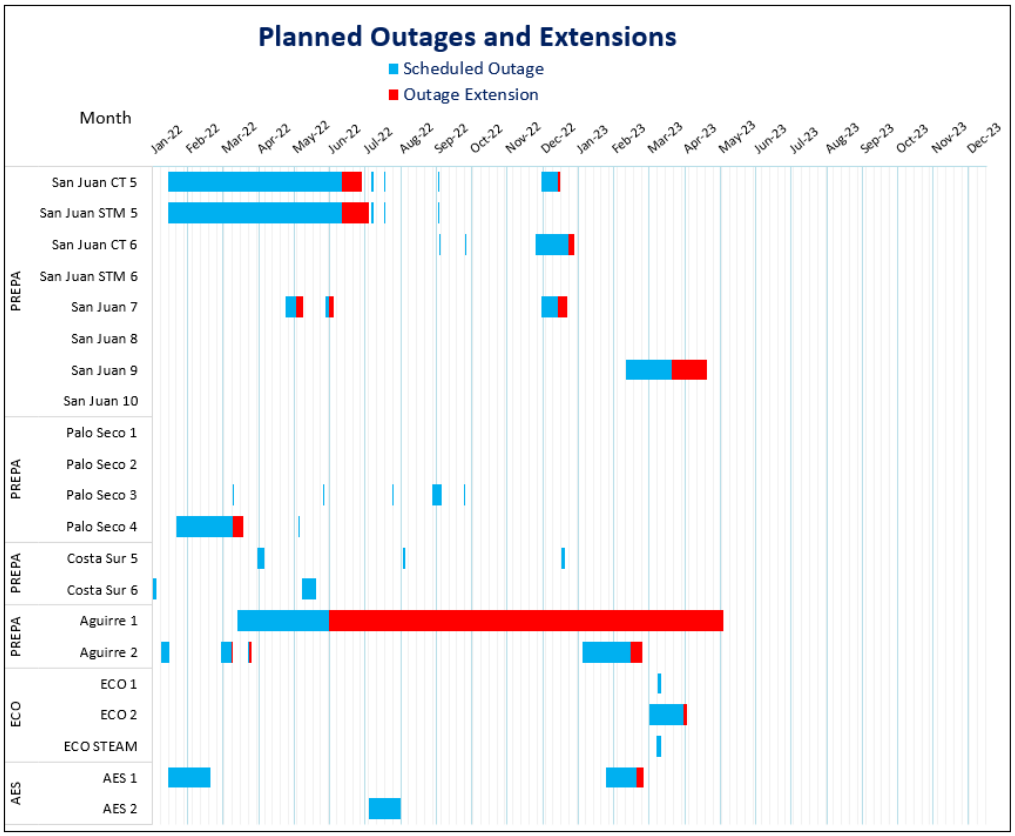
# Exhibit 1

## Planned Outage Schedule

LUMA's System Operations team coordinates with PREPA, and other generators, typically using a two-year outage planning horizon, which results in an "approved planned outage schedule", that is maintained by LUMA's Systems Operations team. However, it is important to note that PREPA is solely responsible for its planned outage schedule.

LUMA suspects that PREPA's outage planning, scope control, and work management are underdeveloped, given that over the past 27 months PREPA forecasted approximately 29,000 hours for planned outages that ended up requiring 49,000 hours to complete, a 70% variance from what was expected. Figure 3 below depicts the schedule performance for all planned outages since LUMA' began operations (June 1, 2021). The blue on the bars represents the original schedule for these planned outages and the red on the bars represents the overrun.

***Figure 3*** *– Planned Outages vs. Actual Outages with Extensions*



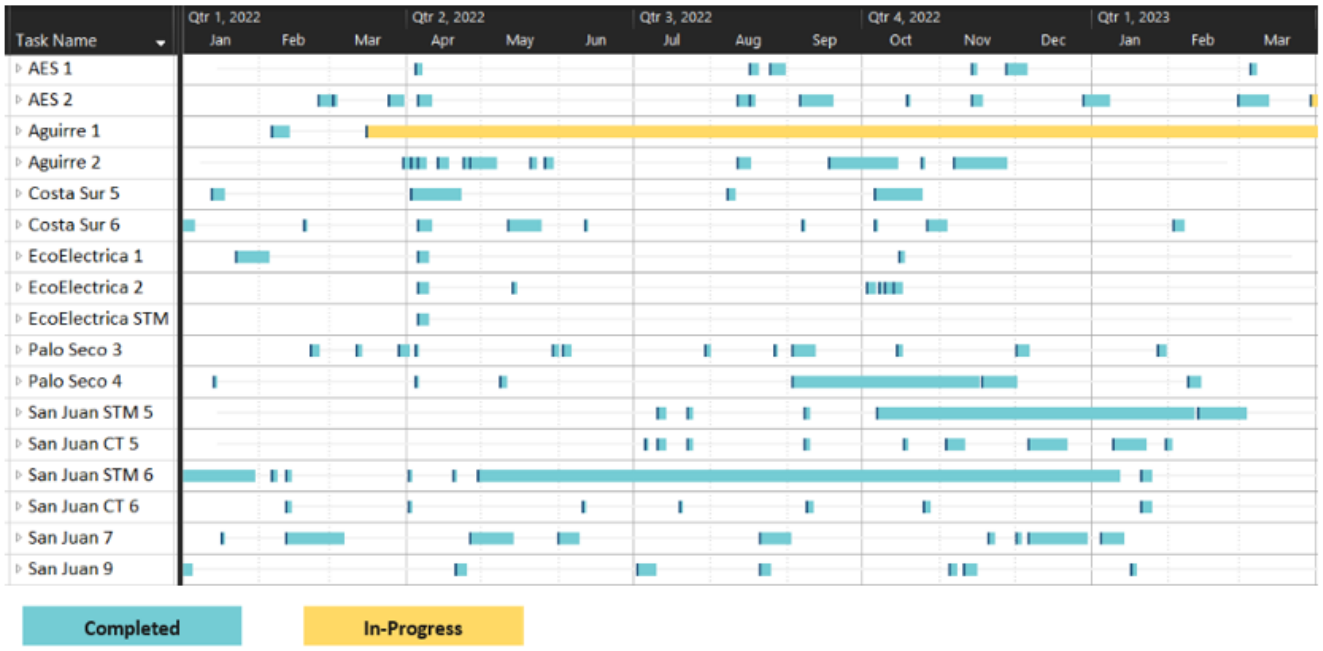
# Exhibit 1

## Forced Outage Rates

Forced outage rates vary considerably from plant to plant and month to month. Forced outage rates for baseload plants averaged approximately 25% over the past 30 months.

Prior to the FCA-PPCA PROMOD analysis, LUMA reviews forced outage rate trends and projections with PREPA as well as reviews the impact of these forced outage rate assumptions on the preliminary PROMOD output. Figure 4 below depicts the forced outage rate history commencement for all plants.

***Figure 4*** *- Forced Outage Rate History*



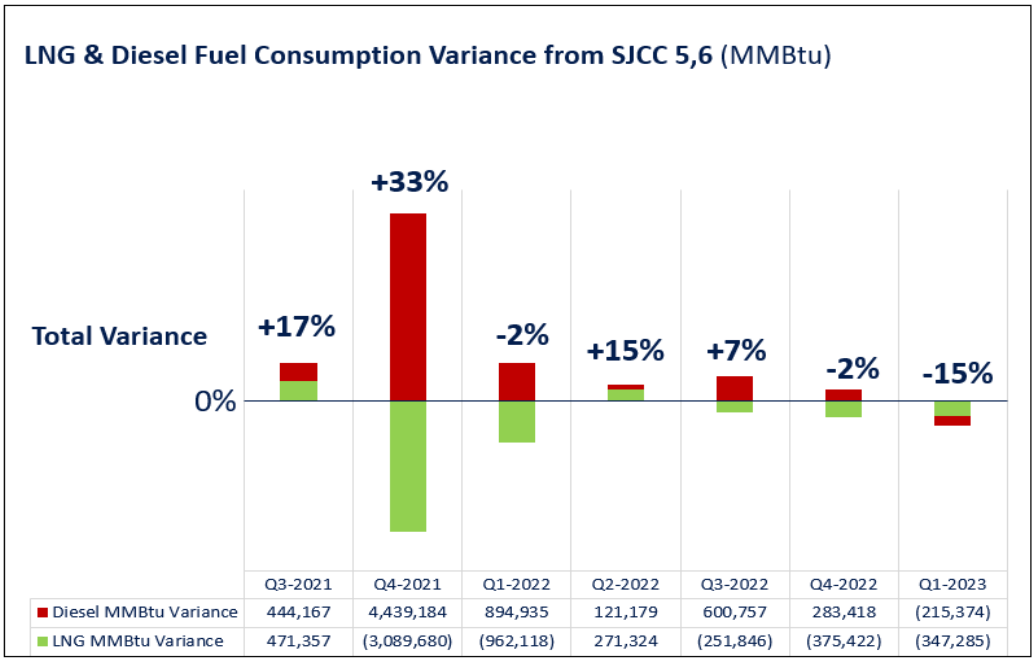

*Graph does not show outages with a duration shorter than 24 hours, which occurred between the hours of 9am – 7am.

## SJCC Use of Diesel Fuel Instead of Natural Gas

Due to reported operational reasons, PREPA has been unable to always operate SJCC with natural gas. At these times when natural gas is not available, PREPA Generation switches over to use more expensive diesel fuel. This significantly increases the production cost but also reduces the volumes of natural gas consumed. These natural gas supply issues experienced at SJCC have forced it to use more diesel fuel than was forecasted, which is a significant driver in its failure to consume nominated natural gas volumes. Figure 5 below illustrates the trade-off between Diesel and Natural Gas. The bar indicates the percentage above (positive) or below expected fuel consumption at SJCC based on PREPA's committed availability. Red bars show actual diesel fuel used above forecast. The green bars show amounts of actual natural gas consumed below forecast. The substitution of diesel for forecasted natural gas is a significant factor in actual natural gas consumption being below forecast.

# Exhibit 1

***Figure 5*** *– Natural Gas vs. Diesel*




| | Q3-2021 | Q4-2021 | Q1-2022 | Q2-2022 | Q3-2022 | Q4-2022 | Q1-2023 |
|---|---|---|---|---|---|---|---|
| Diesel MMBtu Variance | 444,167 | 4,439,184 | 894,935 | 121,179 | 600,757 | 283,418 | (215,374) |
| LNG MMBtu Variance | 471,357 | (3,089,680) | (962,118) | 271,324 | (251,846) | (375,422) | (347,285) |

GOBIERNO DE PUERTO RICO
AUTORIDAD DE ENERGÍA ELÉCTRICA

6 de diciembre de 2021

Salvador Serrano Menéndez
Gerente
Energy Management

Jorge L. Cotto Pérez
Director, Interino, Generación

ACCESO

Solicito el acceso al Programa de Despacho Económico conocido "PCS" que actualmente esta en el Centro de Control Energético en Monacillos.

Este acceso a este programa es vital en el Directorado de Generación para llevar a cabo las nominaciones de combustibles en las distintas centrales generatrices. El contar con acceso a este programa nos permitirá ser más precisos en las nominaciones, en particular para las Centrales de San Juan y Costa Sur, incluyendo EcoEléctrica en el consumo de gas natural que actualmente no se están realizando. También se utiliza para realizar evaluaciones de pronósticos y alternativas de generación entre otros.

De necesitar información adicional pueden comunicarse con nosotros por el 1230 o 0313.

GOVERNMENT OF PUERTO RICO
PUERTO RICO ELECTRIC POWER AUTHORITY

January 27, 2022

VIA EMAIL
wayne.stensby@lumamc.com
wayne.stensby@lumapr.com

Mr. Wayne Stensby
President and Chief Executive Officer
LUMA Energy
San Juan, Puerto Rico

Dear Mr. Stensby:

Hereby, we request access to the software Economic Dispatch Program, also known as PCS. This software's license is owned by the Puerto Rico Electric Power Authority (PREPA) and is now managed by LUMA Energy (LUMA). During the past month, the Generation Director, engineer Jorge Cotto Pérez, sent a request for this software to LUMA's System Operations area. Attached, please find copy of engineer Cotto's letter. The response received to engineer Cotto's request was for PREPA to request each simulation to System Operations and that this area would perform the requested simulation.

The proposal from System Operations is not feasible, mainly because of the kind of use that PREPA's Generation Directorate (Generation) gives to the PCS software. The Generation personnel uses this software to determine fuel nominations in its power plants and, when performing this task, they need to conduct several simulations of different scenarios in order to determine fuel nominations and other parameters related mostly to environmental compliance. It is obvious that it would be burdensome for LUMA's personnel to conduct all the simulations that Generation needs. On the other hand, it is very likely that the Generation personnel will not be able to have the results they need on a timely manner. As System Operations' priorities will necessarily be more important than performing simulations for PREPA.

Having access to the PCS software allows Generation to determine fuel nominations in its power plants, improving the accuracy and precision of the generating units' fuel consumption. In addition, it allows PREPA to determine parameters required for environmental compliance. Achieving these improvements and regulatory compliance represents a direct benefit to the customers supporting a reliable, safe, and affordable electricity service.

Considering the aforementioned reasons, of which the most important is that PREPA is the owner of the PCS software, we request LUMA to provide to engineer Cotto and his staff access to this software.

We appreciate your prompt response to our request.

Cordially,

Josué A. Colón-Ortiz
Executive Director

Annexes

Transmittal # LUMA-PREP-T-00192

March 14, 2022

**To: Puerto Rico Electric Power Authority (PREPA)**
Attention: Anthony Vega
Director de Servicios Administrativos
PO BOX 364267
San Juan, Puerto Rico 00936-4267

**Re: PREPA Request to Access Economic Dispatch Program (PCS)**

In response to the letter from PREPA received by LUMA on January 27, 2022 requesting access to the Economic Dispatch Program software known as PCS and in alignment with Section 13.1(e) of **Transmission and Distribution Operating and Maintenance Agreement ("T&D OMA") executed on June 22, 2020 among the Puerto Rico Electric Power Authority ("PREPA"), the Puerto Rico Public-Private Partnerships Authority ("P3A") and LUMA Energy, LLC and LUMA Energy ServCo, LLC (collectively, "LUMA"),** which states that LUMA has a nonexclusive and limited license to Owner Licensed Intellectual Property, LUMA confirms that PREPA shall be granted access to PCS so that PREPA can conduct simulations to determine fuel nominations and other parameters related to environmental compliance.

LUMA is prepared to grant PREPA access to PCS on or before April 1, 2022. As PREPA is aware, LUMA has a single license for PL/I, which is required for the use of PCS. Once LUMA hands PCS over to PREPA, LUMA will no longer have access to PCS.

LUMA is willing to provide technical support to PREPA personnel for the next fuel nomination cycle following the handover of the software. As part of the transfer process, LUMA will provide the login and password information to PREPA's recipient.

Once PREPA has access to PCS, PREPA will have the information necessary to begin independently determining monthly fuel nominations. As such, LUMA will continue to provide the quarterly system dispatch forecast data as input into these calculations but will stop providing monthly fuel nomination data after PREPA gains access to PCS.

Additionally, LUMA would like confirmation from PREPA that it does not intend to use PCS model for any System Operator activities. As per Section I.C. of the Scope of Services within Annex I of the T&D OMA, LUMA serves the role of System Operator, including:

- managing control center operations, including generation scheduling and economic / reliable T&D System dispatch,
- balancing the supply and demand of electricity, including reacting to changes in demand in real time, adjusting generation dispatch to be in balance with demand and maintaining the T&D System at safe operating levels in accordance with Prudent Utility Practices and System Operation Principles,
- conduct T&D System planning activities, develop and implement reliability standards appropriate for the conditions in Puerto Rico and

LUMA

- manage a transparent, equitable and open generator interconnection process.

LUMA requests that PREPA please confirm in writing that it does not intend to use the PCS model for any System Operator activities and let us know if they have any concerns with the plan and timing outlined in this letter no later than March 25, 2022. Otherwise, LUMA will assume PREPA agrees with the plan and intended use of PCS.

Sincerely,

**LUMA Energy LLC**

Raphael Gignac Digitally signed by Raphael Gignac Date: 2022.03.14 17:42:11 -04'00'

**Raphael Gignac**
Director, System Operations

LUMA

Transmittal # LUMA-PREP-T-00212

April 21, 2022

**To: Puerto Rico Electric Power Authority (PREPA)**
Attention: Anthony Vega
Director de Servicios Administrativos
PO BOX 364267
San Juan, Puerto Rico 00936-4267

**RE: PREPA Request to Access Economic Dispatch Program (PCS) – Follow Up**

LUMA would like to follow up on a letter sent to PREPA on March 14, 2022 regarding "PREPA Request to Access Economic Dispatch Program (PCS)" (Transmittal #LUMA-PREP-T-00192). The letter, confirmed PREPA would be granted access to PCS to enable PREPA's ability to run simulations required to determine fuel nominations.

The original deadline given to PREPA to respond to LUMA was March 25, 2022. As part of the requested response, LUMA asked PREPA to confirm that the PCS model would not to be used for System Operator activities and that PREPA would adhere to the terms of access specified in the letter. Once access to PCS is granted to PREPA, LUMA agreed to provide quarterly load forecast data, but plans to stop providing monthly fuel nomination data. To date, LUMA has not received a response from PREPA.

In the time since the original letter was sent to PREPA on March 14, 2022, LUMA provided PREPA the PCS computer and associated login and password on April 1, 2022. LUMA has in turn, not provided the natural gas nominations on the 5th of the month, as was outlined in the original letter to PREPA.

LUMA has fulfilled all requirements for access to PCS and will no longer provide natural gas nominations to PREPA. This matter will be considered closed unless PREPA gives a response to this letter by April 28, 2022.

Sincerely,
**LUMA Energy LLC**

Raphael Gignac
Digitally signed by Raphael Gignac
Date: 2022.04.21 20:30:47 -04'00'

**Raphael Gignac**
Director, System Operations

LUMA

*EXHIBIT 1-A*

# Exhibit 1-A

## 1.0 Respuesta

El 30 de marzo de 2023, la Autoridad de Energía Eléctrica de Puerto Rico (AEE) radicó ante el Negociado de Energía de Puerto Rico (PREB, por sus siglas en inglés) una moción titulada "*Moción Aclaratoria Asuntos Sobre Procesos de Proyección, Compra de Gas y Despacho de las Unidades de San Juan 5 y 6*"[1] (Moción del 30 de marzo), en la cual la AEE hizo afirmaciones y reclamos erróneos sobre el rol de LUMA en las nominaciones de gas de la AEE. LUMA toma muy en serio sus responsabilidades bajo el Acuerdo de Operaciones y Mantenimiento de Transmisión y Distribución de Puerto Rico (T&D OMA, por sus siglas en inglés) efectivo el 22 de junio de 2020 y sus otras obligaciones bajo las leyes y reglamentos. Es importante para LUMA que no haya confusión y el expediente este claro con respecto a las afirmaciones erróneas de la AEE en su Moción del 30 de marzo.

LUMA aclara que bajo el T&D OMA, LUMA no tiene responsabilidad sobre el suministro, compra, administración o manejo de combustible para la generación de energía. Cada generador es responsable de esta labor, y en el caso de las instalaciones de generación de la AEE, la AEE es actualmente responsable de estas actividades.[2] La AEE tiene un contrato de suministro de combustible con "New Fortress Energy LLC (NFE) para el suministro de gas natural en la unidad generatriz de San Juan (el "Contrato de Suministro"). Según la AEE establece en su Moción del 30 de marzo, el uso, la entrega y el consumo de gas natural se establecen bajo el Contrato de Suministro a través de la programación mensual vinculante (binding monthly schedule). LUMA no es parte del Contrato de Suministro y no tiene participación en este proceso.

En la Moción del 30 de marzo, la AEE afirma que "*la cantidad de combustible que la Autoridad compra es el resultado de las proyecciones de consumo de energía que LUMA informa a la Autoridad.*"[3] La AEE alega que el "*Binding Monthly Schedule*"[4] se establece utilizando las proyecciones de pronóstico y demanda preparadas por LUMA.[5] Esto no sólo es incorrecto, sino que también insinúa incorrectamente que LUMA es responsable del proceso de nominaciones de gas natural. LUMA usa los programas de interrupciones programadas y disponibilidades de las unidades provistos por la AEE para preparar una proyección. Por otro lado, para calcular el monto de nominación, cualquier comprador de combustible prudente debe considerar elementos tales como el impacto económico de nominar por exceso o por defecto, la probabilidad de que sus unidades disponibles proyectadas continúen, los niveles de inventario existentes en los tanques y otros factores para calcular los montos de nominación.

El intento de la AEE de trasladar la responsabilidad de sus propias acciones a LUMA no se sustenta en los hechos. Los procesos actuales utilizados por la AEE para las nominaciones de gas son independientes de las estimaciones de uso de combustible realizadas por LUMA. LUMA no tiene

[1] *Véase,* Moción de la AEE del 30 de marzo, Expediente Núm. NEPR-MI-2020-0001
[2] Obsérvese que en virtud del Contrato de Operación y Mantenimiento de Instalaciones de Generación Térmica de Puerto Rico, fechado el 24 de enero de 2023, Genera, como operador, tendrá la responsabilidad de la gestión del combustible una vez que comience a operar.
[3] *Véase,* página 1 de la Moción de la AEE del 30 de marzo, Expediente Núm. NEPR-MI-2020-0001.
[4] Según se describe en la página 3-4 de la Moción del 30 de marzo, Expediente Núm. NEPR-MI-2020-0001, el *"Binding Monthly Schedule*" según el artículo 7.4(a)(iv) del contrato entre NFEnergia LLC y la AEE, establece que antes del quinto (5) día de cada mes calendario, la AEE debe enviar su requerimiento de gas natural junto con el despacho programado para los próximos tres (3) meses o 90 días; esto se conoce como Programa de Noventa Días (NDS, por sus siglas en inglés). Una vez que NFEnergia acepta el NDS para los meses M, M+1 y M+2, se convierte en el Programa Mensual Vinculante. Según descrito, el Programa Mensual Vinculante establece las cantidades mensuales de gas natural que NFEnergía tiene que vender a la AEE y el programa de entrega y consumo para cada uno de los tres (3) meses siguientes para las necesidades diarias de gas natural y el despacho planificado para el mes M.
[5] *Véase,* página 5 de la Moción de la AEE del 30 de marzo, Expediente Núm. NEPR-MI-2020-0001.

responsabilidad por las nominaciones de combustible de la AEE para el Ciclo Combinado de San Juan (SJCC, por sus siglas en inglés). Además, los datos operativos reales muestran claramente que los problemas operativos de la AEE tales como, limitaciones operativas, interrupciones más largas de lo programado, disponibilidad real por debajo del compromiso de la AEE y uso de diésel en lugar de gas natural, son los factores principales por los que el consumo real de gas natural de la AEE está por debajo de los niveles pronosticados.

**Proyecciones de Gastos en Combustible Estimadas por LUMA**

LUMA estima los gastos de combustible proyectados a consumirse trimestralmente en el Expediente NEPR-MI-2020-0001 (In Re: Puerto Rico Electric Power Authority's Permanent Rate) (y los presenta públicamente en junio, septiembre y diciembre). Estos estimados son irrelevantes para el proceso de nominación de gas de la AEE. LUMA los utiliza únicamente como insumos para el cálculo de los factores de Ajuste de Cargo por Combustible (FCA, por sus siglas en inglés) y Ajuste de Cargo por Compra de Energía (PPCA, por sus siglas en inglés) que se presentan al PREB trimestralmente. Los gastos previstos en combustible y compra de energía adquirida para los tres meses siguientes se suman a los ajustes de periodos anteriores para calcular el importe neto que se cobrará a los contribuyentes. Este importe neto se divide por los kWh que se prevé vender en el trimestre siguiente para calcular los factores FCA y PPCA (en $/kWh) que se añaden a las tarifas para recuperar estos costos de los clientes durante el trimestre siguiente.

Para desarrollar el pronóstico trimestralmente de combustible, el Equipo Regulatorio de LUMA es quien coordina las aportaciones de varios departamentos de LUMA y de la AEE. Este trabajo se realiza actualmente utilizando PROMOD, un sistema integrado de software de simulación de generación y transmisión eléctrica ampliamente utilizado en la industria de servicios eléctricos. La secuencia de eventos es la siguiente:

1. El Equipo Regulatorio de LUMA actualiza las previsiones a 12 meses para el próximo trimestre basándose en las tendencias recientes y los factores estacionales.
2. La AEE provee al Equipo de Operaciones de Sistema de LUMA la disponibilidad diaria de MW para cada planta basada en la disponibilidad real reportada de las diferentes unidades generatrices. Por lo tanto, el estimado más reciente, según provisto por la AEE, es la fuente de la disponibilidad reportada, que generalmente es notablemente menor que la capacidad nominal.
3. La AEE revisa los programas de mantenimiento aprobados con el Equipo de Operaciones de Sistema de LUMA y realiza los cambios necesarios para reflejar sus requisitos de mantenimiento para los próximos 12 meses.
4. La AEE proporciona a LUMA la previsión del precio del combustible para el próximo trimestre.
5. El Equipo Regulatorio de LUMA actualiza todos los supuestos de disponibilidad de las centrales, las interrupciones planificadas y forzosas, así como otros atributos de las centrales, y prepara el escenario inicial de despacho PROMOD, que calcula la generación prevista para satisfacer la demanda esperada para cada hora, para cada central, para el trimestre siguiente. PROMOD calcula los costos de combustible basado en la generación proyectada utilizando los datos de eficiencia de las centrales y los costos de combustible.
6. El Equipo Regulatorio de LUMA revisa el resultado de la simulación inicial de despacho PROMOD con el equipo de Operaciones de Sistemas de LUMA y con el equipo de Generación de la AEE para revisar las horas de reserva disponibles, y colectivamente hacer cualquier cambio a los programas de interrupción o a la disponibilidad de las plantas para reducir los

períodos con reservas inadecuadas. A veces se realizan varias simulaciones de despacho PROMOD para considerar escenarios alternativos de programación de cortes.

7. El Equipo Regulatorio de LUMA toma los supuestos finales (provistos por la AEE y aprobados por el equipo de Operaciones de Sistema de LUMA) y ejecuta una proyección final de despacho (PROMOD), que calcula la generación esperada y los valores de consumo de combustible que luego se cargan al "Reconciliation File" que se presenta al PREB y contiene los factores FCA y PPCA propuestos que se utilizarán para el próximo trimestre.

**Programa de Despacho Económico**

Según detallado anteriormente, las corridas PROMOD de LUMA consisten de tres (3) entradas principales, dos (2) de las cuales son provistas a LUMA por la AEE. El proceso de nominación de gas es realizado y presentado únicamente por la AEE utilizando el Programa de Despacho Económico (PCS, por sus siglas en inglés), al cual, según solicitado por AEE, LUMA le otorgó acceso[6], no PROMOD, que es lo que LUMA utiliza para proyectar el despacho de carga.

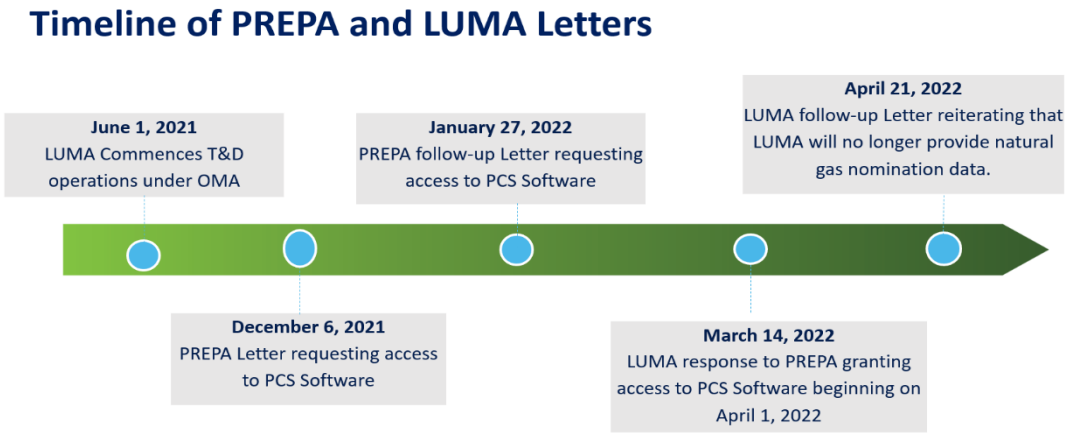
En su carta del 27 de enero de 2022, la AEE solicitó a LUMA que le concediera acceso al software PCS indicando que "*El personal de Generación utiliza este software para determinar las nominaciones de combustible en sus plantas generadoras y, al realizar esta tarea, necesitan llevar a cabo varias simulaciones de diferentes escenarios para determinar las nominaciones de combustible y otros parámetros relacionados mayormente con el cumplimiento ambiental*."[7] La AEE indicó además que "*Tener acceso al software PCS permite a Generación determinar las nominaciones de combustible en sus centrales eléctricas, mejorando la exactitud y precisión del consumo de combustible de las unidades generadoras. Además, permite a la AEE determinar los parámetros requeridos para el cumplimiento ambiental. El logro de estas mejoras y el cumplimiento reglamentario representa un beneficio directo para los clientes que apoyan un servicio de electricidad confiable, seguro y económico.*"[8]

El 14 de marzo de 2022, LUMA emitió respuesta a la carta de la AEE del 27 de enero de 2022, en la que concedía a la AEE acceso al software PCS a partir del 1 de abril de 2022, e informaba a la AEE de que, una vez recibiera el software PCS, LUMA dejaría de proporcionar datos de nominación mensuales, afirmando: "*Una vez que la AEE tenga acceso a PCS, la AEE dispondrá de la información necesaria para empezar a determinar de forma independiente las nominaciones mensuales de combustible. Como tal, LUMA continuará proporcionando los datos trimestrales de previsión de despacho del sistema como entrada en estos cálculos, pero dejará de proporcionar datos mensuales de nominación de combustible después de que la AEE obtenga acceso a PCS.*"[9]

El 21 de abril de 2022, LUMA emitió carta de seguimiento en la que notificó a la AEE que LUMA ya no proporcionaría nominaciones de gas a la AEE, indicando: "*En el tiempo transcurrido desde que se envió la carta original a la AEE el 14 de marzo de 2022, LUMA proporcionó a la AEE el ordenador PCS, el nombre de usuario y contraseña asociados el 1 de abril de 2022. A su vez, LUMA no ha proporcionado las nominaciones de gas natural el día 5 de cada mes, como se indicó en la carta original a la AEE. LUMA ha cumplido con todos los requisitos de acceso al PCS y ya no proveerá nominaciones de gas*

[6] *Véase* Annex A_PREPA December 6, 2021, Letter.pdf and Annex B_PREPA January 27, 2022, Letter.pdf included in this filing. (traducido a español)
[7] *Véase* Annex B_PREPA January 27, 2022, Letter.pdf included in this filing (traducido a español).
[8] *Véase* Annex B_PREPA January 27, 2022, Letter.pdf included in this filing (traducido a español).
[9] *Véase* Annex C_LUMA March 14, 2022, Letter included in this filing (traducido a español).

*natural a la AEE. Este asunto se considerará cerrado a menos que la AEE dé una respuesta a esta carta antes del 28 de abril de 2022.*"[10]




El software PCS utilizado por la AEE permite previsiones más precisas que, a diferencia del proceso de cálculo FCA-PPCA de LUMA, solo permite ajustar las variables de LUMA a PROMOD cada tres meses. El proceso de nominación de gas permite a la AEE ajustar las variables todos los meses, incluida la disponibilidad de unidades que afecta especialmente a la previsión de uso de gas.

No está claro por qué la AEE hizo alegaciones en su Moción del 30 de marzo contrarias a la responsabilidad documentada para las nominaciones de gas. LUMA quiere hacer constar en el expediente que las alegaciones de la AEE de que LUMA determina las nominaciones de gas son falsas y que el proceso documentado para el cálculo de FCA/PPCA y para las nominaciones de gas contradice claramente las alegaciones de la AEE. LUMA utiliza PROMOD para calcular los factores FCA y PPCA, y la AEE utiliza el software PCS para preparar las nominaciones de gas de la AEE.

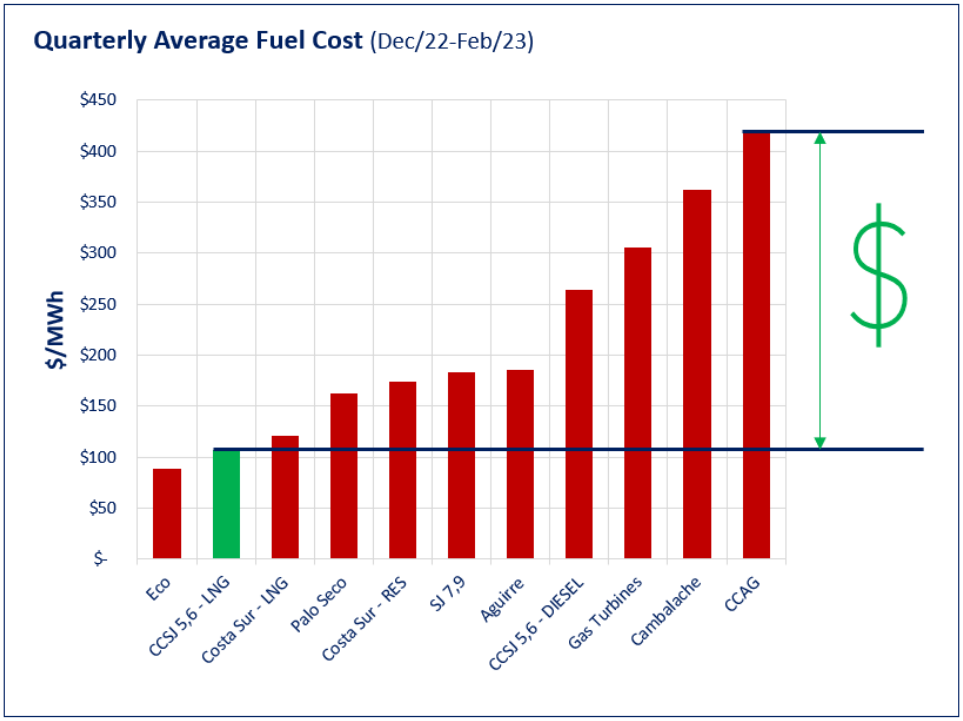
**Rendimiento de SJCC**

En su Moción del 30 de marzo, la AEE hizo referencia a varios "problemas" en el despacho del Ciclo Combinado de San Juan (SJCC, por sus siglas en inglés), como cambios en la previsión de carga, evaporación de GNL y otros factores, insinuando que LUMA, como Operador del Sistema, contribuyó a las nominaciones erróneas de cantidad de gas de la AEE al no despachar SJCC.[11] LUMA se sorprendió por las declaraciones falsas de la AEE, cuando, de hecho, ninguno de los factores mencionados por la AEE en su Moción del 30 de marzo tiene ningún impacto en el despacho de SJCC. SJCC es actualmente la unidad de la AEE de menor costo en el sistema, como se ve en la Figura 1 a continuación, y siguiendo el proceso de despacho de orden de mérito económico de menor costo, el Operador del Sistema intenta maximizar su producción. Sin embargo, el Operador del Sistema no puede despachar SJCC con mayor frecuencia debido a sus constantes limitaciones operativas. El despacho de SJCC (y la producción total de energía) está limitado por su rendimiento real en cuanto a la disponibilidad de la unidad. La disponibilidad de la planta, al igual que todas las operaciones de la planta, son responsabilidad exclusiva de la AEE.

[10] *Véase* Annex C_LUMA March 14, 2022, Letter included in this filing (fragmento fue traducido a español).
[11] *Véase* página 6-7 de la Moción de la AEE del 30 de marzo (Spanish language), Expediente Núm. NEPR-MI-2020-0001.

# Exhibit 1-A

*Figura 1 –Promedio trimestral del costo de combustible*




**Limitaciones operativas de SJCC a corto plazo**

Las limitaciones operativas de la unidad a corto plazo (SJCC alcanza una disponibilidad inferior a la prevista) razón por la que la AEE no consumió sus valores nominados.

Como se indicó anteriormente, la AEE informa diariamente al equipo de Operaciones de Sistema de LUMA qué limitaciones actuales existen para cada unidad. Aproximadamente dos semanas, o más, antes de realizar la simulación FCA-PPCA PROMOD, LUMA confirma con la AEE las disponibilidades reportadas para cada planta y pregunta si existen nuevos límites de disponibilidad que deban reflejarse en el análisis. Sin embargo, las plantas de la AEE se han desempeñado típicamente a niveles de disponibilidad que son más bajos de lo que la AEE se compromete en el proceso de FCA y PPCA. El registro de las diferencias en la producción energética y el consumo de combustible en comparación con lo que se compromete la AEE, que se representa en la Figura 2 a continuación, muestra claramente que las limitaciones operativas han causado que SJCC opere a menos de la disponibilidad prevista en cada uno de los últimos 5 trimestres.

SPANISH TRANSLATION OF EXHIBIT 1

# Exhibit 1-A

***Figura 2** - Diferencia en Producción Eléctrica y Consumo de Combustible vs. Compromiso de la AEE*

| Quarter | Generation %Δ | | Fuel Consumption %Δ | | Comments extracted from Daily Availability Reports / System Operations |
|---|---|---|---|---|---|
| | % | MWh | % | MMBtu | |
| Q3-2021 | **+8%** | (60,065) | **17%** | (915,524) | |
| Q4-2021 | **+13%** | (69,519) | **33%** | (1,349,504) | Deliverability issues from NFE Starting 10/2021, Consuming 100% Diesel |
| Q1-2022 | **-13%** | (522,729) | **-2%** | (67,184) | "Exhaust Gas Temp", and "Broken Rotor" among operational issues that caused limitations on SJCC 6 STM. Almost all quarter consuming 100% Diesel. |
| Q2-2022 | **-8%** | (27,596) | **15%** | (392,503) | SJCC 6 STM offline 2/3 of quarter due to "Problema con valvulas de control atascadas". |
| Q3-2022 | **-4%** | (27,771) | **7%** | 348,911 | Unit 5 limitations due to "Alta temperatura en Rotor, Air cooler y Exhaust" after coming online from Major Maintenance. SJCC5 STM not available since Fiona. |
| Q4-2022 | **-23%** | (122,401) | **-2%** | (92,004) | SJCC 5 Steam Turbine offline most of the quarter due to "Turbina averaida". December consuming 100% Diesel due to longer-than-expected NFE terminal maintenance on NFE. |
| Q1-2023 | **-15%** | (109,460) | **-15%** | (562,659) | Operational issues that resulted in limitations and forced outages include: "Pérdida de Sistema Servo-Hidráulico", "Baja eficiencia Recuperador", "Bajo Vacío", and "Avería en armadura de exitadora". |

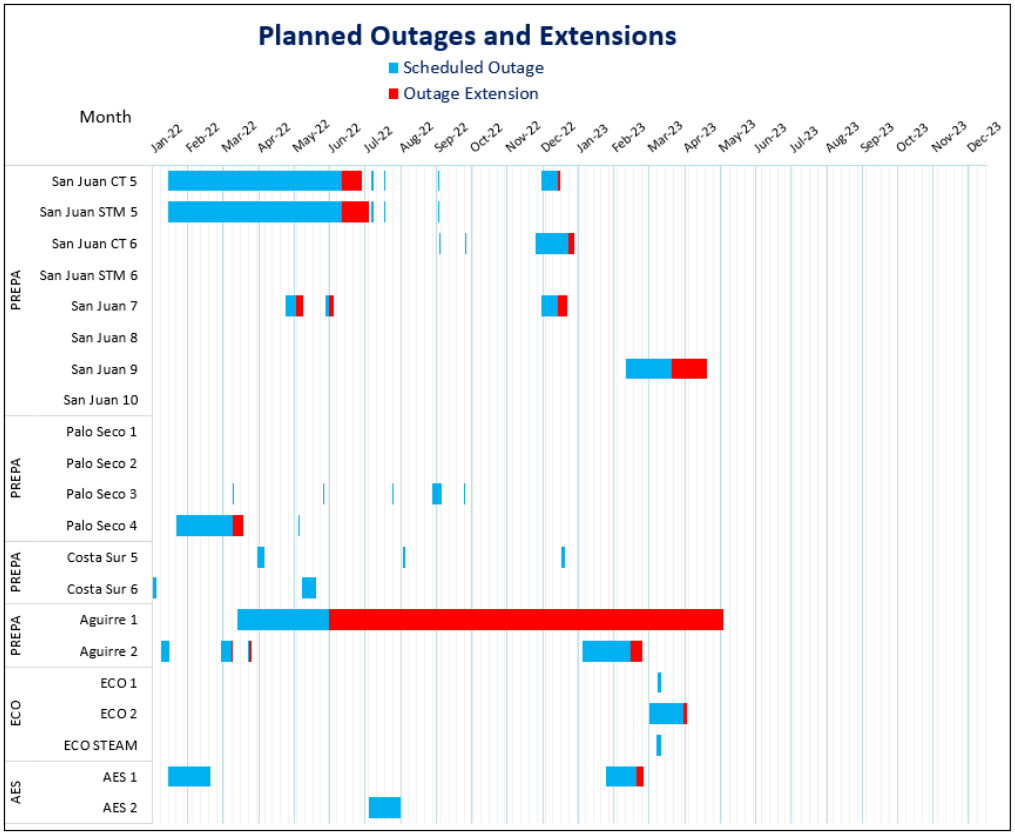
## Calendario de Interrupciones Programadas

El equipo de Operaciones de Sistemas de LUMA coordina con la AEE, y otros generadores, típicamente utilizando una planificación de apagones de dos años, que resulta en un "calendario de interrupciones aprobadas planificados", que es mantenido por el equipo de Operaciones de Sistemas de LUMA. Sin embargo, es importante señalar que la AEE es la única responsable de su programa de interrupciones programadas.

LUMA sospecha que la planificación de interrupciones programadas, el control del alcance y la gestión del trabajo de la AEE están subdesarrollados, dado que en los últimos 27 meses la AEE pronosticó aproximadamente 29,000 horas para interrupciones planificadas que terminaron requiriendo 49,000 horas para completarse, una variación del 70% de lo esperado. La Figura 3 a continuación muestra el desempeño del calendario para todas las interrupciones planificadas desde que LUMA comenzó a operar (1 de junio de 2021). El azul de las barras representa el calendario original de estas paradas planificadas y el rojo de las barras representa el rebasamiento.

# Exhibit 1-A

*Figura 3 – Interrupciones Previstas vs. Interrupciones Reales con Ampliaciones*



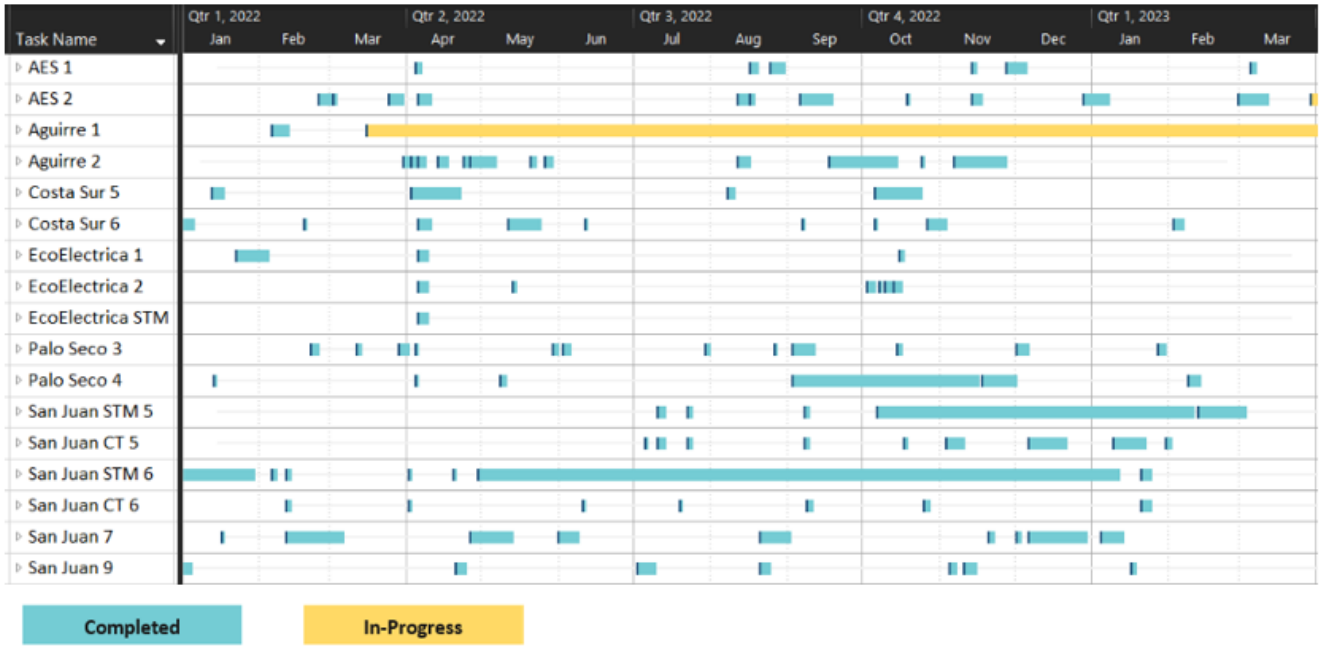

## Tasas de Interrupciones Forzosas

Los índices de interrupciones forzosas varían considerablemente de una unidad a otra y de un mes a otro. En los últimos 30 meses, los índices de interrupciones forzosas de las unidades de carga base han sido, por término medio, de aproximadamente el 25%.

Antes del análisis FCA-PPCA PROMOD, LUMA revisa las tendencias y proyecciones de la tasa de interrupciones forzadas con la AEE y revisa el impacto de estos supuestos de la tasa de interrupciones forzadas en el resultado preliminar de PROMOD. La Figura 4 a continuación muestra el inicio del historial de la tasa de interrupciones forzadas para todas las plantas.

# Exhibit 1-A

***Figura 4*** *- Historial de Interrupciones Forzadas*




*Graph does not show outages with a duration shorter than 24 hours, which occurred between the hours of 9am – 7am.

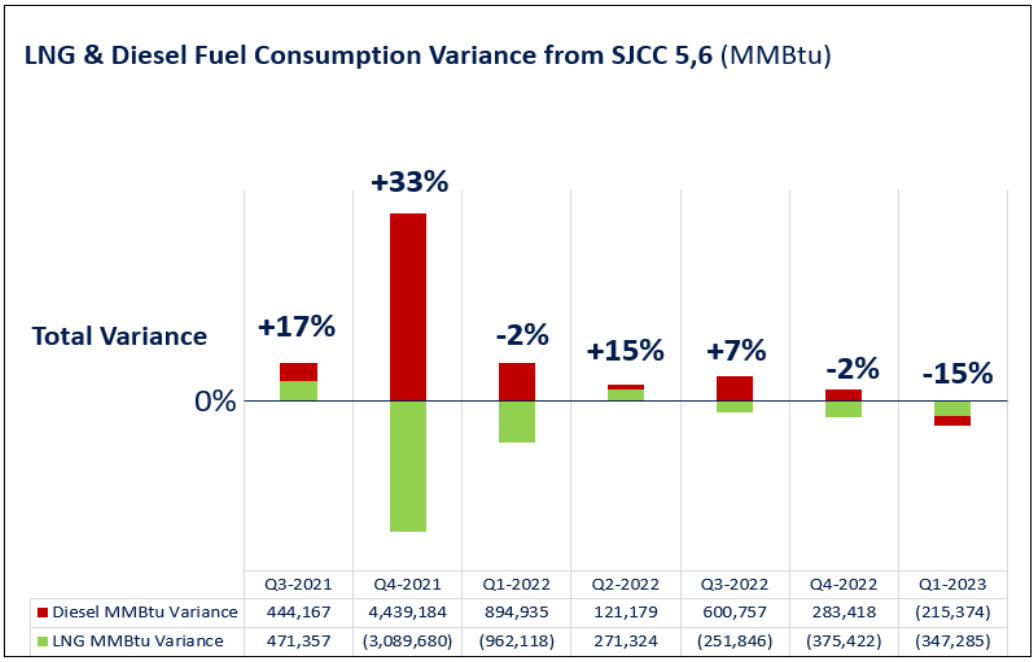
**Uso de Diésel en Lugar de Gas Natural en SJCC**

Debido a razones operacionales, la AEE no siempre ha podido operar SJCC con gas natural. En estos momentos cuando el gas natural no está disponible, la AEE cambia a utilizar combustible diésel más caro. Esto aumenta significativamente el costo de producción, pero también reduce los volúmenes de gas natural consumido. Estos problemas de suministro de gas natural experimentados en SJCC han forzado a utilizar más combustible diésel de lo pronosticado, lo cual es un factor significativo en su incapacidad de consumir los volúmenes de gas natural nominados. La figura 5 ilustra el equilibrio entre diésel y gas natural. La barra, indica el porcentaje por encima (positivo) o por debajo del consumo de combustible previsto en SJCC basado en la disponibilidad comprometida de la AEE. Las barras rojas muestran el combustible diésel real utilizado por encima del pronóstico. Las barras verdes muestran cantidades de gas natural reales consumidas por debajo del pronóstico. La sustitución de diésel por gas natural pronosticado es un factor significativo en el consumo real de gas natural por debajo del pronóstico.

SPANISH TRANSLATION OF EXHIBIT 1

# Exhibit 1-A

***Figura 5*** *– Gas Natural vs. Diesel*




| | Q3-2021 | Q4-2021 | Q1-2022 | Q2-2022 | Q3-2022 | Q4-2022 | Q1-2023 |
|---|---|---|---|---|---|---|---|
| Diesel MMBtu Variance | 444,167 | 4,439,184 | 894,935 | 121,179 | 600,757 | 283,418 | (215,374) |
| LNG MMBtu Variance | 471,357 | (3,089,680) | (962,118) | 271,324 | (251,846) | (375,422) | (347,285) |