LAKELAND ELECTRIC

March 31, 2008

Florida Public Service Commission
Blanca S. Bayó, Director
Bureau of Records & Hearing Services
Betty Easley Conference Center, Rm. 110
4075 Esplanade Way
Tallahassee, Florida 32399-0850

080000

Dear Ms. Bayó:

Pursuant to Section 186.801, Florida Statutes and Rules 25-22.070-072 of Florida Administrative Code, Lakeland Electric hereby submits 25 printed copies of its 2008 Ten Year Site Plan.

If you have any questions please do not hesitate to contact us.

Sincerely,

John P. Guiseppi
System Planning Section

Enclosure

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LAKELAND ELECTRIC

2008 Ten-Year Site Plan For Electrical Generating Facilities And Associated Transmission Lines

April 2008

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1.0 Introduction

This report contains the 2008 Lakeland Electric Ten-Year Site Plan (TYSP) pursuant to Florida Statutes and as adopted by Order No. PSC-97-1373-FOF-EU on October 30, 1997. The Lakeland TYSP reports the status of the utility's resource plans as of December 31, 2007. The TYSP is divided into the following nine sections: Introduction, General Description of Utility, Forecast of Electrical Power Demand and Energy Consumption, Demand-Side Management Programs, Forecasting Methods and Procedures, Forecast of Facilities Requirements, Generation Expansion Analysis Results and Conclusions, Environmental and Land Use Information, and Ten-Year Site Plan Schedules. The contents of each section are summarized briefly in the remainder of this Introduction.

1.1 General Description of the Utility

Section 2.0 of the TYSP discusses Lakeland's existing generation and transmission facilities. The section includes a historical overview of Lakeland's system, and a description of existing power generating and transmission facilities. This section includes tables which show the source of the utility's current 927 MW of net winter generating capacity and 897 MW of net summer generating capacity (as of the end of calendar year 2007).

1.2 Forecast of Electrical Power Demand and Energy Consumption

Section 3.0 of the TYSP provides a summary of Lakeland's load forecast. Lakeland is projected to remain a winter peaking system throughout the planning period. The projected annual growth rates in peak demand for the winter and summer are 1.38 % and 1.21% percent, respectively, for 2008 through 2017.

Net energy for load is projected to grow at an average annual rate of 1.62% percent for 2008 through 2017. Projections are also developed for high and low load growth scenarios.

1.3 Demand-Side Management Programs

Section 4.0 provides descriptions of the existing conservation and demand-side management programs. Additional details regarding Lakeland's demand-side management programs are on file with the Florida Public Service Commission (FPSC).

Lakeland's current conservation and demand management programs include the following programs for which demand and energy savings can readily be demonstrated:

- Commercial Programs:
  - Commercial Lighting Program.
  - Thermal Energy Storage Program.

Lakeland also currently conducts the following conservation and demand-side management programs which promote energy savings and efficiency:

- Residential Programs:
  - Energy Audit Program.
  - Public Awareness Program.
  - Speakers Bureau.
  - Informational Bill Inserts.
- Commercial Programs:
  - Commercial Audit Program.

Section 4.0 also contains discussions of Lakeland's solar technology programs. While these types of programs are not traditionally thought of as DSM, they have the same effect of conserving demand and energy normally generated by fossil fuels as DSM programs do by virtue of their avoidance of fossil fuels through the use of renewable energy.

1.4 Forecasting Methods and Procedures

Section 5.0 discusses the forecasting methods used for the TYSP and outlines the assumptions applied for system planning. This section also summarizes the integrated resource plan for Lakeland and provides planning criteria for the Florida Municipal Power Pool, of which Lakeland is a member. The integrated resource plan is fully incorporated in the TYSP and is discussed in further detail in Sections 6 and 7 of this report. Fuel price projections are provided for coal, natural gas, and oil; with brief descriptions of the methodology. Assumptions for the economic parameters and evaluation criteria which are being applied in the evaluation are also included in Section 5.0.

1.5 Forecast of Facilities Requirements

Section 6.0 integrates the electrical demand and energy forecast with the conservation and demand-side management forecast to determine Lakeland's requirements for the ten-year planning horizon. Application of the reserve margin criteria indicates no need for additional capacity during the current ten year reporting period.

1.6 Generation Expansion Analysis Results and Conclusions

Section 7.0 discusses the current status of any supply-side evaluation being undertaken by Lakeland to identify the best option for its system. It also discusses basic methodology used by Lakeland in its Generation Expansion Planning Process.

1.7 Environmental and Land Use Information

Section 8.0 discusses the land and environmental features of Lakeland's TYSP.

1.8 Ten-Year Site Plan Schedules

Section 9.0 presents the schedules required by the Florida Public Service Commission (FPSC) for the TYSP.

2.0 General Description of Utility

2.1 City of Lakeland Historical Background

2.1.1 Generation

The City of Lakeland was incorporated on January 1, 1885, when 27 citizens approved and signed the city charter. Shortly thereafter the original light plant was built by Lakeland Light and Power Company at the corner of Cedar Street and Massachusetts Avenue. This plant had an original capacity of 50 kW. On May 26, 1891, plant manager Harry Sloan threw the switch to light Lakeland by electricity for the first time with five arc lamps. Incandescent lights were first installed in 1903.

Public power in Lakeland was established in 1904, when foresighted citizens and municipal officials purchased the small private 50 kW electric light plant from owner Bruce Neff for $7,500. The need for an expansion led to the construction of a new power plant on the north side of Lake Mirror in 1916. The initial capacity of the Lake Mirror Power Plant is estimated to have been 500 kW. The plant has since been expanded three times. The first expansion occurred in 1922 with the addition of 2,500 kW; in 1925, 5,000 kW additional capacity was added, followed by another 5,000 kW in 1938. With the final expansion, the removal of the initial 500 kW unit was required to make room for the addition of the 5,000 kW generating unit, resulting in a total peak plant capacity of 12,500 kW.

As the community continued to grow, the need for a new power plant emerged and the Charles Larsen Memorial Power Plant was constructed on the southeast shore of Lake Parker in 1949. The initial capacity of the Larsen Plant Steam Unit No. 4 completed in 1950 was 20,000 kW. The first addition to the Larsen Plant was Steam Unit No. 5 (1956) which had a capacity of 25,000 kW. In 1959, Steam Unit No. 6 was added and increased the plant capacity by another 25,000 kW. Three gas turbines, each with a nominal rating of 11,250 kW, were installed as peaking units in 1962. In 1966, a third steam unit capacity addition was made to the Larsen Plant. This was Steam Unit No.7 having a nominal 44,000 kW capacity and an estimated cost of $9.6 million. This brought the total Larsen Plant nameplate capacity up to a nominal 147,750 kW.

In the meantime, the Lake Mirror Plant, with its old and obsolete equipment, became relatively inefficient and hence was no longer in active use. It was kept in cold standby and then retired in 1971.

As the city continued to grow during the late 1960's, the demand for power and electricity grew at a rapid rate, making evident the need for a new power plant. A site was purchased on the north side of Lake Parker and construction commenced during

1970. Initially, two diesel units with a peaking capacity of a nominal rating 2,500 kW each were placed into commercial operation in 1970.

Steam Unit No. 1, with a nominal rating of 90,000 kW, was put into commercial operation on February 24, 1971, for a total cost of $15.22 million. In June of 1976, Steam Unit No. 2 at Plant 3 was placed into commercial operation, with a nominal rated capacity of 114,707 kW and at a cost of $25.77 million. This addition increased the total capacity of the Lakeland system to approximately 360,000 kW. At this time, Plant 3 was renamed the C. D. McIntosh, Jr. Power Plant in recognition of the former Electric and Water Department director.

On January 2, 1979, construction was started on McIntosh Unit No. 3, a nominal 334 MW coal fired steam generating unit which became commercial on September 1, 1982. The unit was designed to use low sulfur oil as an alternate fuel but an alternate fuel has never been used in the unit. The unit uses a minimal amount of natural gas or #2 diesel oil for flame stabilization during startups. Petroleum Coke has been used in recent years as a supplemental fuel to coal based on economics. The plant utilizes sewage effluent for cooling tower makeup water. This unit is jointly owned with the Orlando Utilities Commission (OUC) which has a 40 percent undivided interest in the unit.

As load continued to grow, Lakeland continually studied and reviewed alternatives for accommodating the additional growth. Alternatives included both demand- and supply-side resources. A wide variety of conservation and demand-side management programs were developed and marketed to Lakeland customers to encourage increased energy efficiency and conservation in keeping with the Florida Energy Efficiency and Conservation Act of 1980 (FEECA). Changes to the FEECA rules in 1993 exempted Lakeland from conservation requirements, but Lakeland has remained active in promoting and implementing cost-effective conservation programs. These programs are discussed in further detail in Section 4.0.

Although demand and energy savings arose from Lakeland's conservation and demand-side management programs, additional capacity was required in the early 1990's. Least cost planning studies resulted in the construction of Larsen Unit No. 8, a natural gas fired combined cycle unit with a nameplate generating capability of 124,000 kW. Larsen Unit No. 8 began simple cycle operation in July 1992, and combined cycle operation in November of that year.

In 1994, Lakeland made the decision to retire the first unit at Larsen Plant, Steam Unit No. 4. This unit, put in service in 1950 with a capacity of 20,000 kW, had reached the end of its economic life. In March of 1997, Lakeland retired, Larsen Unit No. 6, a 25 MW oil fired unit that was also nearing the end of its economic life. In October of 2004, Lakeland retired Larsen Unit 7, a 50MW oil fired steam unit. The capacity from these units has been officially retired but no dismantlement of either unit has taken place. This leaves open the possibility of re-powering those units sometime in the future should the economics become advantageous to do so.

In 1999, the construction of McIntosh Unit No. 5 Simple Cycle combustion turbine was completed. The unit was released for commercial operation in May, 2001. Beginning in September 2001, the unit underwent conversion to a combined cycle unit through the addition of a nominal 120 MW steam turbine generator. Construction was completed in Spring 2002 with the unit being declared commercial in May 2002. The resulting combined cycle capacity of the unit is 322 MW summer and 371 MW winter.

During the summer of 2001, Lakeland took its first steps into the world of distributed generation with the groundbreaking of its Winston Peaking Station. The Winston Peaking Station, consists of 20 quick start reciprocating engines each driving a 2.5 MW electric generator. This provides Lakeland with 50 MW of peaking capacity that can be started and put on line at full load in ten minutes. The Station was declared commercial in late December 2002.

2.1.2 Transmission

The first phase of the Lakeland 69 kV transmission system was placed in operation in 1961 with a step-down transformer at the Lake Mirror Plant to feed the 4 kV bus, nine 4 kV feeders, and a new substation in the southwest section of town with two step-down transformers feeding four 12 kV feeders.

In 1966, a 69 kV line was completed from the northwest substation to the south-west substation, completing the loop around town. At the same time, the old tie to Bartow was reinsulated for a 69 kV line and placed in operation, feeding a new step-down substation in Highland City with four 12 kV feeders. In addition, a 69 kV line was completed from Larsen Plant around the southeast section of town to the southwest substation. By 1972, 20 sections of 69 kV lines, feeding a total of nine step-down substations, with a total of 41 distribution feeders, were completed and placed in service. By the fall of 1996, all of the original 4 kV equipment and feeders had been replaced and/or upgraded to 12 kV service. By 1998, 29 sections of 69 kV lines were in service feeding 20 distribution substations.

As the Lakeland system continued to grow, the need for additional and larger transmission facilities grew as well. In 1981, Lakeland's first 230 kV facilities went into service to accommodate Lakeland's McIntosh Unit No. 3 and to tie Lakeland into the State transmission grid at the 230 kV level. A 230 kV line was built from McIntosh Plant to Lakeland's west substation. A 230/69 kV autotransformer was installed at each of those substations to tie the 69 kV and 230 kV transmission systems together. In 1988, a second 230 kV line was constructed from the McIntosh Plant to Lakeland's Eaton Park substation along with a 230/69 kV autotransformer at Eaton Park. That line was the next phase of the long-range goal to electrically circle the Lakeland service territory with 230 kV transmission to serve as the primary backbone of the system.

In 1999, Lakeland added generation at its McIntosh Power Plant that resulted in a new 230/69/12kV substation being built and energized in March of that year. The substation, Tenoroc, replaced the switching station called North McIntosh. In addition to Tenoroc, another new 230/69/12kV substation was built. The substation, Interstate, went on line June of 1999 and is connected by what was the McIntosh West 230 kV line. This station was built to address concerns about load growth in the areas adjacent to the I-4 corridor which were causing problems at both the 69kV and distribution levels in this area.

In 2001, Lakeland began the next phase of its 230kV transmission system with the construction of the Crews Lake 230/69kV substation. The substation was completed and placed in service in 2001. This project includes two 230kV ties and one 69kV tie with Tampa Electric, a 150MVA 230/69kV autotransformer and a 230kV line from Lakeland's Eaton Park 230kV substation to the Crews Lake substation.

Early transmission interconnections with other systems included a 69 kV tie at Larsen Plant with Tampa Electric Company (TECO), established in the mid 1960s. A second tie with TECO was later established at Lakeland's Highland City substation. A 115 kV tie was established in the 1970s with Florida Power Corporation (FPC) and Lakeland's west substation and was subsequently upgraded and replaced with the current two 230 kV lines to FPC in 1981. At the same time, Lakeland interconnected with Orlando Utilities Commission (OUC) at Lakeland's McIntosh Power Plant. In August 1987, the 69 kV TECO tie at Larsen Power Plant was taken out of service and a new 69 kV TECO tie was put in service connecting Lakeland's Orangedale substation to TECO's Polk City substation. In mid-1994, a new 69 kV line was energized connecting Larsen Plant to the Ridge Generating Station (Ridge), an independent power producer. Lakeland has a 30-year firm power-wheeling contract with Ridge to wheel up to 40 MW of their power to FPC. In early 1996, a new substation, East, was inserted in the Larsen Plant to the Ridge 69 kV transmission line. Later in 1996, the third tie line to TECO was built from East to TECO's Gapway substation. As mentioned above, in August of 2001, Lakeland completed two 230kV ties and one 69kV tie with TECO at Lakeland's Crews Lake substation. The multiple 230 kV interconnection configuration of Lakeland is also tied into the bulk transmission grid and provides access to the 500 kV transmission network via FPC, providing for greater reliability. At the present time, Lakeland has a total of approximately 117 miles of 69 kV transmission and 28 miles of 230 kV transmission lines in service along with six 150 MVA 230/69 kV autotransformers.

2.2 General Description: Lakeland Electric

2.2.1 Existing Generating Units

This section provides additional detail on Lakeland's existing units and transmission system. Lakeland's existing generating units are located at the two existing plant sites: Charles Larsen Memorial (Larsen) and C.D. McIntosh Jr. (McIntosh). Both plant sites are located on Lake Parker in Polk County, Florida. The two plants have multiple units with different technologies and fuel types. The following paragraphs provide a summary of the existing generating units for Lakeland. Table 2-1 summarizes the environmental considerations for Lakeland's steam turbine generators and Table 2-2 provides other physical characteristics of all Lakeland generating units.

The Larsen site is located on the southeast shore of Lake Parker in Lakeland. The site has three units. The total net winter (summer) capacity of the plant is 148 MW (121 MW). Units 2 and 3, General Electric combustion turbines, have a combined net winter (summer) rating of 27 MW (19 MW). The units burn natural gas as a primary fuel with diesel as a backup. Historically, Larsen Unit No. 5 consisted of a boiler for steam generation and steam turbine to convert the steam to electrical power. When the boiler began to show signs of degradation beyond economical repair, a gas turbine with a heat recovery steam generator, Unit No. 8, was added to the facility. This allowed the gas turbine (Unit No. 8) to generate electricity and the waste steam from the turbine to be injected into the former Unit No. 5 steam turbine for a combined cycle configuration. The former Unit No. 5 steam turbine currently has a net winter (summer) rating of 31 MW (29 MW) and is referred to as Unit No. 8 Steam Turbine from this point on in this document and in the reporting of this unit. The Unit No. 8 combustion turbine has a net winter (summer) rating of 90 MW (73 MW).

The McIntosh site is located in the City of Lakeland along the northeastern shore of Lake Parker and encompasses 513 acres. Electricity generated by the McIntosh units is stepped up in voltage by generator step-up transformers to 69 kV and 230 kV for transmission via the power grid. The McIntosh site currently includes seven units in commercial operation having a total net winter and summer capacity of 729 MW and 726 MW, respectively. Unit CT1 consists of a General Electric combustion turbine with a net winter (summer) output rating of 19 MW (16 MW). Unit No. 1 is a natural gas/oil fired General Electric steam turbine with a net winter and summer output of 80 MW. Unit No. 2 is a natural gas/oil fired Westinghouse steam turbine with a winter and summer output of 106 MW. Unit No. 3 is a 342 MW pulverized coal fired unit owned 60 percent by Lakeland and 40 percent by OUC. Lakeland's share of the unit yields net winter and summer output of 205 MW. Technologies used for Unit 3 are very innovative making it a very environmentally friendly coal unit. Unit No. 3 was one of the first "zero-discharge" plants built, meaning no waste water products leave the plant site untreated. Unit No. 3 also includes a wet flue gas scrubber for SO_2 removal and uses treated sewage water for cooling water. Two small diesel units with a net output of 2.5 MW each are also located at the McIntosh site.

McIntosh Unit No. 5, a Westinghouse 501G combined cycle unit, was initially built and operated as a simple cycle combustion turbine that was placed into commercial operation May, 2001. The unit was taken off line for conversion to combined cycle starting in mid September 2001 and was returned to commercial service in May 2002 as a combined cycle unit with a rating of 368 MW winter and 322 MW summer. The unit is equipped with a Selective Catalytic Reduction (SCR) module for NO_x control.

Lakeland Electric constructed a 50-megawatt electric peaking station adjacent to its Winston Substation in 2001. The purpose of the peaking plant was to provide additional quick start generation for Lakeland's system during times of peak loads. This is Lakeland's first experience with distributed generation.

The station consists of twenty (20) EMD 20 cylinder reciprocating engines driving 2.5 MW generators. The units are currently fueled by #2 fuel oil but have the capability to burn a mix of 5% #2 oil and 95% natural gas. Lakeland currently does not have natural gas service to the site.

The plant has remote start/run capability for extreme emergencies at times when the plant is unmanned. The station does not use open cooling towers. This results in minimal water or wastewater requirements. Less than three quarters of the six (6) acre site was developed leaving considerable room for water retention.

The engines are equipped with hospital grade noise suppression equipment on the exhausts. Emission control is achieved by Selective Catalytic Reduction (SCR) using 19% aqueous ammonia. The SCR system will allow the plant to operate within the Minor New Source levels permitted by the Florida Department of Environmental Protection (DEP).

This was Lakeland's first venture into distributed generation. Winston Peaking Station (WPS) was constructed adjacent to Lakeland's Winston Distribution Load Substation. Power generated at WPS goes directly into Winston Substation at the 12.47kV distribution level of the substation and has sufficient capacity to serve the substation loads. Winston Substation serves several of Lakeland's largest and most critical accounts. Should Winston lose all three 69kV circuits to the substation the WPS can be on line and serving load within ten minutes. In addition to increasing the substation's reliability, this arrangement will allow Lakeland to delay the installation of a third 69kV to 12.47kV transformer by several years and also contributes to lowering loads on Lakeland's transmission system.

2.2.2 Capacity and Power Sales Contracts

Lakeland has no firm power sales contract in place as of December 15, 2007.

Lakeland shares ownership of the C. D. McIntosh Unit 3 with OUC. The ownership breakdown is a 60 percent share for Lakeland and a 40 percent ownership share for OUC. The energy and capacity delivered to OUC from McIntosh Unit 3 is not considered a power sales contract because of the OUC ownership share.

2.2.3 Capacity and Power Purchase Contracts

Lakeland currently has no long term firm power purchase contracts.

2.2.4 Planned Unit Retirements

Lakeland currently has no set retirement plans in place for its units due to the current economic conditions of the electric utility industry and the uncertainty that those conditions present. When that is combined with an ample reserve margin, Lakeland deems that its most prudent decision for the moment is to continue to put all expansion and retirement plans into abeyance until market conditions encourage a change. Lakeland is currently in the midst of an Integrated Resource Planning Process that is identifying optimal solutions for supply and demand side needs and resources.

2.2.5 Load and Electrical Characteristics

Lakeland's load and electrical characteristics have many similarities with those of other peninsular Florida utilities. The peak demand has historically occurred during the winter months. Lakeland's actual total peak demand (Net Integrated) in the winter of 2006/07 was 596 MW which occurred on February 17th. The actual summer peak in 2007 was 648 MW and occurred on August 9th. Lakeland normally is winter peaking and expects to continue to do so in the future based on expected normal weather. Lakeland's historical and projected summer and winter peak demands are presented in Section 3.0.

Lakeland is a member of the Florida Municipal Power Pool (FMPP), along with Orlando Utilities Commission (OUC) and the Florida Municipal Power Agency's (FMPA) All-Requirements Project. The FMPP operates as an hourly energy pool with all FMPP capacity from its members committed and dispatched together. Commitment and dispatch services for FMPP are provided by OUC. Each member of the FMPP retains the responsibility of adequately planning its own system to meet native load and Florida Reliability Coordinating Council (FRCC) reserve requirements.

2.3 Service Area

Lakeland's electric service area is shown on Figure 2-1 and is entirely located in Polk County. Lakeland serves approximately 246 square miles of which approximately 199 square miles is outside of Lakeland's city limits.

Table 2-1
Lakeland Electric
Existing Generating Facilities
Environmental Considerations for Steam Generating Units

Plant Name	Unit	Particulate	Flue Gas Cleaning		Type
			SO_x	NO_x	
Charles Larsen Memorial	8ST	N/A	N/A	N/A	OTF
C. D. McIntosh, Jr.	1	None	None	None	OTF
	2	None	LS	FGR	WCTM
	3	EP	S	LNB	WCTM
	5ST	N/A	N/A	N/A	WCTM

FGR = Flue gas recirculation
LNB = Low NO_x burners
EP = Electrostatic precipitators
LS = Low sulfur fuel
S = Scrubbed
OTF = Once-through flow
WCTM = Water cooling tower mechanical
N/A = Not applicable to waste heat applications

Source: Lakeland Environmental Staff

Table 2-2a
Lakeland Electric Existing Generating Facilities

Plant Name	Unit No.	Location	Unit Type[3]	Fuel[4]		Fuel Transport[5]		Alt Fuel Days Use[2]	Commercial In-Service Month/Year	Expected Retirement Month/Year	Gen. Max. Nameplate kW	Net Capability	
				Pri	Alt	Pri	Alt					Summer MW	Winter MW
Charles Larsen Memorial	2	16-17/28S/24E	GT	NG	DFO	PL	TK	---	11/62	Unknown	11.500	10	14
	3		GT	NG	DFO	PL	TK	---	12/62	Unknown	11,500	9	13
	8		CA	WH	---	---	---	---	04/56	Unknown	25,000	29	31
	8		CT	NG	DFO	PL	TK	---	07/92	Unknown	101,520	73	90
Plant Total												121	148

[2]Lakeland does not maintain records of the number of days that alternate fuel is used.

[3]Unit Type

CA	Combined Cycle Steam Part
CT	Combined Cycle Combustion Turbine
GT	Combustion Gas Turbine
ST	Steam Turbine

[4]Fuel Type

DFO	Distillate Fuel Oil
RFO	Residual Fuel Oil
BIT	Bituminous Coal
WH	Waste Heat
NG	Natural Gas

[5]Fuel Transportation Method

PL	Pipeline
TK	Truck
RR	Railroad

Table 2-2b
Lakeland Electric Existing Generating Facilities

Plant Name	Unit No.	Location	Unit Type[3]	Fuel[4] Pri	Fuel[4] Alt	Fuel Transport[5] Pri	Fuel Transport[5] Alt	Alt Fuel Days Use[2]	Commercial In-Service Month/Year	Expected Retirement Month/Year	Gen. Max. Nameplate kW	Net Capability Summer MW	Net Capability Winter MW
Winston Peaking Station	1-20	21/28S/23E	IC	NG	DFO	PL	TK	NR	12/01	Unknown	2,500 each	50	50
Plant Total												50	50
C.D. McIntosh, Jr.	D1	4-5/28S/24E	IC	DFO	---	TK	---	NR	01/70	Unknown	2,500	2.5	2.5
	D2		IC	DFO	---	TK	---	NR	01/70	Unknown	2,500	2.5	2.5
	GT1		GT	NG	DFO	PL	TK	NR	05/73	Unknown	26,640	16	19
	1		ST	NG	RFO	PL	TK	NR	02/71	Unknown	103,000	80	80
	2		ST	NG	RFO	PL	TK	NR	06/76	Unknown	126,000	106	106
	3[1]		ST	BIT	---	RR	---	NR	09/82	Unknown	363,870	205	205
	5		CT	NG	DFO	PL	TK	NR	05/01	Unknown	292,950	200	200
	5		CA	WH	---	---	---	NR	05/02	Unknown	135,000	114	114
Plant Total												726	729
System Total												**897**	**927**

[1]Lakeland's 60 percent portion of joint ownership with Orlando Utilities Commission.
[2]Lakeland does not maintain records of the number of days that alternate fuel is used.

[3]Unit Type

CA	Combined Cycle Steam Part
CT	Combined Cycle Combustion Turbine
GT	Combustion Gas Turbine
ST	Steam Turbine

[4]Fuel Type

DFO	Distillate Fuel Oil
RFO	Residual Fuel Oil
BIT	Bituminous Coal
WH	Waste Heat
NG	Natural Gas

[5]Fuel Transportation Method

PL	Pipeline
TK	Truck
RR	Railroad

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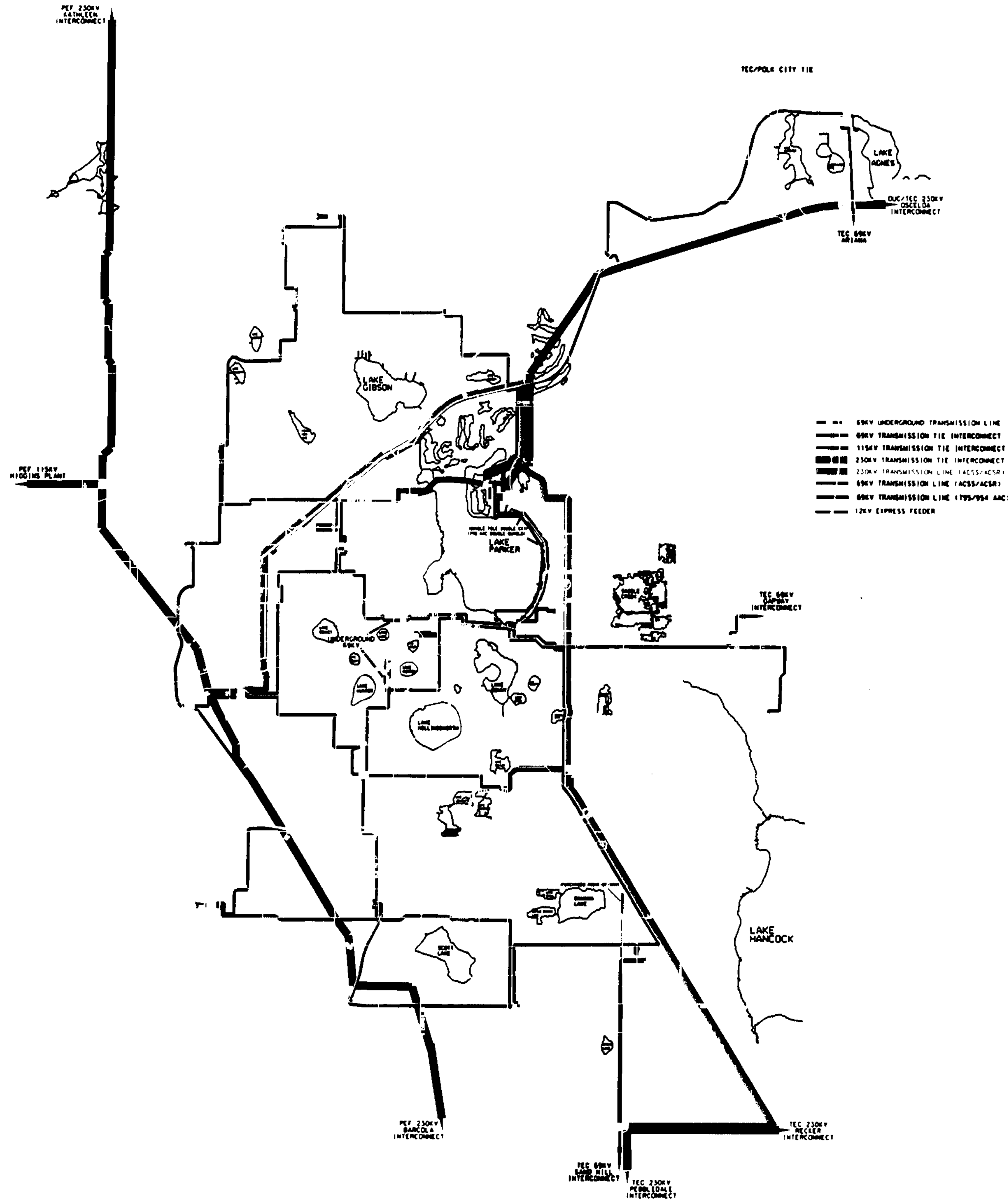

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3.0 Forecast of Electrical Power Demand and Energy Consumption

Lakeland routinely develops a detailed short-term (1-yr) electric load and energy forecast for budget purposes and a longer-term (20-yr) forecast for use in its planning studies. This is undertaken on a fiscal year basis with each year ending September 30th. Lakeland forecasts monthly data and then summarizes annually.

In 2006, Lakeland began using an advanced statistical program called MetrixND for analysis and forecasting time series data such as number of customers, energy and demand consumption. Short-term and long-term forecasts are generated using the same forecasting software. The software allows Lakeland to incorporate economic, demographic, price, elasticity's, end-use saturations and efficiencies, and various weather variables into the forecast.

MetrixND is well known and used in the forecasting industry. Many utilities use MetrixND to produce their short and long-term forecasts. Those utilities include (to name a few): Tampa Electric Company, Orlando Utilities Commission, Florida Power and Light, Ameren, Exelon, PPL, ConEdison, Vectren and Indianapolis Power and Light.

The economic and demographic variables used in this forecast were purchased from Moody's Economy.com and the Bureau of Economic and Business Research (BEBR). Economy.com is a leading independent provider of economic, financial, and industry research. The Bureau of Economic and Business Research (BEBR) is an applied research center in the Warrington College of Business at the University of Florida.

The most current economic and demographic data available is used to develop the forecast. The current forecast is based on the January 2008 quarterly update from Economy.com and the annual BEBR forecast published June of 2007.

Many variables were evaluated for the forecast, but the variables used in the current forecast include: gross regional product, manufacturing employment, non-manufacturing employment, total employment, disposable personal income per household, household size, household growth, structural changes (appliance saturation and efficiency trends) and weather. Binary variables were also used to explain outliers in historical billing data, trend shifts, monthly seasonality, rate migration between classes, etc...

The real price of electricity was developed using a 12-month moving average of real average revenue. The historical price data along with the Consumer Price Index (CPI) was used to develop a price forecast for use in the MetrixND structure. Price was evaluated in this forecast; however, it was not used in any of the models. The inclusion of the price variable yielded spurious and inconsistent results. Due to time constraints these results were not able to be fully explained and thus price was not included at this time. Work will continue this year to better understand the impacts of the price variable on the model results.

All of the models of the forecast are developed using historical 20-year normal weather. The Utility owns and operates its own weather stations. The weather stations are strategically placed throughout the service territory to provide the best estimate of overall temperature for the Lakeland service area.

Heating and cooling degrees days are variables that attempt to explain a customer's behavior to either hot or cold weather. The industry standard for calculating degree days is: (Average Daily Temperature – 65 degrees = Heating or Cooling Degree Day). If the Average Daily Temperature is higher than 65 degrees then it is a Cooling Degree Day (CDD), Example: 75 - 65 = 10 CDD). If the Average Daily Temperature is lower than 65 degrees then it is a Heating Degree Day (HDD). Example: 55 – 65 = 10 HDD).

Base temperatures of HDD-Base 65°, HDD-Base 60°, CDD-Base 60°, CDD-Base 65° and CDD- Base 75° were also evaluated during model development in 2006. This analysis was performed to further refine the appropriate breaks for defining HDD and CDD.

Techniques employed to generate the forecasts include econometric and multiple regression modeling, study of historical relationships and growth rates, trend analysis, and exponential smoothing. Lakeland also reviews the forecasts for reasonableness, compares projections to historical patterns, and modifies the results as needed using informed judgment.

MetrixND also incorporates a forecasting approach called SAE (Statistically Adjusted End-Use) modeling. This approach allows for appliance saturations and efficiencies among other variables to be incorporated into an interactive equation for use in a regression for sales models. Included in this equation are: end-use saturation and efficiency trends, HDD, CDD, price, elasticity's, income and household size.

Regression models are estimated in MetrixND to forecast monthly sales by class. The results of all classes are summed to create a total sales forecast. A loss-factor (based on 4-years of historical monthly data) is applied to convert total sales into energy (NEL).

Regression models are estimated in MetrixND to forecast monthly peaks, which are driven by the monthly energy and actual peak-producing weather conditions. The forecast is generated under assumptions of "normal" peak-producing weather conditions.

The winter peak forecast has been developed under the assumption that its occurrence will be on a January weekday. Winter temperatures at peak ranging from 28.5° to 32.8° have typically occurred on January to March weekdays between 7 and 8 a.m. Lakeland Electric remains a winter peaking utility with projected winter demand increases averaging 10 MW per year over the forecast horizon.

Summer temperatures at peak ranging from 94.1° to 96.1° have typically occurred on August weekdays between 3 and 6 p.m. Over the 10-year forecast, an average 9 MW summer demand increase per year is expected.

Twenty four hourly regression models and one daily energy neural network model were developed in MetrixND to generate the 20-year hourly load profile. Each of these models relates weather (dry bulb temperature, dew point temperature, etc) and calendar-conditions (day-of-week, month, holidays, etc.) to load. The un-calibrated hourly load shape is then scaled to the energy forecast and the peak forecast using MetrixLT. The result is an hourly load shape that is calibrated to the system energy and system peak forecasts. Forecasts are generated with these models by using assumptions of "normal" daily weather conditions.

In August of 2005, the United States Congress passed the Energy Policy Act, which changes the dates of both the start and end of daylight savings time (DST). This went into effect in March 2007. DST will begin three weeks earlier and will end one week later than what have traditionally occurred. The calendar data used internally in the models was modified to reflect this change.

Lakeland Electric currently does not have any demand side management, and therefore, does not assume any deductions in peak load for demand side management.

The reader may notice some inconsistencies in the forecast when comparing one year or one month to another. This can be explained by the following reasons: some actual data was used in the models to generate the Fiscal Year 2008 Forecast. Therefore, October 2007 – December 2007 is actual data and *not* predicted values based on normal weather.

There may also be some inconsistencies seen in the projected data for the commercial sector (Industrial and GSD classes). This is due to rate migration. All of Lakeland's commercial accounts now on the Contract rate (28 accts) will migrate into the GSLD (19 accts), ELDC (2 accts) and GSD (7 accts) classes. The contracts began expiring in Fiscal Year 2007 and will continue to expire at different months through the end of Fiscal Year 2010. Additionally, Lakeland has ten industrial accounts on the Interruptible rate which will also migrate into the GSLD (7 accts) and GSD (3 accts) classes. These accounts also began migrating in Fiscal Year 2007 and will all be moved by the end of Fiscal Year 2010.

3.1 Service Territory Population Forecast

The electric service territory population estimate for the City of Lakeland for Fiscal Year 2007 is 253,027 persons. The BEBR June 2007 estimate for population in the Lakeland/Winter-Haven MSA is 578,160 persons.

Lakeland's electric service territory population is projected to increase at a 1.47% average annual growth rate (AAGR) from Fiscal Year 2008 through Fiscal Year 2017. Polk County's population (Lakeland/Winter-Haven MSA) is growing at 1.81% AAGR for the ten-year forecast horizon.

3.2 Customer Forecasts

Lakeland forecasts the number of accounts for the following categories and subcategories:

- Residential
- Commercial
  - General Service
  - General Service Demand
- Industrial
  - General Service Large Demand
  - Contract
  - Interruptible
  - ELDC
- Other
  - Private Area Lighting
  - Roadway Lighting
  - Electric
  - Water
  - Municipal

3.2.1 Residential Accounts

Regression analysis was used to develop the residential account forecast. Total residential accounts were projected as a function of the number of households. Historical data suggests that a strong correlation exists between the population growth in Polk County (Lakeland Winter-Haven MSA) and the number of new residential accounts in the Lakeland service territory. The number of residential accounts for outside the city limits was developed using an exponential smoothing model.

Projected AAGR for total residential accounts is 1.77% for Fiscal Year 2008 through Fiscal Year 2017.

3.2.2 *Commercial Accounts*

The General Service (GS) projections for number of new accounts are a function of residential accounts. The general assumption is that, as more people move into the area the demand for small commercial businesses will increase.

General Service accounts are expected to increase at an AAGR of 1.2% from Fiscal Year 2008-2017.

Total General Service Demand (GSD) accounts for inside and outside city limits were developed using regression models. The primary driver used for both models is non-manufacturing employment. The GSD total account class is expected to grow at a rate of 0.3 % from Fiscal Year 2008-2017.

Commercial (GS and GSD) accounts are projected to increase by an AAGR of 1.5% for the 10-year reporting period.

3.2.3 *Industrial Accounts*

Industrial accounts represent the combination of General Service Large Demand (GSLD), Contract, Interruptible and ELDC accounts.

Projections for the industrial customers were modeled independently of MetrixND. Each customer was evaluated to account for their expected future energy and demand consumption. Special consideration was also given to new major commercial and industrial development projects.

Additional load was added to the forecast to account for two new industrial customers coming on-line during the forecast period. The Publix Town Center is expected to come on-line in April of Fiscal Year 2008. They will be a GSLD account and their load is expected to be approximately 525 kwd. Teneroc High School is also expected to come on-line this fall as a GSLD customer with a load of approximately 1000 kwd.

3.2.4 *Other Accounts*

Other accounts are comprised of accounts within the municipal, electric and water departments, private area lighting and roadway lighting. Historical data for these classes is very inconsistent and difficult to model. Therefore, the account projections for this category were based on time trends, historical growth rates and knowledge of future projects and developments. Most of these models were exogenous forecasts built outside of MetrixND and were added to the other customer forecasts to generate the Total Account Forecast.

The Other Account category is expected to increase at 0.13% AAGR over the 10-year reporting period.

3.2.5 Total Accounts

The Total Account Forecast for the City of Lakeland is the sum of individual forecasts provided above. Total accounts are expected to increase at 1.50% AAGR over the 10-year reporting period.

3.3 Energy Sales Forecast

Lakeland forecasts energy sales for the following categories and subcategories:

- Residential
- Commercial
  - General Service
  - General Service Demand
- Industrial
  - General Service Large Demand
  - Contract
  - Interruptible
  - ELDC
- Other
  - Electric
  - Water
  - Municipal
  - Unmetered
  - Private Area Lighting
  - Roadway Lighting

The energy sales models are based on an approach developed by Itron, for use in MetrixND, called SAE (Statistically Adjusted End-Use) modeling. This approach allows for appliance saturations and efficiencies among other variables to be incorporated into an interactive equation for use in a regression for sales models.

3.3.1 Residential Energy Sales Forecast

Personal disposable income, persons per household, price, weather, employment, appliance saturations and efficiencies etc... are all variables that impact the average energy use of a residential customer. Customer growth is driven primarily by number of households and population.

For these reasons, residential sales models for inside and outside the city limits were broken down into two separate forecast models; a customer model and an average use model.

The equation used to develop residential energy sales is as follows:

$Res\ Sales_t = Cust_t \times AvgUse_t$

Customer projections are a function of the number of households in the Lakeland/Winter-Haven MSA area.

The average use regression model was based on the following average use equation:

$AvgUse_t = B_0 + B_1XCool_t + B_2XHeat_t + B_3XOther_t + e_t$

Where:

XCOOL = AC saturation (central, room AC), AC efficiency, thermal efficiency, home size, income, average household size, price and cooling degree days (CDD).

$$XCool_{y,m} = CoolIndex_y \times CoolUse_{y,m}$$

$$CoolIndex_y = StructuralIndex_y \times \sum_{Type} Weight_y^{Type} \times \frac{\left(Sat_y^{Type} \middle/ Eff_y^{Type} \right)}{\left(Sat_{01}^{Type} \middle/ Eff_{01}^{Type} \right)}$$

$$CoolUse_{y,m} = \left(\frac{CDD_{y,m}}{CDD_{01}}\right) \times \left(\frac{HHSize_{y,m}}{HHSize_{01}}\right)^{0.20} \times \left(\frac{Income_{y,m}}{Income_{01}}\right)^{0.20} \times \left(\frac{Price_{y,m}}{Price_{by}}\right)^{-0.20}$$

XHEAT = Heating saturation (resistance, heat pump), heating efficiency, thermal efficiency, home size, income, household size, price and heating degree days (HDD).

$$XHeat_{y,m} = HeatIndex_y \times HeatUse_{y,m}$$

$$HeatIndex_y = Structural\ Index_y \times \sum_{Type} Weight^{Type} \times \frac{\left(Sat_y^{Type} \middle/ Eff_y^{Type} \right)}{\left(Sat_{01}^{Type} \middle/ Eff_{01}^{Type} \right)}$$

$$HeatUse_{y,m} = \left(\frac{HDD_{y,m}}{HDD_{01}}\right) \times \left(\frac{HHSize_{y,m}}{HHSize_{01}}\right)^{0.20} \times \left(\frac{Income_{y,m}}{Income_{01}}\right)^{0.20} \times \left(\frac{Price_{y,m}}{Price_{01}}\right)^{-0.20}$$

XOTHER = saturation levels (water heat, appliances, lighting densities, plug loads), appliance efficiency, income, household size, price and number of billing days.

- Nonweather-sensitive end-use saturation and efficiency trends
- Number of billing days
- Hours of light
- Household size and income
- Water temperature
- Prices

The Total Residential Energy Sales Forecast is projected to increase at 1.63% AAGR over the 10-year reporting period.

3.3.2 *Commercial Energy Sales*

General Service (GS) and General Service Demand (GSD) energy sales were projected for both inside and outside the city limits. A separate model was developed for each using the SAE modeling approach. Binary variables were also used to help explain fluctuations in historical billing data due to rate migrations etc…

$$Sales_m = a + b_c \times XCool_m + b_h \times XHeat_m + b_o \times XOther_m + e_m$$

Commercial energy sales (GS and GSD) are expected to increase at 2.68% AAGR over the 10-year reporting period. A substantial portion of this anticipated growth is due to rate migration from the Contract and Interruptible rate classes.

3.3.3 *Industrial Energy Sales*

Total GSLD energy sales were projected on an individual basis to determine future expected demand and energy requirements. Close contact was made with the Account Managers on all accounts. Large Industrial customer, demand and energy sales forecasts were modeled independently of MetrixND and later imported into the model to generate the Total Sales Forecast.

Total GSLD energy sales are projected to increase at a 0.3% AAGR over the 10-year reporting period. Energy sales for the Industrial class is lower this forecast horizon due to the Contract and Interruptible customers that migrated into the GSD rate class.

3.3.4 Other Sales

Other energy sales are comprised of sales for the municipal, electric and water departments, private area lighting, roadway lighting, and unmetered (street lighting) energy sales. Models are very difficult to develop for these rate classes due to the large fluctuations in the historical billing data. Therefore, the projections for this category were based on historical trends and growth rates. Special consideration was given to account for new projects and developments.

Other energy sales are expected to increase at 0.10% AAGR over the 10-year reporting period.

3.3.5 Total Sales

The Total Energy Sales Forecast for the City of Lakeland is the sum of the individual forecasts provided above. Total energy sales are projected to grow at 1.6% AAGR over the 10-year reporting period.

3.4 Net Energy for Load Forecast

Net energy for load is defined as the electricity generated by a system's own generating plants in addition to energy purchased from others, less that delivered for resale.

The Net Energy for Load Forecast was developed through MetrixND. Regression models are estimated in MetrixND to forecast monthly sales by class (Res, GS, GSD, etc). The results of all classes are summed to create a total sales forecast. A loss-factor is applied to convert total sales into energy. Electric losses, the energy loss as a percentage of total system energy (NEL) were estimated using four years of historical monthly data.

Net energy for load is projected to increase at 1.7% AAGR over the 10-year reporting period.

3.5 Peak Demand

Lakeland is typically, and expects to continue to be, a winter peaking utility. However, it is important to note that historical peaks over the past ten years indicate that Lakeland has been a summer peaking Utility three out of the last ten years.

Lakeland Electric's winter season is defined as November through March; and summer season is defined as April through October.

Regression models are estimated in MetrixND to forecast monthly peaks, which are driven by the monthly energy and actual peak-producing weather conditions. The forecast is generated under assumptions of "normal" peak-producing weather conditions.

Historical load data was adjusted for the hurricanes of 2004.

Interruptible accounts have the potential load reduction of 7 MW in winter and 9 MW in summer.

The Total Annual Peak Demand Forecast is expected to increase at approximately 10 MW's a year over the 10-year reporting period. The Summer Peak Demand Forecast is expected to increase at 9 MW's over the 10-year reporting period.

Table 3-1
Historical and Projected
Heating and Cooling Degree Days

YEAR	HDD 65	CDD 65
1998	680	3,143
1999	442	3,096
2000	526	2,934
2001	841	2,934
2002	449	3,435
2003	749	3,302
2004	620	3179
2005	563	3211
2006	516	3,474
2007	412	3,415
2008	574	3,199
2009	574	3,199
2010	574	3,199
2011	574	3,199
2012	574	3,199
2013	574	3,199
2014	574	3,199
2015	574	3,199
2016	574	3,199
2017	574	3,199

Table 3-2
Historical Monthly Peaks and Date

	2005		2006		2007	
Jan	648	24-Jan	522	8-Jan	565	30-Jan
Feb	498	11-Feb	680	14-Feb	596	17-Feb
Mar	476	3-Mar	434	20-Mar	471	6-Mar
Apr	456	1-Apr	541	21-Apr	510	26-Apr
May	523	24-May	559	31-May	558	4-May
Jun	578	15-Jun	594	21-Jun	571	25-Jun
Jul	616	28-Jul	613	26-Jul	633	18-Jul
Aug	639	18-Aug	628	2-Aug	648	9-Aug
Sep	568	19-Sep	580	25-Sep	616	12-Sep
Oct	542	10-Oct	537	20-Oct	562	22-Oct
Nov	427	16-Nov	474	21-Nov	442	27-Nov
Dec	520	22-Dec	434	8-Dec	489	18-Dec

3.6 Sensitivity Cases

3.6.1 High and Low Load Sensitivity

A high and low case scenario forecast was generated for the following forecast categories: total customers, total sales, system net energy for load and system peak demands. The forecast scenarios were based on variations of the primary drivers including: customer growth, economic growth, and weather.

These two additional sensitivity cases provide a bandwidth across which Lakeland can evaluate potential power supply planning alternative scenarios.

Table 3-3 Summer Peak Demand (MW)			
Year	Low	Base	High
2008	634	647	668
2009	640	654	679
2010	646	660	687
2011	652	667	694
2012	659	674	702
2013	665	682	710
2014	672	691	719
2015	679	700	728
2016	687	710	737
2017	694	721	747
AAGR	1.01%	1.21%	1.25%

Table 3-4 Winter Peak Demand (MW)			
Year	Low	Base	High
2008/09	608	685	748
2009/10	614	693	758
2010/11	620	701	768
2011/12	626	709	778
2012/13	632	717	788
2013/14	637	726	798
2014/15	643	736	809
2015/16	650	746	820
2016/17	656	757	831
2017/18	662	769	842
AAGR	0.95%	1.29%	1.32%

Table 3-5 Net Energy for Load (GWH)			
Year	Low	Base	High
2008	3022	3106	3227
2009	3029	3170	3366
2010	3070	3213	3421
2011	3107	3257	3471
2012	3148	3306	3525
2013	3184	3352	3575
2014	3225	3404	3630
2015	3267	3460	3687
2016	3315	3526	3750
2017	3356	3590	3806
AAGR	1.17%	1.62%	1.85%

Model Evaluation and Statistics

Several steps are taken to ensure the best models are used for determining future customer, demand and energy requirements. The first step is to determine the forecast drivers. Once the drivers are determined, the model statistics are evaluated. MetrixND calculates the following list of statistical tests for use in determining the best model:

Adjusted R-Squared
Durbin Watson Statistic
F-Statistic
Probability (F-Statistic)
Mean Absolute Deviation (MAD)
Mean Absolute Percent of Error (MAPE)

Data Sources

Bureau of Economic and Business Research (BEBR) Annual Forecast, June 2007 Forecast, University of Florida.

City of Lakeland Florida, 2007 Electric Rate Study, January 24, 2007

Coincident Peak Information, Lakeland Electric Load Research, 2007.

Current List of Large Customers, Lakeland Electric.

Customer Statistics Reports, Lakeland Electric.

Economy.com, Quarterly Update for Florida Counties, January 2008.

Historical Billing Information, CIBS Database & UMS.

Historical Hourly Loads, XA-21 Report, Lakeland Electric.

Load & Energy Forecast (2006/2007), Lakeland Electric.

Load Generation Summary, Lakeland Electric.

Monthly Peak Record, Lakeland Electric.

Municipal Breakdown Report, Lakeland Electric.

Temperature, Rainfall and Humidity Data, Lakeland Electric.

4.0 Demand - Side Management Programs

Lakeland Electric is committed to the efficient use of electric energy and is committed to providing cost-effective conservation and demand reduction programs for all its consumers. Lakeland is not subject to FEECA rules but has in place several Demand-Side Management (DSM) programs and remains committed to utilizing cost-effective conservation and DSM programs that will benefit its customers. Presented in this section are the currently active programs.

This section also includes a brief description of Lakeland's advances in solar technology and a new LED traffic light retrofit program. Lakeland has been a pioneer in the deployment and commissioning of solar energy devices and continues to support and look for opportunities to promote solar energy technologies.

4.1 Existing Conservation and Demand-Side Management Programs

Lakeland has the following conservation and demand-side management programs that are currently available and address two major areas of demand-side management:

- Reduction of energy needs on a per customer basis.
- Movement of energy to off-peak hours when it can be generated at a lower cost.

4.1.1 Non-Measurable Demand and Energy Savings

The programs outlined in this section cannot directly be measured in terms of demand and energy savings, but are very important in that they have been shown to influence public behavior and thereby help reduce energy requirements. Lakeland considers the following programs to be an important part of its objective to cost-effectively reduce energy consumption:

- Residential Programs:
  - Energy Audit Program.
  - Public Awareness Program.
  - Speakers Bureau.
  - Informational Bill Inserts.
- Commercial Programs:
  - Commercial Audit Program.

4.1.1.1 Residential Programs.

4.1.1.1.1 Residential Energy Audits.

The Energy Audit Program promotes high energy-efficiency in the home and gives the customer an opportunity to learn about other utility conservation programs. The program provides Lakeland with a valuable customer interface and a good avenue for increased customer awareness.

4.1.1.1.2 Public Awareness Program.

Lakeland believes that an informed public aware of the need to conserve electricity is the greatest conservation resource. Lakeland's public awareness programs provide customers with information to help them reduce their electric bills by being more conscientious in their energy use.

4.1.1.1.3 Speakers Bureau.

Lakeland provides speakers to local group meetings to help inform the public of new energy efficiency technologies and ways to conserve energy in the commercial and residential sectors.

4.1.1.1.4 Informational Bill Inserts.

Monthly billing statements provide an excellent avenue for communicating timely energy conservation information to its customers. In this way, Lakeland conveys the message of better utilizing their electric resources on a regular basis in a low cost manner.

4.1.1.2 Commercial Programs.

4.1.1.2.1 Commercial Energy Audits.

The Lakeland Commercial Audit Program includes educating customers about high efficiency lighting and thermal energy storage analysis for customers to consider in their efforts to reduce costs associated with their electric usage.

4.1.2 Demand-Side Management Technology Research

Lakeland has made a commitment to study and review promising technologies in the area of conservation and demand-side management. Some of these efforts are summarized below.

4.1.2.1 Direct Expansion Ground Source Heat Pump Study.

In cooperation with ECR Technologies of Lakeland, Lakeland Electric was given the Governor's Energy Award for work in the evaluation and analysis of direct expansion ground source heat pump (GSHP) technology. This technology reduces weather sensitive loads and promotes greater energy efficiency. A study of the demand and energy savings associated with this technology was completed in an effort to establish its cost-effectiveness for new construction, as well as retrofitting the technology to existing homes. The original units were installed in the 1980's and are still in service. There is little customer interest due to the cost of the units. Currently, no new sites are being developed.

4.1.2.2 Whole House Demand Controller Study/Real Time Pricing.

The concept of this technology is to control multiple appliances in the customer's home. The initial study was designed such that when a customers' demand reached a pre-set level, no additional appliances would be allowed to turn on. There has been no customer interest in this program as initially offered.

4.1.2.3 Time-of-Day Rates.

Lakeland is currently offering a time of day program and plans to continue as this makes consumers aware of the variation in costs during the day. To date, there has been limited interest by Lakeland's customers in this demand-side management program.

4.1.3 New Conservation Programs 2008

In keeping with Lakeland Electric's plan to promote retail conservation programs, the utility is launching the following Energy Efficiency & Conservation Programs during 2008:

Residential

- Insulation rebate - $100 rebate for adding attic insulation to achieve R30 total. Certificate issued to resident at energy audit/visit and redeemed to Insulation Contractor. Can be homeowner installed
- Energy Saving Kits – giveaway at audits contains weather-stripping, outlet gaskets, low flow showerhead, CFL, etc.
- HVAC Maintenance Incentive - $50 rebate for residential customers that have A/C maintenance done.
- Low-Income Seniors Weatherization – home fix up includes weather-stripping, caulking, wrap water heater, etc. up to $500 per home, 50 homes per year
- Compact Fluorescent Lighting – giveaway at audits, up to 3 per residence
- On-line Energy Audit – March 08

Commercial

- Energy Audits – rebate of up to $2000 (1/2 the cost) for GSLD, Contract, and Interruptible customers to have audit done by Energy Services Company. Promoted by Account Executives
- Compact Fluorescent/LED Lighting – rebate up to $200 per customer for CFL/LED lighting upgrades
- Vending Miser Incentive - $75 rebate (1/2 the cost) for commercial customers that install vending miser. Limit of 3 per customer.

Expected Results

- 700 kw demand reduction and over 3,000,000 kwh

4.2 Solar Program Activities

Lakeland Electric views solar energy devices as distributed generators whether they interconnect to the utility grid or not. Solar also contributes to reducing both peak demand and energy linking it to demand side management. As such they can potentially fill the much-desired role that an electric utility needs to avoid future costs of building new (and/or re-working existing) supply side resources and delivery systems.

4.2.1 Solar Powered Street Lights.

Distributed generation produces the energy in end use form at the point of load by the customer, thereby eliminating many of the costs, wastes, pollutants, environmental degradation, and other objections to central station generation.

Solar powered streetlights offer a reliable, cost-effective solution to remote lighting needs. As shown in Figure 4-1, they are completely self-contained, with the ability to generate DC power from photovoltaic modules and batteries. During daylight hours solar energy is stored in the battery bank used to power the lights at night. By installing these self sufficient, stand-alone solar lighting products, Lakeland Electric was able to avoid the construction costs related to expansion of its distribution system into remote areas. These avoided costs are estimated to be approximately $40,000.

For 13 years Lakeland had 20 solar powered streetlights in service. Each of these lights offset the need for a traditional 70 watt fixture that Lakeland typically would use in this type of application and displaced the equivalent amount of energy that the 70 watt fixture would use on an annual basis. The primary application for this type of lighting is for remote areas as stated above. In 2006, Lakeland's distribution system was developed in the areas where the solar powered streetlights were installed. Lakeland has chosen to phase-out the solar powered streetlights due to their age. Lakeland installed these 20 lights in mid-1994 in a grant program with the cooperation of the Florida Solar Energy Center (FSEC).

Figure 4-1
Solar Powered Streetlight

4.2.2 Solar Thermal Collectors for Water Heating.

The most effective application for solar energy is the heating of water for domestic use. Solar water heating provides energy directly to the end-user and results in a high level of end-user awareness. The sun's energy is stored directly in the heated water itself, reducing the effect of converting the energy to other forms.

Lakeland presently owns and operates 57 solar water heaters. Lakeland recently chose a second type of solar water heater with a simpler connection and metering setup. Two of these new units are currently installed and data is being gathered to compare their efficiency to the 55 installed in prior years. All units are installed on the roofs of residential customers' homes, i.e. – at the point of consumption. Since this method of energy delivery bypasses the entire transmission and distribution system, there are other benefits than only avoided generation costs.

In Lakeland's program, each solar water heater remains the property of the utility, thereby allowing the customer to avoid the financial cost of the purchase. Lakeland's return on this investment is realized through the sale of the solar generated energy as a separate line item on the customer's monthly bill. This energy device is monitored by using a utility-quality Btu meter calibrated to read in kWh.

One of the purposes of this program is to demonstrate that solar thermal energy can be accurately metered and profitably sold to the everyday residential end-user of hot water. Lakeland Electric's fleet of 57 solar thermal energy generators displaces over 2,000 kWh per year per installation on average.

Lakeland Electric is also the first utility to successfully trade Renewable Energy Credits (REC's) that were produced by these solar water heaters. In 2004 a transaction took place between Lakeland and two REC buyers: Keys Energy Services of Key West and the Democratic National Convention in Boston. Keys Energy needed the REC's for its retail Green Pricing program. The Democratic National Convention used the REC's to offset the emissions produced during that convention.

4.2.3 Utility Expansion of Solar Water Heating Program

During November, 2007 Lakeland Electric issued a Request for Proposals for the expansion of its Residential Solar Water Heating Program. In this solicitation Lakeland sought the services of a venture capital investor who would purchase, install, own, operate and maintain 3,000 – 10,000 solar water heaters on Lakeland Electric customers' residences in return for a revenue-sharing agreement. Lakeland Electric would provide customer service and marketing support, along with meter reading, billing and collections. During December, 2007 a successful bidder was identified and notified. Lakeland Electric is currently in discussions to arrive at a long-term agreement with that vendor. Annual projected energy savings from this project will range between 7,500 and 25,000 megawatt-hours. These solar generators will also produce Renewable Energy Credits that will contribute toward Florida's expected mandate for renewable energy as a part of the utility's energy portfolio.

4.2.4 Utility-Interactive Residential Photovoltaic Systems

This project is a collaborative effort between the Florida Energy Office (FEO), FSEC, Lakeland Electric, and Shell Solar Industries. The primary objective of this program is to develop approaches and designs that integrate photovoltaic (PV) arrays into residential buildings, and to develop workable approaches to interconnection of PV systems into the utility grid. Lakeland originally installed 3 PV systems, all of which were directly interconnected to the utility grid. These systems have an average nominal power rating of approximately 2.6 kilowatts peak (kwp) and are displacing approximately 2900 kWh per year per installation at standard test conditions. During 2005 title to these systems was transferred to those homeowners in return for their extended voluntary participation.

Lakeland owned, operated, and maintained the systems for at least 7 years. FSEC conducted periodic site visits for testing and evaluation purposes. System performance data was continuously collected via telephone modem line during those years and, at one site, continues to do so. Lakeland and FSEC will continue to analyze the results of utility and systems simulation tests and prepare recommendations for appropriate interconnection requirements for residential PV systems. FSEC prepared technical reports on system performance evaluation, onsite utilization, coincidence of PV generation with demand profiles, and utilization of PV generated electricity as a demand-side management option.

Four additional photovoltaic systems have been privately purchased in the Lakeland Electric service territory. These newer systems generate a total of 16.6 kw of electric capacity. Lakeland Electric has allowed the interconnection of these systems in "net meter" fashion. Lakeland Electric is now the hosting utility to 7 privately-owned, grid-connected solar photovoltaic generators. An eighth system (6.5 kw) is scheduled for installation during March, 2007. This will be the first non-residential PV system in Lakeland. It will serve the pumping and other electrical loads at a commercial tropical fish breeding facility.

4.2.5 Utility-Interactive Photovoltaic Systems on Polk County Schools

Lakeland is also actively involved in a program called "Portable Power." The focus of the program is to install Photovoltaic Systems on portable classrooms in the Polk County School District. This program is a partnership including Lakeland Electric, Polk County School District, Shell Solar Industries, Florida Solar Energy Research and Education Foundation, Florida Solar Energy Center and the Solar Electric Power Association, formerly known as the Utility Photovoltaic Group. It will allow seventeen portable classrooms to be enrolled in former President Clinton's "Million Solar Roofs Initiative." With the installation of the photovoltaic systems 80 percent of the electricity requirements for these classrooms will be met.

Along with the photovoltaic systems, a specially designed curriculum on solar energy appropriate to various grade levels has been developed. An education package has been delivered to the schools for their teachers' use in the explanation of solar sciences. By addressing solar energy technologies in today's public school classrooms, Lakeland is informing the next generation of the environmental and economic need for alternate forms of energy production.

The "Portable Power" in the schools, shown in Figure 4-2, consists of installing 1.8kWp photovoltaic systems on 17 portable classrooms. In addition to the educational awareness benefits of photovoltaic programs in schools, there are several practical reasons why portable classrooms are most appropriate as the platforms for photovoltaics. They have nearly flat roofs and are installed in open spaces, so final orientation is of little consequence. Another reason is the primary electric load of the portable classroom is air conditioning, which is reduced by the shading effect of the panels on their short stand-off mounts. Most important, the total electric load on the portable classroom has high coincidence with the output from the PV system. The hot, sunny day which results in the highest cooling requirements also produce the maximum PV output.

Of extreme value to the photovoltaic industry, Lakeland Electric, in a partnership with the FSEC, provided on-site training sessions while installing the solar equipment on these school buildings. Attendees from other electric utilities were enrolled and given a hands-on opportunity to develop the technical and business skills needed to implement their own solar energy projects. The training classes covered all aspects of the solar photovoltaic experience from system design and assembly, safety and reliability, power quality, and troubleshooting to distributed generation and future requirements of deregulation.

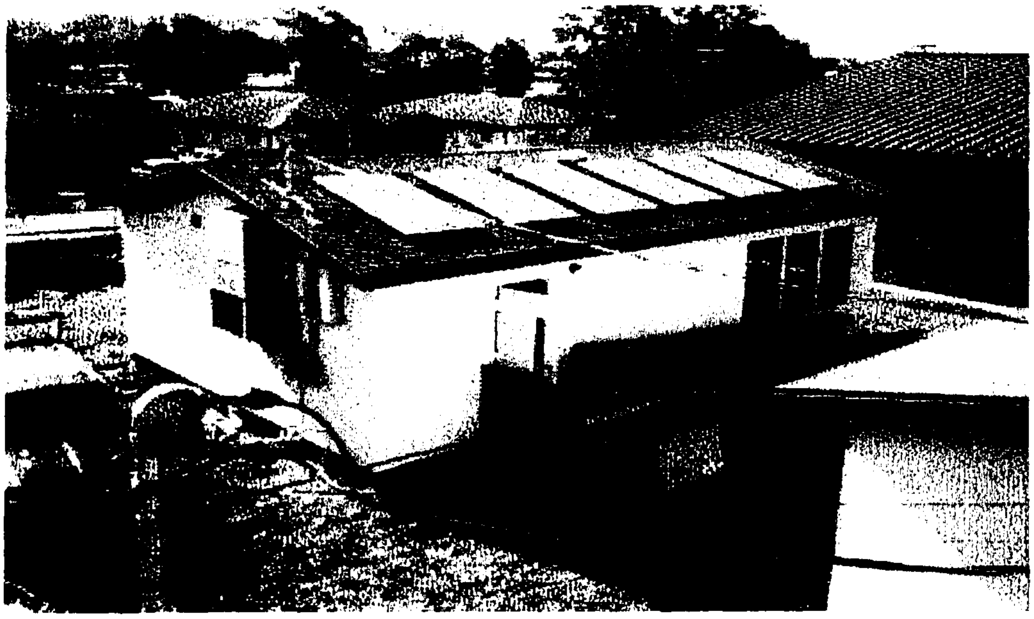


Figure 4-2
Portable Classroom Topped by PV Panels

Lakeland owns, operates, and maintains the systems that are installed on these classrooms. Lakeland monitors the performance and FSEC conducts periodic testing of the equipment. Through the cooperative effort of the partnership, different ways to use photovoltaics efficiently and effectively in today's society are being evaluated.

As a result of aging, several portable classrooms have been retired. And, where shifting populations have caused school officials to relocate some classrooms to schools that are outside Lakeland's service territory, Lakeland has removed the PV systems from those classrooms. Because the equipment is still capable of generating, budgets are being created that would have these systems re-installed on buildings owned by the City of Lakeland.

4.2.6 Integrated Photovoltaic's for Florida Residences

Lakeland's existing integrated photovoltaic program supports former President Clinton's "Million Solar Roofs Initiative". The Department of Energy granted five million dollars for solar electric businesses in addition to the existing privately funded twenty-seven million dollars, for a total of thirty-two million dollars for the program. Through the Utility Photovoltaic Group, the investment supported 1,000 PV systems in 12 states and Puerto Rico with hopes to bring photovoltaics to the main market. The 1,000 systems were part of the 500,000 commitments received for the initiative to date.

The goal is to have installed solar devices on one million roofs by the year 2010. Lakeland is helping to accomplish this national goal.

This program provides research in the integration of photovoltaic's in newly constructed homes. Two new homes, having identical floor plans, were built in "side-by-side" fashion. The dwellings were measured for performance under two conditions: occupied and unoccupied. Data is being collected for end-use load and PV system interface. As a research project, the goal is to see how much energy could be saved without factoring in the cost of the efficiency features.

The first solar home was unveiled May 28, 1998, in Lakeland, Florida. The home construction includes a 4 kW photovoltaic system, white tiled roof, argon filled windows, exterior wall insulation, improved interior duct system, high performance heat pump and high efficiency appliances. An identical home with strictly conventional construction features was also built as a control home. The homes are 1 block apart and oriented in the same direction as shown in Figure 4-3. For the month of July 1998, the occupied solar home air conditioning consumption was 72 percent lower than the unoccupied control house. Living conditions were simulated in the unoccupied home. With regard to total power, the solar home used 50 percent less electricity than the air conditioning consumption of the control home. The solar home was designed to provide enough power during the utility peak that it would not place a net demand on the grid. If the solar home produces more energy than what is being consumed on the premises, the output of the photovoltaic system could be sent into the utility grid. The objective was to test the feasibility of constructing a new, single family residence that was engineered to reduce air conditioning loads to an absolute minimum so most of the cooling and other daytime electrical needs could be accomplished by the PV component.

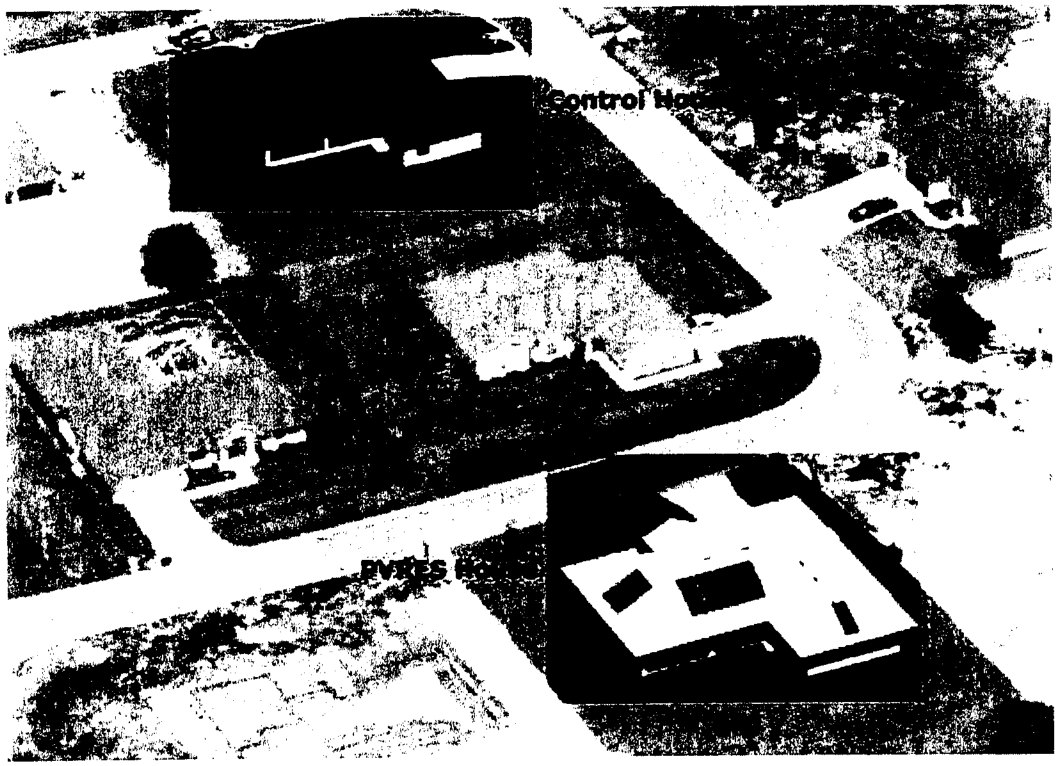


Figure 4-3
Solar House and Control House

4.2.7 Utility-Scale Solar Photovoltaic Program

During November, 2007 Lakeland Electric issued a Request for Proposal seeking an investor to purchase and install investor-owned PV systems totaling 24 megawatts on customer-owned sites as well as City of Lakeland properties. During December, 2007 a successful bidder was identified. Lakeland Electric is now in discussions with that vendor with the expectation of arriving at a mutually agreeable long-term contract during 2008. Projected reduction in annual fossil-fuel generation is expected to be 31,800 megawatt-hours. This project will not only offset future energy generation, but will also produce highly valuable Renewable Energy Credits in anticipation of a Florida mandate to produce renewable energy as a part of the utility's overall portfolio.

4.3 Green Pricing Program

Because no long-term budgets have been established for the deployment of solar energy devices, many utilities are dependent on infrequent, somewhat unreliable sources of funding for their solar hardware purchases. To provide for a more regularly available budget, a number of utilities are looking into the voluntary participation of their customers. Recent market studies performed in numerous locations and among diverse population groups reveal a public willingness to pay equal or even slightly higher energy prices knowing that their payments are being directed towards renewable fuels.

The Florida Municipal Electric Association (FMEA) has assembled a workgroup called "Sunsmart". This workgroup is a committee composed of member utilities. Its purpose is to raise environmental awareness and implement "Green Pricing" programs that would call for regular periodic payments from customers who wish to invest in renewables. The Florida Solar Energy Center (FSEC) co-hosts this effort by providing meeting places and website advertising to recruit from statewide responses. A grant from the State of Florida Department of Community Affairs, Florida Energy Office has been appropriated to encourage utility involvement with Green Pricing. Lakeland Electric is an active member of this committee and is investigating the marketability and public acceptance of a Green Pricing Program in its service territory.

4.4 LED Traffic Light Retrofit Program

The City of Lakeland is responsible for the operation and maintenance of 3,411 traffic lights at over 171 intersections. Historically, these traffic signals have used incandescent bulbs which are replaced every 18 months and use approximately 135 watts of electricity per bulb. This amounts to an annual electrical consumption of 1,633,525 kwh for all 12" red and green signals, arrow signals and pedestrian crossing signals.

This project retrofitted the existing bulbs with highly efficient Light Emitting Diodes (LEDs). The LEDs use approximately 10 watts of energy which is more than a 90% decrease in energy consumption as compared to their incandescent counterparts and have a longer life span, up to seven years, which reduces maintenance costs as well.

The Florida Department of Transportation (FDOT) agreed to help fund Lakeland's project to retrofit the signals. The FDOT contributed $50,000 for these new LED traffic lamps on all roadways within Lakeland's city limits. The FDOT views this as a "good neighbor policy" since FDOT depends on city crews to maintain the signals on its roads and highways within the city's limits.

The project began in December, 2002 and was completed in June 2003. The project is expected to save the City of Lakeland $150,000 per year in maintenance and electricity costs.

As a next step, Lakeland Electric added backup power supply equipment at 14 critical intersections earmarked for FDOT-funded LED signals. These improvements were limited to those intersections that are located on state-funded roadways. The UPS systems will improve safety by keeping traffic signals operating during power outages and accidents. Emergency vehicles in Lakeland will see the added benefit of having easier access to desired areas such as fire and medical locations. Lakeland anticipates being one of the first cities in Florida to have the UPS systems applied to the LED signals.

4.5 Renewable Resources

4.5.1 Energy and Demand

This year the Florida Reliability Coordination Council (FRCC) received a request from the Florida Public Service Commission (FPSC) to help in determining the amount of energy and demand derived from renewable resources. The FRCC asked members this year to supply the information and sent out a template for consistency. The following tables represent the information Lakeland Electric supplied to the FRCC this year.

Table 4-1

Existing FIRM Capacity and Energy by Primary Fuel Type

	Base Year: 2007	**Utility: Lakeland Electric**					
		Gross (MW) Capability				**Net Energy For Load**	
	Generation by Primary Fuel	**Summer (MW)**	**Summer (%)**	**Winter (MW)**	**Winter (%)**	**MWh**	**%**
1	Coal	219.0	23.7%	219.0	23.2%	1,502.0	49.3%
2	Nuclear						
3	Residual	196.0	921.2%	191.0	20.1%	12.0	0.4%
4	Distillate	55.0	6.0%	55.0	5.8%	3.0	0.1%
5	Natural Gas	454.0	49.1%	483.0	50.9%	1,498.0	49.2%
6	Renewables (Purchases)						
7	Renewable (Owned)						
8	Purchases (Other)					30.0	1.0%
9	Total	924.0	100.0%	948.0	100.0%	3,045.0	100.0%

Coal from above ~ Jointly owned LAK 60% of 365MW = 219.0MW Lakeland Electric

Notes

> Capacities requested are Gross MW.
> NEL is annual for 2007 calendar year.

Table 4-2

Existing FIRM Renewable Report by Fuel Type

	Base Year: 2007	Utility: Lakeland Electric					
		Gross (MW) Capability				Net Energy For Load	
	Renewable Fuel Type*	Summer (MW)	Summer (%)	Winter (MW)	Winter (%)	MWh	%
1	Biomass						
2	Landfill Gas						
3	Hydro						
4	Geothermal						
5	Biofuels						
6	Solar						
7	Ocean Energy						
8	Wind						
9	Other						
10	Total	0	0	0	0	0	0

* Based on values contained in Row 6 (Line 13) and Row 7 (Line 14) of Table A1.

Table 4-2b

Existing NON-FIRM Renewable Report by Fuel Type

	Base Year: 2007	Utility: Lakeland Electric					
		Gross (MW) Capability				Net Energy For Load	
	Renewable Fuel Type*	Summer (MW)	Summer (%)	Winter (MW)	Winter (%)	MWh	%
1	Biomass						
2	Landfill Gas						
3	Hydro						
4	Geothermal						
5	Biofuels						
6	Solar	0.2	100.0%	0.2	100.0%	362.0	100.0%
7	Ocean Energy						
8	Wind						
9	Other						
10	Total	0.2	100.0%	0.2	100.0%	362.0	100.0%

Notes

> Capacities requested are Gross MW.

Table 4-3

Existing NON-FIRM Self-Service Renewable Generation Facilities

Base Year: 2006	Utility: Lakeland Electric						
Facility Name	Unit No.	Gross MW	Net MW	Fuel Type	Self-Service MW	Self-Service MWh	In-Service Date
Solar Hot Water (Fleet of 57)		0.1	0.1	Sunlight			1998-2002
Solar Photovoltaic (Fleet of 16)		0.1	0.1	Sunlight			1998-2007

Notes

> Capacities requested are Gross MW. Enter WINTER capacities.

5.0 Forecasting Methods and Procedures

This section describes and presents Lakeland's long-term integrated resource planning process, the economic parameter assumptions, plus the fuel price projections being used in the current evaluation process.

5.1 Integrated Resource Planning

Lakeland selects its capacity resources through an integrated resource planning process. Lakeland's planning process considers conservation, demand-side management measures, and supply-side resources along with the needs of the T&D system. The integrated resource planning process employed by Lakeland continuously monitors supply and demand-side alternatives. As promising alternatives emerge, they are included in the evaluation process.

5.2 Florida Municipal Power Pool

Lakeland is a member of the Florida Municipal Power Pool (FMPP) along with the Orlando Utilities Commission (OUC) and the All-Requirements Project of the Florida Municipal Power Agency (FMPA). The three utilities operate as one control area. All FMPP capacity resources are committed and dispatched together from the OUC Operations Center.

The FMPP is not a capacity pool meaning that each member must plan for and maintain sufficient capacity to meet their own individual demands and reserve obligations. Any member of the FMPP can withdraw from FMPP with 1 year written notice. Lakeland, therefore, must ultimately plan to meet its own load and reserve requirements as reflected in this document.

5.3 Economic Parameters and Evaluation Criteria

This section presents the assumed values adopted for economic parameters and inputs used in Lakeland's planning process. The assumptions stated in this section are applied consistently throughout this document. Subsection 5.3.1 outlines the basic economic assumptions. Subsections 5.3.2 and 5.3.3 outline the constant differential fuel forecasts, and base case, high and low.

5.3.1 Economic Parameters

This section presents the values assumed for the economic parameters currently being used in Lakeland's least-cost planning analysis.

5.3.1.1 Inflation and Escalation Rates

The general inflation rate applied is assumed to be 3.0 percent per year based on the US forecasted Producer Price Index. A 2.5 escalation rate is applied to operation and maintenance (O&M) expenses. Fuel price escalation rates are discussed below in Section 5.3.2.

5.3.1.2Bond Interest Rate

Consistent with the traditional tax exempt financing approach used by Lakeland, the self-owned supply-side alternatives assume 100 percent debt financing. Lakeland's long-term tax exempt bond interest rate is assumed to be 4.7 percent.

5.3.1.3 Present Worth Discount Rate

The present worth discount rate used in the analysis is set equal to Lakeland's assumed bond interest rate of 4.7 percent.

5.3.1.4 Interest During Construction

During construction of the plant, progress payments will be made to the EPC contractor and interest charges will accrue on loan draw downs. The interest during construction rate is assumed to be 4.7 percent.

5.3.1.5 Fixed Charge Rates

The fixed charge rate is the sum of the project fixed charges as a percent of the project's total initial capital cost. When the fixed charge rate is applied to the initial investment, the product equals the revenue requirements needed to offset fixed costs for a given year. A separate fixed charge rate can be calculated and applied to each year of an economic analysis, but it is most common to use a Levelized Fixed Charge Rate that has the same present value as the year by year fixed charged rates. Included in the fix charged rate calculation is an assumed 2.0 percent issuance fee, a 1.0 percent annual insurance cost, and a 6-month debt reserve fund earning interest at a rate equal to the bond interest rate.

5.3.2 Fuel Price Projections

This section presents the fuel price projections for coal, natural gas and oil. This year's fuel price forecast for natural gas has been prepared with the assistance of The Energy Authority (TEA) for Lakeland Electric. The fuel price forecast for solid fuels and oils has been prepared by Lakeland Electric's staff.

5.3.2.1 Natural Gas

Natural gas is a colorless, odorless fuel that burns cleaner than many other traditional fossil fuels. Natural gas can be used for heating, cooling, and production of electricity, and other industry uses.

Natural gas is found in the Earth's crust. Once the gas is brought to the surface, it is refined to remove impurities such as water, sand, and other gases. The natural gas is then transmitted through pipelines and delivered to the customer either directly from the pipeline or through a distribution company or utility. When natural gas reaches its destination through a pipeline, it is sometimes stored prior to distribution.

Table 5-1
Base Case Fuel Price Forecast Summary (Real Price $/mmbtu, No Inflation Added)

	McIntosh 3 Coal[1]	Natural Gas[1]	High Sulfur #6 Oil[1]	Low Sulfur #6 Oil[1]	#2 Diesel Oil[1]
2008	2.92	9.54	12.19	14.55	18.49
2009	3.72	8.85	11.87	14.23	18.17
2010	3.97	9.75	11.62	13.98	17.92
2011	4.27	10.58	11.56	13.92	17.86
2012	4.40	10.08	11.69	14.08	18.07
2013	4.53	10.19	11.83	14.25	18.29
2014	4.67	10.37	11.98	14.42	18.51
2015	4.81	10.58	12.12	14.60	18.73
2016	4.95	10.77	12.27	14.77	18.95
2017	5.10	10.96	12.41	14.95	19.18
Average Annual Growth Rate	6.39%	1.55%	0.20%	0.30%	0.41%

[1]Prices represent delivered prices.

5.3.2.1.1 Natural gas supply and availability

Natural gas reserves exist both in the United States and North American mainland and coastal regions. Natural gas reserves are mostly dependent on domestic production. Increasing demand for natural gas as a fuel for both home and heating and new power generation projects is contributing to the price volatility seen in recent years. Liquefied Natural Gas (LNG) feasibility is currently being explored by two projects proposing pipelines from the Bahamas to Florida, and several projects in the Gulf of Mexico.

5.3.2.1.2 Natural gas transportation

There are now two transportation companies serving Peninsular Florida, Florida Gas Transmission Company (FGT) and Gulfstream. Lakeland Electric has interconnections and service agreements with both companies to provide diversification and competition in delivery.

5.3.2.1.2.1 Florida Gas Transmission Company

FGT is an open access interstate pipeline company transporting natural gas for third parties through its 5,000-mile pipeline system extending from South Texas to Miami, Florida.

The FGT pipeline system accesses a diversity of natural gas supply regions, including:

- Anadarko Basin (Texas, Oklahoma, and Kansas).
- Arkona Basin (Oklahoma and Arkansas).
- Texas and Louisiana Gulf Areas (Gulf of Mexico).
- Black Warrior Basin (Mississippi and Alabama).
- Louisiana – Mississippi – Alabama Salt Basin.
- Mobile Bay

FGT's total receipt point capacity is in excess of 3.0 billion cubic feet per day and includes connections with 10 interstate and 10 intrastate pipelines to facilitate transfers of natural gas into its pipeline system. FGT reports a current delivery capability to Peninsular Florida in excess of 2.0 billion cubic feet per day.

5.3.2.1.2.2 Florida Gas Transmission market area pipeline system

The FGT multiple pipeline system corridor enters the Florida Panhandle in northern Escambia County and runs easterly to a point in southwestern Clay County, where the pipeline corridor turns southerly to pass west of the Orlando area. The mainline corridor then turns to the southeast to a point in southern Brevard County, where it turns south generally paralleling Interstate Highway 95 to the Miami area. A major lateral line (the St. Petersburg Lateral) extends from a junction point in southern Orange County westerly to terminate in the Tampa, St Petersburg, Sarasota area. A major loop corridor (the West Leg Pipeline) branches from the mainline corridor in southeastern Suwannee County to run southward through western Peninsular Florida to connect to the St. Petersburg Lateral system in northeastern Hillsborough County. Each of the above major corridors includes stretches of multiple pipelines (loops) to provide flow redundancy and transport capability. Numerous lateral pipelines extend from the major corridors to serve major local distribution systems and industrial/utility customers.

5.3.2.1.2.3 Gulfstream pipeline

The Gulfstream pipeline is a 744-mile pipeline originating in the Mobile Bay region and crossing the Gulf of Mexico to a landfall in Manatee County (south Tampa Bay). The pipeline has the capability to supply Florida with 1.1 billion cubic feet of gas per day serving existing and prospective electric generation and industrial projects in southern Florida. Figure 5-1 shows the route for the Gulfstream pipeline. Phase I of the pipeline has been completed and ends in Polk County, Florida. The pipeline will be extended to FP&L's Martin Plant. Construction for the Gulfstream pipeline began in 2001 and Phase II was completed in 2005.

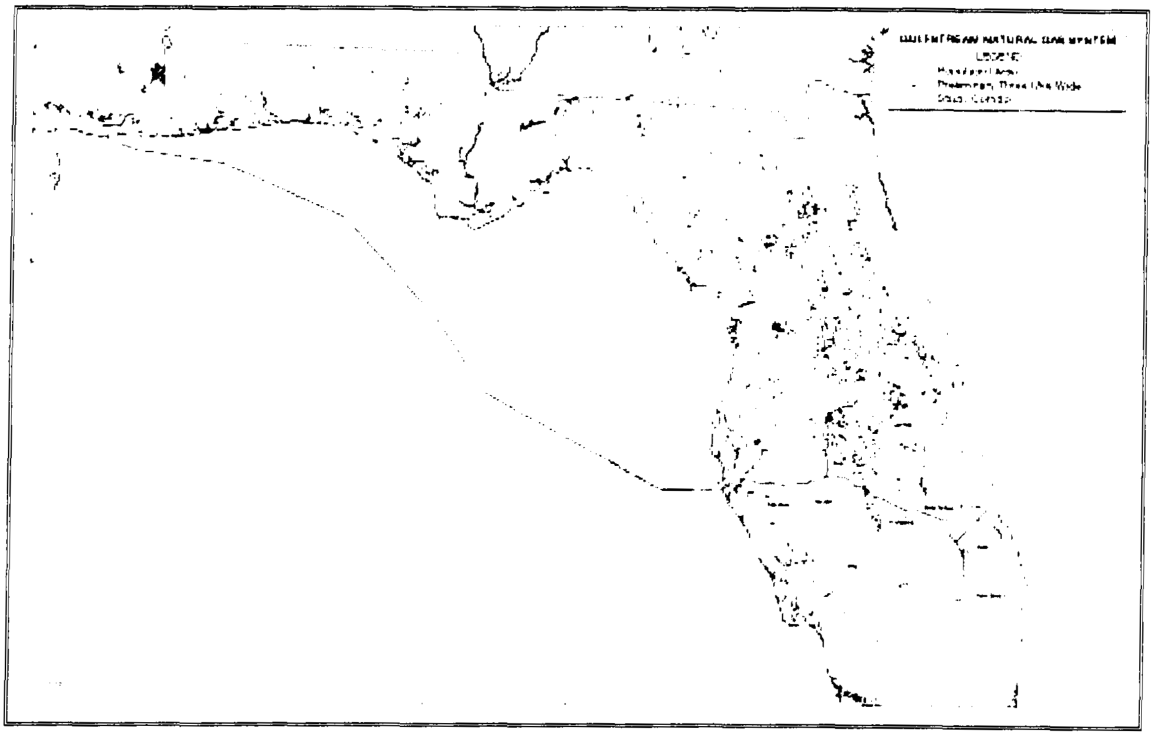


Figure 5-1
Gulfstream Natural Gas Pipeline

5.3.2.1.3 Natural gas price forecast

The price forecast for natural gas is based on historical experience and future expectations for the market. The forecast takes into account the fixed long term contracts that Lakeland has in place for a portion of its gas along with new or spot purchases of gas to meet its needs. The cost of reservation is not included in the price of natural gas in Table 5-1. All other fuel types in the table are delivered prices. As previously stated, natural gas prices have been extremely volatile in recent years. To address this volatility, Lakeland Electric initiated a formal fuels hedging program in 2003. The Energy Authority (TEA), a company located in Jacksonville, FL, is Lakeland's consultant assisting in the administration and adjustment of policies and procedures as well as the oversight of the program.

Lakeland currently has a ten-year contract with British Gas (assigned to BG by El Paso) for the supply of natural gas for a portion of Lakeland's base natural gas requirements. Lakeland also has one year remaining on a ten-year natural gas pre-paid agreement through Florida Gas Utility (FGU) for approximately 6% of its average needs, and has entered into another pre-paid agreement with FGU that commences upon the expiration of the first pre-pay (commencement date is 12/1/08)), and extends for 20-years. Lakeland purchases "seasonal" gas to supplement the base requirement and purchase "as needed" daily gas to round out its supply needs.

Natural gas transportation from FGT is currently supplied under two tariffs, FTS-1 and FTS-2. Rates in FTS-1 are based on FGT's Phase II expansion and rates in FTS-2 are based on the Phase III expansion. The Phase III expansion was extensive and rates for FTS-2 transportation are significantly higher than FTS-1. Rates for the Phase IV, Phase V, and any other future expansions will be set by the Federal Energy Regulatory Commission (FERC) rate cases at the completion of the projects. Costs for future expansions are anticipated to be rolled in with Phase III costs and the resultant rates are expected to be similar to the existing Phase III rates. Current FTS-1 and FTS-2 transportation rates along with FGT's interruptible transportation rate ITS-1 are shown in Table 5-2.

Table 5-2
Natural Gas Tariff Transportation Rates

Rates And Surcharges	Rate Schedules			
	FGT FTS-1 w/surcharges (cents/DTH)*	FGT FTS-2 w/surcharges (cents/DTH)*	FGT ITS-1	Gulfstream FTS-1
Reservation	40.25	76.90	59.31	55.0
Usage	2.96	0 .21	0.00	0.02
Total	43.21	77.11	59.31	55.02
Fuel Charge	2.95%	2.95%	2.95%	2%

* A DTH is equivalent to 1 mmbtu or 1 mcf

For purposes of projecting delivered gas prices, transportation charges of $0.61/mmbtu were applied for existing units as this is the average cost for Lakeland to obtain natural gas transportation for those units. This average rate is realized through a current mix of FTS-1, FTS-2 and Gulfstream FTS transportation, including consideration of Lakeland's ability to relinquish FTS-2 transportation and acquire other firm and interruptible gas transportation on the market.

5.3.2.2 Coal

Coal has been used as an energy source for hundreds of years and provided the energy which fueled the Industrial Revolution of the 19th Century and it was a primary fuel of the electric era in the 20th Century. Lakeland's McIntosh Unit #3 is a 365 mega watt coal burning generator that was placed into service in the early 1980's.

5.3.2.2.1 Coal supply and availability

Lakeland's current coal purchase contracts are approximately 50 percent long-term and 50 percent spot purchases. Spot purchases can extend from several months to one year in length. Lakeland maintains a 30 – 35 day coal supply reserve (90,000 – 110,000 tons) at the McIntosh site.

5.3.2.2.2 Coal transportation

McIntosh Unit 3 is Lakeland's only unit burning coal. Lakeland projects McIntosh Unit 3 will burn approximately 1,000,000 tons of coal/petroleum coke per year. The coal sources are located in eastern Kentucky, which affords Lakeland a single rail line haul via CSX Transportation. Lakeland also imports a portion of its coal needs from South American sources.

5.3.2.2.3 Coal price forecast

Currently, Lakeland's long-term purchase of coal for McIntosh 3 is under two contracts which extend through 2010. Lakeland is expecting an increase in coal costs due to the expiration of two lower-priced contracts at the end of 2008, and as new contracts are crafted for 2009 and beyond.

5.3.2.3 Fuel Oil

5.3.2.3.1 Fuel oil supply and availability

The City of Lakeland currently obtains all of its fuel oil through spot market purchases and has no long-term contracts. This strategy provides the lowest cost for fuel oil consistent with usage, current price stabilization, and on-site storage. Lakeland's Fuels Section continually monitors the cost-effectiveness of spot market purchasing.

5.3.2.3.2 Fuel oil transportation

Although the City of Lakeland is not a large consumer of fuel oils, a small amount is consumed during operations for backup fuel and diesel unit operations. Fuel oil is transported to Lakeland by truck.

5.3.2.3.3 Fuel oil price forecast

Recent world events appear to have placed oil prices at a new level in the world market. Lakeland has adjusted its oil price forecast to reflect current market pricing and what the anticipated future price may be.

5.3.3 Fuel Forecast Sensitivities

Lakeland is not presenting specific forecasted fuel price sensitivities. In the 2005 IRP study, fuel price sensitivity cases were run for natural gas and coal. Natural gas price sensitivity cases included: + $1.00/mmbtu, + $2.00/mmbtu, + $3.00/mmbtu and - $1.00/mmbtu from the base case price forecast. Coal price sensitivities included +/- $0.50/mmbtu from the base case price forecast. No price sensitivities were run on oil fuels as they only make up a very small part of total energy production and cost in the forecast period.

6.0 Forecast of Facilities Requirements

6.1 Need for Capacity

This section addresses the need for additional electric capacity to serve Lakeland's electric customers in the future. The need for capacity is based on Lakeland's load forecast, reserve margin requirements, power sales contracts, existing generating and unit capability and scheduled retirements of generating units.

6.1.1 Load Forecast

The load forecast described in Section 3.0 is used to determine the need for capacity. A summary of the load forecast for winter and summer peak demand for base, high, and low projections are provided in Tables 3-3 and 3-4.

6.1.2 Reserve Requirements

Prudent utility planning requires that utilities secure firm generating resources over and above the expected peak system demand to account for unanticipated demand levels and supply constraints. Several methods of estimating the appropriate level of reserve capacity are used. A commonly used approach is the reserve margin method, which is calculated as follows:

$$\frac{\text{system net capacity - system net peak demand}}{\text{system net peak demand}}$$

Lakeland has looked at probabilistic approaches to determine its reliability needs in the past. These have included indices such as LOLP and EUE. Lakeland has found that due to the strength of its transmission system, assisted LOLP or EUE values were so small that reserves based on those measures would be nearly non-existent. Conversely, isolated probabilistic values come out overly pessimistic calling for excessively high levels of reserves due to approximately 50% of Lakeland's capacity being made up by only two units. As a result, Lakeland has stayed with the reserve margin method based on the equation presented above. When combined with regular review of unit performance at times of peak, Lakeland finds reserve margin to be the proper reliability measure for its system.

Generation availability is reviewed annually and is found to be within industry standards for the types of units that Lakeland has in its fleet, indicating adequate and prudent maintenance is taking place. Lakeland's winter and summer reserve margin target is currently 15%. This complies with the FRCC reserve margin criteria for the FRCC Region. As Lakeland's needs and fleet of resources continue to change through time, reserve margin levels will be reviewed and adjusted as appropriate.

6.1.3 Additional Capacity Requirements

By comparing the load forecast plus reserves with firm supply, the additional capacity required on a system over time can be identified. Lakeland's requirements for additional capacity are presented in Tables 6-1 through 6-4 which show the projected reliability levels for winter and summer base cases, and winter high and low load demands, respectively. Lakeland's capacity requirements are driven by the base winter peak demand forecasts.

The last column of Table 6-1 indicates that using the base winter forecast, Lakeland will not need any additional capacity in the current ten year planning cycle. Table 6.3 Winter/High Case indicates a deficient to maintain the 15% reserve margin in the later part of the report period; however the deficient is with in the reserve margin of the base winter case therefore capacity additions are not planned for this case. LE will take measures to correct this deficient in future years as the load forecast is updated.

Pace Global Energy Services, LLC was contracted by the City of Lakeland's Electric to conduct a risk integrated resource plan ("RIRP") and evaluation of the future resource needs of LE. This study is designed to guide LE in making strategic decisions regarding the timing and type of future build decisions necessary to meet the future load growth in the City of Lakeland and Polk County.

Pace's unique approach to resource planning – Pace RIRP^{SM} explicitly incorporates market volatility, the relationship between commodity prices for natural gas, coal, power, and the utilities relationship to load, thereby improving traditional IRP approaches. Pace's RIRP^{SM} approach further analyzes the regulatory and environmental risk elements that subject utilities to a variety of threats that can undermine its attempts at achieving environmental and financial goals while maintaining rate stability and price competitiveness. These specific risk categories include regulatory changes, CO_2 environmental regulatory regimes, market structure changes and increased costs in project development and construction. Pace RIRP^{SM} allows for evaluating a wide range of portfolios across the complete spectrum of utility risks in an appropriate, logical, and compelling way.

Covering the period from 2008 through 2028 ("Study Period"), this Report includes a brief summary of the components of the RIRP that Pace provided LE throughout the process.

These include;

- A review of LE's planning objectives and major risks.
- Pace's Reference Case assumptions that reflect the main fundamental drivers of our market view, as well as the simulation methodology used to develop an integrated market pricing forecast for the relevant power market.

- An assessment of the Supply/Demand balance of LE.
- A review of capacity alternatives available to LE under current regulatory conditions in the state of Florida.
- A presentation of LE's risk profile and portfolio options.

Lakeland received the final report March 17, 2008. As previously mentioned, absent any retirements, Lakeland does not need additional capacity in the current ten year planning horizon. Results of the RIRP do indicate the need for additional capacity shortly beyond the current ten year planning horizon and therefore Lakeland has moved into a second phase of that study to identify the best alternative(s) for Lakeland and its customers based on factors such as least cost, risk avoidance and other strategic concerns. Lakeland has concluded from Phase I of the RIRP that additional fuel diversity is in the best interests of Lakeland and its customers. Further study is taking place regarding the potential disposition of two existing Lakeland resources. Possible scenarios include but are not limited to retirements, fuel conversion strategies, fuel diversification strategies, and long term capacity replacement based on fuel savings or combinations of any of these. Depending on the outcome of that analysis, the need for new capacity could be shifted to occur in the current ten year planning horizon. Results of this next phase of the RIRP study are expected to be complete by October of 2008 and will be included in the 2009 filing of this document.

As Lakeland expects to continue to be a winter peaking utility, Table 6-2 also indicates that no additional capacity is needed during the summer peak seasons for the current ten year planning cycle. Tables 6-3 and 6-4 show the high and low winter load forecasts for Lakeland.

Table 6-1
Projected Reliability Levels - Winter / Base Case

Year	Net Generating Capacity (MW)	Net System Purchases (MW)	Net System Sales (MW)	Net System Capacity (MW)	System Peak Demand		Reserve Margin		Excess/ (Deficit) to Maintain 15% Reserve Margin	
					Before Interruptible and Load Management (MW)	After Interruptible and Load Management (MW)	Before Interruptible and Load Management (%)	After Interruptible and Load Management (%)	Before Interruptible and Load Management (MW)	After Interruptible and Load Management (MW)
2008/2009	927	0	0	927	685	685	35.3	35.3	139	139
2009/2010	927	0	0	927	693	693	33.8	33.8	130	130
2010/2011	927	0	0	927	701	701	32.2	32.2	121	121
2011/2012	927	0	0	927	709	709	30.7	30.7	112	112
2012/2013	927	0	0	927	717	717	29.3	29.3	102	102
2013/2014	927	0	0	927	726	726	27.7	27.7	92	92
2014/2015	927	0	0	927	736	736	26.0	26.0	81	81
2015/2016	927	0	0	927	746	746	24.3	24.3	69	69
2016/2017	927	0	0	927	757	757	22.5	22.5	56	56
2017/2018	927	0	0	927	769	769	20.5	20.5	43	43

Table 6-2
Projected Reliability Levels - Summer / Base Case

Year	Net Generating Capacity (MW)	Net System Purchases (MW)	Net System Sales (MW)	Net System Capacity (MW)	System Peak Demand		Reserve Margin		Excess/ (Deficit) to Maintain 15% Reserve Margin	
					Before Interruptible and Load Management (MW)	After Interruptible and Load Management (MW)	Before Interruptible and Load Management (%)	After Interruptible and Load Management (%)	Before Interruptible and Load Management (MW)	After Interruptible and Load Management (MW)
2008	897	0	0	897	647	647	38.6	38.6	153	153
2009	897	0	0	897	654	654	37.2	37.2	145	145
2010	897	0	0	897	660	660	35.9	35.9	138	138
2011	897	0	0	897	667	667	34.5	34.5	130	130
2012	897	0	0	897	674	674	33.1	33.1	122	122
2013	897	0	0	897	682	682	31.5	31.5	113	113
2014	897	0	0	897	691	691	29.8	29.8	102	102
2015	897	0	0	897	700	700	28.1	28.1	92	92
2016	897	0	0	897	710	710	26.3	26.3	81	81
2017	897	0	0	897	721	721	24.4	24.4	68	68

Table 6-3
Projected Reliability Levels - Winter / High Case

Year	Net Generating Capacity (MW)	Net System Purchases (MW)	Net System Sales (MW)	Net System Capacity (MW)	System Peak Demand		Reserve Margin		Excess/ (Deficit) to Maintain 15% Reserve Margin	
					Before Interruptible and Load Management (MW)	After Interruptible and Load Management (MW)	Before Interruptible and Load Management (%)	After Interruptible and Load Management (%)	Before Interruptible and Load Management (MW)	After Interruptible and Load Management (MW)
2008/2009	927	0	0	927	748	748	23.9	23.9	67	67
2009/2010	927	0	0	927	758	758	22.3	22.3	55	55
2010/2011	927	0	0	927	768	768	20.7	20.7	44	44
2011/2012	927	0	0	927	778	778	19.2	19.2	32	32
2012/2013	927	0	0	927	788	788	17.6	17.6	21	21
2013/2014	927	0	0	927	798	798	16.2	16.2	9	9
2014/2015	927	0	0	927	809	809	14.6	14.6	-3	-3
2015/2016	927	0	0	927	820	820	13.0	13.0	-16	-16
2016/2017	927	0	0	927	831	831	11.6	11.6	-29	-29
2017/2018	927	0	0	927	842	842	10.1	10.1	-41	-41

Table 6-4
Projected Reliability Levels - Winter / Low Case

Year	Net Generating Capacity (MW)	Net System Purchases (MW)	Net System Sales (MW)	Net System Capacity (MW)	System Peak Demand: Before Interruptible and Load Management (MW)	System Peak Demand: After Interruptible and Load Management (MW)	Reserve Margin: Before Interruptible and Load Management (%)	Reserve Margin: After Interruptible and Load Management (%)	Excess/ (Deficit) to Maintain 15% Reserve Margin: Before Interruptible and Load Management (MW)	Excess/ (Deficit) to Maintain 15% Reserve Margin: After Interruptible and Load Management (MW)
2008/2009	927	0	0	927	608	608	52.5	52.5	228	228
2009/2010	927	0	0	927	614	614	51.0	51.0	221	221
2010/2011	927	0	0	927	620	620	49.5	49.5	214	214
2011/2012	927	0	0	927	626	626	48.1	48.1	207	207
2012/2013	927	0	0	927	632	632	46.7	46.7	200	200
2013/2014	927	0	0	927	637	637	45.5	45.5	194	194
2014/2015	927	0	0	927	643	643	44.2	44.2	188	188
2015/2016	927	0	0	927	650	650	42.6	42.6	180	180
2016/2017	927	0	0	927	656	656	41.3	41.3	173	173
2017/2018	927	0	0	927	662	662	40.0	40.0	166	166

7.0 Generation Expansion Analysis Results and Conclusions

With the addition of McIntosh 5 in 2002, LE's generation profile shifted towards more exposure to natural gas. Pace recommends that LE attempt to pursue a course of action that attempts to limit its exposure to natural gas and attempts to add additional base load units. This course of action will be very difficult to accomplish give the regulatory and political environment that presently exists in Florida. This course of action is further complicated by the reliance LE must have on third parties to initiate and gain approval for such resources and for LE to successfully contract for equity shares or operating partnerships.

Regardless of the resource plan that LE develops, there is tremendous price risk from the volatility of natural gas that will pervade LE's supply portfolio for the foreseeable future. Robust commodity and price risk management programs are imperative to managing these costs. Proactively managing these risks over the near to medium term through well managed and controlled risk management programs can help LE mitigate the fuel and market volatility risks.

7.1 Supply-Side Economic Analysis

KEY FINDINGS: MARKET RISK

As stated previously LE desires to reduce the expected utility cost and narrow the distribution of possible outcomes. Pace concludes that additional base load capacity is essential in accomplishing that goal. Purchasing or constructing IGCC, nuclear or even renewable capacity is necessary for achieving this outcome.

Of the four base-load capacity resource options available to LE; IGCC appears to be superior, making plan 1[1] (Hold & Buy IGCC) the lowest in expected costs and volatility of possible outcomes. Nuclear power stations reduce both total expected utility cost and volatility of LE's utility cost. Uranium markets have been, and are expected to be more stable than natural gas markets. Therefore, market risk in this portfolio is reduced. The combination of the four baseload options in Plan 9 (Hold & Buy Renew / IGCC / Nuc) provides portfolio performance that is extremely close in terms of reduced volatility of possible outcomes when compared to the status quo risk profile.

However, an additional consideration in procuring nuclear and IGCC capacity is the capital cost risk. Recently, there has been a heavy run up capital costs in completing baseload resources. It is possible that if the costs to complete a nuclear or IGCC facility

[1] Again we note the current situation in Florida where the IGCC projects have either been delayed indefinitely or cancelled outright in response to the regulatory and permitting approval uncertainty.

could escalate far beyond Pace's estimate, fixed costs of these facilities could become stranded or rates could rise to levels that could drive away economic growth in Lakeland.

The combination of additional mid-merit combined-cycle and peaking combustion turbine gas-fired units provides no benefit to LE. Additional assets of these types will not reduce market risk or lower expected system cost. Acquiring additional gas-fired assets does not materially improve LE's risk profile beyond the status quo case.

7.1.1 Operational Risk

In terms of operational risks, modern IGCC and advanced technology next-generation nuclear facilities represent relatively unproven options due to the lack of operating stations in the US. Currently, only two small scale operational IGCC facilities exist in the US (including the nearby facility operated by Tampa Electric Company).

Due to the historical operational problems of current US nuclear fleet, in addition to the advanced technology expected to be used on the next generation of reactors operational risk in being part of the ownership of additional nuclear plants is also unknown. Therefore, it is possible the availability of the unit could be low in the early years of its operational life. In addition, as a minority partner LE would not be the operator of any nuclear facility in which it acquires capacity. The availability of the plant would depend heavily on the primary owner of the facility and the design performance of the nuclear technology. Mitigating part of this concern is the exceptional performance of the nuclear fleets in France, Japan and Korea.

The operational risks of constructing additional CC and CT facilities are minimal; as the operational characteristics of CT and CC generating units are well known to LE. In addition, LE already is the operator of the McIntosh 3 unit, and therefore is fully informed of the operational risks of investing in the remaining capacity.

7.1.2 Regulatory Risk

The regulatory risk considered within this RIRP analysis considers the impact of a more stringent global warming reduction program beyond what Pace has considered its reference case. Reducing this risk is best done by acquiring renewable and nuclear facilities. Purchasing the remaining capacity of McIntosh 3, or building even an IGCC facility increases this risk factor (assuming that the IGCC option does not entail back-end carbon capture and sequestration).

The plan with the lowest regulatory risk is Plan 11 (Sell Mc3 & Buy CC / Nuc), which involves the sale of LE's capacity in the McIntosh 3 coal-fired unit. The benefits of this portfolio if a carbon emissions cost program is initiated at either the state or federal level that is greater than the reference case forecast is more pronounced than any other plan. Of the plans considered in this study, Plan 11 reduces the reliance on coal and increases LE's holdings of natural gas-fired capacity, limiting LE's emissions of CO_2. In addition, plans that contained renewable or nuclear plants also showed some mitigation of LE's regulatory risk.

7.1.3 Future Capacity Additions Investment Decisions

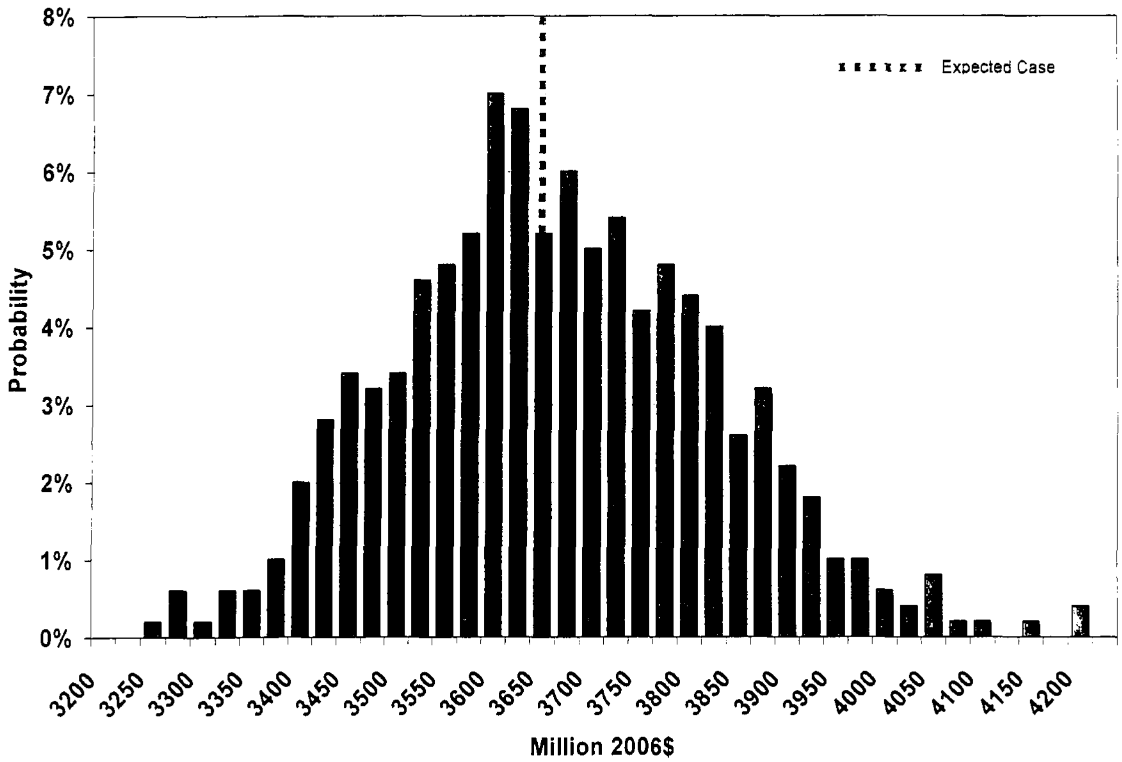
Lakeland Electric requires 423 MW of additional capacity by the end of the Study Period. Pace's analysis of the resources available to LE suggests that Advanced Nuclear Reactors, Biomass, Municipal Solid Waste, Gas-fired Combined Cycle and Combustion Turbine are available to LE for future development.

LE's status quo option is to maintain with its current resource base, while buying needed energy in the spot FMPP and FRCC markets. This plan results in a risk profile as seen in Exhibit 7.1. This is the risk profile that LE's decisions on future capacity investments should attempt to mitigate and improve.

The final decision on future investment lies with Lakeland Electric, and its views on balancing its primary planning objectives. Balancing competing and sometimes conflicting objectives requires an excellent understanding of current and future market conditions.

LE's net present value risk profile has an expected value of $3.6 billion, with a standard deviation of $164 million. The range between the maximum and minimum value is $0.95 billion. The distribution of possible outcomes results from the volatility in the fuel and power markets modeled in this RIRP analysis.

Exhibit 7.1: Net Present Value Utility Cost Risk Profile – 2008 - 2028



Note: Assumes a 2.5% Real Discount Rate
Source: Pace

Increasing the utility's base load capacity would reduce total system utility cost as well as cost volatility. Even accounting for the recent run ups in uranium prices, the markets for U_3O_8 and coal are notably lower and less volatile than natural gas and fuel oil. While increasing IGCC and nuclear base load resources reduces volatility and system cost, these base load alternatives in Florida will be extremely difficult to permit and construct and neither can be pursued alone by LE. LE should actively network and engage partnership or equity share participation in potential base load project developments. LE should give strong political support to nuclear and IGCC at the state level. This should be done to prevent the current regimes regulatory push towards a gas-only future. LE should attempt to influence state-level regulators in order to inform them of the risks and costs of their actions as current policies push the state in this direction.

When comparing the IGCC to nuclear build decision, neither type presents a solid case of superiority over the other and ultimately comes down to which technology can be constructed in the state. Both provide stability and reduced utility costs by taking advantage of the coal and uranium markets, respectively. However, nuclear facilities provide lower and more stable energy through a larger capital requirement. When considering regulatory carbon compliance risk, IGCC facilities produce significant amounts of CO_2 and would require significant additional capital to install carbon capture equipment; a technology which remains commercially unproven. On the other hand, capital expense of nuclear facilities is a large unknown due to the lack of any recent history of constructing such facilities on US soil. Furthermore, the utilities in Florida will be hard pressed to have the first nuclear facility online prior to 2020. Therefore, if a nuclear plant is chosen by LE as a future expansion resource, the additional lead time would result in greater volatility due to the time LE would remain exposed to the volatility in the spot energy markets. Given the evolving regulatory conditions in the state of Florida, the nuclear build addition appears the more credible of the two options.

Biomass, MSW, or alternative technologies such as plasma gasification may provide options in the future for "base load like" supply, i.e. low price fuels that are similar to the economics of nuclear and IGCC. LE should consider evaluating projects similar to those recently proposed and under construction in the state of Florida. These projects can reduce expected utility cost volatility to levels similar to other base load generation types.

A natural gas-fired capacity expansion future represents the highest-cost, highest-risk outcome for LE. Additional natural gas-fired capacity does not reduce future market and only partially mitigates carbon related regulatory risk. With these resources, LE does not substantially reduce its risk profile beyond the status quo case. This is due to the large amount of gas-fired capacity already in the FMPP and FRCC market that regularly sets the marginal price of energy.

As shown in Section 6 and again in the Tables in Section 9, Lakeland does not have an immediate capacity need in the current ten year planning horizon. This gives Lakeland the ability to continue, in a timely but unhurried manner, its evaluation of resource options along with existing resources and what the proper mix of existing and/or new resources should be, if any. Options being considered have included but were not limited to remaining in or leaving the generation business, diversification of existing resource portfolio, retirements, environmental compliance strategies, fuel switching and proper fuel diversification of future resource portfolio's. As no final decision has been made at the time of this writing, all resources are assumed available over the planning cycle meaning no planned retirements of existing facilities being proposed for the current ten year planning cycle. The demand and capacity analysis presented in Section 6 indicates that this position is feasible and achievable for the current planning cycle.

7.2 Demand-Side Economic Analysis

Lakeland continues to actively monitor Demand-Side Options to find the most cost-effective way to meet our customers' needs. To date, no traditional cost-effective

DSM measures have been identified. Lakeland was able to demonstrate its solar thermal water heating program cost-effective through the use of the PSC approved FIRE model in the 2005 IRP. The main driver for this program being cost-effective is because it has its own self-sustaining rate, meaning there is no revenue loss to the utility and other customers do not subsidize the program. Participants are billed for the thermal energy used at a separate rate from their normal KWH consumption. As a result Lakeland is developing a business plan to present to its management to increase the penetration of its solar thermal hot water program. This program has been highly successful in its R&D stage and should be considered a hybrid between DSM and distributed generation. It should be noted that despite this program being cost-effective, even the most aggressive implementation of this program would not meet all of th4e future capacity needs of the system.

7.3 Sensitivity Analysis

In Lakeland's normal course of analysis a preferred option would be selected. Lakeland would then perform several sensitivity analyses to measure the impact of important assumptions on the option(s) selected. The sensitivity analyses may include but not be limited to the following:

- High load and energy growth.
- Low load and energy growth.
- High fuel price escalation.
- Low fuel price escalation.
- Constant differential between oil/gas and coal prices over the planning horizon.
- Carbon tax

For each sensitivity analysis, a best plan over the planning horizon would be identified. The sensitivity analyses have be performed by Pace over the same planning period used throughout the economic evaluations, with a projection of annual costs and cumulative present worth costs.

7.4 Transmission and Distribution

All options selected would be analyzed for impacts to the transmission and distribution systems and the costs of any upgrades would be factored into the final analysis and decision.

8.0 Environmental and Land Use Information

Lakeland's 2008 Ten-Year Site Plan has no capacity additions in it and thus no additional environmental or land use information is required at this time. All existing units are fully permitted and meet all permitted requirements. Any future additions would comply with all applicable environmental and land use requirements.

9.0 Ten-Year Site Plan Schedules

The following section presents the schedules required by the Ten-Year Site Plan rules for the Florida Public Service Commission. Lakeland has attempted to provide complete information for the FPSC whenever possible.

9.1 Abbreviations and Descriptions

The following abbreviations are used throughout the Ten-Year Site Plan Schedules.

Abbreviation	Description
Unit Type	
CA	Combined Cycle Steam Part
GT	Combustion Gas Turbine
ST	Steam Turbine
CT	Combined Cycle Combustion Turbine
IC	Internal Combustion Engine
Fuel Type	
NG	Natural Gas
DFO	Distillate Fuel Oil
RFO	Residual Fuel Oil
BIT	Bituminous Coal
WH	Waste Heat
Fuel Transportation Method	
PL	Pipeline
TK	Truck
RR	Railroad
Unit Status Code	
RE	Retired
SB	Cold Standby (Reserve)
TS	Construction Complete, not yet in commercial operation
U	Under Construction
P	Planned for installation

Table 9-1a
Schedule 1.0: Existing Generating Facilities as of December 31, 2004

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				Fuel		Fuel Transport						Net Capability[1]	
Plant Name	Unit No.	Location	Unit Type	Pri	Alt	Pri	Alt	Alt Fuel Days Use	Commercial In-Service Month/Year	Expected Retirement Month/Year	Gen. Max. Nameplate kW	Summer MW	Winter MW
Charles Larsen Memorial	2	16-17/28S/24E	GT	NG	DFO	PL	TK	28	11/62	Unknown	11,500	10	14
	3		GT	NG	DFO	PL	TK	28	12/62	Unknown	11,500	9	13
	8		CA	WH	---				04/56	Unknown	25,000	29	31
	8		CT	NG	DFO	PL	TK	5	07/92	Unknown	101,520	73	90
Plant Total												121	148

[1]Net Normal.

Source: Lakeland Energy Supply Unit Rating Group

Table 9-1b
Schedule 1.0: Existing Generating Facilities as of December 31, 2004

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				Fuel		Fuel Transport						Net Capability[1]	
Plant Name	Unit No.	Location	Unit Type	Pri	Alt	Pri	Alt	Alt Fuel Days Use	Commercial In-Service Month/Year	Expected Retirement Month/Year	Gen. Max. Nameplate kW	Summer MW	Winter MW
Winston Peaking Station	1-20	21/28S/23E	IC	NG	DFO	PL	TK	3	12/01	Unknown	2,500 each	50	50
Plant Total												50	50
C.D. McIntosh, Jr.	D1	4-5/28S/24E	IC	DFO	---	TK	---		01/70	Unknown	2,500	2.5	2.5
	D2		IC	DFO	---	TK	---		01/70	Unknown	2,500	2.5	2.5
	GT1		GT	NG	DFO	PL	TK	2	05/73	Unknown	26,640	16	19
	1		ST	NG	RFO	PL	TK	29	02/71	Unknown	103,000	80	80
	2		ST	NG	RFO	PL	TK	25	06/76	Unknown	126,000	106	106
	3[2]		ST	BIT	---	RR	---		09/82	Unknown	363,870	205	205
	5		CT	NG	DFO	PL	TK	3	05/01	Unknown	292,950	200	200
	5		CA	WH	---				05/02	Unknown	135,000	114	114
Plant Total												726	729
System Total												897	927

[1]Net Normal.
[2]Lakeland's 60 percent portion of joint ownership with Orlando Utilities Commission.
Source: Lakeland Energy Supply Unit Rating Group

Table 9-2

Schedule 2.1: History and Forecast of Energy Consumption and Number of Customers by Customer Class

-1	-2	-3	-4	-5	-6	-7	-8	-9
	Rural & Residential					Commercial		
Year	Population	Members per Household	GWh	Average No. of Customers	Average kWh Consumption per Customer	GWh	Average No. of Customers	Average kWh Consumption per Customer
1998	217,681	2.54	1,249	85,840	14,550	625	10,033	62,294
1999	221,060	2.53	1,239	87,222	14,205	642	10,338	62,101
2000	224,882	2.53	1,263	88,740	14,233	659	10,553	62,447
2001	231,044	2.56	1,328	90,332	14,701	665	10,637	62,518
2002	234,210	2.55	1,328	91,875	14,454	686	10,639	64,480
2003	236,890	2.54	1,418	93,126	15,227	688	11,013	62,472
2004	243,576	2.60	1,403	93,620	14,986	693	11,248	61,611
2005	247,942	2.58	1,443	96,205	14,996	734	11,480	63,937
2006	253,405	2.57	1,438	98,680	14,571	753	11,832	63,642
2007	253,027	2.52	1,444	100,523	14,367	769	11,898	64,645
Forecast								
2008	256573	2.53	1,487	101,222	14,695	763	11,962	63,823
2009	260,092	2.54	1,519	102,369	14,841	777	12,060	64,436
2010	263,868	2.54	1,548	104,009	14,885	796	12,161	65,479
2011	267,772	2.53	1,579	105,844	14,914	806	12,293	65,586
2012	271,711	2.52	1,614	107,776	14,977	817	12,434	65,721
2013	275,690	2.51	1,648	109,811	15,012	826	12,584	65,622
2014	279,729	2.50	1,688	111,910	15,079	836	12,742	65,604
2015	283,799	2.49	1,729	114,158	15,150	847	12,908	65,618
2016	288,066	2.47	1,779	116,619	15,256	861	13,090	65,758
2017	292,387	2.45	1,827	119,191	15,328	873	13,283	65,698

Table 9-3
Schedule 2.2: History and Forecast of Energy Consumption and Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Industrial						
Year	GWh	Average No. of Customers	Average kWh Consumption per Customer	Railroads and Railways	Street & Highway Lighting GWh	Other Sales to Public Authorities GWh	Total Sales to Ultimate Consumers GWh
1998	474	62	7,650,935	0	17	80	2,460
1999	486	73	6,654,671	0	17	82	2,457
2000	502	80	6,269,363	0	18	86	2,549
2001	493	81	6,087,383	0	19	81	2,566
2002	520	84	6,192,833	0	19	80	2,701
2003	533	88	6,059,818	0	19	80	2,729
2004	541	91	5,950,484	0	20	82	2,725
2005	541	83	6,513,108	0	20	84	2,809
2006	584	87	6,711,874	0	21	87	2,883
2007	607	88	6,901,330	0	21	87	2,929
Forecast							
2008	621	88	7,061,000	0	21	87	2,980
2009	618	84	7,359,964	0	21	87	3,023
2010	612	81	7,552,556	0	21	87	3,065
2011	613	81	7,565,358	0	21	88	3,106
2012	614	81	7,577,988	0	21	88	3,154
2013	615	81	7,590,852	0	21	88	3,198
2014	616	81	7,603,790	0	21	88	3,248
2015	617	81	7,616,506	0	21	88	3,302
2016	618	82	7,536,317	0	21	88	3,367
2017	619	82	7,549,037	0	21	88	3,428

Table 9-4
Schedule 2.3: History and Forecast of Energy Consumption and Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)
Year	Sales for Resale GWh	Utility Use & Losses GWh	Net Energy for Load GWh	Other Customers (Average No.)	Total No. of Customers
1998	0	71	2,531	10,271	106,800
1999	0	110	2,567	10,622	108,710
2000	0	117	2,666	10,614	110,457
2001	0	128	2,694	10,699	111,993
2002	0	70	2,771	10,583	113,734
2003	0	169	2,898	10,517	115,050
2004	0	142	2,847	10,362	116,010
2005	0	133	2,939	10,206	118,002
2006	0	122	3005	10,016	120,615
2007	0	116	3,045	9,869	122,378
Forecast					
2008	0	126	3,106	9,911	123,183
2009	0	147	3,170	9,913	124,426
2010	0	148	3,213	9,913	126,164
2011	0	151	3,257	9,915	128,133
2012	0	152	3,306	9,916	130,207
2013	0	154	3,352	9,918	132,394
2014	0	156	3,404	9,918	134,651
2015	0	158	3,460	9,920	137,067
2016	0	159	3,526	9,922	139,713
2017	0	162	3,590	9,924	142,480

Table 9-5
Schedule 3.1: History and Forecast of Summer Peak Demand Base Case (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					Residential		Commercial/Industrial		
Year	Total	Wholesale	Retail	Interrupt.	Load Management	Conservation	Load Management	Conservation	Net Firm Demand
1998	550	0	550	0	0	0	0	0	550
1999	542	0	542	0	22	0	0	0	520
2000	556	0	556	0	21	0	0	0	525
2001	549	0	549	0	0	0	0	0	549
2002	578	0	578	0	0	0	0	0	578
2003	579	0	579	0	0	0	0	0	579
2004	584	0	584	0	0	0	0	0	584
2005	639	0	639	0	0	0	0	0	639
2006	631	0	631	0	0	0	0	0	631
2007	648	0	648	0	0	0	0	0	648
Forecast									
2008	647	0	647	0	0	0	0	0	647
2009	654	0	654	0	0	0	0	0	654
2010	660	0	660	0	0	0	0	0	660
2011	667	0	667	0	0	0	0	0	667
2012	674	0	674	0	0	0	0	0	674
2013	682	0	682	0	0	0	0	0	682
2014	691	0	691	0	0	0	0	0	691
2015	700	0	700	0	0	0	0	0	700
2016	710	0	710	0	0	0	0	0	710
2017	721	0	721	0	0	0	0	0	721

Table 9-6
Schedule 3.2: History and Forecast of Winter Peak Demand Base Case (MW)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interrupt.	Residential		Comm./Ind.		Net Firm Demand
					Load Management	Conservation	Load Management	Conservation	
1998/99	613	0	613	0	51	0	0	0	562
1999/2000	610	0	610	0	51	0	0	0	559
2000/01	656	0	656	0	0	0	0	0	656
2001/02	659	0	659	0	0	0	0	0	659
2002/03	694	0	694	0	0	0	0	0	694
2003/04	570	0	570	0	0	0	0	0	570
2004/05	648	0	648	0	0	0	0	0	648
2005/06	680	0	680	0	0	0	0	0	680
2006/07	596	0	596	0	0	0	0	0	596
2007/08	669	0	669	0	0	0	0	0	669
Forecast									
2008/09	685	0	685	0	0	0	0	0	685
2009/10	693	0	693	0	0	0	0	0	693
2010/11	701	0	701	0	0	0	0	0	701
2011/12	709	0	709	0	0	0	0	0	709
2012/13	717	0	717	0	0	0	0	0	717
2013/14	726	0	726	0	0	0	0	0	726
2014/15	736	0	736	0	0	0	0	0	736
2015/16	746	0	746	0	0	0	0	0	746
2016/17	757	0	757	0	0	0	0	0	757
2017/18	769	0	769	0	0	0	0	0	769

Table 9-7

Schedule 3.3: History and Forecast of Annual Net Energy for Load – GWh

Base Case

-1	-2	-3	-5	-6	-7	-8	-9	-10
Year	Total	Residential Conservation	Comm./Ind. Conservation	Retail	Wholesale	Utility Use & Losses	Net Energy for Load	Load Factor %
1998	2460	0	0	2460	0	71	2,531	51.1%
1999	2457	0	0	2457	0	110	2,567	47.8%
2000	2549	0	0	2549	0	117	2,666	49.9%
2001	2566	0	0	2566	0	128	2,694	46.9%
2002	2701	0	0	2701	0	70	2,771	48.0%
2003	2729	0	0	2729	0	169	2,898	47.7%
2004	2725	0	0	2725	0	142	2,867	56.0%
2005	2809	0	0	2809	0	133	2,942	51.8%
2006	2883	0	0	2883	0	122	3,005	50.4%
2007	2929	0	0	2929	0	116	3,045	54.9%
Forecast								
2008	2980	0	0	2980	0	126	3,106	56.0%
2009	3,023	0	0	3,023	0	147	3,170	51.3%
2010	3,065	0	0	3,065	0	148	3,213	51.4%
2011	3,106	0	0	3,106	0	151	3,257	51.6%
2012	3,154	0	0	3,154	0	152	3,306	51.7%
2013	3,198	0	0	3,198	0	154	3,352	51.8%
2014	3,248	0	0	3,248	0	156	3,404	52.0%
2015	3,302	0	0	3,302	0	158	3,460	52.2%
2016	3,367	0	0	3,367	0	159	3,526	52.6%
2017	3,428	0	0	3,428	0	162	3,590	52.9%

Table 9-8
Schedule 4: Previous Year and Two Year Forecast of Retail Peak Demand and Net Energy for Load by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Month	Actual		2008 Forecast		2009 Forecast	
	Peak Demand[1] MW	NEL GWh	Peak Demand[1] MW	NEL GWh	Peak Demand[1] MW	NEL GWh
January	565	226	669	241	685	253
February	596	214	595	218	600	221
March	471	224	495	232	498	236
April	410	225	489	223	493	228
May	558	258	579	280	585	285
June	577	279	594	285	600	290
July	633	302	625	302	631	307
August	648	326	647	321	654	327
September	616	285	570	272	576	277
October	569	272	556	266	561	271
November	442	211	465	217	469	221
December	489	223	539	249	546	254

[1] After Load Management, Conservation and Interruptible Load exercised as needed.

Table 9-9
Schedule 5: Fuel Requirements

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Calendar Year										
	Fuel Requirements	Type	Units	2007-Actual	2008	2009	2101	2011	2012	2013	2014	2015	2016	2017
(1)	Nuclear		Trillion Btu	0	0	0	0	0	0	0	0	0	0	0
(2)	Coal[1]		1000 Ton	630	484	552	574	622	614	628	610	584	638	618
(3)	Residual	Steam	1000 BBL	29	0	0	0	0	0	0	0	0	0	0
(4)		CC	1000 BBL	0	0	0	0	0	0	0	0	0	0	0
(5)		CT	1000 BBL	0	0	0	0	0	0	0	0	0	0	0
(6)		Total	1000 BBL	29	0	0	0	0	0	0	0	0	0	0
(7)	Distillate	Steam	1000 BBL	0	0	0	0	0	0	0	0	0	0	0
(8)		CC	1000 BBL	0	0	0	0	0	0	0	0	0	0	0
(9)		CT	1000 BBL	7	0	2	1	1	3	5	6	7	9	13
(10)		Total	1000 BBL	7	0	2	1	1	3	5	6	7	9	13
(11)	Natural Gas	Steam	1000 MCF	342	666	965	631	427	607	725	106	0	0	0
(12)		CC	1000 MCF	10,569	8,919	12,799	9,460	7,012	8,846	9,157	10,433	12,087	11,768	12,529
(13)		CT	1000 MCF	12	10	35	19	18	31	47	74	91	115	158
(14)		Total	1000 MCF	10,923	9,595	13,799	10,110	7,457	9,484	9,929	10,613	12,178	11,883	12,687
(15)	Other		Trillion Btu	0	0	0	0	0	0	0	0	0	0	0

[1] Includes Petroleum Coke.

Table 9-10
Schedule 6.1: Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Calendar Year										
	Energy Sources	Type	Units	2007 - Actual	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
(1)	Inter-Regional Interchange		GWh	0	0	0	0	0	0	0	0	0	0	0
(2)	Nuclear		GWh	0	0	0	0	0	0	0	0	0	0	0
(3)	Coal[1]		GWh	1502	1252	1426	1479	1599	1579	1616	1572	1504	1644	1593
(4)	Residual	Steam	GWh	12	0	0	0	0	0	0	0	0	0	0
(5)		CC	GWh	0	0	0	0	0	0	0	0	0	0	0
(6)		CT	GWh	0	0	0	0	0	0	0	0	0	0	0
(7)		Total	GWh	12	0	0	0	0	0	0	0	0	0	0
(8)	Distillate	Steam	GWh	0	0	0	0	0	0	0	0	0	0	0
(9)		CC	GWh	0	0	0	0	0	0	0	0	0	0	0
(10)		CT	GWh	3	0	0	0	0	0	0	0	0	1	1
(11)		Total	GWh	3	0	0	0	0	0	0	0	0	1	1
(12)	Natural Gas	Steam	GWh	126	53	78	51	36	51	61	9	0	0	0
(13)		CC	GWh	1371	1233	1786	1304	953	1217	1259	1444	1682	1636	1750
(14)		CT	GWh	1	1	3	2	2	4	6	8	10	12	18
(15)		Total	GWh	1498	1287	1867	1657	991	1272	1326	1461	1692	1648	1768
(16)	NUG			0	0	0	0	0	0	0	0	0	0	0
(17)	Hydro			0	0	0	0	0	0	0	0	0	0	0
(18)	Other (Specify)[2]			30	567	-123	377	667	455	410	371	264	233	228
(19)	Net Energy for Load		GWh	3045	3106	3170	3213	3257	3306	3352	3404	3460	3526	3590

[1] Includes Petroleum Coke.
[2] Intra-Regional Net Interchange including Firm Sale to FMPA

Table 9-11
Schedule 6.2: Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Calendar Year										
	Energy Source	Type	Units	2007 - Actual	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
(1)	Inter-Regional Interchange		%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(2)	Nuclear		%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(3)	Coal[1]		%	49.33	40.31	44.98	46.03	49.09	47.76	48.21	46.18	43.47	46.63	44.37
(4)	Residual	Steam	%	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(5)		CC	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(6)		CT	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(7)		Total	%	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(8)	Distillate	Steam	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(9)		CC	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(10)		CT	%	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
(11)		Total	%	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
(12)	Natural Gas	Steam	%	4.14	1.71	2.46	1.59	1.11	1.54	1.82	0.26	0.00	0.00	0.00
(13)		CC	%	45.02	39.70	56.34	40.59	29.26	36.81	37.56	42.42	48.61	46.40	48.75
(14)		CT	%	0.03	0.03	0.09	0.06	0.06	0.12	0.18	0.24	0.29	0.34	0.50
(15)		Total	%	49.20	41.44	58.90	42.23	30.43	38.48	39.46	42.92	48.90	46.74	49.25
(16)	NUG		%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Hydro		%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Other (Specify)[2]		%	0.99	18.25	-3.88	11.73	20.48	13.76	12.23	10.90	7.63	6.61	6.35
(18)	Net Energy for Load		%	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

[1] Includes Petroleum Coke.
[2] Other = Intra-Regional Net Interchange Including Firm Sale to FMPA.

Table 9-12

Schedule 7.1: Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Summer Peak

-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
Year	Total Installed Capacity	Firm Capacity Import	Firm Capacity Export	Projected Firm Net To Grid from NUG	Total Capacity Available	System Firm Peak Demand	Reserve Margin Before Maintenance[1]		Scheduled Maintenance	Reserve Margin After Maintenance[1]	
	MW	MW	MW	MW	MW	MW	MW	%	MW	MW	%
2008	897	0	0	0	897	647	250	38.6	0	250	38.6
2009	897	0	0	0	897	654	243	37.2	0	243	37.2
2010	897	0	0	0	897	660	237	35.9	0	237	35.9
2011	897	0	0	0	897	667	230	34.5	0	230	34.5
2012	897	0	0	0	897	674	223	33.1	0	223	33.1
2013	897	0	0	0	897	682	215	31.5	0	215	31.5
2014	897	0	0	0	897	691	206	29.8	0	206	29.8
2015	897	0	0	0	897	700	197	28.1	0	197	28.1
2016	897	0	0	0	897	710	187	26.3	0	187	26.3
2017	897	0	0	0	897	721	176	24.4	0	176	24.4

[1] Included exercising Load Management and Interruptible Load.

Table 9-13

Schedule 7.2: Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Winter Peak

-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
Year	Total Installed Capacity	Firm Capacity Import	Firm Capacity Export	Projected Firm Net To Grid from NUG	Total Capacity Available	System Firm Peak Demand	Reserve Margin Before Maintenance[1]		Scheduled Maintenance	Reserve Margin After Maintenance[1]	
	MW	MW	MW	MW	MW	MW	MW	%	MW	MW	%
2007/08	927	0	0	0	927	685	242	35.3	0	242	35.3
2008/09	927	0	0	0	927	693	234	33.8	0	234	33.8
2009/10	927	0	0	0	927	701	226	32.2	0	226	32.2
2010/11	927	0	0	0	927	709	218	30.7	0	218	30.7
2011/12	927	0	0	0	927	717	210	29.3	0	210	29.3
2012/13	927	0	0	0	927	726	201	27.7	0	201	27.7
2013/14	927	0	0	0	927	736	191	26.0	0	191	26.0
2014/15	927	0	0	0	927	746	181	24.3	0	181	24.3
2015/16	927	0	0	0	927	757	170	22.5	0	170	22.5
2016/17	927	0	0	0	927	769	158	20.5	0	158	20.5

[1] Included exercising Load Management and Interruptible Load.

Table 9-14
Schedule 8.0: Planned and Prospective Generating Facility Additions and Changes

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Plant Name	Unit No.	Location	Unit Type	Fuel		Fuel Transport		Const Start	Commercial In-Service	Expected Retirement	Gen Max Nameplate	Net Capability		Status
				Pri.	Alt.	Pri.	Alt.	Mo/Yr	Mo/Yr	Mo/Yr	kW	Sum MW	Win MW	

None At Time Of This Filing

Table 9-15
Schedule 9.1: Status Report and Specifications of Approved Generating Facilities

(1)	Plant Name and Unit Number:	N/A
(2)	Capacity:	
(3)	Summer MW	
(4)	Winter MW	
(5)	Technology Type:	
(6)	Anticipated Construction Timing:	
(7)	Field Construction Start-date:	
(8)	Commercial In-Service date:	
(9)	Fuel	
(10)	Primary	
(11)	Alternate	
(12)	Air Pollution Control Strategy:	
(13)	Cooling Method:	
(14)	Total Site Area:	
(15)	Construction Status:	
(16)	Certification Status:	
(17)	Status with Federal Agencies:	
(18)	Projected Unit Performance Data:	
(19)	Planned Outage Factor (POF):	
(20)	Forced Outage Factor (FOF):	
(21)	Equivalent Availability Factor (EAF):	
(22)	Resulting Capacity Factor (%):	
(23)	Average Net Operating Heat Rate (ANOHR):	
(24)	Projected Unit Financial Data:	
(25)	Book Life:	
(26)	Total Installed Cost (In-Service year $/kW):	
(27)	Direct Construction Cost ($/kW):	
(28)	AFUDC Amount ($/kW):	
(29)	Escalation ($/kW):	
(30)	Fixed O&M ($/kW-yr):	
(31)	Variable O&M ($/MWh):	

Table 9-16
Schedule 9.2: Status Report and Specifications of Proposed Generating Facilities

(1)	Plant Name and Unit Number:	None in Current Planning Cycle
(2)	Capacity:	
(3)	Summer MW	
(4)	Winter MW	
(5)	Technology Type:	
(6)	Anticipated Construction Timing:	
(7)	Field Construction Start-date:	
(8)	Commercial In-Service date:	
(9)	Fuel	
(10)	Primary	
(11)	Alternate	
(12)	Air Pollution Control Strategy:	
(13)	Cooling Method:	
(14)	Total Site Area:	
(15)	Construction Status:	
(16)	Certification Status:	
(17)	Status with Federal Agencies:	
(18)	Projected Unit Performance Data:	
(19)	Planned Outage Factor (POF):	
(20)	Forced Outage Factor (FOF):	
(21)	Equivalent Availability Factor (EAF):	
(22)	Resulting Capacity Factor (%):	
(23)	Average Net Operating Heat Rate (ANOHR):	
(24)	Projected Unit Financial Data:	
(25)	Book Life:	
(26)	Total Installed Cost (In-Service year $/kW):	
(27)	Direct Construction Cost ($/kW):	
(28)	AFUDC Amount ($/kW):	
(29)	Escalation ($/kW):	
(30)	Fixed O&M ($/kW-yr):	
(31)	Variable O&M ($/MWh):	

Table 9-17
Schedule 10: Status Report and Specifications of Proposed Directly Associated Transmission Lines

(1)	Point of Origin and Termination:	None planned.
(2)	Number of Lines:	None planned.
(3)	Right of Way:	None planned.
(4)	Line Length:	None planned.
(5)	Voltage:	None planned.
(6)	Anticipated Construction Time:	None planned.
(7)	Anticipated Capital Investment:	None planned.
(8)	Substations:	None planned.
(9)	Participation with Other Utilities:	None planned.