**BEFORE THE**
**LOUISIANA PUBLIC SERVICE COMMISSION**



**DOCKET NO. I-36175**

**CLECO POWER COMPANY (CLECO),**
**EX PARTE**

***In re: 2021 Request to Initiate Integrated Resource Planning Process Pursuant to the General Order (Corrected) in Docket No. R-30021 Dated April 20, 2012.***

## STAFF REPORT

### *I. Background*

On October 20, 2021, Cleco power ("Cleco" or "Company") submitted a request to the Louisiana Public Service Commission ("LPSC," or "Commission") to initiate the Integrated Resource Planning ("IRP") process (Event 1 of the IRP process). On February 21, 2022, Cleco filed with the Commission its *Cleco Power LLC's Data Assumptions and Description of Studies to be Performed* (referred to as "Cleco Assumptions") (Event 2 of the IRP process). On March 18, 2022, Cleco filed its *Presentation for the Cleco Power IRP Stakeholder Meeting of March 24, 2022* (referred to as "Cleco Presentation"). The first stakeholder meeting (Event 3 of the IRP process) was held virtually on March 24, 2022, at which Cleco presented the IRP data assumption materials and addressed questions from stakeholders.

Following the first stakeholder meeting, stakeholders filed comments (Event 4). The Sierra Club filed on May 24, 2022; the Southern Renewable Energy Association ("SREA") filed on June 13, 2022; the Alliance for Afforable Energy ("AAE") filed on June 15, 2022; the Advanced Energy Management Association ("AEMA") filed on June 23, 2022; and International Paper filed on June 24, 2022. In addition, Cleco filed comments on June 15, 2022; and Staff filed comments on June 24, 2022. Cleco filed *Updated IRP Assumptions* on September 9, 2022.

Cleco filed its *Cleco Power 2021 Integrated Resource Plan, LPSC Docket No. I-36175 Draft IRP Report* ("Draft IRP Report") on October 26, 2022 (Event 5). The second stakeholder meeting (Event 6) was held on November 29, 2022. The meeting provided an opportunity for stakeholders to ask questions and give feedback to Cleco on its Draft IRP Report, and to assess the extent to which Cleco responded to issues and feeback on the data assumptions in the Draft IRP Report. Following the stakeholder meeting, stakeholders filed comments (Event 7). Sierra Club filed on January 30, 2023; AEMA and SREA filed on January 31, 2023; and AAE filed on February 1, 2023.

The purpose of this report (Event 8) is to identify issues that remain in Cleco's Draft IRP Report, that Cleco should address in its Final IRP Report and in so doing, meet the requirements established in the IRP Rules contained in LPSC Corrected General Order, Docket No. R-30021, In re: Development and Implementation of Rule for Integrated Resource Planning/or Electric Utilities (April 20, 2012) ("IRP Order").

## *II. Summary of Staff's Comments*

Staff appreciates Cleco's efforts and recognizes that Cleco has already complied with many of the requests made by Staff and stakeholders and this is reflected in Cleco's Draft IRP Report. Overall, as discussed below in more detail, Cleco has not defined its resource options with enough transparency to allow Staff to be confident that Cleco has examined its options thoroughly, especially for the Project Diamond Vault. In several cases, Cleco must update costs using the impact of current tax subsidies, to include in the assumptions. In its Final IRP Report, Cleco should report the results of testing its portfolios across all its scenarios, to provide more insight into the risks as well as costs of the portfolios. It must provide a clear rationale (and computation of costs) for choosing its preferred portfolio.

The issues are discussed in detail below, organized by the following topics:

i. Load Forecast;
ii. Going-in Position
iii. Modeling Assumptions for Future Supply Options (Including Diamond Vault)
iv. Transmission
v. Resources in MISO
vi. Natural Gas Price Outlooks
vii. Portfolio Development and Analysis
viii. Other.

## *III. Staff's detailed Comment*

### i. Load forecast

Cleco developed three peak demand forecasts: Base Case, Base Electrification Case, and Upside Electricfication Case. Cleco provided the energy and peak demand outlooks (numerically) for the Base Case in which peak demand reaches 2,167 GW by 2042.[1] Cleco should also provide the peak demand data behind Figure 2.1, which includes all three cases.

Staff requested (at the first stakeholder meeting on March 24, 2022) that Cleco provide the results of the electrification study the Company referred to in the context of its Electrification scenario before the scheduled release data of its Draft IRP in October 2022, as Cleco said the study is already under way and indicated the Company is willing to provide it to stakeholders. Cleco does not seem to have done so. In the Draft IRP Report, Cleco noted *"The electrification study provided Cleco Power with annual, cumulative energy contributions, broken down by each category"* but did not provide the study itself.[2] Cleco summarized the results of the study, noting: *"The Base Electrification scenario assumes that by 2030, 4% of light and medium trucks in Cleco*

[1] LPSC Docket No. I-36175. Cleco Draft IRP Report. Appendix 1 – Monthly Energy and Peak Demand.
[2] LPDC Docket No. I-36175. Cleco Draft IRP Report. P. 27.

*Power's territory are electric, 6% of personal vehicles are electric, 40% of new gas compression statements are electric, and 50% of existing gas compression stations will convert to electric pumps. Cleco Power's Upside Electrification scenario assumes that by 2030, 6% of light and medium trucks in Cleco Power's territory are electric, about 15% of personal vehicles are electric, 80% of new gas compression statements are electric, and 75% of existing gas compression stations will convert to electric pumps."*[3] Cleco should provide this study to assist Staff and stakeholder's efforts to understand the drivers of Cleco's load forecasts.

In addition, Cleco was asked at the First Stakeholder meeting to address the following issues, which more-or-less address in the Draft IRP Report:

- Staff and International Paper requested 10 years of historical load and demand information, annual total energy consumption by class, and monthly energy consumption by utility and by customer class (which Cleco is required to file, in any case). Cleco mostly complied. Cleco provided 10 years of historical monthly, customer-class energy consumption data. in "Appendix1 Monthly Energy and Peak Demand," filed with Cleco's Draft IRP Report. Cleco provided total peak load data by month over 10 years (but not by customer class), also in Appendix 1.
- Staff requested that the role of customer counts, usage per customer, the customer segment, and role of incremental energy efficiency ("EE") in driving peak load and energy consumption should be described, and annual tables of numbers for these drivers should be provided. Cleco partly complied. It provided the outlook for residential customers only in Table 2.5, Section 2 of the Draft IRP Report. Cleco provided its econometric equations but not the input data. Cleco explained that existing EE programs and distributed

[3] LPDC Docket No. I-36175. Cleco Draft IRP Report. P. 27.

generation are embedded in historical customer usage data, and are not explicitly modeled as a line item reduction to load. New EE programs are modeled as a resource option in Aurora, rather than as a direct reduction in the load inputs (this is discussed in EE section below).

- Staff asked that the historical annual results of the TOUCH (time of use choice) program (in terms of impact on peak kW) be included in the Draft IRP Report, along with projections of results going forward in each of Cleco's scenarios. Cleco complied, including the past three years of historic results, and determined not to forecast, because impacts were so small.

**ii. Cleco's going-in position**

The LPSC Corrected General Order, Docket No. R-30021 ("IRP Rule") states that a company's IRP Report must contain detailed information with regard to existing supply-side resources, existing demand-side resources, and the existing transmission system.[4]

With respect to existing supply-side resources, Staff requested that Cleco also provide an analysis of the historical and going-forward costs for each of the resources included in the going in position, and report an LCOE for each resource; Cleco should then compare each resource's LCOE to Cleco's forecast of energy prices in each of its Scenarios. The Draft IRP should then discuss Cleco's decisions whether to de-activate or retire each of its existing resources in the context of the going-forward LCOE and energy prices as well as reliability and resource adequacy in each of Cleco's future scenarios. Similarly, SREA requested that Cleco include renewable LCOEs so stakeholders and the LPSC can evaluate the reasonableness of the underlying data input assumptions, before running its models. Cleco more-or-less complied with this request. In

[4] LPSC Corrected General Order, Docket No. R-30021, Section 3 and Section 5.

Appendix 5 Portfolio Costs (Confidential) filed with the Draft IRP, it provided capacity factors, variable O&M, heat consumption, unit revenue, and fuel costs for existing plants and generic new supply resources (but not before running its models). In Appendix 9 Existing Generation Revenue Requirements (Confidential) it provided capital cost, variable O&M, fixed O&M, fuel costs, and the resulting LCOE for existing plants (see Figure 1).

**Figure 1. Cleco's LCOE for existing plants, at a range of capacity factors**

| Capacity factor | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
|---|---|---|---|---|---|---|---|---|---|---|
| Acadia | $125 | $83 | $69 | $62 | $58 | $55 | $53 | $51 | $50 | $49 |
| Coughlin | $146 | $94 | $76 | $68 | $62 | $59 | $56 | $55 | $53 | $52 |
| Nesbitt | $82 | $66 | $61 | $58 | $57 | $56 | $55 | $54 | $54 | $53 |
| Rodemacher 2 | $165 | $97 | $75 | $64 | $57 | $52 | $49 | $47 | $45 | $43 |
| Madison 3 | $572 | $302 | $213 | $168 | $141 | $123 | $110 | $100 | $93 | $87 |

Source: Appendix 9 Existing Generation Revenue Requirements (Confidential)

The LCOEs can be used by Staff and stakeholders to compare to the LCOEs of new resources, such as those shown in Figure 7.5 of the Draft IRP Report (though it is Staff's understanding that the LCOEs shown in Figure 7.5 were not used in Cleco's Aurora modeling or its preferred portfolion decision, an issue which is discussed later in this report).

With respect to existing resources, Staff also appreciates that, as requested, Cleco included in its Draft IRP, for each scenario, whether the Aurora retired a unit if the retirement assumption had not been hard-wired by Cleco (except for Madison 3 which was hard-wired not to retire).[5] Staff understands that these are not deactivation decisions, nor does it constiute an analysis of optimal retirement dates. This exercise simply helps to provide insight into the long-term costs of various resource decisions.

[5] LPSC Docket No. I-36175. Cleco Draft IRP Report. Appendix 5 Portfolio Costs (Confidentia).

In addition, Cleco was asked at the First Stakeholder meeting to address the following issues, in the Draft IRP Report:

- Cleco was asked to provide results of technical review of the cost for Rodmacher 2 to meet the Environmental Protection Agency's ("EPA") coal combustion residuals ("CCR") rules. Cleco did not fully comply. In the Draft IRP Report, Cleco noted "Rodemacher 2, a PRB coal plant, will cease operations by 2028 due to EPA requirements to close or retrofit large surface impoundments that contain coal combustion residuals." However, the Draft IRP Report does not include the results of the technical or cost review for Rodemacher 2 or for Madison 3, the other sold-fuel unit.
- Staff requested that the capacity factor for each Cleco unit resulting from the hourly energy model be transparently reported for each existing Cleco unit; and clearly reported for each new technology that is included in each scenario, in the Draft IRP. Cleco addressed this in its response to SREA Request for information ("RFI") No. 17 (June 8, 2022), and in Appendix 5 Portfolio Costs (Confidential).

**iii. Modeling assumptions for future supply options**

Certain modeling assumptions for future supply options appear to be out of date. Several stakeholders (AEMA, Sierra Club) expressed concern that Cleco had not included currently-available tax credits provided by the Inflation Reduction Act ("IRA"). The IRA is currently the law of the land and should be reflected in the cost assumptions acrss all the scenarios (unless there is a scenario in which Cleco assumes the IRA is repealed). Cleco and said it *"is currently analyzing how to properly utilize the "Inflation Reduction Act" to benefit its customers. Cleco Power will include further detail regarding its treatment of the "Inflation Reduction Act" in its Final IRP Report."* Proper utilization is in the cost assumptions—not as a scenario. Cleco must include the

impacts of the IRA's Production Tax Credit and Investment Tax Credit (for the renewable technologies that are examined in the IRP). Cleco should clearly specify in the Final IRP Report the extent that the tax credits and any other relevant provisions of the IRA impacts the cost of a resource. Cleco must be explicit about the impact of the ITC and on the total cost/kW; and the impact of the PTC on the cost per MWh. Cleco also needs to provide the impact on the LCOE: Cleco must show the LCOE for renewable technologies reflecting the IRA. Crucially, Cleco noted that the information in Fgiure 7.5 is "for comparison purposes only and was not being used in the pre-screening or any other analyses."[6] This calls into question the purpose of the information provided in Table 7.4, Figure 7.4, and Figure 7.5. To provide transparency, Cleco must provide the actual data, assumptions, and LCOE results that it used to create and test its portfolios.

Cleco must include the cost of offshore wind in Table 7.3, and this should reflect updated assumptions, incorporating the impact of the IRA's ITC. A utility-sponsored offshore wind project currently under development (the Dominion Offshore Wind Project offshore Virginia) reports an LCOE of $77/MWh at a capacity factor of 43% including the ITC, much lower than the $150/MW in Cleco's LCOE assumptions shown in Cleco's Figure 7.4.[7] the $77/MWh is also lower than the LCOE of Madison 3 (shown in Figure 1 above) which Cleco is assuming will go forward with millions of dollars of investment in carbon capture, as "Project Diamond Vault."

Project Diamond Vault should not be included as a going-in resource assumption. The details of the cost of adding carbon capture and sequestration ("CCS") to Madison Unit 3 are not transparent in the Draft IRP Report. Many stakeholders have indicated concern over the lack of information provided. AAE noted that the cost of the Madison Unit 3 CCS project was its greatest

[6] LPSC Docket No. I-36175. Cleco Draft IRP Report. P. 88.

[7] Dominion Energy. "Application, Direct Testimony, Appendices, and Schedules of Virginia Electric and Power Company." PUR-2021-00142. https://coastalvawind.com/resources/pdf/public-application-volume-01-2021-cvow.pdf.

concern in Cleco's IRP, and it recommended that the expected additional costs and impacts of this CCS installation be modeled in the IRP. International Paper ("IP") noted its concern that Cleco Power had not included any information on the CCS project in its assumptions for the IRP proceeding. IP is concerned about the economics of the Project Diamond Vault and the risk that an uneconomic project will create for Cleco Power retail customers. Sierra Club also had concerns, noting that Cleco did not evaluate alternatives or consider risks involved in continued operation of Madison 3. SREA pointed out the lack of empirical data available to asses such a project's costs.

Cleco did not respond in a useful or transparent manner to these issues. In response to SREA RFI No. 33, it merely referred to https://www.cleco.com/diamondvaultfaq. The information provided at that URL is at the level of a press release. It is not detailed enough, especially because there is no support for the claim that a $900 million investment will not increase customer rates. It strains credulity that a huge CCS project such as Diamond Vault will result in no increase to customer rates. It evokes the "too cheap to meter" claim for nuclear power in the 1950s. Worse, in response to SREA RFI No. 4 (June 8, 2022), cleco noted *"All units will run "economic," except for Madison 3 at Brame Energy Center, due to potential carbon capture and sequestration efforts at Madison 3."* In other words, Cleco is forcing Madison 3 to run in every scenario, whether or not it is economic. Apart from the questionable economics, with an assumed UCAP of 400 MW, if the plant is ever on outage for extended periods of time, it could impact reliability.

**iv. Transmission**

Section 5 of the IRP Rules require that *"[t]he IRP shall include the most recent long-term transmission plan and planning study prepared by the entity charged with performing transmission planning pursuant to the effective FERC jurisdictional open access transmission tariff. Unless this*

*information is included in the transmission planning study provided, the utility shall identify and describe significant transmission constraints and limitations within its system and identify and describe any Reliability Must Run ("RMR") units that it operates. Furthermore, the utility shall discuss any actions that could be taken to eliminate the constraints, limitations, and RMR units".*[8]

Staff has noted in a previous IRP filing that there are *"essentially two ways transmission may enter the IRP Process: 1) as an alternative to a generation project; or 2) through identified amounts of excess capacity available through the (RTO) network, which could be considered alternative resources. Both of these possibilities should be fully analyzed in the IRP Process and included in the Draft IRP Report..."*[9]. Staff does not believe that the IRP Rule intends that the IRP exclude considerations of transmission in the analysis of preferred portfolios. Detailed modeling of every transmission versus generation solution would indeed be complex.

However, Staff believes there is middle ground. The IRP Rule provides that *"At times, there may be large transmission projects that could provide access to economic generation resources, and it may be desirable to treat those projects as separate resource options in the optimization process."* In other states, IRPs include scenarios with and without major transmission projects, because the existence of a new transmission line (even if it is not a perfect substitute for generation) could change the optimal portfolio of generation resources. A good example of this is the 2021 IRP by Idaho Power.[10] However, as Cleco indicated that it does not have any transmission projects under way with MISO, Staff does not expect Cleco to perform such modeling for this IRP.

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[8] LPSC Corrected General Order, Docket No. R-30021, In re: Development and Implementation of Rule for Integrated Resource Planning/or Electric Utilities (April 20, 2012).
[9] Docket No. I-34694.
[10] Idaho Power Company. Integrated Resource Plan 2021. December 2021. https://docs.idahopower.com/pdfs/AboutUs/PlanningforFuture/irp/2021/2021%20IRP_WEB.pdf

**v. Resource supply mix for MISO**

Cleco must provide the UCAP or ICAP annual total capacity for each scenario and sensitivity (not only the four (Reference, Base Electrification, Upside Electricfoication, and Environmental; all assuming Base gas price forecast) that were provided in Appendix 7. This will help the Staff and stakeholders evaluate the internal consistency and the accuracy of the starting point of each scenario. For example, SREA noted that it "*requests clarity on the Electrification Cases: is the surrounding MISO market assumed to be impacted as well? Presumably electric growth would occur throughout MISO South in either of those scenarios; however, the data provided in Appendix 7 suggest otherwise.*" And *"Compared to EIA Form 860-M data, it appears Cleco's MISO South data include more than 10 GW of extra coal capacity in MISO South, while excluding nearly 500 MW of existing solar, and 5,000 MW of existing natural gas. Still, all of Cleco's cases over-assume MISO South's existing installed capacity by over 5,800 MW. It appears that Cleco's base model is not accurately capturing the current landscape of MISO South. If the starting landscape is incorrect, it is highly likely that Cleco's 20-year forecast is incorrect in all the Cases."*[11]

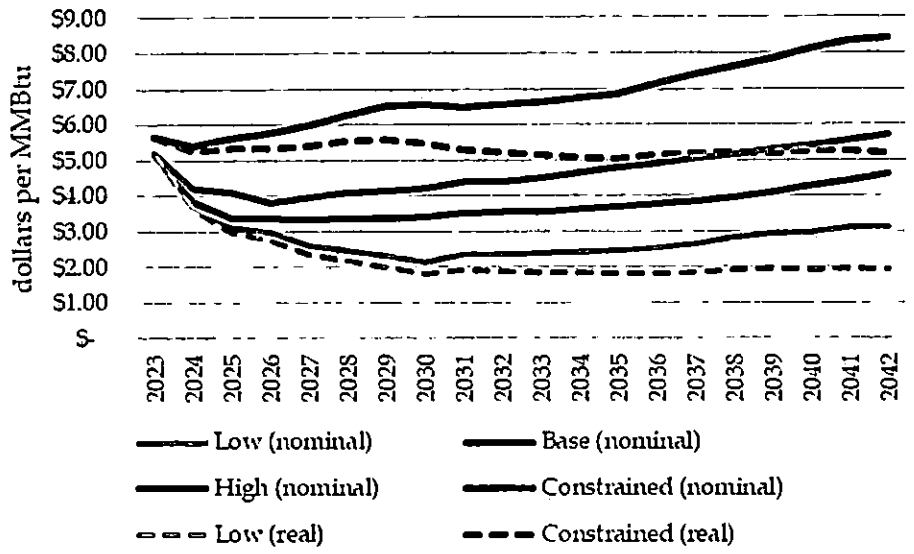
**vi. Natural gas price forecast**

To reflect potential volatility of natural gas prices, Staff asked Cleco to examine the potential for a wider range of outcomes for natural gas prices in its scenarios. Rather than broaden the range between the high and low outlooks, Cleco added a fourth outlook, "Constrained Supply" (see Figure 2), which is an acceptable approach. Based on Cleco's 2.55% inflation assumptions beginning in 2023, this translates into low-case prices of $1.93/MMBtu by 2042; and in the constrained-price case, $5.20/MMBtu by 2042. The range across the futures is probably wide

[11] LPSC Docket No. I-36175. SREA. *Southern Renewable Energy Association's Comments Regarding Cleco's IRP Data Inputs.* June 13, 2022

enough to produce useful tests of the economics of its three portfolios. Cleco used the Constrained Suppy case as a sensitivity test in three of its scenarios.

**Figure 2. Cleco's natural gas prices forecast (nominal dollars) and conversion to real dollars at Cleco's assumed 2.55% inflation**




Source: Cleco Draft IRP Report, Appendix 2.

**vi. Portfolio development and analysis**

Cleco reported that its preferred portfolio includes the following elements:[12]

1. Retirement of Teche Unit 3 (gas-fired steam turbine, 305 MW UCAP)[13] (note: this unit does not appear in scenarios/sensitivities)[14];
2. Maintain Nesbitt Unit 1 (gas-fired steam turbine, 399 MW UCAP) [15] in operation through MISO seasonal construct transition and then assess the value of the asset, and consider

[12] Docket No. I-36175. Cleco Drart IRP Report. P. 120.
[13] UCAP data from Cleco Drart IRP Report. Appendix 4 – UCAP Positions.
[14] Data from Cleco Drart IRP Report, Appendix 6 – Cleco Power Fuel Mix Charts.
[15] UCAP data from Cleco Drart IRP Report. Appendix 4 – UCAP Positions.

retiring it based on procurement of dispatchable capacity (note: this unit is not included in any scenarios/sentivities after 2024); [16]

3. Procurement of up to 500 MW (UCAP)[17] of dispatchable capacity (note: in the Reference Case, 56 MW of Wärtsilä combustion turbine ("CT") capacity is added in 2024; in the Upside Electric/Low Gas Price, and the Upside Electric/Constrained Gas Price, 418 MW of CT capacity is added in 2028; no other dispatchable generation capacity is added in any other scenario); [18]
4. Retirement of Rodemacher Unit 2 (coal-fired, 142 MW UCAP) by 2028, pending agreement among the joint owners (note: this unit is not included any scenario/sensitivities as of 2028); [19]
5. Maintain Madison Unit 3 (petcoke/coal-fired 592 MW UCAP) in operation through 2040 at a minimum, and execute the Diamond Vault CCS project at the generation facility (note: this appears as 400 MW beginning in 2028 in all scenarios/sensitivities)[20]; and
6. Procurement of up to 500 MW of installed renewable capacity ("ICAP") (note: capacity additions of solar (including PPA) by 2042 range from 220 MW in the Reference Case/Low Gas scenario to 1,020 MW in the Constrained Gas scenario). [21]

As is evident from the description above, the preferred portfolio is loosely defined. Staff understands that the IRP serves only as guide for future investment, and *"the portfolios indentifed in the IRP do not represent firm decisions to procure additional resources or retire existing*

[16] Data from Cleco Drart IRP Report, Appendix 6 – Cleco Power Fuel Mix Charts.
[17] UCAP data from Cleco Drart IRP Report. Appendix 4 – UCAP Positions.
[18] Data from Cleco Drart IRP Report, Appendix 6 – Cleco Power Fuel Mix Charts.
[19] Ibid.
[20] Ibid.
[21] Ibid.

*resources."*[22] However, the information Cleco provided is inadequate for Staff and stakeholders to assess the methodology Cleco used to arrive at its preferred portfolio—it is not possible to determine where the preferred portfolio came from, nor why it is preferred. There can be no claim that Cleco's preferred portfolio is the "least cost" solution to provide reliability when it was not compared with the others based on its total costs, and across all the scenarios. These problems are the result of three issues with Cleco's methodology and/or reporting of assumptions and results.

First, Cleco must also clearly identify which of the portfolios presented in Figure 8.3 through Figure 8.12 is its preferred portfolio (or whether the preferred portfolio is some combination of any of the portfolios shown in Figure 8.3 through Figure 8.12).

Second, in "Appendix 5 - Portfolio Costs (Confidential)," only fuel costs and other variable costs are provided. Capital costs are conspicuously absent. Any cost comparison MUST include all costs, including capital costs. Typically, a cost comparison would be perfomed using the LCOE. The LCOE for each additional resource, across future scenarios/sensitivities, and a variety of portfolios would be required for Cleco to make an informed decision and be able to identify a least-cost option. Presumably, Cleco had to perform calculations of the impact on rate base of the capital expenditures in each scenario/sensitivity in order to arrive at "Appendix 10 - Customer Impact." Cleco must report these expenditures, and provide an LCOE for the preferred portfolio and other portfolios that it considered, in each of its scenarios. The lack of a total cost estimate for the portfolios that were considered and especially for the preferred portfolio is not acceptable.

Third, it appears from Appendix 5 – Portfolio Costs (Confidential) that Cleco tested different portfolios in different scenarios. This is a misguided application of scenario analysis. The purpose of scenarios is to allow a company to plan better and react quickly to more than one version of the

[22] Docekt No. I-36175. Cleco Draft IRP Report. P. 94.

future. The potential decision (in this case, the decision as to which resource portfolio is the least cost, given resource needs and reliability) should be tested against a variety of possible futures, to ensure the decision is robust against a variety of future outcomes, all of which are out of the control of the company. The only aspect of the future which is under the control of the company is what portfolio of resources it choses, not the future that unfolds. IP requested that, at a minimum, Cleco test each resource portfolio against the assumptions in the other scenarios.[23] Staff agrees and is very surprised that Cleco either did not do this, or did it but did not provide the results. From what Cleco reported in Appendix 5, it seems that the Company decided on a single portfolio for each scenario. The correct use of scenario analysis, which is to test the robustness of a variety of choices—in this case, a variety of portfolios against a variety of scenarios—was short-circuited.

Cleco reported that it used a set of five scenarios to analyze its choice of resource portfolio, shown in Table 7.5 of the Draft IRP Report (and shown in Figure 3 below for the reader's convenience). Combined with sensitivities to three different gas price outlooks in seceral scenarions, Cleco created a total of 12 different future business environments. Staff had requested that Cleco perform sensitivities or scenarios which reflect a low MISO energy price, as well as a high energy price, and Cleco complied. [24]

[23] LPSC Docket No. I-36175 *International Paper Company Comments on Cleco Power's Proposed Data Assumptions and Studies*. Filed June 24, 2022. P.4.

[24] LPSC Docket No. I-36175 *Staff Comments on Cleco's Assumptions and Cleco's Presentation*. Filed June 24, 2022. P. 4.

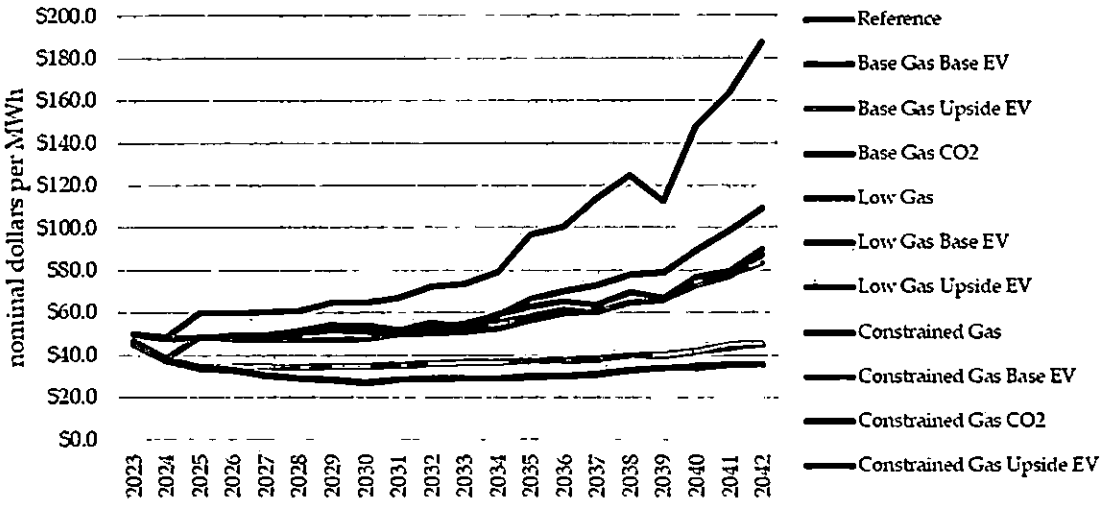
**Figure 3. Cleco's IRP scenarios and sensitivities**

| | Reference Case | Base Electrification | Upside Electrification | Environmental | Resource Adequacy |
|---|---|---|---|---|---|
| Natural Gas Curve | Base<br>Constrained<br>Low | Base<br>Constrained<br>Low | Base<br>Constrained<br>Low | Base<br>Constrained | Base |
| Cleco Power Load Curve | Base | Base Electrification | Upside Electrification | Base | Base |
| CO2 Emission Cost | No | No | No | Yes | No |
| Planning Reserve Margin | 9.4% | 9.4% | 9.4% | 9.4% | -50.0% |

Source: Cleco Draft IRP Report. P. 92

This is a large number of scenarios/sensitivities against which to test potential portfolios, and the task could become pointlessly time-consuming if every portfolio must be tested in every scenario/sensitivity. Cleco can perform the task more efficiently by using only a few, well-chosen scenarios. For example, although Cleco defined 12 scenario/sensitivities, the difference in energy prices (LMPs) is very small between several of the cases (see Figure 4), so several could be eliminated without reducing the usefulness of the scenario exercise. A smaller number of scenario/sentivities, perhaps four, should be sufficient to test the portfolios. Cleco should also avoid the temptation of thinking of any scenarios as "most likely." Scenarios do not represent probabilities—they represent possibilities.

**Figure 4. Cleco's energy price (LMP) outlooks in each scenario/sensitivity**




Source: Cleco Draft IRP Report. Appendix 5.

To summarize, Cleco must:

1) Clearly define each portfolio which will be tested. This definition includes providing all costs, unit MW sizes, commercial online year, etc. Unit sizes, variable costs, and other relevant information will be used as inputs into Aurora, as before. Unit sizes, fixed costs, impact of IRA, variable costs, etc., will also provide the inputs for an LCOE analysis of the cost of the portfolios (see #3 below). Report the results in terms of annual MW by type (i.e., fuel and technology);
2) Consider reducing the number of scenarios/sensitivities. Test every portfolio in every scenario;
3) Report the results, not just in the format used in Appendix 5 (which does not consider capital costs), but in terms of LCOE. Provide the components of the LCOE analysis in an Appendix, and clearly state the costs and technical specifications used in the calculation of LCOE for resources and the total portfolio. Report the actual LCOE by

fuel and technology of each resource component in each scenario (LCOE will differ across scenarios based on fuel prices and capacity factors, hence the need to report LCOE for each type of resource in each scenario);

4) Provide a comparison grid for the total LCOE for each portfolio in each scenario; and do the same for the LCOE/MW. Cleco may determine that the preferred portfolio is the one which is not necessarily the least cost in any one scenario, but the one which appears to be the least risky across all of the potential futures against which it was tested. This insight can only be arrived at using a holistic view of the results of the portfolios across all the scenarios.
5) Provide its conclusion as to the preferred portfolio based on this clear and transparent analysis.

Finally, specifying the technology of a stakeholder (Wartsila) as a resource to be included in portfolios or scenario/sensitivities is not appropriate. New technology options should be defined generically, in order to to bias the process in favore of one technology over another.

### vii. Other

**Demand-side resources ("DR") and energy efficiency ("EE")**

To incorporate DR and EE, Cleco Power reported that it engaged a consultant to assess the market potential in its service territory.[25] Cleco also provided Appendix 3 - Cleco Power DSM Potential Study Report.[26] The study included estimates of the magnitude of potential yearly savings, estimates of the costs of those savings, and calculation of the cost-effectiveness of the programs.

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[25] LPSC Docket No. I-36175. Cleco Draft IRP Report. P. 8. Cleco reports engging ICF, but the study filed by Cleco in Appendix 3 was authored by DNV.

[26] DNV. *Cleco DSM Potential Study: 2023 to 2042.* March 25, 2022.

In terms of EE, the study found that the achievable savings from Cleco's planned EE programs would be 97 MW by 2023 (see Figure 5). This is 0.47% (about one-half of one percent) of the 2,043 peak demand projected for 2032 in the Base Case.

**Figure 5. Energy efficiency results**

**Table 1-1. Summary of Cumulative Energy Efficiency Savings, 2032**

| Cumulative Energy Efficiency 2023-2032<br>All Sectors | Technical Potential | Economic Potential | Achievable Planned Program Plus Potential | Achievable Planned Program Potential |
|---|---|---|---|---|
| Energy Savings (GWh) | 3,611 | 2,416 | 465 | 363 |
| Demand Savings (MW) | 869 | 647 | 129 | 97 |
| Program Costs – Real ($Million) | | | $105 | $90 |

Source: DNV. *Cleco DSM Potential Study: 2023 to 2042.* March 25, 2022

The total program cost to achieve the 97 MW reduction was reported at $90 million, implying a cost of $928/kW.[27] This is lower than the total cost per kW for any of the supply side technologies (except for an industrial Frame CT) shown in Tables 7.1-7.3 in Cleco's Draft IRP Report.

In terms of DR (as distinct from EE), the study found that in its Reference Case, 102.7 MW could be reduced from summer pak load (see Figure 6). The 102.7 MW is 4.7% of the 2,167 projected for 2042 in Cleco's Base Case. The cost of saving the 102.7 MW, at $4.4 million, works out to $42.84/kW.

[27] DNV. *Cleco DSM Potential Study: 2023 to 2042.* March 25, 2022. P. 10.

**Figure 6. Demand response results**

**Table 1-3. Summary of Annual Demand Response Impacts**

| Demand Response | 2042 | |
|---|---|---|
| All Sectors | High Case | Reference Case |
| Summer Achievable Potential (MW) | 140.9 | 102.7 |
| % of System (Summer) Peak | 6.0% | 4.4% |
| Annual Program Costs – Real ($Million) | $5.7 | $4.4 |

Source: DNV. *Cleco DSM Potential Study: 2023 to 2042.* March 25, 2022

It is not clear whether or how Cleco incorporated the DR and EE analysis into its portfolio or scenarios. Cleco seems to have included 50.138 MW of EE in 2024 (but in no other year) in all its scenarios/sensitivities except the Reference Case/Base Gas Price and the $CO_2$ Case/Constrained Gas.[28] Why is EE included in only one year? Why is it the same amount in every scenario in which it appears, when EE is probably much more attractive when energy prices are high? Why is the volume so much less than the results of the study would imply? Why is (apparently) no DR included at all, when it is clearly cost-effective?

Cleco must be explicit as to the impact of DR and EE on load and energy consumption in each load forecast and scenario. Cleco should compare the cost of DR and EE to the LCOE of supply alternatives in its selection of the least-cost portfolio to meet reliability requirements.

Cleco did not include any distributed energy resources ("DERs") as distinct resource alternatives.[29]

[28] Draft IRP Report Appendix 6 – Cleco Power Fuel Mix Charts.
[29] LPSC Docket No. I-36175. Cleco Draft IRP Report. P. 25.

**Reliability**

Cleco should not be required to include an analysis of loss of load expectation ("LOLE") for each portfolio/scenario combination. While the IRP Rules contemplate reliability, Clecos's inclusion of a reserve margin and peak load projections help to recognize relibability needs. Cleco should explicitly explain how it can incorporate capacity accreditation into portfolio analysis. In response to SREA Request for Information ("RFI") No. 19, Cleco noted that it did not have seasonal capacity accreditation readily available. Cleco should develop this information and use it to help determine reliability of various portfolios across the scenarios.

**Net zero goals**

Given Cleco's stated aspirations for net zero carbon emissions by 2050,[30] Cleco should report its current carbon footprint and the carbon footprint of each of the portfolios in each of the scenarios. This is not a complex exercise: Aurora provides outputs as to how much energy is generated by each technology. It is simple enough to multiply this output by the carbon emissions for each fuel type/technology type. Staff is not arguing that net-zero should be a requirement of the preferred portfolio and is not asking Cleco to perform detailed studies of emissions impacts. This is just a simple check-up based on model outputs.

## *IV. Conclusion*

Staff's comments can be organized into four themes: Transparency, treatment of resource options, timeliness/accuracy, and insight (see Figure 7). Cleco should enhance the transparency of the IRP by providing additional information; it must treat resource options in a manner that does

[30] Cleco Power. "A Message from our CEO on Sustainability." https://www.cleco.com/about/sustainability/a-message-from-our-ceo-on-sustainability

not prejudice the modeling in favor of one over another; it must improve the timeliness and therefore the accuracy of several key inputs; and will gain additional insight into its alternatives and their potential outcomes with some additional quantitative analysis, which include reporting the total cost of the preferred portfolion under a variety of scenarios.

**Figure 7. Summary of Staff's comments**

| Transparency | Treatment of resource options | Timeliness and accuracy | Insight |
|---|---|---|---|
| Provide numerical data for load forecasts for all three futures | Assume only generic new resources, do not name a specific vendor | Incorporate IRA tax credits into assumptions | Reduce the number of scenario/sensitivities to a more manageable set |
| Clearly define each portfolio which will be tested, providing all costs, unit MW sizes, commercial online year, fixed costs, impact of IRA, variable costs, etc., sufficient to support an LCOE analysis of the cost of the portfolios | Do not force Project Diamond Vault (or any new resource) into every portfolio and every scenario– projects must compete on economics. Do not offer based on self-schedule in Aurora | Examine MISO resource assumptions and improve consistency with current data; improve consistency with scenario stories | Test all portfolios against all scenario/sensitivities |
| Provide cost assumptions for transmission for each new technology if any | | | Provide LCOE and LCOE/MW for each resource as modeled; and for each portfolio/scenario combination |
| Report $CO_2$ emissions for all portfolios and scenarios | | | Make use of all the futures in determining the preferred portfolio– do not bet on one future |
| Incorporate capacity accreditation into portfolio evaluation | | | |
| Provide clear explanations for all DR and EE assumptions; ensure they are consistent with energy prices for each future and consistent with results of DSM study; be explicit as to the impact of DR and EE on load and energy consumption in each load forecast and scenario. Compare the cost of DR and EE to the LCOE of supply alternatives in its selection of the least-cost portfolio to meet reliability requirements | | | |

Staff appreciates Cleco's efforts to date, and recognizes that Cleco has complied with many of the requests it received before issuing the Draft IRP Report. Staff's focus has been to ensure that Cleco's IRP accurately reflects Cleco's planning and operation within the MISO system; the options available to it in terms of supply, demand, and transmission resources, and the uncertainties inherent in its business environemnt. This will ensure that Cleco's IRP will provide an adequate

basis for Cleco's internal business plans and the Commission's evaluation of the prudence of Cleco's investments.

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that I have this 28th day of February, 2023, served copies of the foregoing pleading upon all known parties of this proceedings by electronic mail.

W. NOAH HOGGATT

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