phelps

Phelps Dunbar LLP
Canal Place
365 Canal Street
Suite 2000
New Orleans, LA 70130
504 566 1311

September 9, 2022

12922-0564

Collin Buisson
collin.buisson@phelps.com
Direct 504 584 9213

VIA OVERNIGHT DELIVERY

Ms. Terri Lemoine Bordelon
Records Division
Louisiana Public Service Commission
Galvez Building, 12th Floor
602 N. Fifth Street
Baton Rouge, LA 70802

REDACTED

Re: LPSC Docket No. I-36175, Cleco Power LLC, ex parte. In re: 2021 Request to Initiate Integrated Resource Planning Process Pursuant to the General Order (Corrected) in Docket R-30021, dated April 20, 2012.

Dear Ms. Bordelon:

Enclosed please find one original and three copies of a public version of Cleco Power LLC's ("Cleco Power") Updated IRP Assumptions, to be filed into the record of the captioned docket.

Also enclosed, in a sealed enveloped marked "Confidential", are one original and three copies of a confidential version of Cleco Power's Updated IRP Assumptions, which we are filing as confidential, highly sensitive protected materials submitted under seal and exempt from public disclosure as competitively sensitive, trade secret, proprietary, and other confidential information pursuant to Rule 12.1 of the Commission's Rules of Practice and Procedure.

Please return one date-stamped copy of each of the public and confidential versions of the filing to us via the enclosed self-addressed, stamped envelope. If you have any questions, or require any additional information, please do not hesitate to contact us.

Sincerely,

Collin Buisson

Collin Buisson
Counsel for Cleco Power LLC

CB:CB:

cc: Docket No. I-36175 Service List
Nathan G. Huntwork
Daniel T. Pancamo

CERTIFICATE OF SERVICE

I hereby certify that I have, this 9th day of September 2022, served a copy of the referenced filing to all known parties to this proceeding, by U.S. mail, postage prepaid and properly addressed, by hand delivery, by overnight courier service, or by electronic mail.

Collin Buisson

Collin Buisson
La. Bar No. 38146

BEFORE THE
LOUISIANA PUBLIC SERVICE COMMISSION

DOCKET NO. I-36175

CLECO POWER LLC, EX PARTE

In re: Request to Initiate IRP Process (October 20, 2021) Pursuant to the General Order (Corrected) in Docket No. R-30021, Issued April 20, 2012.

CLECO POWER LLC
UPDATED DATA ASSUMPTIONS

REDACTED TO OMIT CONFIDENTIAL, HIGHLY SENSITIVE PROTECTED MATERIALS SUBMITTED UNDER SEAL AS COMPETITIVELY SENSITIVE, TRADE SECRET, PROPRIETARY, AND OTHER CONFIDENTIAL INFORMATION PURSUANT TO RULE 12.1 OF THE COMMISSION'S RULES OF PRACTICE AND PROCEDURE

September 8, 2022

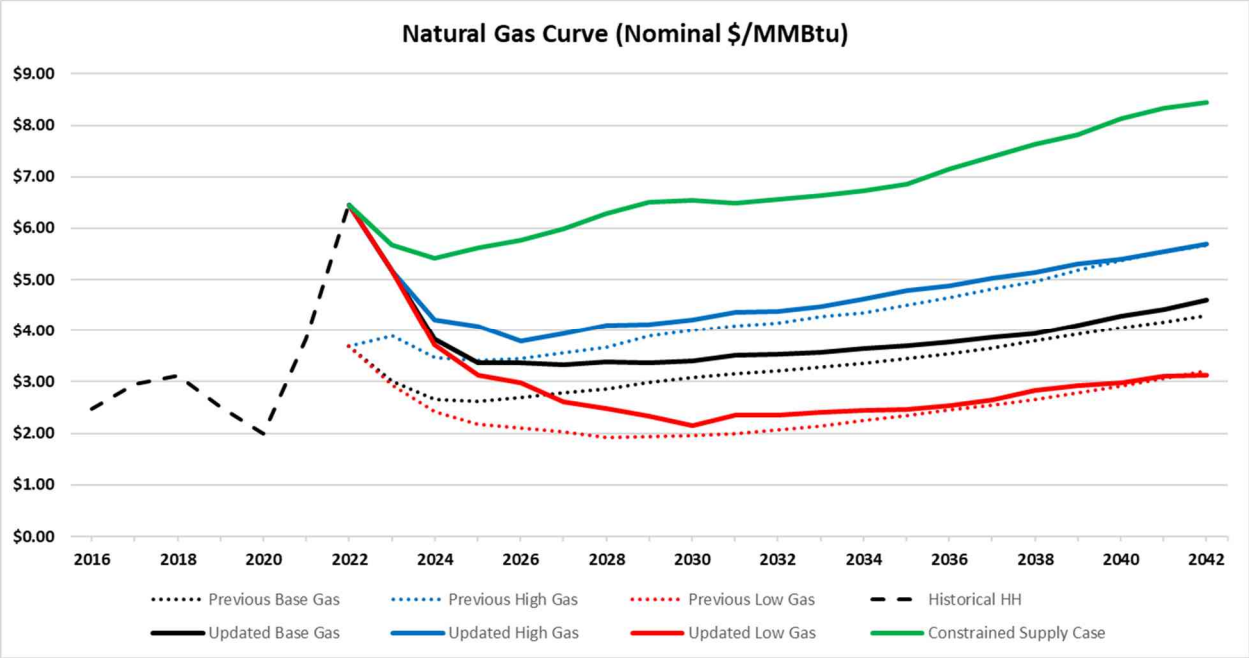
Objective

Cleco Power LLC ("Cleco Power" or the "Company") filed its data assumptions and descriptions of studies to be performed in the Company's Integrated Resource Plan ("IRP") in February 2022. In June 2022, stakeholders filed formal comments about Cleco Power's assumptions and IRP process. Cleco Power considered the comments and is now filing these Updated Data Assumptions to address certain of these comments before the Company files its Draft IRP Report. Cleco Power's objective is to remain collaborative and transparent about changes in the assumptions that it is using during the IRP process.

Data Inputs

Many of the IRP stakeholders wanted Cleco Power to use an updated natural gas curve for its modeling. In **Chart 1**, Cleco Power has now chosen to use four gas cases: Base Case, Low Case, High Case, and a Constrained Supply Case. The Constrained Supply Case focuses on reduced production, thereby leading to tighter future supplies and higher costs. Cleco Power has also included the gas assumptions from the February 2022 filing on the chart.

Chart 1: Natural Gas Curve



The Louisiana Public Service Commission ("LPSC") Staff asked Cleco Power to provide the Carbon Dioxide curve Cleco Power will use in the Environmental Case. **Chart 2** shows the CO_2 Price Curve that Cleco Power will use in its modeling.

The Filsinger Energy Partners ("FEP") Environmental Scenario assumes that a national $20/short ton carbon tax is implemented in 2025 and remains flat in real terms until 2030. The national carbon tax then increases from $20/short ton ($26/short ton nominal) in 2030 to $80/short ton ($170/short ton nominal) by 2050. In FEP's model, this carbon pricing achieves approximately a 90% reduction in electricity sector carbon emissions by 2050 compared to 2021 levels.

The FEP Environmental Scenario assumes that the United States Department of Energy's ("DOE") goal of reducing green hydrogen production costs by 80% from ~$5/kg to $1/kg by 2030 is achieved. The scenario assumes that the incremental cost reductions continue at a slower rate after 2030 as the technology matures. The FEP Environmental Scenario assumes that all new thermal generation construction (*e.g.*, combined cycle, combustion turbine) will use a blended fuel of green hydrogen and natural gas. The blending rate starts at 10% green hydrogen in 2031 and increases by 10% percent each year until 2040. After 2040 all new thermal generation will be utilizing 100% carbon-free green hydrogen fuel in lieu of natural gas for power generation.

Chart 2: Carbon Dioxide Price Curve

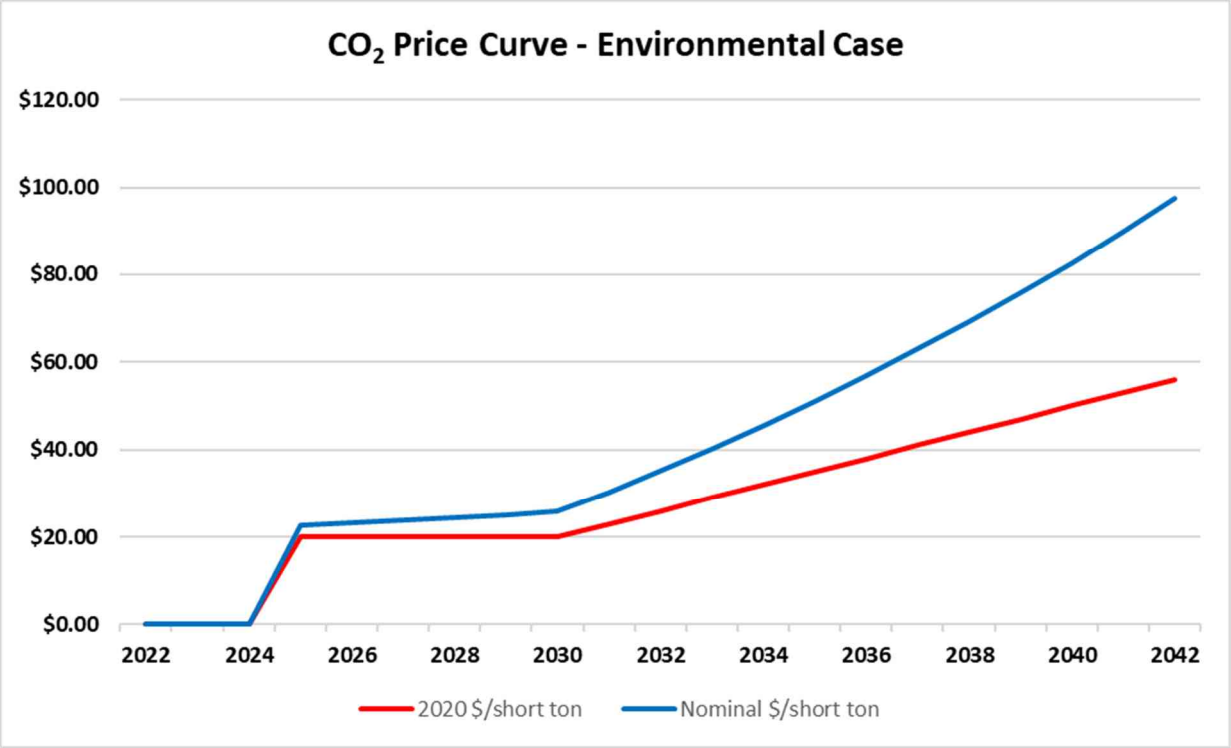


Chart 3 illustrates Cleco Power's projected demand requirement for three different cases: Base Case, Base Electrification Case, and Upside Electrification Case. Each case includes a 9.4% reserve margin, which is in line with the Midcontinent Independent System Operator, Inc.'s ("MISO") 2021/2022 Planning Reserve Margin. Cleco Power is excluding the load of Dixie Electric Membership Corporation ("DEMCO") as a wholesale customer when the term of the Power Supply and Service Agreement between Cleco Power and DEMCO expires on March 31, 2024, thereby resulting in a reduction to peak demand forecasts. Cleco Power will not include a High Case (+10%) or a Low Case (-10%) sensitivity.

Chart 3: Peak Demand Curve

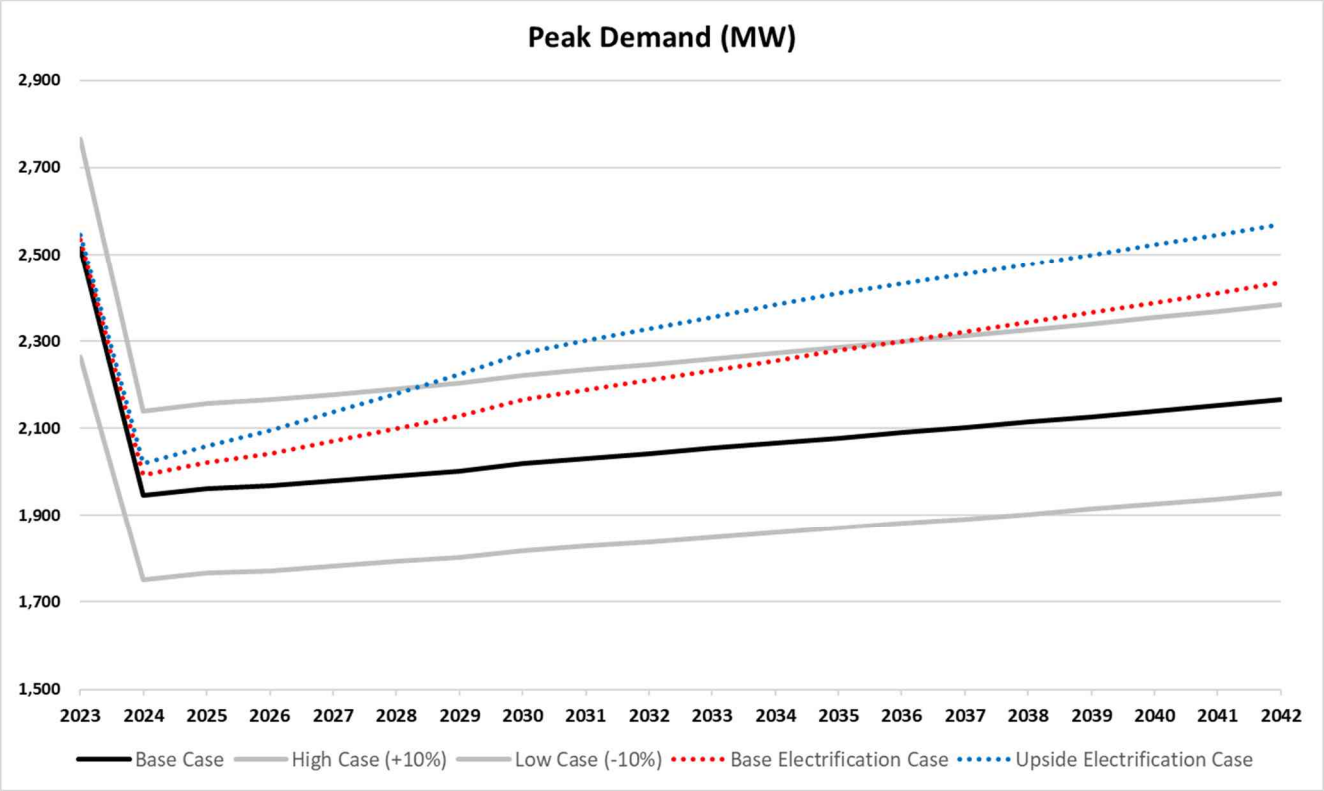
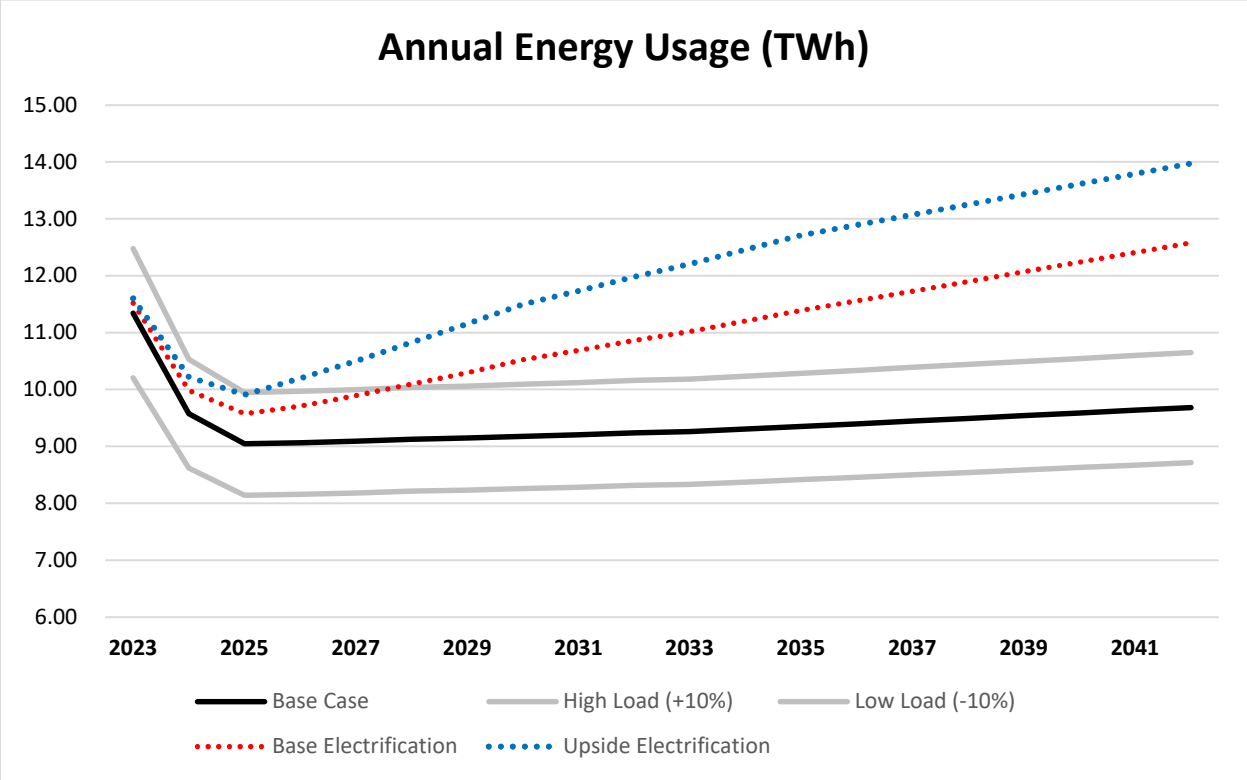


Chart 4 illustrates Cleco Power's forecasted load based on projected demand sensitivities and the Peak Demand Curves in both the Base Adoption and Upside Adoption cases. The Base Case energy curves do not incorporate electrification adoption assumptions (electrification is discussed more fully below). Cleco Power is excluding DEMCO's load as a wholesale customer when the term of the Power Supply and Service Agreement between Cleco Power and DEMCO expires on March 31, 2024, thereby resulting in a reduction to energy forecasts.

Chart 4: Load Curves



Electrification

Cleco Power hired consultants to develop an electrification strategy which includes gas Compression and Electric Vehicles. Cleco Power is incorporating two electrification scenarios: a "Base Case Electrification" and an "Upside Case Electrification." Cleco Power assumes as the liquified natural gas ("LNG") market continues to expand, new natural gas compressor stations will select electric-motor-driven equipment utilizing Cleco's transmission and distribution infrastructure, as part of widespread adoption of environmental, social, and governance ("ESG") targets. Cleco's Electrification strategy is also rooted in the assumption that light, medium, and heavy-duty trucks will begin to adopt electricity as their fuel of choice. The adoption rates take into consideration that electric vehicle utilization will increase inside the State of Louisiana, as well as outside of Cleco's service territory utilizing electric infrastructure across key interstate systems throughout Cleco's service region. The adoption rate increase is based on vehicle manufactures' targets and government mandates.

Green Tariff

Cleco Power intends to dedicate renewable resources to supply customers with green energy that will allow them to meet their environmental targets.

Chart 5 shows the increase that each electrification case will have on Cleco Power's summer peak demand for each year from 2023 to 2042. The coincidental peak due to electrification was found by shaping the Gas Compression, Electric Vehicles, and Forklifts to each hour of each year being studied, and found the total demand increase on the same hour as Cleco Power's peak demand.

Chart 5: Electrification's Coincidental Peak with Cleco Power

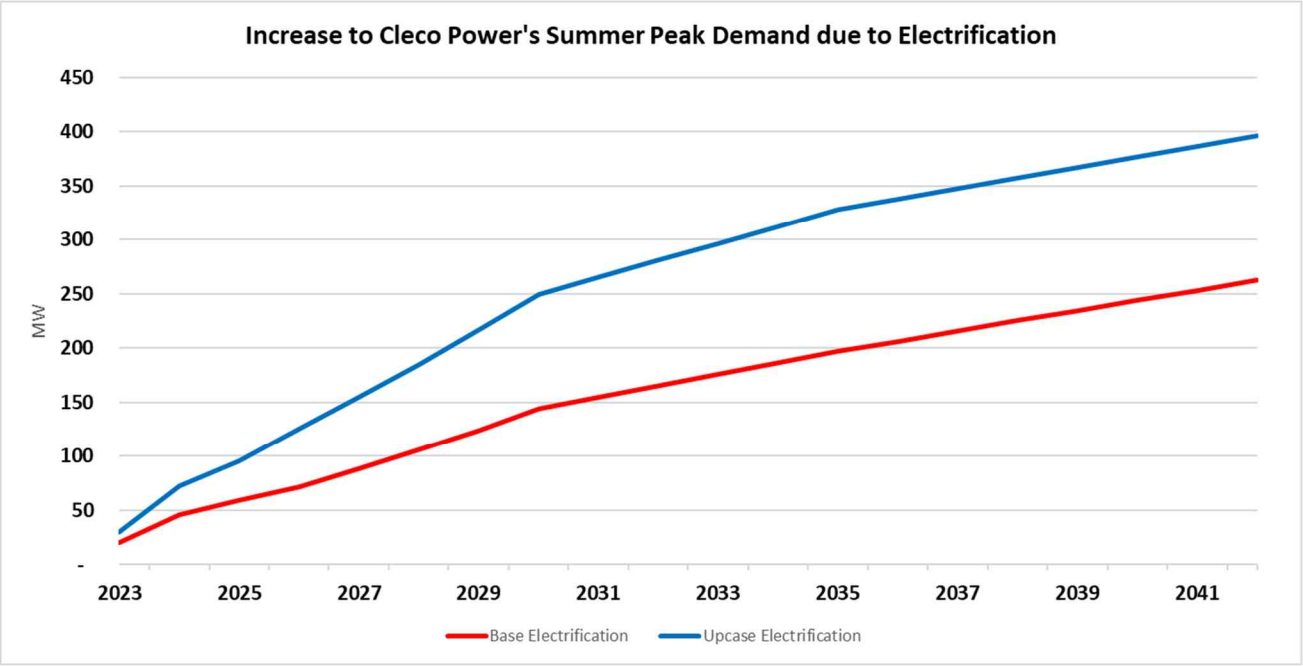
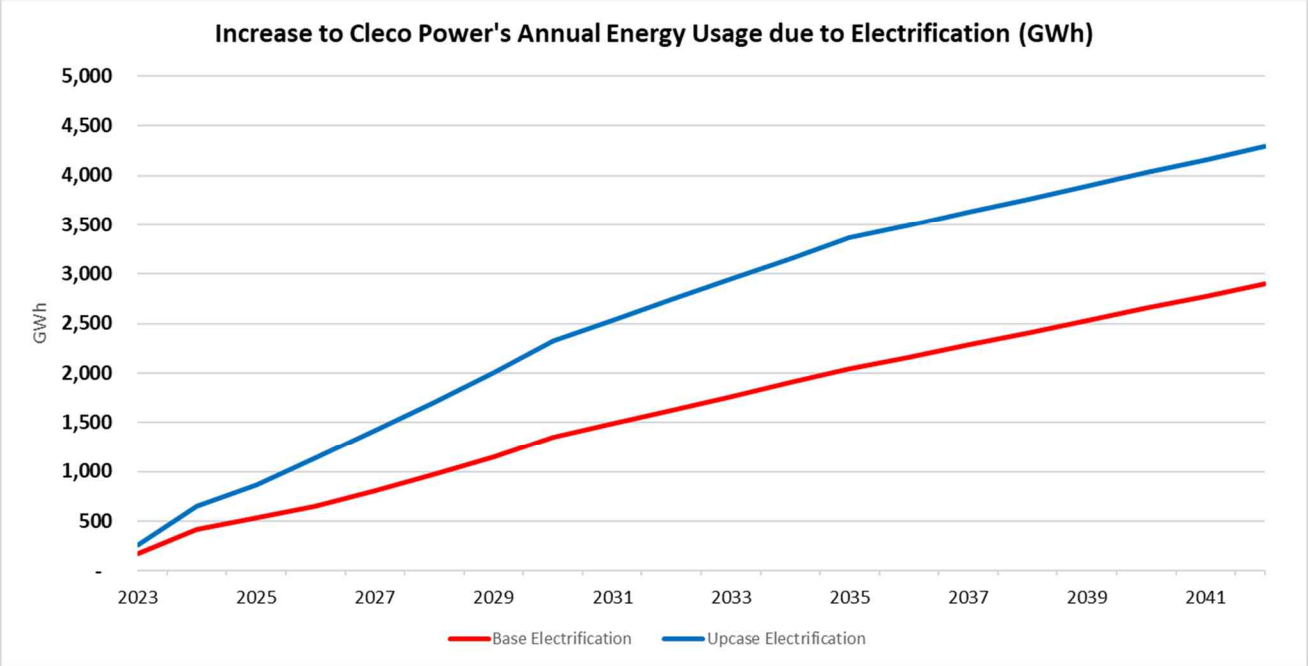


Chart 6 shows how each electrification case contributes to Cleco Power's annual energy usage.

Chart 6: Electrification's Incremental Annual Energy Contribution



Current and Future Supply-Side Resources

In August 2022, Cleco Power entered into a power purchase agreement with D.E. Shaw Renewable Investments ("DESRI") for 240 MW_{ac} of solar power, known as the "Dolet Hills Solar Project." Subject to authorization by the LPSC, the facility will be built near the recently-retired Dolet Hills Power Station in Mansfield, LA. The expected commercial operation date ("COD") is Q4 2024.

According to public correspondence with the United States Environmental Protection Agency, Rodemacher Power Station 2 in Lena, LA is expected to cease operations by 2028. This will lower Cleco Power's installed capacity ("ICAP") by 149 MW.

Cleco Power plans to derate Madison Power Station 3 (Lena, LA) by 200 MW beginning in 2028 due to Cleco Power's proposed carbon capture and sequestration project, also known as Project Diamond Vault.

Teche Power Station 3 located in St. Mary Parish, LA is expected to be retired in May 2023 due to its anticipated value, which is based off of MISO's Planning Resource Auction ("PRA"). Therefore, Cleco Power will not include Teche 3 in its generation portfolio for the IRP, resulting in a loss of 336 MW of ICAP.

Cleco Power intends to build a 45 MW_{ac} solar facility in central Louisiana.

Resource Alternatives

In its original assumptions filing, Cleco Power used numbers supplied by Burns & McDonnell Engineering Company, Inc. Cleco Power has now decided to use resource alternatives data from Energy Exemplar ("EE") for the following reasons:

- The EE data is publicly sourced from 2022 EIA Annual Energy Outlook data;
- Generic resources help reduce redundancy and improve modeling time;
- The ease of inputting the different technologies into Aurora for modeling; and
- The inclusion of overnight costs learning curves for future years.

It should be noted that the Solar PPA price escalates at 2.50% each year.

Table 1: Combined Cycle Gas Turbines

2020 $'s	Combined Cycle Gas Turbine	
	Single-Shaft (1x1)	Multi-Shaft (2x1)
Total Overnight Cost $/kW	$1,172	$1,036
MW	418	1083
Annual FOM ($/MW-wk)	$528	$461
VOM $/MWh	$2.60	$1.91
Heat Rate	6,431	6,370
Total $/kW	$1,251	$1,106
Total $/MW - week	$24,055	$21,271
NOx (lbs/mmBtu)	0.007	0.007
SO_2 (lbs/mmBtu)	0	0
CO_2 (lbs/mmBtu)	120	120
Depreciable Life	30	30

Table 2: Combustion Turbines

2020 $'s	Cumbustion Turbine		Wärtsilä	
	Aeroderivative	Industrial Frame	Wartsila (18MW)	Wartsila (18MW) w/ addon
Total Overnight Cost $/kW	$1,262	$766	Redacted	
MW	105	237		
FOM $/kW - year	$17.06	$7.33		
Annual FOM ($/MW-wk)	$605	$316		
VOM $/MWh	$4.80	$4.60		
Heat Rate	9,124	9,905		
Total $/kW	$1,348	$818		
Total $/MW - week	$25,918	$15,723		
NOx (lbs/mmBtu)	0.03	0.05		
SO_2 (lbs/mmBtu)	0	0		
CO_2 (lbs/mmBtu)	120	120		
Depreciable Life	30	30		

Table 3: Renewables

2020 $'s	Renewables				PPA
	Battery storage	Wind	Solar photovoltaic (PV) with tracking	Solar PV with storage	Solar*
Total Overnight Cost $/kW	$1,284	$1,676	$1,295	$1,705	
MW	50	200	150	150	100
FOM $/kW - year	$25.96	$27.57	$15.97	$33.67	
Annual FOM ($/MW-wk)	$844	$761	$628	$1,059	
VOM $/MWh					$42.00
Heat Rate					
Total $/kW	$1,364	$1,780	$1,375	$1,811	
Total $/MW - week	$26,222	$34,232	$26,441	$34,829	
Depreciable Life	15	20	25	15	25
Capacity Factor	16%	40%	24%	21.6%	24%