

Cleco Power's

2004 Integrated Resource Plan

Draft / Abridged

Cleco Power Confidential

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Section 1

Executive Summary

This report documents the results as well as the process associated with Cleco Power's (Cleco or the Company) 2004 Integrated Resource Plan (IRP). The intent of the IRP is to identify Cleco Power's load obligations and ascertain a portfolio of supply resources that provide reliable power at a competitive price. Specifically, the Company's objective is to lower fuel costs, diversify fuel mix, and reduce its dependence on short-term market sources for capacity and/or energy.

Cleco Power's philosophy was to focus the 2004 IRP on long-term resource needs that address key concerns of the Company such as deliverability, reliability, cost, fuel diversity and stability, counterparty credit, regional transmission issues, environmental issues, and market forecast.

Currently, Cleco Power fulfills its capacity and energy requirements through its existing generation fleet and LPSC approved short-term firm power contracts. When economically viable, spot market purchases provide an additional source of energy supply. This "short-term strategy" is highly dependent on natural gas prices and the deliverability of power to Cleco's control area. With these two important factors in mind, the Company designed a methodology to determine how to mitigate these risks.

First, a review of the Company's current generating fleet and expected retirement dates was conducted. Currently, all assets are economically dispatched with the exception of Unit 3 of Teche Power Station and Unit 1 of Rodemacher Power Station, both of which are considered resource must run (RMR)¹ units. The following table lists the Company's existing fleet of generation assets.

¹ Teche Unit 3 is a full year must run for system reliability purposes, Rodemacher Unit 1 is a must run during the summer months to optimize system operations and economics

Section 1 Executive Summary

*Existing Generation Fleet**

Station/Unit	Modeled Retirement Date	Age at Retirement Date	In Service Date
Franklin	2018	46	1973
Teche 1	2018	66	1953
Teche 2	2018	63	1956
Teche 3	2018	48	1971
Rodemacher 1	2018	44	1975
Rodemacher 2	2040	59	1982
Dolet Hills Unit 1	2040	60	1986

* For IRP evaluation purposes only. Per the Company's settlement in Docket number U-21453 LA, Cleco makes no assertions regarding the actual potential unit retirement dates.

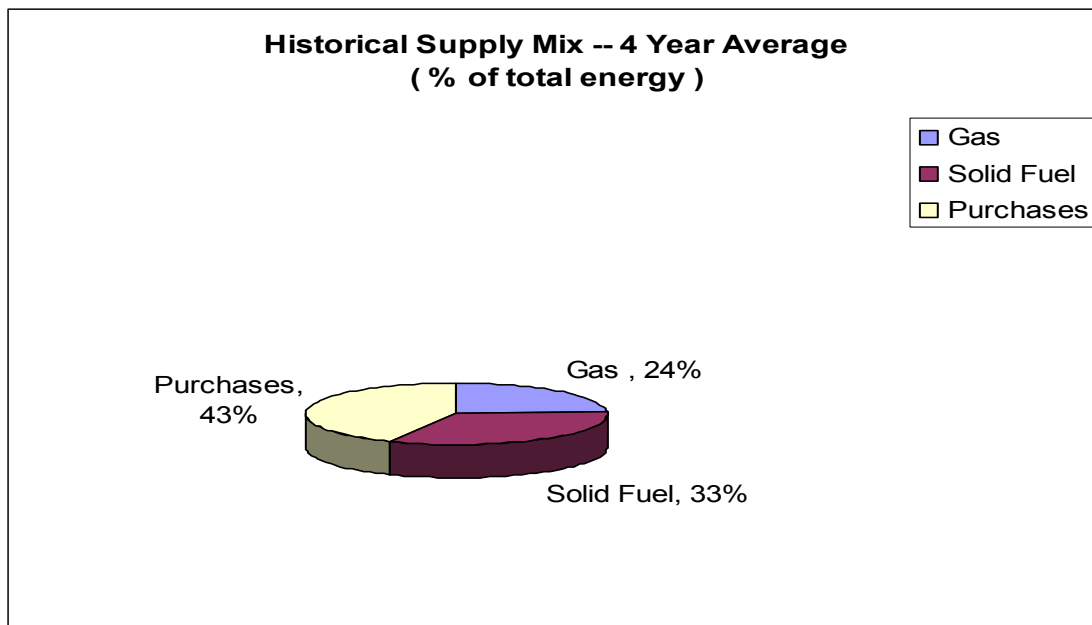
The Company then chose two scenarios to bound the extreme conditions that price and deliverability risk may cause. A Reference Base Case that represents the Company's view of the most-likely scenario will be included in the final evaluation. This approach provides a balanced and objective view of a complex and somewhat dynamic set of variables. The Reference Base Case is intended to represent or assess the long-term outlook for meeting the incremental resource needs with respect to the Company's current short-term strategy. The long-term Reference Base Case consists of the Company's existing generation assets and the long-term load forecast for the planning period 2006 thru 2035. Over the 30-year planning period energy and demand is forecasted with an annual growth rate of about 1.2% per year. Beginning in 2006, the Company's forecasted peak system demand with reserve requirements is 2,143 MW and ends with a demand projection of 2,917 MW in 2035.

Next, the Company identified the chief concerns in providing competitive and reliable power to its customers. One paramount concern is the inadequacy of the regional bulk power transmission system. Specifically, the lack of import capability into Cleco's control area serves to isolate the Company from firm market supply.

Section 1 Executive Summary

Due to the transmission constraints and the long development and construction period associated with transmission projects, the Company selected a 20 percent planning reserve margin through the end of 2015, and 15 percent planning reserve margin after 2015. The Company believes that these reserve margins are a prudent and reasonable assumption given these risks.

Another key issue is the Company's dependence on the natural gas market. As you can see from the following chart, about 24 percent of the Company's energy costs are directly related to the Company's ability to secure natural gas fuel supply for its generation resources. An additional 43 percent of energy costs are indirectly related to the natural gas market via short-term and spot market purchases, making natural gas 67 percent of the Company's fuel portfolio. The natural gas market is volatile in nature and has produced average daily prices from a low of \$1.98 to a high of \$18.60 per MMBTU from 2002 to date.



Section 1 Executive Summary

The Company derived three potential solutions to help address the limitations discussed previously:

- *Build transmission assets to increase deliverability of market sourced power*
- *Secure long-term contracts for market sourced power via an RFP process*
- *Build and/or convert generation assets within the Company's control area*

Section 1 Executive Summary

The scope of this study is to determine what top portfolio of self-build and/or fuel conversion projects create a long-term strategy that mitigates risks and lowers our customer's overall costs. As stated earlier, the Company's objective is to ***lower fuel costs, diversify fuel mix, and reduce its dependence on short-term market supply for capacity and energy.***

To start the process, a long-term Monte Carlo closed system dispatch provided the first indication of the types of generation assets to be considered during the evaluation. The Company then considered approximately 20 individual site specific resource alternatives. Each of these alternatives was evaluated to determine their total benefit considering capital cost, rate impact, and fuel savings. As a result of the process, a short-list of the most viable stand alone projects was developed. Next, 18 portfolios of the stand alone products were designed and evaluated.

As a result of this analysis, the Company has narrowed its selection from 18 portfolios down to these top four portfolios:

Portfolio # 3:

100-MW Peaking, 750-MW Combined-Cycle, 800-MW Fuel Conversions

Portfolio # 10:

800-MW Fuel Conversions

Portfolio # 11:

750-MW Combined-Cycle, 800-MW Fuel Conversions

Portfolio # 18:

100-MW Peaking, 500-MW Combined-Cycle, 800-MW Fuel Conversions

Section 1 Executive Summary

- Each of these analyses is highly dependent on capital costs, market constraints, and forward market prices.

Although the Company believes our assumptions are reasonable, substantial changes in the assumptions may warrant reconsidering some of the original portfolios.

Section 2

Load Forecast

Overview of Annual Load Forecast Process

A 30-year load forecast was developed for the Integrated Resource Planning (IRP) process. Development of the forecast is a two stage process originating with an energy component (by month) and then finally an hourly forecast for the entire planning period.

Energy

The Energy Forecast is based on both econometrics and customer specific data. Historical temperature and customer data are used to develop regression equations to forecast the major retail classes of Residential, Commercial, Industrial, Street Lighting, and Public Authorities. Temperature data from the NOAA National Weather Service is weather normalized over the 30-year period.

Existing and New Retail customers with demands greater than 1 MW and Full Requirements Wholesale customers are forecasted separately. Historical data as well as marketing intelligence are incorporated into the forecast.

The complete Energy Forecast combines both the major retail classes and all individual forecasts producing a forecast of energy consumption by month over the planning period.

Section 2 Load Forecast

Demand

Demand (or Hourly Load) is forecasted by applying both statistical forecasting methods and an average hourly system load factor to the Energy Forecast.

Historical demand, temperature, and monthly energy values along with the Energy Forecast are used to determine the Statistical forecast.

Forecast Pro[®] is the statistical forecasting software employed for the IRP process. Forecast Pro[®] utilizes various regression techniques such as box Jenkins and Exponential Smoothing. Development of a statistical hourly load profile is realized by incorporating the Energy Forecast and any known events into the software.

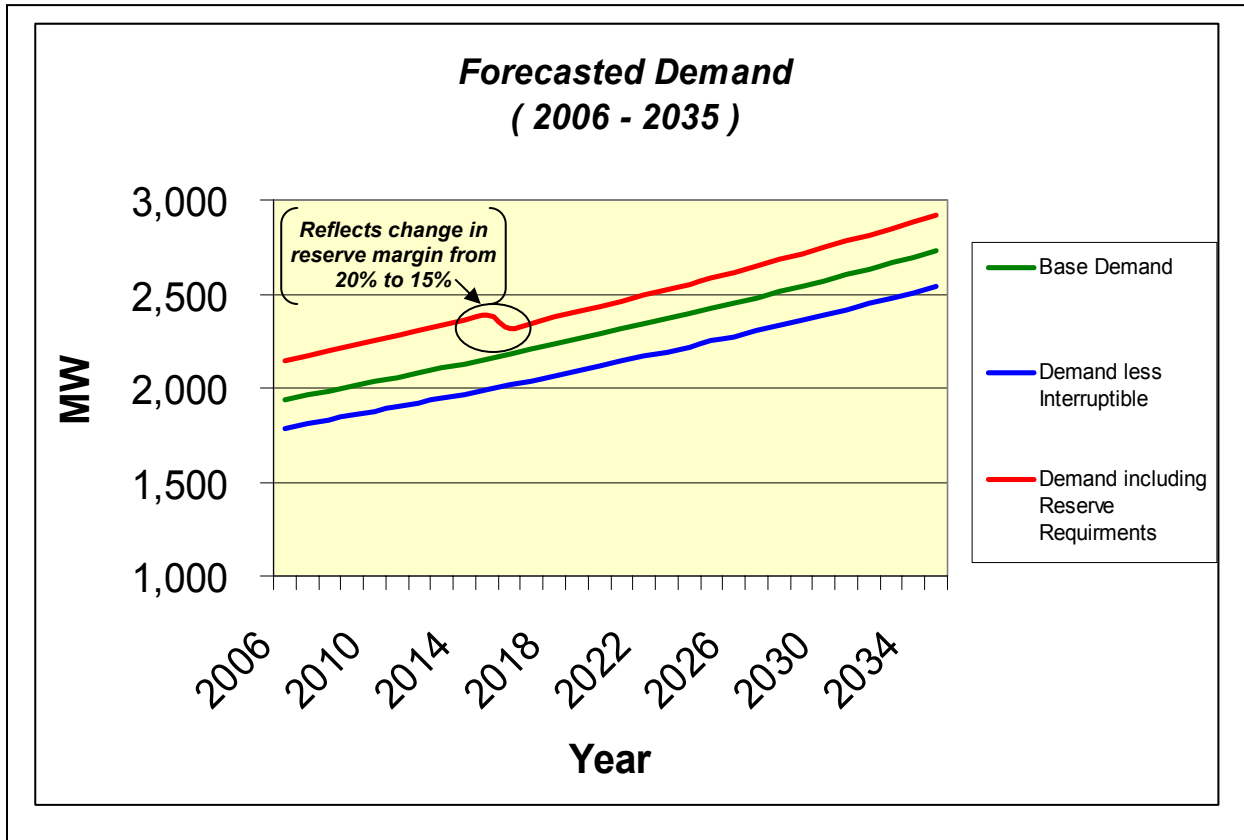
Summary

In general, over the 30-year planning period energy and demand is forecasted with an annual growth rate of about 1.2% per year. Chart A describes the forecast of annual system peak demand including reserve requirements for the 30-year planning period. Beginning in 2006, the Company's forecasted peak system demand with reserve requirements is 2,143 MW and ends with a demand of 2,917 MW in 2035.

Section 2 Load Forecast

Chart A

Long-Term Reference Base Case Forecasted Demand with Reserve Requirements



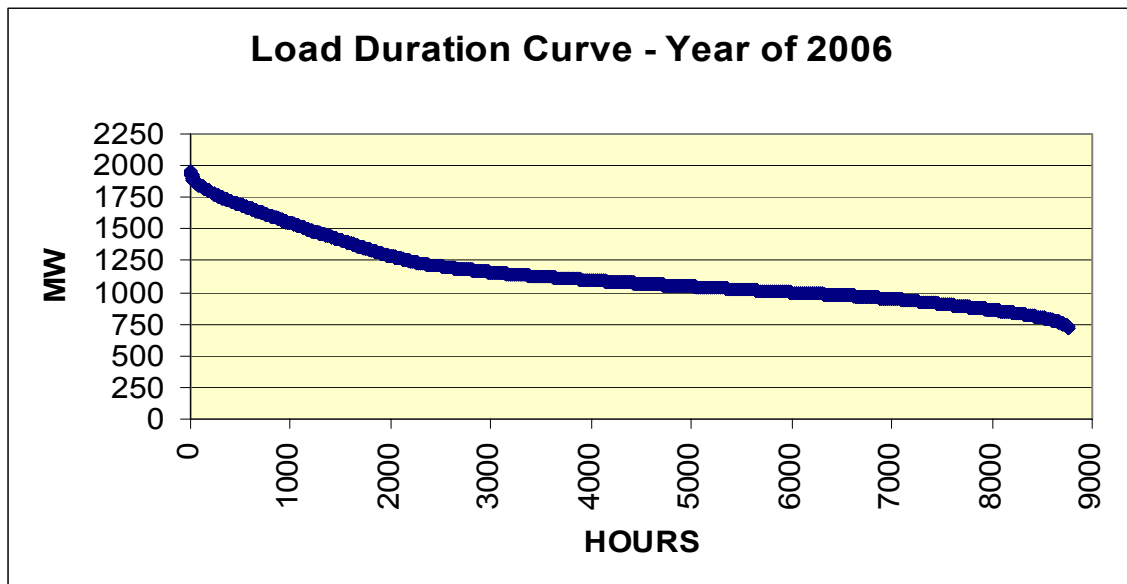
Section 3

Generation

Energy Position

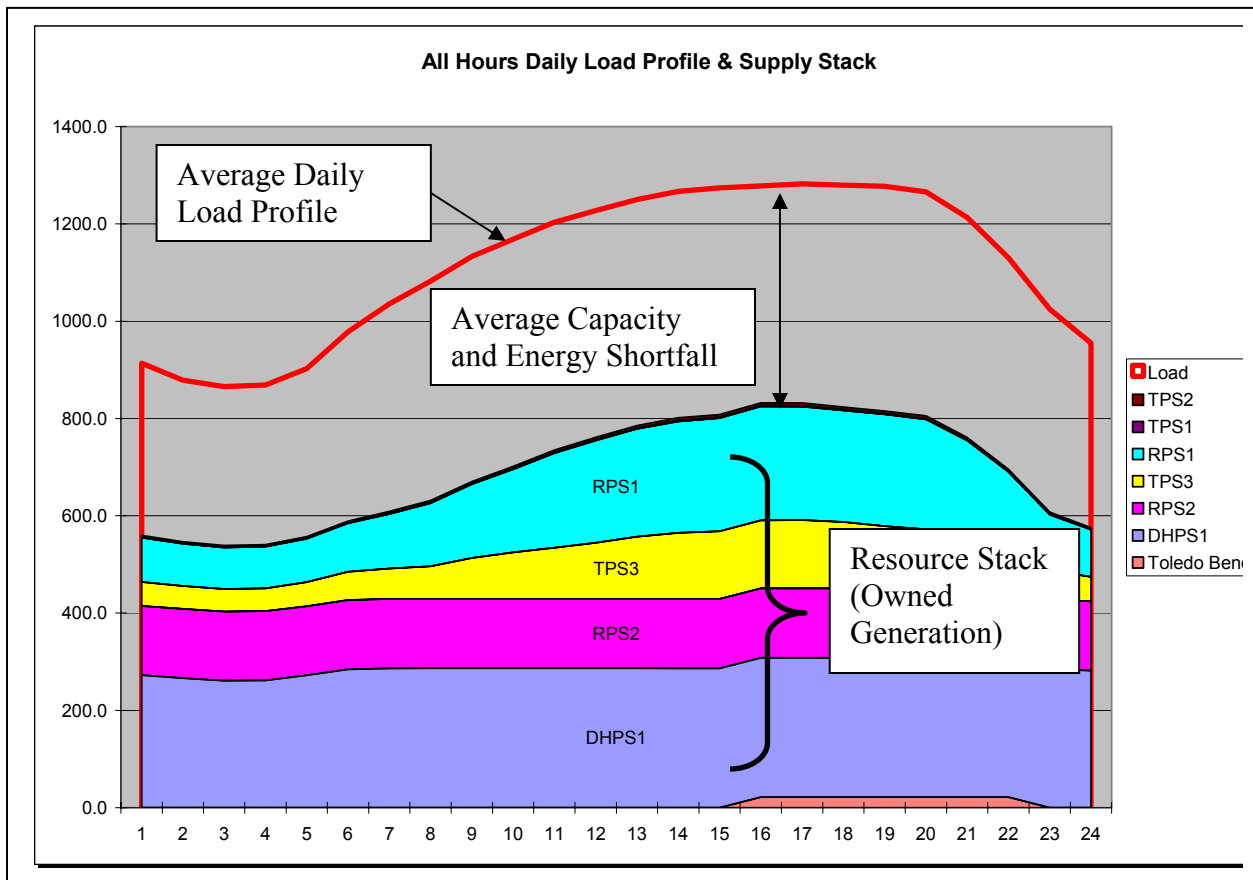
The following four charts, three load duration curves (Chart C) and one average daily load and resource profile (Chart H), provide insight into Cleco's load obligations for the 30 year planning period. As you can see from the Charts, there is about 800 to 1000 MW of continuous load energy requirements over the 30 year planning period (2006 – 2035). The continuous load piece represents about 60% of the total energy requirements emphasizing the importance of securing a low cost resource of this component. During the first half of the planning period (2006 – 2018) Dolet Hills Unit 1 and Rodemacher Unit 2 provide a portion of this base load need leaving the Company 350-550 MWs short of continuous load supply. The standard deviation of a typical 24 hour daily load profile (Chart H) is approximately 150 MW indicating a strong need for some true type peaking product. As you can see from the 2006 load duration curve there is a need for 150 MW for less than 2% or 160 hours during the year.

Chart C



Section 3 Generation

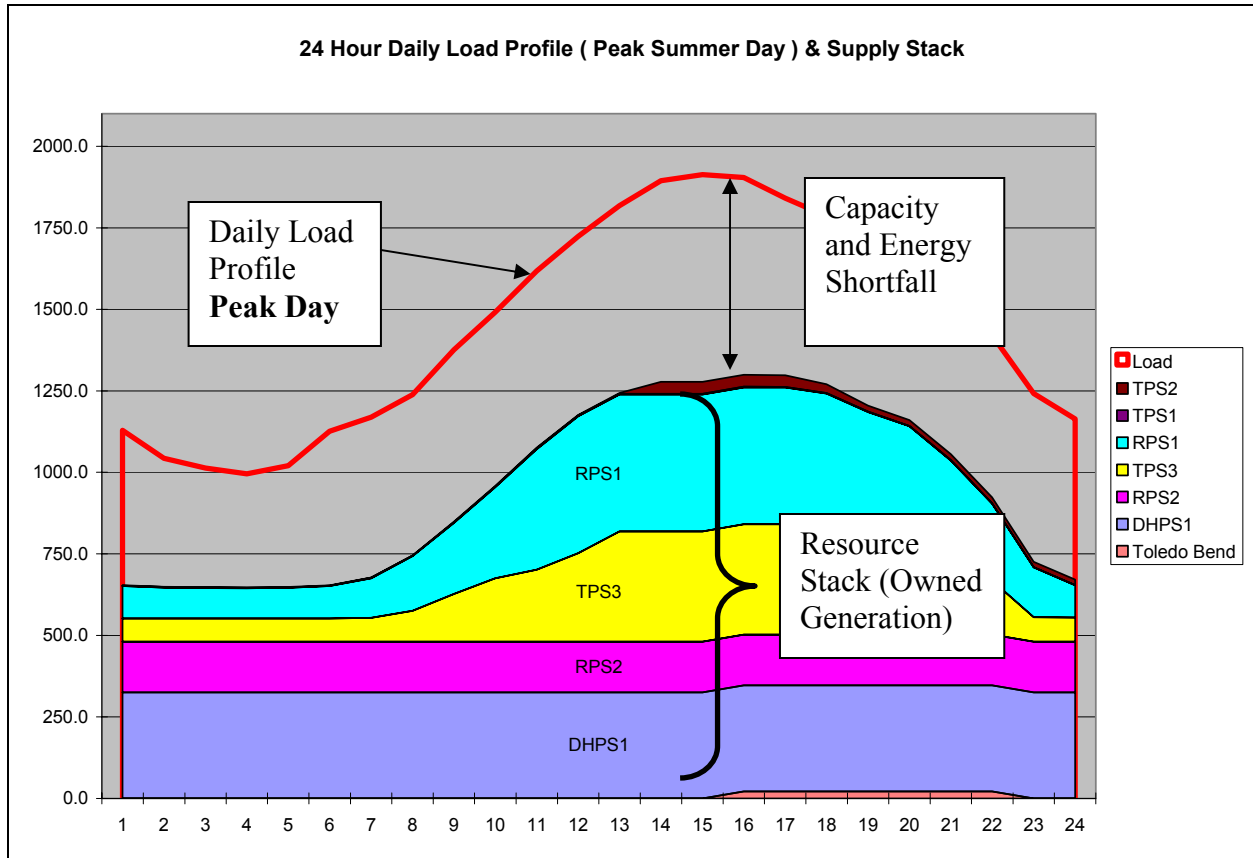
Chart H
Average 24 Hour Daily Profile and Supply Capability¹



¹ Average profile is forecasted 2005 data and generation stack represents typical dispatch levels

Section 3 Generation

Chart I
24 Hour Daily Load Profile (Peak Summer Day) and Supply Capability¹



¹ Load profile is forecasted 2005 data and generation stack represents typical dispatch levels

Section 4

Modeling & Methodology

Overview

Integrated resource planning has to consider many alternatives when identifying an optimum portfolio of resources to match future load obligations. Over the past few years, the numerous risks associated with the power industry have become quite evident. Many of the risks such as transmission availability and natural gas volatility have very tangible impacts on the performance of generation resources in the area. Additionally, exposure to other risks such as, legislations concerning emissions and regulatory changes are much harder to quantify, but have substantial impact. Nevertheless, inherent in any business are risks and part of this process is to identify and understand those risks and mitigate them as much as possible. Going forward the Company has adopted a long-term integrated resource planning strategy that addresses issues based not only on its immediate needs, but on long-term energy, capacity, and market assessments. The Company's objective is to lower fuel costs, diversify fuel mix, and reduce its dependence on short-term market supply for capacity and energy.

Approach

The Company chose two scenarios the "Restricted Market" scenario and the "Unrestricted Market" scenario. This approach provides a balanced and objective view of a complex and somewhat dynamic problem. Next, the Company performed a long-term Monte Carlo closed-system build out of resources. This provided a rough estimate of the types of resources the Company should consider in fulfilling its load obligations.

Section 4 Modeling & Methodology

Based on this approximation, the Company then developed a list of potential site-specific resource projects.

Many of these projects were eliminated based on capital costs and other limitations resulting in a short-list of viable site-specific projects. Next, various combinations of the resources in the short-list were developed creating 18 portfolios of energy products. Fuel cost was determined for each of the portfolios for the Restricted Market scenario and Unrestricted Market scenario. In addition to fuel cost, rate impact due to capital investment and incremental O&M cost was determined. Finally, the portfolios were ranked according to their total cost. Four top performing portfolios were selected based on these two scenarios.

The Restricted Market scenario treated the Cleco system as almost completely isolated from market supply. In this case, the Company averaged less than 1% of energy supply from the market. The lack of import capability is a key concern and definitely warrants this worse case market-restricted scenario.

Conversely, the Unrestricted Market scenario provides open access to market supply with no regards to transmission constraints. This scenario assumes Cleco has unlimited access to the market.

Lastly, the Reference Base Case will provide a realistic view of the import market supply available to Cleco's control area over the long-term planning period.

Section 4 Modeling & Methodology

Base Assumptions

Key to any evaluation is the models and the underlying assumptions utilized in the models. The Company selected GENTRADER[®] and AURORA[®] two widely accepted hourly generation dispatch optimization and forecasting programs. The AURORA[®] long-term forecasting software establishes the energy market forecast for the planning period 2006 thru 2035. AURORA[®] has the capability of performing long-term analyses and optimizing resources to meet demand over the long-term period. Based on our assumptions of fuel prices, capital costs, transmission constraints, etc. the value of every supply resource in the region is determined. New resources that create value on a going-forward basis are added while existing resources with no value on a going-forward basis are retired. The AURORA[®] North American database contains over 9,000 generating resources along with demand for each of the major regions. AURORA[®] energy market prices are determined from the clearing price of the marginal resources

With the significant amount of gas generation in our region, natural gas forecast prices become extremely important. Natural gas tends to establish the price floor for the power market, and just as importantly heavily influences the future build-out selection between solid fuel resources and natural gas resources over the long-term build-out period 2006 thru 2035. As a result of the importance of the natural gas forecast, Cleco carefully selected a long-term gas forecast. Cleco chose CERA, Cambridge Energy Research

Section 7 Modeling & Methodology

Associates', 20 year forecast and applied a two period lag regression to extrapolate the final ten years. Cambridge Energy Research Associates (CERA) is a leading advisor to major North American and international companies, financial institutions and organizations, delivering strategic knowledge and independent analysis on energy markets, geopolitics, industry trends and strategy. CERA is headquartered in Cambridge, Mass., and has offices in Beijing, Calgary, Mexico City, Moscow, Oakland, Paris, Sao Paolo, and Washington, D.C.

Section 4 Modeling & Methodology

Closed System Long-Term Build-Out

In order to determine the company's resource needs, once again the Company used AURORA[®]'s hourly production-cost economic dispatch model to perform a long-term analysis and optimization of resources to meet demand over the long-term period 2006 thru 2035.

Based on our assumptions, AURORA[®] performs multiple iterations of economic dispatch simulations and selects the most economical resources to build-out over the 30-year planning period. New resources that create value on a going-forward basis are added while existing resources with no value on a going-forward basis are retired.

By creating a closed system consisting of the Company's load obligations and existing generation resources, the Company is able to identify the general scope of desired supply products. This optimization provides an approximation for how the company should select resources over the long-term planning period.

In summary, the long-term build-out identified the need for additional solid fuel (base-load) power supply, combined-cycle (intermediate) power supply, and combustion-turbine (peaking) power supply. The company's focus is to evaluate and determine the optimum portfolio of these energy products considered necessary to meet its load obligations over the 30-year planning period.

Section 4 Modeling & Methodology

Assumptions for construction and operating cost for combined-cycle, peaking, and solid fuel alternatives are based on currently viable but generic options. This approach focuses the long-term build-out analysis on the most reasonable expectations of technology available to the company over the 30-year planning period.

Resource Alternatives

Based on the types of products recommended from the long-term build-out, Cleco determined approximately 20 separate site specific resource alternatives.

Cleco's engineering department along with Burns & McDonnell Engineering Company located in Kansas, Missouri provided cost estimates and performance data for each of these alternatives. These assumptions provide the base data for the initial screening process. Many of the resource options were eliminated based on capital cost, operational flexibility, potential fuel benefit, and potential rate impact to the customer. As a result of the initial screening process, a short-list of the most viable stand-alone projects was developed.

Portfolio Resource Evaluations (Unrestricted and Restricted Market Scenarios)

Next, various combinations of the resources in the short-list were evaluated for the Unrestricted and Restricted Market scenarios. Detailed hourly dispatches were run to determine the optimum solution with regards to fuel costs. GENTRADER[®], an hourly economic dispatch model was used to determine the fuel implications of each portfolio. Each portfolio was modeled in conjunction with Cleco's current generation fleet and load obligations. GENTRADER[®] optimizes and integrates the new portfolio with existing resources for the entire study period. Next, portfolios are ranked based on total fuel and fixed costs. The four top performers were selected for continued analysis for the long-term Reference Base Case and sensitivities.

Section 4 Modeling & Methodology

As a result of this analysis, the Company has narrowed its selection from 18 portfolios down to these top four portfolios:

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