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

IN RE: IN RE: PUERTO RICO ELECTRIC POWER AUTHORITY PERMANENT RATE	**CASE NO. NEPR-MI-2020-0001** **SUBJECT: Presentation for Technical Conference of September 22, 2021**

MOTION SUBMITTING PRESENTATION AND REQUESTING LEAVE FOR LUMA TO OFFER PRESENTATION DURING TECHNICAL CONFERENCE SCHEDULED FOR SEPTEMBER 22, 2021

TO THE HONORABLE 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. Per a Resolution and Order issued by the Energy Bureau on September 17, 2021, a technical conference is scheduled for September 22, 2021 at 1:30 pm, to consider LUMA's *Motion Submitting of FCA and PPCA Quarterly Reconciliations and Proposed Factors and Request for Confidential Treatment* filed on September 16, 2021, involving proposed Fuel Charge Adjustment ("FCA") and Purchased Power Charge Adjustment ("PPCA") reconciliations for the months of June, July, and August, 2021, and the proposed factors for the FCA, PPCA and FOS riders to be applied from October 1, 2021 until December 31, 2021 ("September 16th Submission").
2. LUMA has prepared a Power Point™ presentation that it proposes to offer during the September 22nd technical conference, with leave from the Energy Bureau. The presentation

was developed to aid analysis and discussions on the aforementioned September 16th Submission and to provide additional explanations on the filings.

3. As Exhibit 1to this Motion, LUMA submits the Power Point™ presentation in pdf format. *See* Exhibit 1.

4. For the benefit of the public, LUMA is preparing a Spanish-language version of the presentation. LUMA will employ best efforts to file the Spanish-language version of the presentation prior to the technical conference that is scheduled for 1:30 p.m. Alternatively, LUMA will submit the Spanish-language presentation expediently after the technical conference to complete the record.

WHEREFORE, LUMA respectfully requests that the Energy Bureau **accept** the Power Point™ presentation that is filed with this Motion in pdf format and **grant** LUMA representatives leave to offer the presentation during the September 22nd technical conference.

RESPECTFULLY SUBMITTED.

In San Juan, Puerto Rico, this 22nd day of September 2021.

DLA Piper (Puerto Rico) LLC
500 Calle de la Tanca, Suite 401
San Juan, PR 00901-1969
Tel. 787-945-9107
Fax 939-697-6147

/s/ Margarita Mercado Echegaray
Margarita Mercado Echegaray
RUA NÚM. 16,266
margarita.mercado@us.dlapiper.com

Exhibit 1
English Language Presentation

LUMA

Technical Conference

October to December 2021 – Proposed Factors
NEPR-MI-2020-0001

September 22, 2021

LUMAPUERTORICO.COM

LUMA Proposed Factors

Agenda

1. Fuel Charge Adjustment and Purchase Power Charge Adjustment in relation to Customer Rates
2. Summary of Calculation for FCA and PPCA Factors
    1. Q2 FY2022 Fuel and Purchased Power Forecast
    2. Reconciliation from Jun-Aug FY2022
    3. Jun-Aug Not Billed Adjustment
    4. Retail Sales (kWh) Forecast
3. Proposed Factors and Bill Impact
4. Analysis of Risks in the Forecast

Fuel Charge Adjustment and Purchase Power Charge Adjustment in relation to Customer Rates

Permanent Rate Composition

Base Rate

- Cost by kWh does not change, until PREB approves a new Rate Order
  - Customer Fix Charge
  - Energy Charge
  - Demand Charge

Annual Reconciliation Riders

- Approved by PREB in June 2020 for the period between July 2021 to June 2022
  - CILT and Subsidies

Quarterly Reconciliation Adjustments

- Adjusted and approved quarterly
  - Fuel Charge Adjustment (FCA)
  - Purchased Power Charge Adjustment (PPCA)

Fuel and Purchased Power Charges Definition and Formula

- The Fuel Charge Adjustment (FCA) is a reconciling rider mechanism which recovers the cost of fuel consumed in PREPA's generating units[1] on a quarterly basis.

$$FCA = \frac{Total\ Cost\ of\ Fuel \pm Prior\ Period\ Reconciliation}{Aplicable\ Retail\ kWh\ Sales}$$

- The Purchased Power Charge Adjustment (PPCA) is a reconciling rider mechanism which recovers the cost of power purchased from Independent Power Producers on a quarterly basis.

$$PPCA = \frac{Total\ Purchased\ Power \pm Prior\ Period\ Reconciliation}{Aplicable\ Retail\ kWh\ Sales}$$

Notes: **Total Cost of Fuel** = Forecast cost of fuel purchased for all PREPA's generating facilities for the three months (October, November and December) in the quarterly time period. **Total Purchased Power** = Forecast of the cost of purchased sources of energy and capacity for the three months (October, November and December) in the quarterly time period. **Prior Period Reconciliation** = Revenues over or under recovered from the first two month from the actual quarter (July and August) and the last from the prior quarter (June). **Applicable Retail kWh Sales** = Forecast energy sales to all classes of customers, including to all net metering customers.

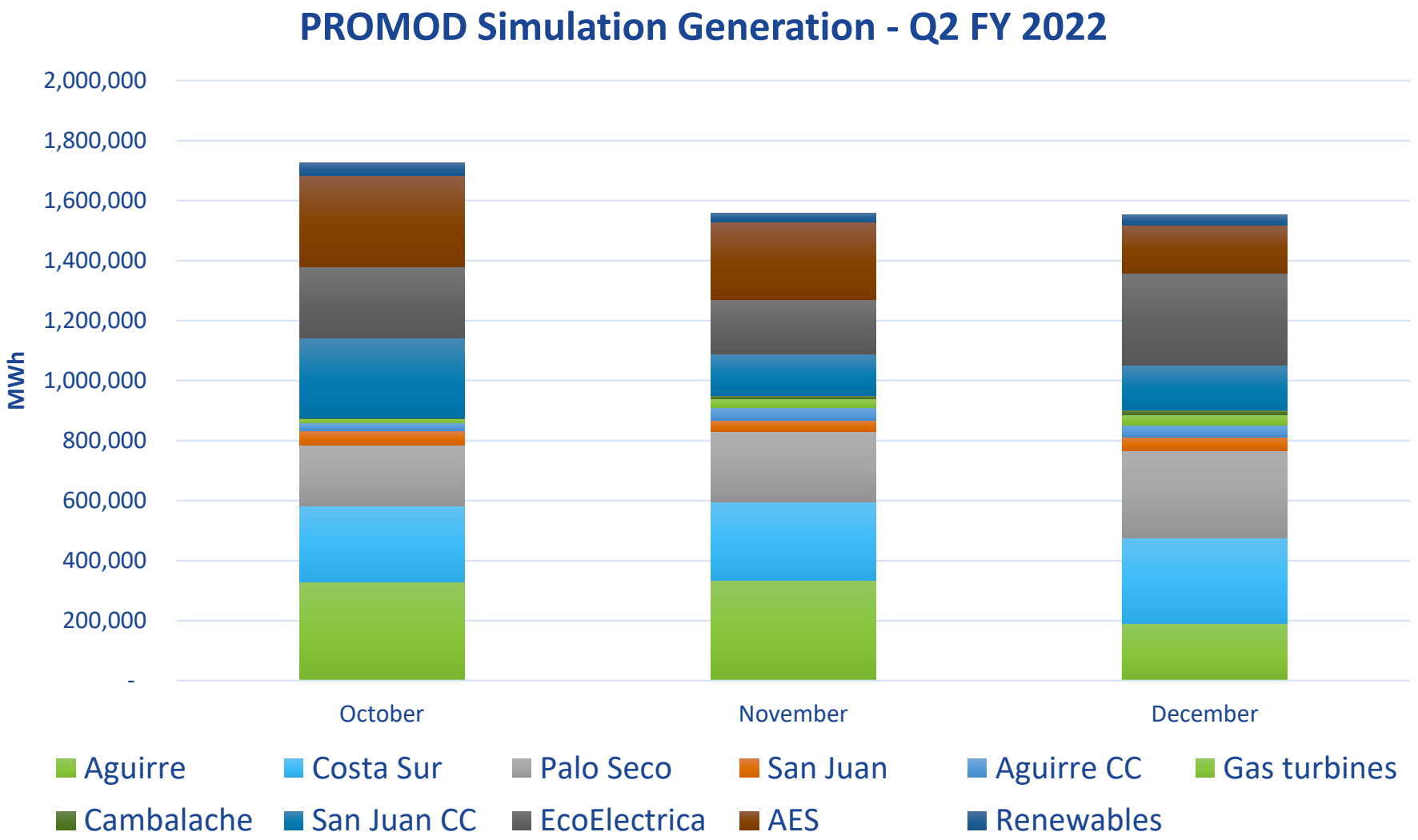
[1] Also includes fuel for EcoElectrica.

Summary of Calculation for FCA and PPCA Factors

Summary of Calculation for FCA and PPCA Factors

Q2 FY2022 Fuel and Purchased Power Forecast

PROMOD Overview



- Forecast generation dispatch based on least cost security constrained optimization of Generation units and dispatch to supply electric demand.

Summary of Calculation for FCA and PPCA Factors

Reconciliation from Jun-Aug FY2022

Reconciliation Results – Fuel Charge Adjustment (FCA) – June, July and August 2021

- Actual fuel costs for quarter were $81.7 million higher than the forecasted amounts, increasing from $420.8 to $502.6 million, or 19.4%[1]
- Billed sales for quarter related to the FCA were less than projected by $20.2 million, decreasing from $453.9 to $433.7 million, or 4.4%.
- Prior period adjustments, as determined in previous quarter (Mar-May) reconciliations, are $35.9 million.

Adjustment Clause	June 2021	July 2021	August 2021
Fuel Charge Adjustment (FCA)			
Forecasted Sales	$134,742,030.01	$156,933,972.11	$162,171,606.34
Forecast Fuel Cost	$139,426,069.35	$131,191,382.29	$150,210,900.41
Actual Billed Sales	$127,847,129.85	$149,666,218.26	$156,181,373.63
Actual Fuel Costs	$150,881,201.79	$164,804,147.65	$186,864,936.34
Prior Period Adjustment	$2,711,091.47	$16,328,363.91	$16,873,087.68
Difference	**$25,745,163.41**	**$31,466,293.30**	**$47,556,650.39**

[1] Includes Authority's use.

Reconciliation Results – Purchased Power Charge Adjustment (PPCA) – June, July and August 2021

- Actual purchased power expense for quarter was less than projected by $9.1 millones, decreasing from $141.4 to $132.3 million, or 6.4%.
- Billed sales for quarter related to the PPCA were less than projected by $6.4 million, decreasing from $144.0 to $137.6 million, or 4.4%.
- Prior period adjustments, as determined in previous quarter (Mar-May) reconciliations, are ($3.2) million.

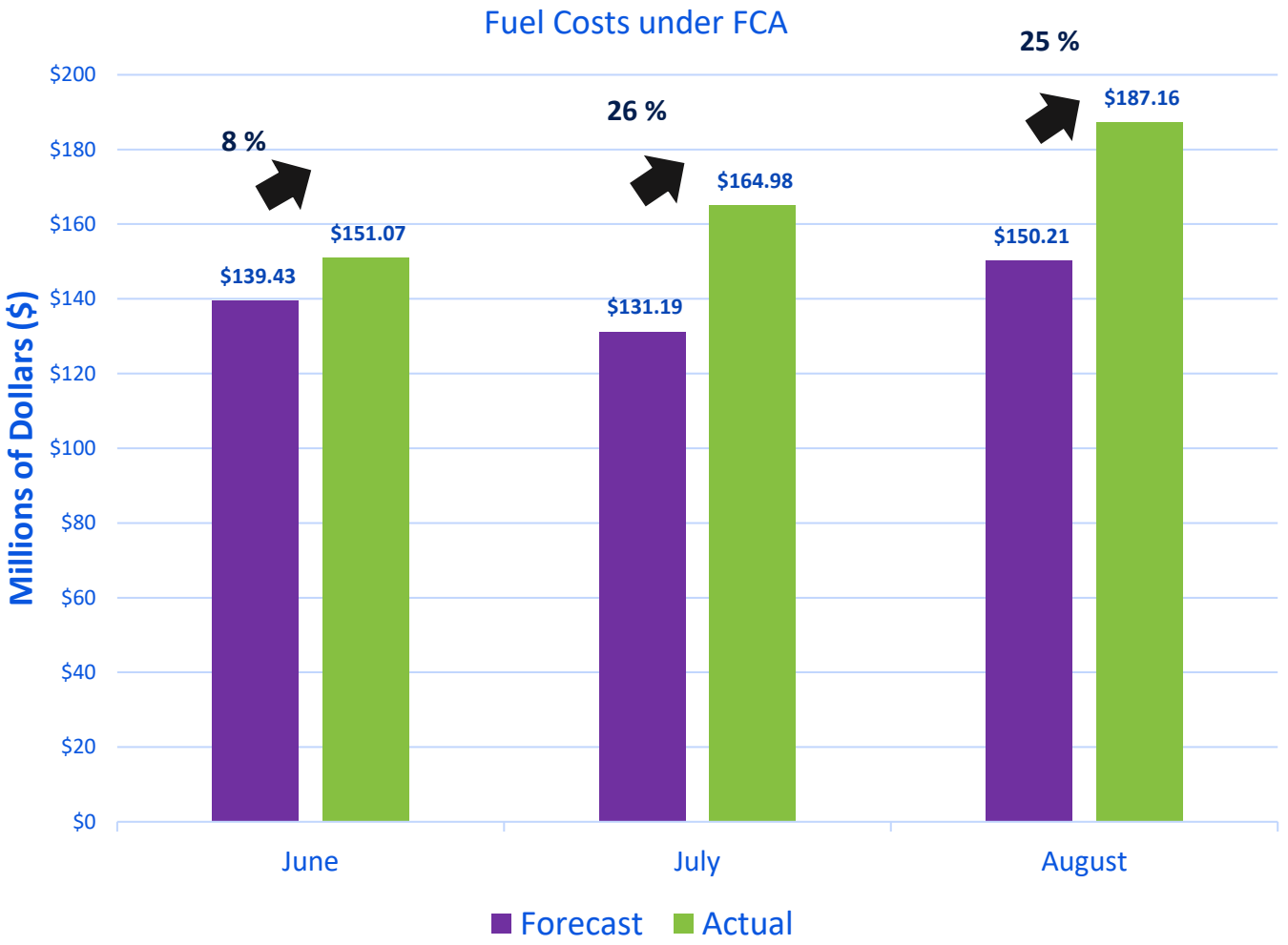
Adjustment Clause	June 2021	July 2021	August 2021
Purchased Power (PPCA)			
Forecasted Sales	$41,792,106.13	$50,267,855.24	$51,945,533.03
Forecast Purchased Power Expense	$41,328,481.59	$50,366,266.00	$49,709,380.68
Actual Billed Sales	$39,633,322.90	$47,962,549.11	$49,962,081.47
Actual Purchased Power Expense	$40,026,584.30	$46,628,412.06	$45,624,344.56
Prior Period Adjustment	($6,294,358.53)	$1,510,975.61	$1,561,382.64
Difference	**($5,901,097.13)**	**$176,838.56**	**($2,776,354.27)**

Summary of Calculation for FCA and PPCA Factors

Reconciliation from Jun-Aug FY2022

Fuel Cost Variance

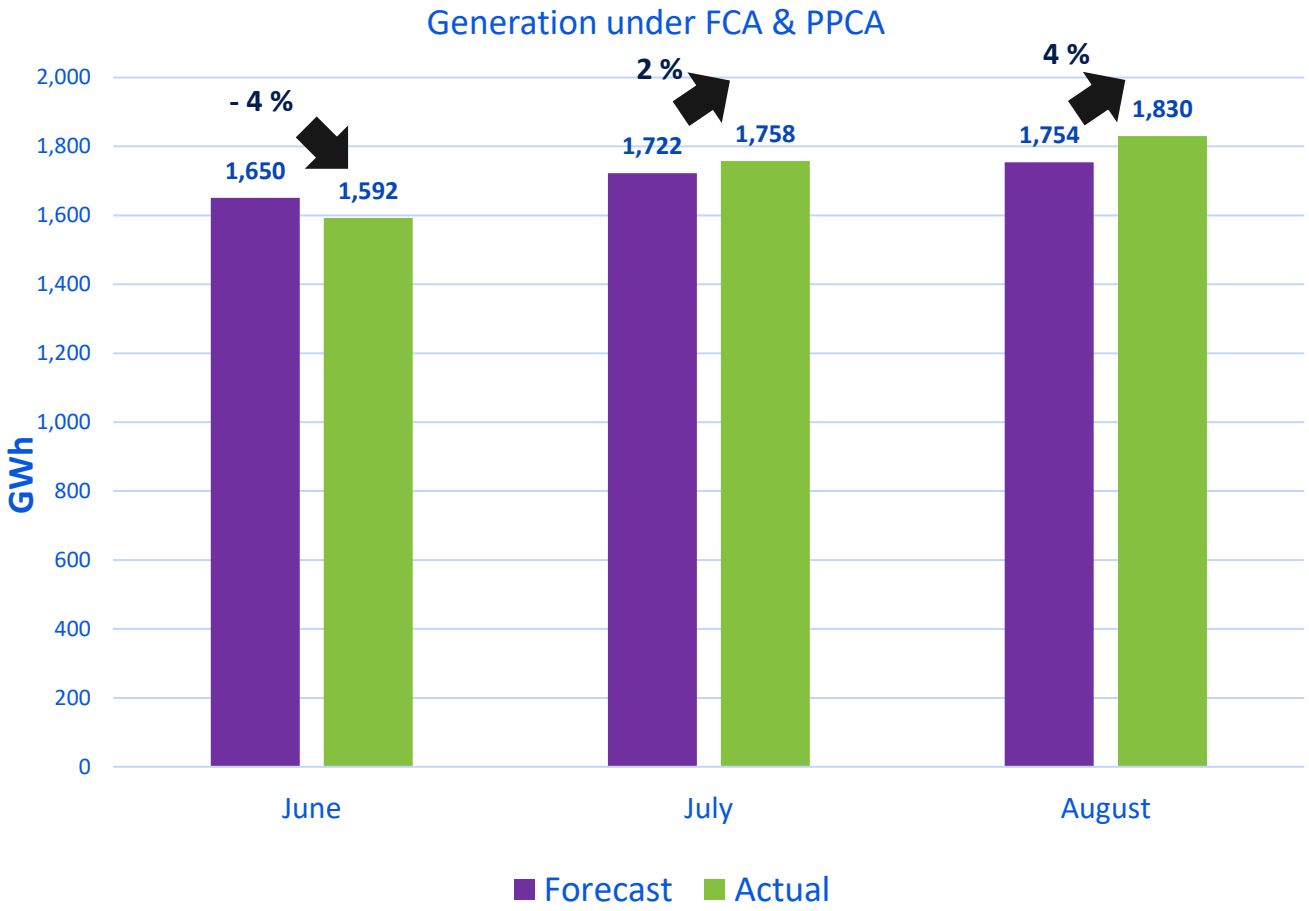
Actual fuel expenditures in Q1 FY22 were almost 20% higher than projected



3-month Total Fuel Cost Comparison:

- Forecasted: $ 420.83 Million
- Actual: $ 503.21 Million
- Variance: $82.38 Million (19.6%)

Actual electric generation provided to all customers in Q1 FY22 was 1% higher than projected

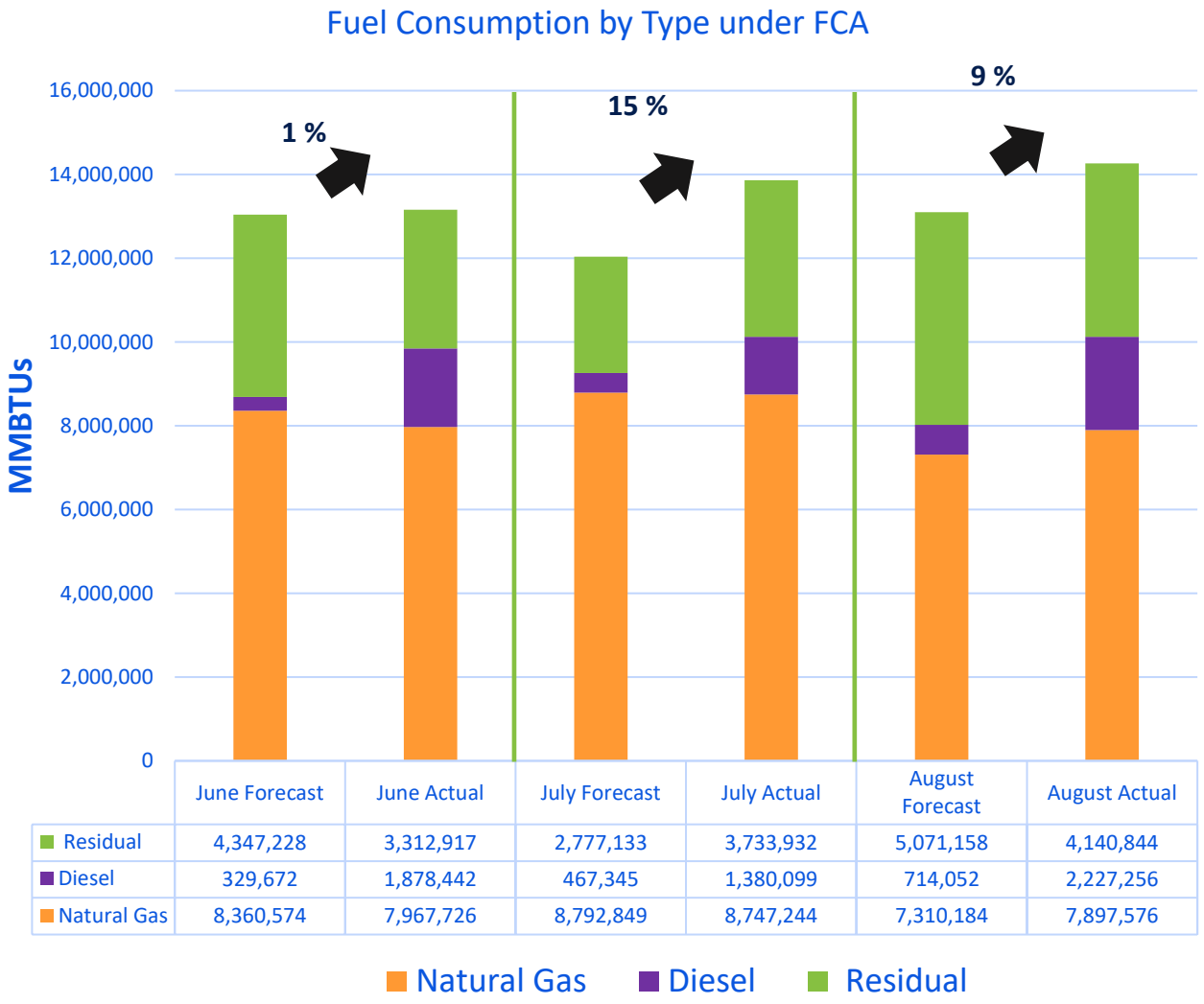


3-month Total Generation Comparison:

- Forecasted: 5,126.9 GWh
- Actual: 5,179.3 GWh
- Variance: 52.4 GWh (1%)

Forecast values represent output from June 1st PROMOD run used to estimate individual plant dispatch. Actual values in load forecast could sometimes vary slightly due to unit availability assumptions used by PROMOD

Actual fuel procured in Q1 FY22 was 8% higher than forecasted, driven by a larger consumption of diesel fuel than projected



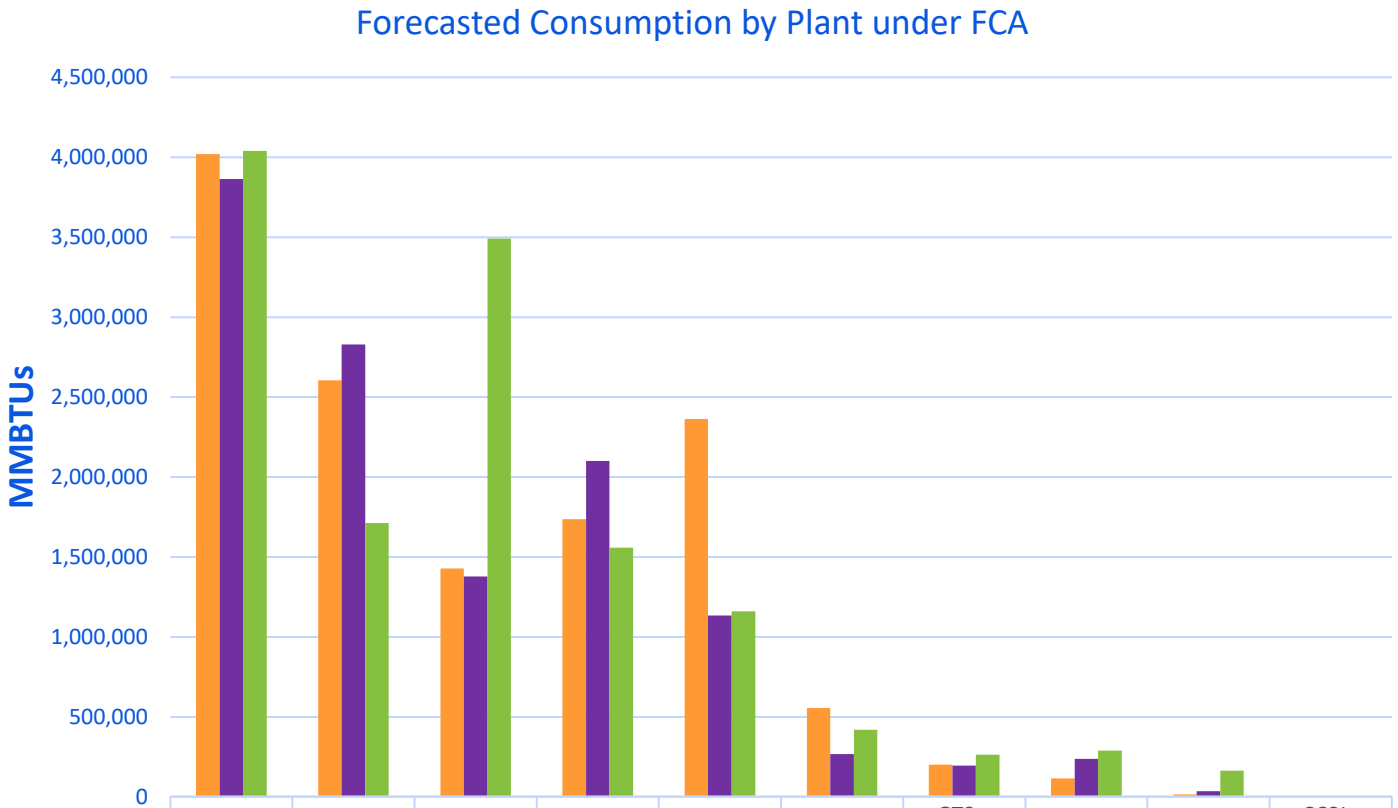
	June Forecast	June Actual	July Forecast	July Actual	August Forecast	August Actual
Residual	4,347,228	3,312,917	2,777,133	3,733,932	5,071,158	4,140,844
Diesel	329,672	1,878,442	467,345	1,380,099	714,052	2,227,256
Natural Gas	8,360,574	7,967,726	8,792,849	8,747,244	7,310,184	7,897,576

3-month Total Consumption Comparison:

- Forecasted: 38,170,192 MMbtu
- Actual: 41,286,035 MMbtu
- Variance: 3,115,842 MMbtu (8%)

Fuel Type	Forecast	Actual	% Variance
Residual	12,195,518	11,187,692	-8%
Diesel	1,511,068	5,485,797	263%
Natural Gas	24,463,605	24,612,546	1%
Total	**38,170,192**	**41,286,035**	**8%**

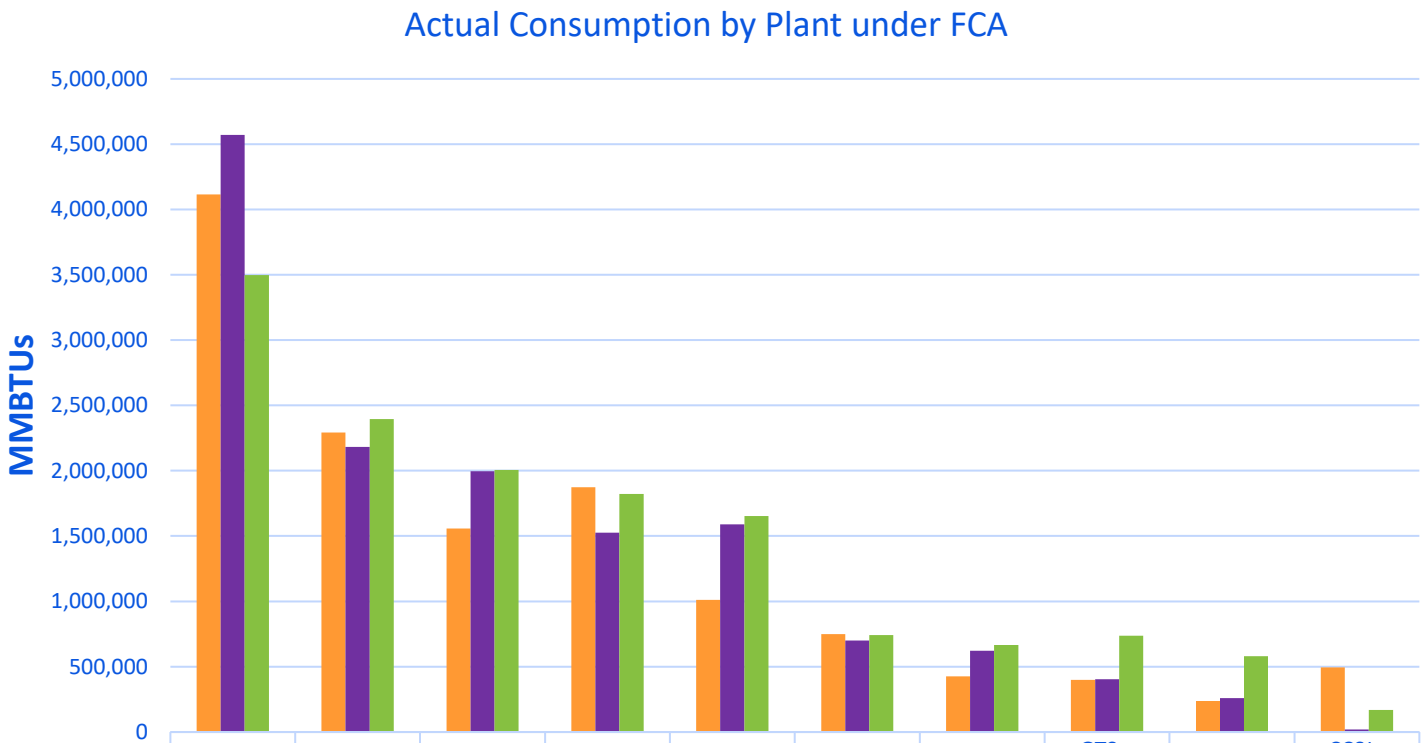
Fuel procurement forecast assumed high utilization of more efficient, base load generation sites



	Costa Sur	Eco	Aguirre	CCSJ - NG	Palo Seco	SJ - Vapor	GTS + Mayaguez	CCAG	Camb	CCSJ - Diesel
June	4,019,845	2,605,278	1,428,216	1,735,451	2,363,585	555,426	200,146	114,718	14,808	-
July	3,863,654	2,829,085	1,377,946	2,100,110	1,132,799	266,388	195,386	236,615	35,344	-
August	4,039,783	1,712,180	3,491,696	1,558,221	1,160,617	418,845	263,802	288,053	162,196	-

- PROMOD forecast optimizes expected plant utilization to determine least cost dispatch
- PROMOD maximizes production from lowest cost units first, then relies on less efficient units as needed to meet demand
- Forecasted production determined primarily by plant availability due to outage schedules
- Peaker units forecast to be used only on occasional hours as needed (high heat rate, high cost)

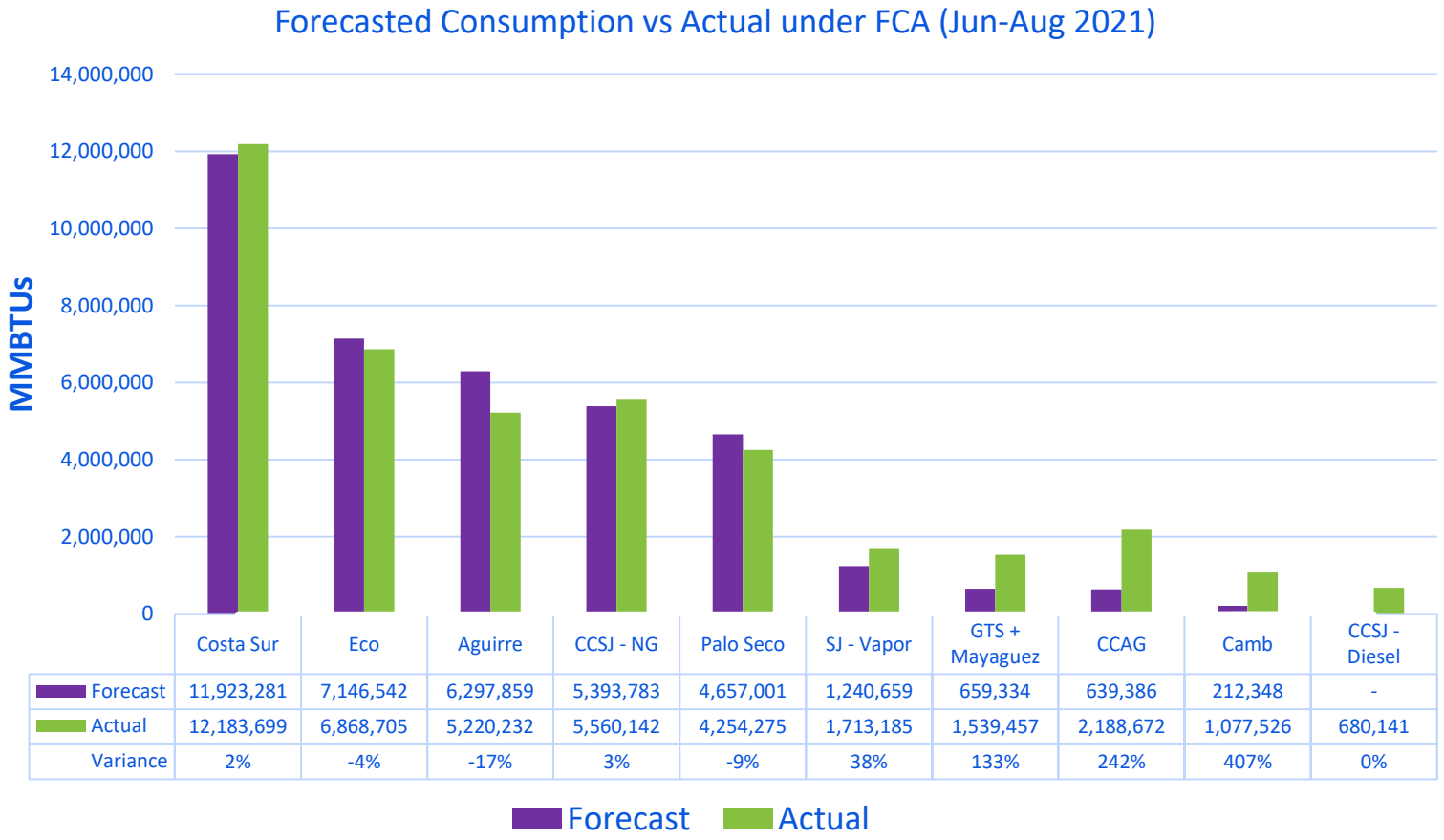
Diesel fueled-peaker plants were utilized to meet customer demand and to minimize load shedding



	Costa Sur	Eco	CCSJ - NG	Aguirre	Palo Seco	CCAG	SJ - Vapor	GTS + Mayaguez	Camb	CCSJ - Diesel
June	4,116,467	2,292,637	1,558,622	1,874,588	1,011,876	747,960	426,453	399,406	237,887	493,190
July	4,570,314	2,181,287	1,995,643	1,524,387	1,589,190	698,907	620,355	403,837	259,342	18,013
August	3,496,918	2,394,781	2,005,877	1,821,256	1,653,209	741,805	666,378	736,214	580,298	168,939

- Increased reliance on peaker plants in August

Greater than expected use of diesel-fueled peaker plants was the largest variance driver in the quarter



	Costa Sur	Eco	Aguirre	CCSJ - NG	Palo Seco	SJ - Vapor	GTS + Mayaguez	CCAG	Camb	CCSJ - Diesel
Forecast	11,923,281	7,146,542	6,297,859	5,393,783	4,657,001	1,240,659	659,334	639,386	212,348	-
Actual	12,183,699	6,868,705	5,220,232	5,560,142	4,254,275	1,713,185	1,539,457	2,188,672	1,077,526	680,141
Variance	2%	-4%	-17%	3%	-9%	38%	133%	242%	407%	0%

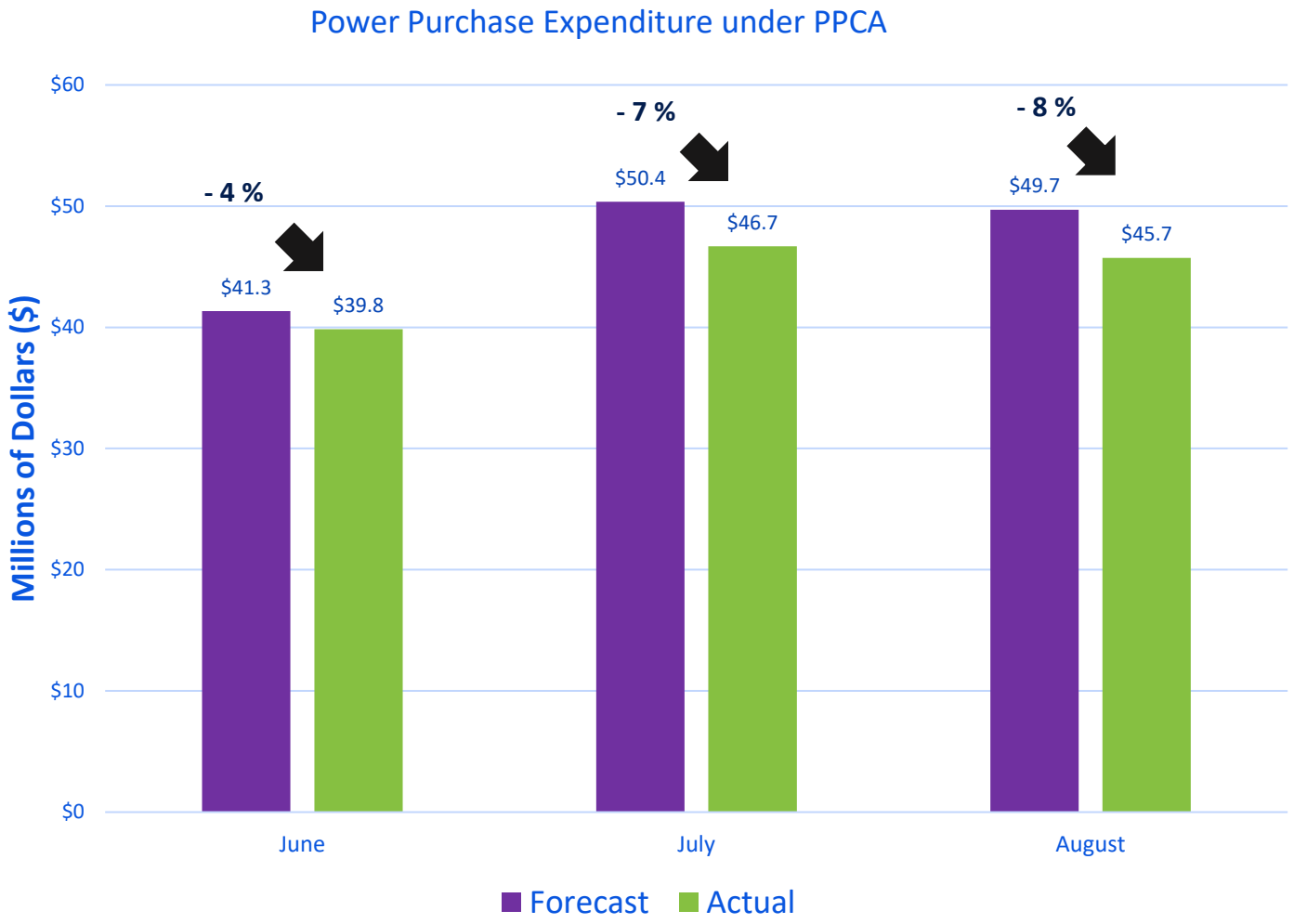
- Moderately higher utilization than forecast at Costa Sur, Ecoelectrica, and CCSJ
- Considerably less utilization than forecast at Aguirre and Palo Seco
- Significantly greater utilization than forecast at peaker plants

Summary of Calculation for FCA and PPCA Factors

Reconciliation from Jun-Aug FY2022

Purchase Power Cost Variance

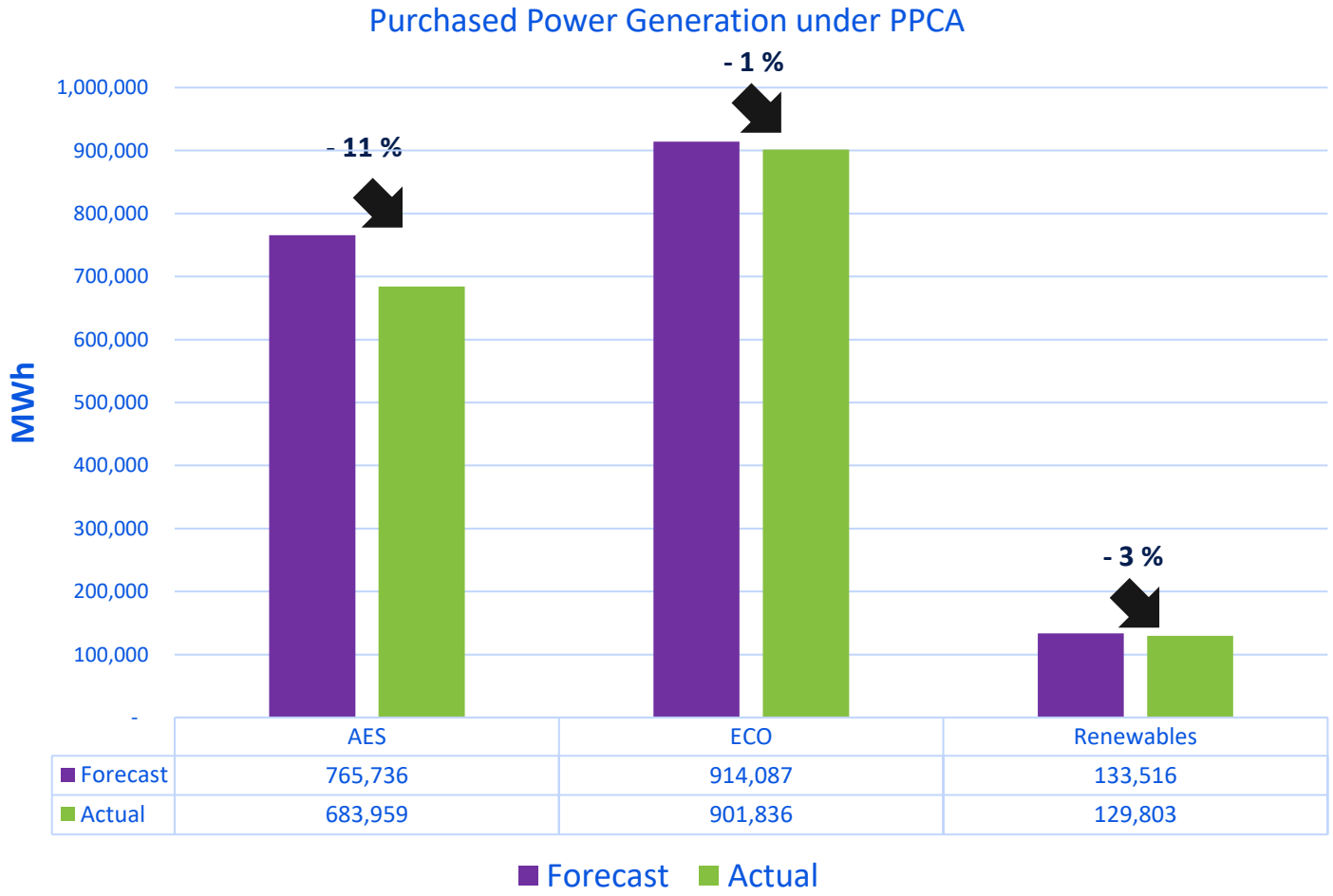
Actual purchased power costs in Q1 FY22 were just ~7% lower than projected



3-month Power Purchase Cost Comparison:

- Forecasted: $ 141.4 Million
- Actual: $ 132.2 Million
- Variance: -$9.2 Million (-6.5%)

Actual purchased power production in Q1 FY22 was just over 5% lower than projected



3-month Total Generation Comparison:

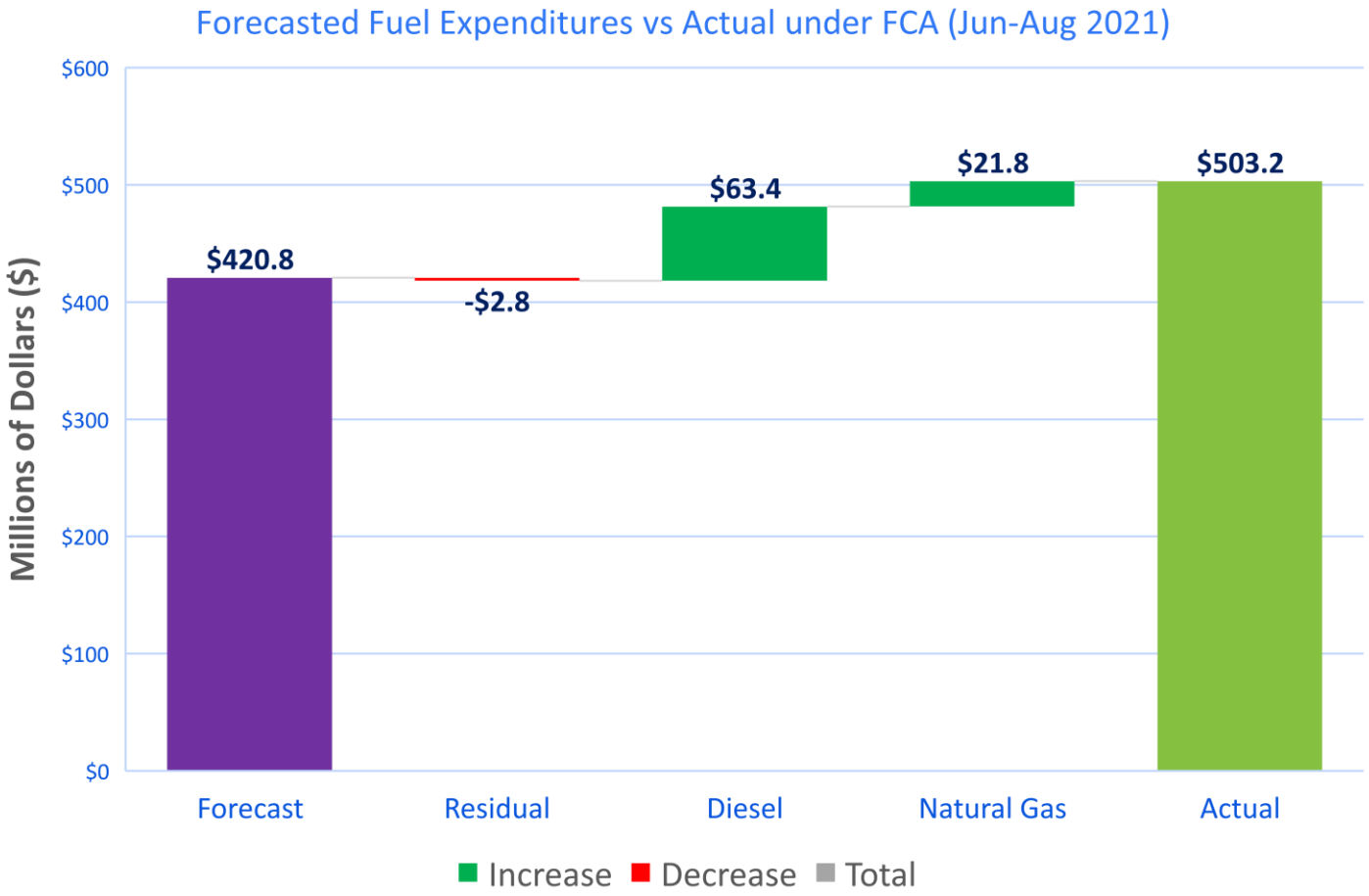
- Forecasted: 1,813,338 MWh
- Actual: 1,715,598 MWh
- Variance: -97,740 MWh (-5.4%)

Summary of Calculation for FCA and PPCA Factors

Reconciliation from Jun-Aug FY2022

Overall Cost Variance

The greatest source of variance was a reduction in lower cost residual fuel plants, which were replaced by diesel and some natural gas fuel plants



- Due to lack of resource adequacy, higher cost diesel-fueled peaker plants were relied upon to reduce load shed events
- Even with reliance on peakers, there was not enough capacity to meet customer demand for several periods and load shedding did occur

Summary of Calculation for FCA and PPCA Factors

Inventory Discussion

Inventory Review and Fuel Cost

May 17, 2021

- Inventory levels were measured and certified by external entities and provided to PREPA

June 30, 2021

- PREPA adjusted inventory levels measured on May 17, 2021 to develop estimated inventory levels as of June 30, 2021 (PRECIO PONDERADO DIRECTORADO DE GENERACION @ junio 30 2021)

July 2021

- The beginning balances for July were adjusted based on the inventory levels within the PRECIO PONDERADO DIRECTORADO DE GENERACION @ junio 30 2021 file
- Costs in the fuel report used the adjusted barrels multiplied by the weighted price as of June 30, 2021

Inventory adjustment as of June 30, 2021

No. 2 Fuel Oil

Plant	Diff BBls	Diff $
AGUIRRE Diesel /CC	(11,530.62)	(1,068,836.87)
Aguirre Gas		
SAN JUAN CC	10,682.34	1,012,210.54
CAMBALACHE	4,498.95	389,513.98
MAYAGÜEZ	2,824.68	247,178.64
PALO SECO	(256.71)	(23,400.23)
DAGUAO	(5,093.88)	(479,683.32)
JOBOS	5,031.49	484,918.42
VEGA BAJA	(973.46)	(90,632.49)
YABUCOA	1,030.13	64,953.81
COSTA SUR	97.92	8,004.57
TOTAL	**6,310.83**	**544,227.05**

No. 6 Fuel Oil - June 30 2021

Plant	Diff BBls	Diff $
AGUIRRE	(6,314.78)	(523,226.80)
COSTA SUR	(361.82)	(24,131.55)
CORCO		
PALO SECO	7,446.50	596,501.14
SAN JUAN	(5,371.19)	(381,511.08)
TOTAL	**(4,601.29)**	**(332,368.29)**

	Diff BBls	Diff $
Total Adjustment	**1,710**	**211,859**

LUMA

Summary of Calculation for FCA and PPCA Factors

Jun – Aug Not Billed Adjustment

Customers Not Billed

- Due to issues with the billing process during the months of June, July and August, LUMA has not been able to provide bills to a portion of customers
- In order to avoid double counting, LUMA proposes removing these unbilled amounts as LUMA anticipates billing these in the upcoming quarter

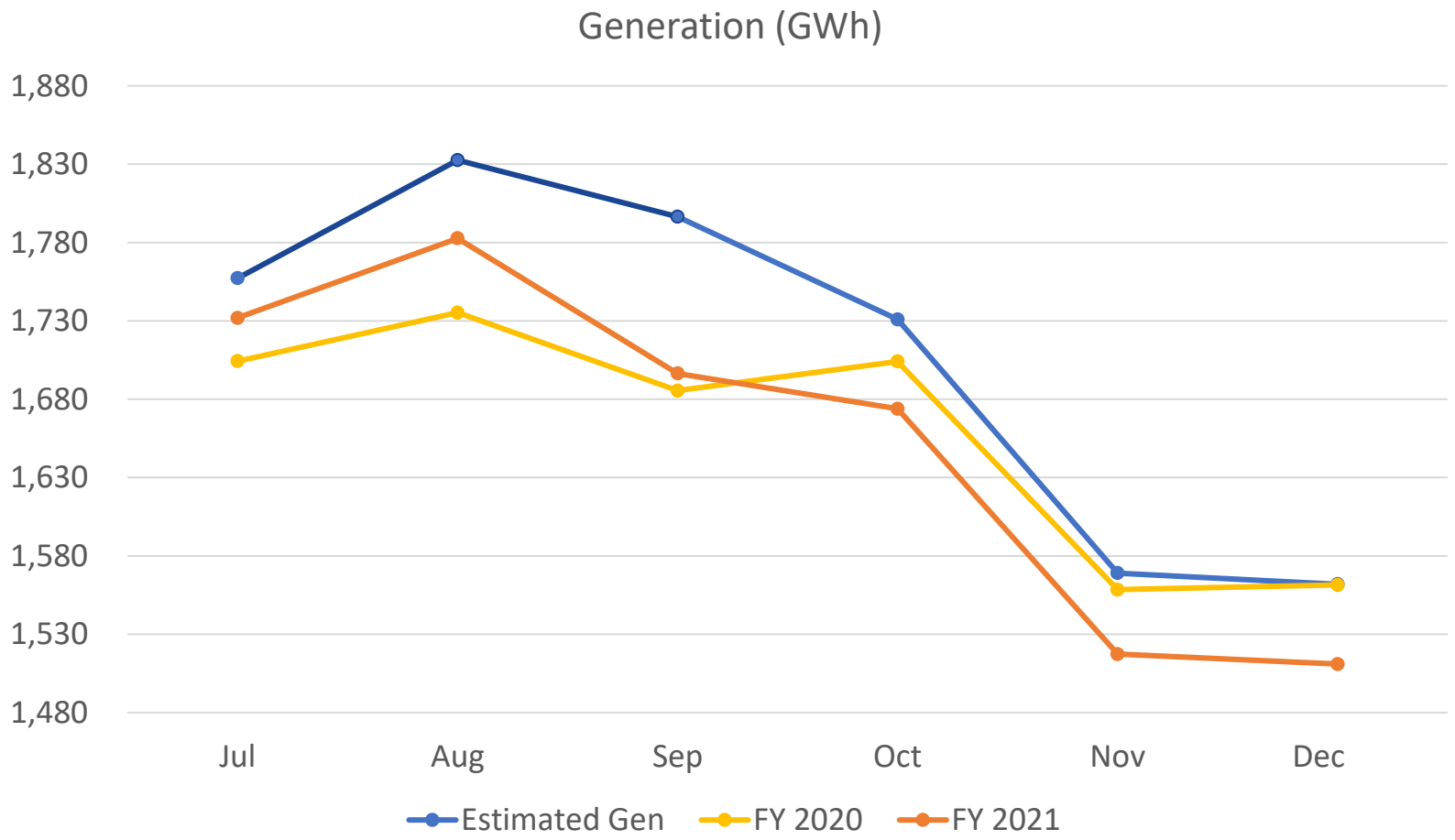
Month	Consumption (kWh)	FCA ($)	PPCA ($)
June	5,345,096	510,221	158,252
July	9,224,762	980,011	313,909
August	63,649,333	6,761,914	2,165,923
Total	**78,219,191**	**8,252,146**	**2,638,085**

Summary of Calculation for FCA and PPCA Factors

Retail Sales (kWh) Forecast

Retail Forecast Methodology and Assumptions

- The sales were estimated based on the actual daily generation



Proposed FCA and PPCA Factors

Fuel and Purchased Power Charge Adjustment Formula

$$FCA = \frac{Total\ Cost\ of\ Fuel \pm Prior\ Period\ Reconciliation}{Aplicable\ Retail\ kWh\ Sales}$$

$$PPCA = \frac{Total\ Purchased\ Power \pm Prior\ Period\ Reconciliation}{Aplicable\ Retail\ kWh\ Sales}$$

$$FCA = \frac{\$476,702,706.42 + \$113,020,253.81}{4,204,282,263.73}$$

$$PPCA = \frac{\$132,417,847.96 - \$5,862,527.99}{4,204,282,263.73}$$

Propose Factors For Q2 FY2022

Riders	July 2021 - September 2021 (Approved by PREB Resolution and Order June 29,2021)	Proposed October-December 2021	Difference
FCA	$0.1062	$0.1363	$0.0301
PPCA	$0.0340	$0.0288	($0.0052)
		Total	**$0.024923**

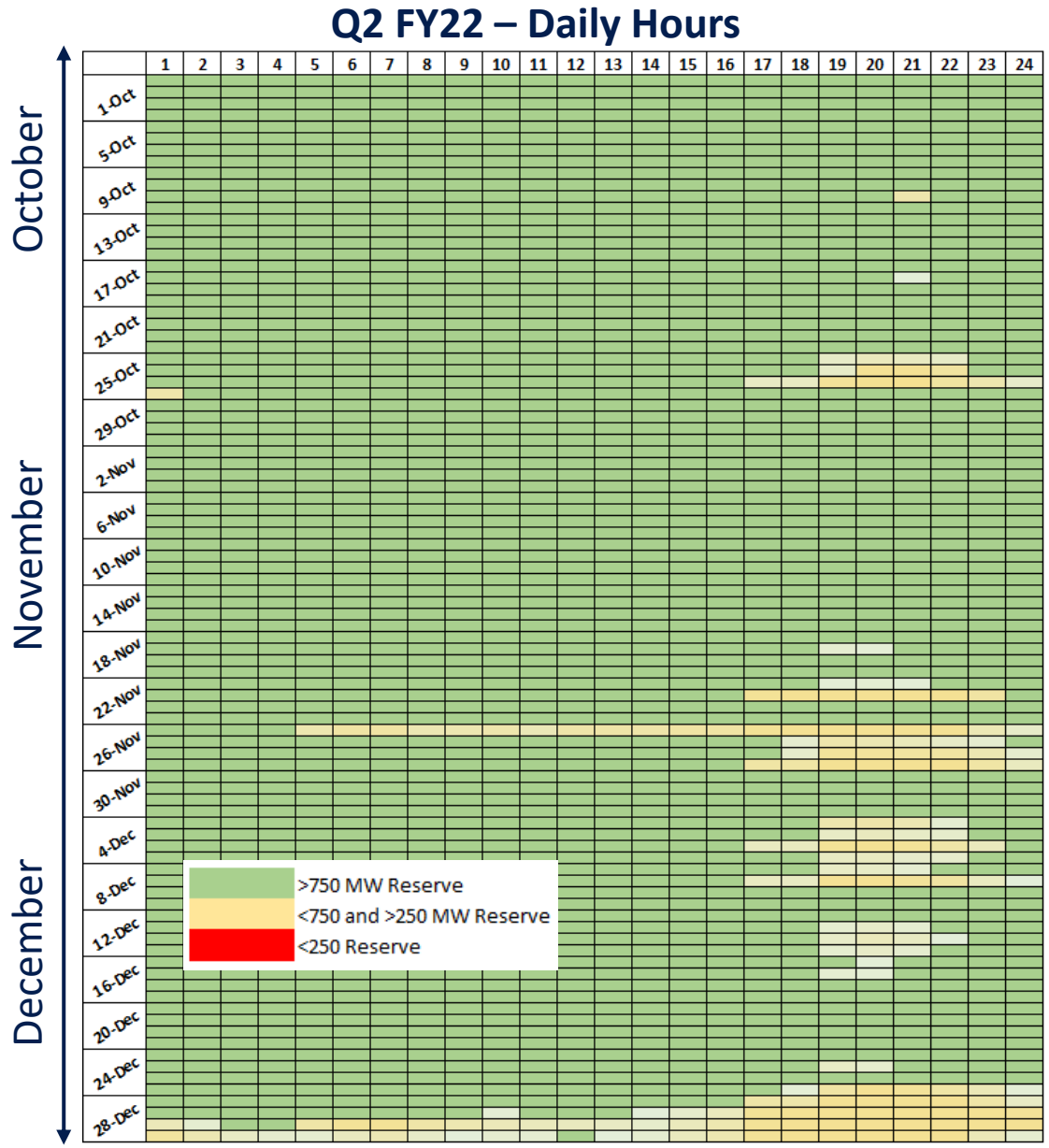
Analysis of Risks in the Forecast

Hourly Forecast Illustrates Risks and Opportunities

Hour	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2,108	2,115	2,154	2,149	2,125	2,148	2,165
2	2,034	2,020	2,062	2,049	2,028	2,060	2,087
3	1,980	1,970	1,996	1,998	1,976	1,995	2,008
4	1,940	1,936	1,957	1,960	1,940	1,962	1,965
5	1,906	1,940	1,958	1,963	1,945	1,966	1,948
6	1,883	2,025	2,045	2,049	2,029	2,037	1,947
7	1,832	2,116	2,132	2,127	2,100	2,108	1,923
8	1,797	2,112	2,113	2,115	2,081	2,100	1,920
9	1,833	2,199	2,194	2,187	2,156	2,171	1,994
10	1,886	2,268	2,258	2,253	2,228	2,240	2,051
11	1,909	2,288	2,280	2,263	2,227	2,253	2,058
12	1,953	2,299	2,313	2,295	2,267	2,265	2,060
13	1,955	2,300	2,290	2,289	2,269	2,269	2,071
14	1,949	2,304	2,290	2,290	2,264	2,276	2,061
15	1,964	2,326	2,335	2,313	2,283	2,290	2,085
16	1,998	2,351	2,359	2,339	2,302	2,317	2,121
17	2,075	2,407	2,420	2,388	2,349	2,347	2,205
18	2,119	2,381	2,398	2,368	2,327	2,329	2,238
19	2,323	2,528	2,529	2,502	2,463	2,437	2,407
20	2,381	2,557	2,553	2,526	2,488	2,449	2,420
21	2,391	2,540	2,536	2,508	2,475	2,424	2,382
22	2,385	2,490	2,485	2,458	2,431	2,377	2,322
23	2,334	2,411	2,404	2,378	2,358	2,360	2,269
24	2,232	2,289	2,276	2,265	2,252	2,262	2,190

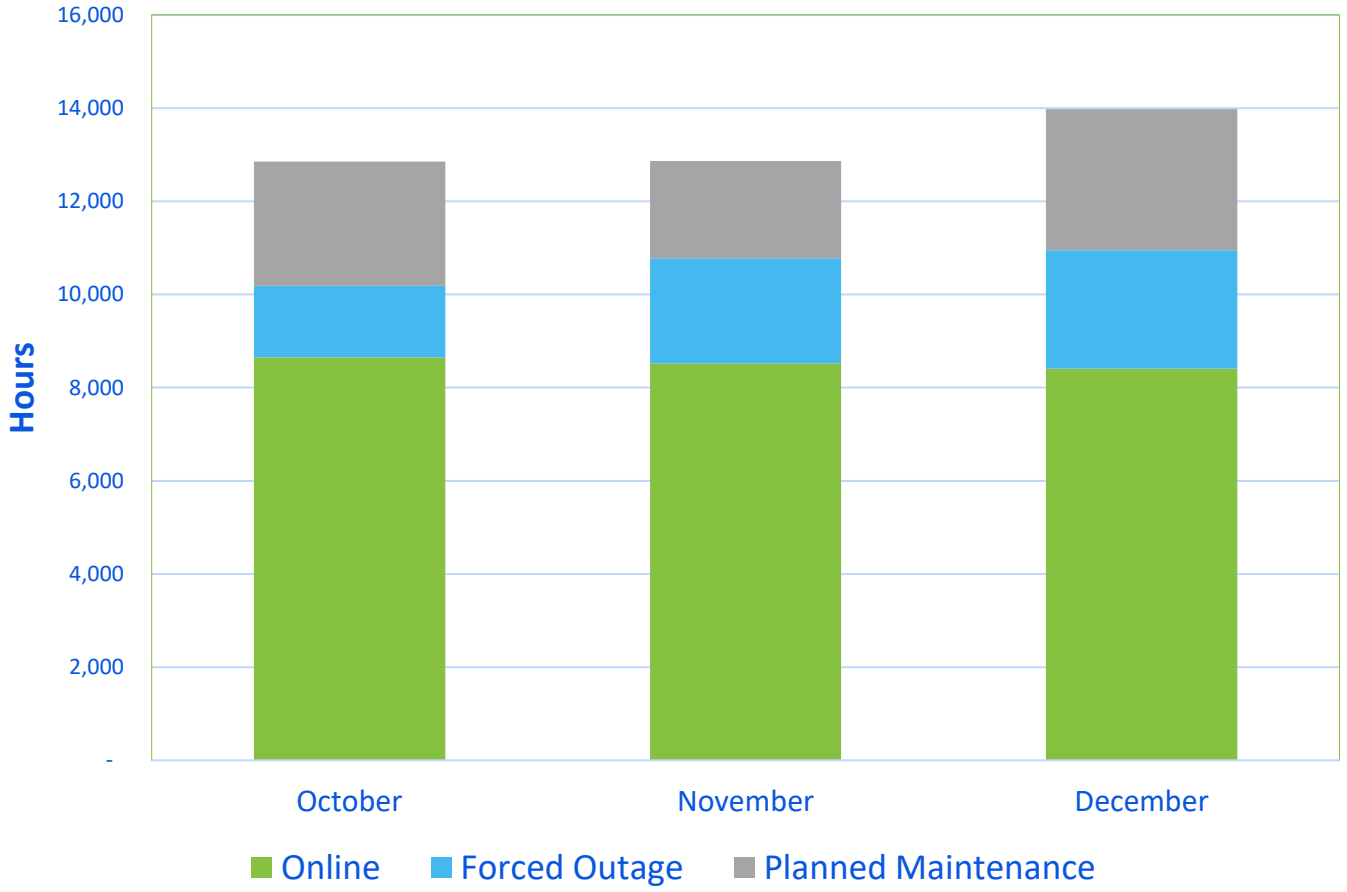
- Peak consumption between 6-10 pm is always the period of greatest concern and risk exposure
- High demand generally extends past midnight which highlights near-term and long-term issues:
  - A targeted demand-side program could reduce residential peak demand
  - If energy storage is a building block of resource strategy, longer duration is required

An Hourly Perspective Highlights Periods of Concern in Q2 2022



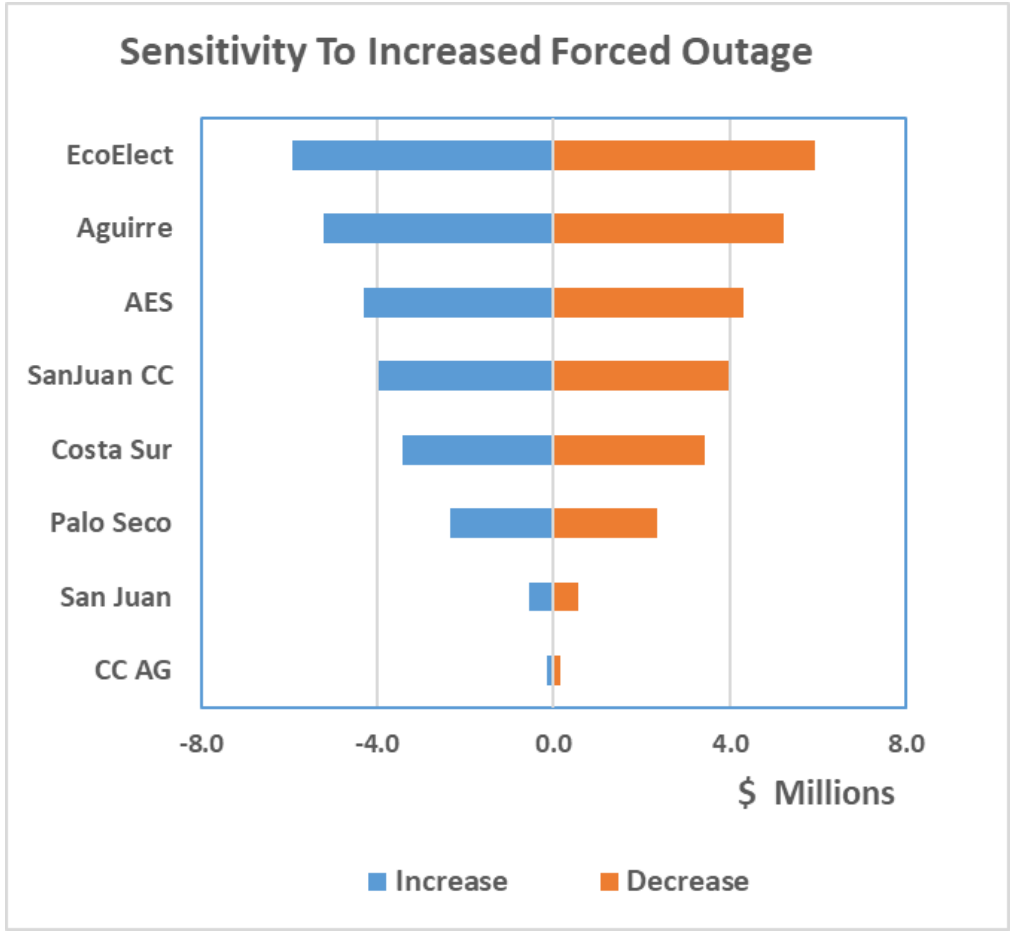
- Yellow-shaded sections illustrate periods where available reserves are forecasted to be below 750 MW
- Familiar patterns of hours of greatest concern:
  - Between 6-10 pm
  - Last week of December is also a noticeable concern

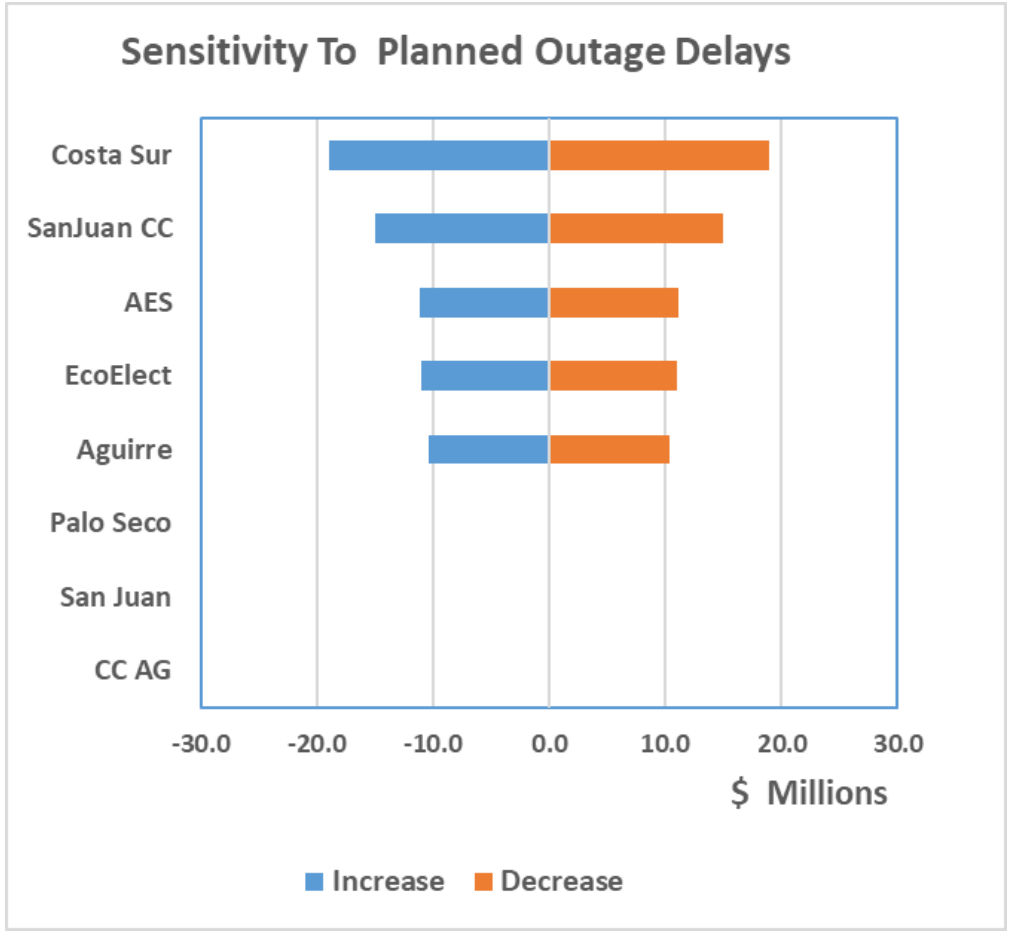
Generator Availability is Modeled Based on Planned Outage and Forced Outage Assumptions



- Each generator produces their projected availabilities that drive the FCA forecast
- Outage schedules for Q2 FY22 have very little flexibility
  - Many units have been deferring outages since spring
- Forced outage hours are based upon historical averages by unit

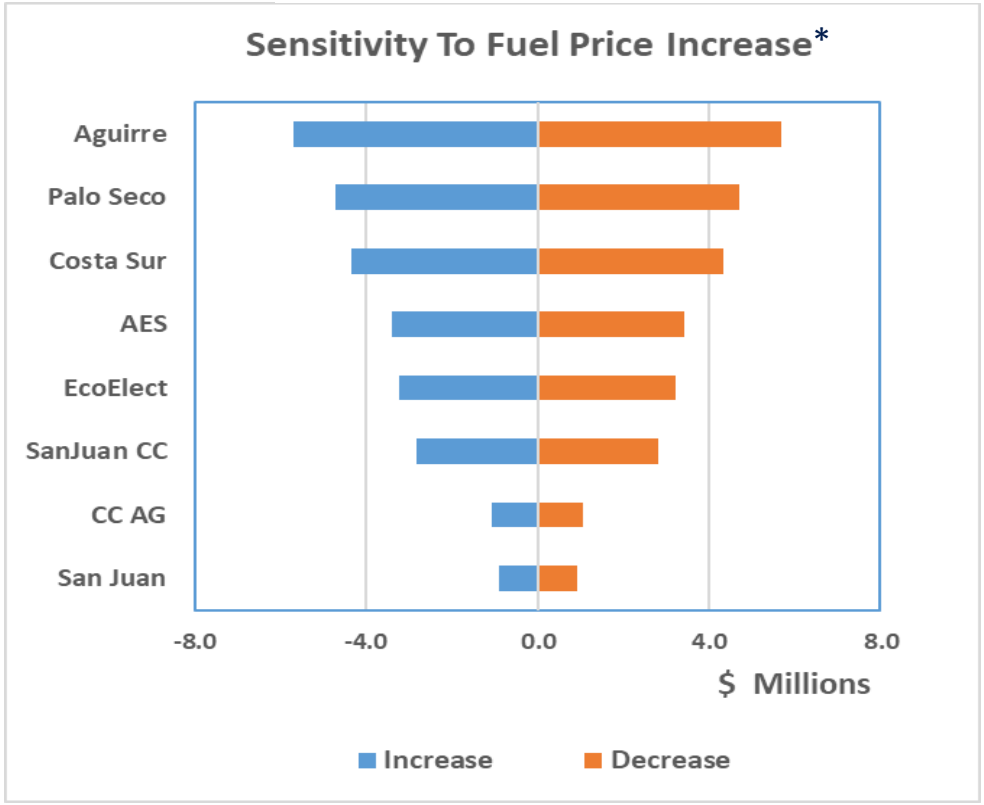
Significant Risk Exposure to Forced Outage Rates and Planned Outage Schedule Delays





Forced outage rate sensitivity tests the impact of an increase or decrease of 100 hours availabilities lost to forced outages
Planned Outage Delay sensitivity tests the impact of an increase or decrease of 10% of the outage duration of currently planned outages

Fuel Prices Have Increased



- Significant increases in fuel prices over the past 12-months
  - ~75% increase in WTI prices
  - >150% increase in Henry Hub
- Direct impact to Fuel Charge Adjustment

*FCA sensitivities for Q2 FY2022 to increases or decrease in fuel prices by 5%.

Several Process Improvements Underway to Mitigate Risks

- Outage schedules are reviewed several times per week
  - Alternate outage windows evaluated with PROMOD
- Implementing new processes to collect data and analyze alternatives
  - To support data driven decision making
  - Systems Operations maintaining historical records on more structured basis
- Increased forced outages rates or extended planned outage delays affects resource adequacy and drives higher costs

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Thank You