LAKELAND ELECTRIC

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Director, Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850
Attn: Ann Cole

March 31, 2010

100000-OT

Dear Ms. Cole,

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 2010 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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APA ___
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LAKELAND ELECTRIC

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2010 Ten-Year Site Plan
For
Electrical Generating Facilities
And
Associated Transmission Lines

April 2010

Contents

Contents (Continued)

Contents (Continued)

List of Tables

List of Tables (Continued)

List of Figures

List of Exhibits

1.0 Introduction

This report contains the 2010 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, 2009. The TYSP is divided into the following nine sections: Introduction, General Description of Utility, Forecast of Electrical Power Demand and Energy Consumption, Energy Conservation & 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 961 MW of net winter generating capacity and 908 MW of net summer generating capacity (as of the end of calendar year 2009).

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 0.96 % and 1.09% percent, respectively, for 2010 through 2019.

Net energy for load is projected to grow at an average annual rate of 1.13% percent for 2010 through 2019. Projections are also developed for high and low load growth scenarios.

1.3 Energy Conservation & Management Programs

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

Lakeland's current energy conservation & 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 energy 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 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 energy conservation & 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 energy conservation & 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 energy conservation & 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.

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 gross capacity of the unit is 329 MW summer and 351 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 151 MW (124 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 93 MW (76 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 760 MW and 734 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 345 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 31, 2009.

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.

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 2008/09 was 710 MW which occurred on January 22nd. The actual summer peak in 2009 was 627MW and occurred on July 16th. 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] 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
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	76	93
Plant Total												124	151

[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

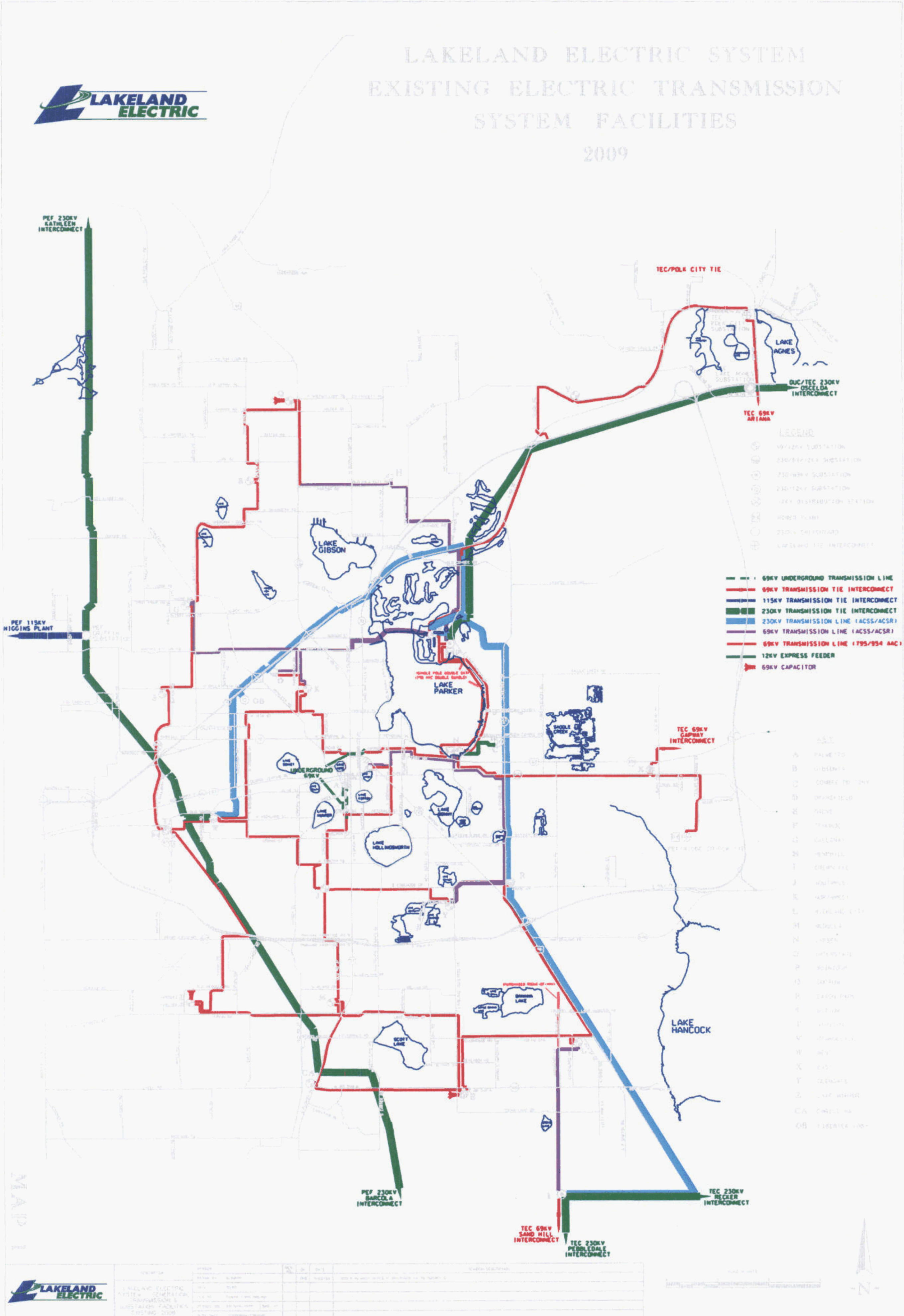
Table 2-2b
Lakeland Electric Existing Generating Facilities

Plant Name	Unit No.	Location	Unit Type[3]	Fuel[4]		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
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	TK	NR	09/82	Unknown	363,870	205	205
	5		CT	NG	DFO	PL	TK	NR	05/01	Unknown	292,950	207	228
	5		CA	WH	---	---	---	NR	05/02	Unknown	135,000	115	117
Plant Total												734	760
System Total												**908**	**961**

[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**		[4]**Fuel Type**		[5]**Fuel Transportation Method**	
CA	Combined Cycle Steam Part	DFO	Distillate Fuel Oil	PL	Pipeline
CT	Combined Cycle Combustion Turbine	RFO	Residual Fuel Oil	TK	Truck
GT	Combustion Gas Turbine	BIT	Bituminous Coal	RR	Railroad
ST	Steam Turbine	WH	Waste Heat		
		NG	Natural Gas		


LAKELAND ELECTRIC SYSTEM
EXISTING ELECTRIC TRANSMISSION
SYSTEM FACILITIES
2009
LAKELAND ELECTRIC
PEF 230KV KATHLEEN INTERCONNECT
TEC/POLK CITY TIE
LAKE AGNES
OUC/TEC 230KV OSCELOA INTERCONNECT
TEC 69KV ARIANA
LEGEND
LAKE GIBSON
PEF 115KV HIGGINS PLANT
69KV UNDERGROUND TRANSMISSION LINE
69KV TRANSMISSION TIE INTERCONNECT
115KV TRANSMISSION TIE INTERCONNECT
230KV TRANSMISSION TIE INTERCONNECT
230KV TRANSMISSION LINE (ACSS/ACSR)
69KV TRANSMISSION LINE (ACSS/ACSR)
69KV TRANSMISSION LINE (795/954 AAC)
12KV EXPRESS FEEDER
69KV CAPACITOR
LAKE PARKER
TEC 69KV GAPWAY INTERCONNECT
UNDERGROUND 69KV
LAKE HOLLINGSWORTH
LAKE HANCOCK
SCOTT LAKE
PEF 230KV BARCOLA INTERCONNECT
TEC 230KV RECKER INTERCONNECT
TEC 69KV SAND HILL INTERCONNECT
TEC 230KV PEBBLEDALE INTERCONNECT
LAKELAND ELECTRIC

3.0 Forecast of Electrical Power Demand and Energy Consumption

Lakeland routinely develops a detailed short-term (1-year) electric load and energy forecast for budget purposes and short-term operational studies. The longer-term (up until 25-years) forecast is developed for use in its long-term planning studies. The long-term forecasts are used as a key input into Lakeland's Integrated Resource Plan.

Sales and customer forecasts of monthly data are prepared by rate classification or revenue class. In some cases, such as the commercial sector, individual rate classifications were combined to eliminate the effects of class migration. Separate forecast models are also developed for inside and outside Lakeland's corporate limits for the Residential (RS), General Service (GS), General Service Demand (GSD) and Industrial rate classifications. Lakeland forecasts monthly data and then summarizes the data annually by fiscal period ending September 30th.

Lakeland uses an advanced statistical program called MetrixND (developed by Itron) to assist with the analysis and forecasting of its time series data such as number of customers, energy and demand consumption. MetrixND allows Lakeland to incorporate economic, demographic, price, elasticities, end-use appliance saturations and efficiencies, and various weather variables into the forecast. Lakeland also uses MetrixLT (developed by Itron), which integrates with MetrixND, and is used for developing long-term system and revenue class hourly load forecasts.

Many variables were evaluated in the development of this forecast. The variables that proved to be significant include: gross state product, non-manufacturing employment, total employment, disposable personal income per household, household size, household growth, appliance saturation and efficiency trends as well as weather. Binary variables were also used to explain outliers in historical billing data, trend shifts, monthly seasonality, rate migration between classes, etc…

The economic projections used in this forecast were purchased from Moody's Economy.com. Moody's is one of the leading economic forecasting and consulting firms in the nation and is widely used within the electric forecasting industry. This forecast reflects their most current economic outlook which is dated December 2009.

Population projections used in this forecast were purchased from the Bureau of Business and Economic Research (BEBR). BEBR is an applied research center in the Warrington College of Business Administration at the University of Florida. BEBR focuses their research on Florida and its local areas. Their forecasts of population are also widely used throughout the electric forecasting industry. This forecast reflects their most recent demographic projections which are dated June 2009.

The real price of electricity was developed using a 12-month moving average of real average revenue. The historical price data by class, along with the Consumer Price Index (CPI), was used to develop a price forecast for use in the MetrixND modeling structure.

The end-use saturation and efficiency projections used in this forecast were purchased from Itron. Itron offers end-use data services and forecasting support through its Energy Forecasting Group (EFG). EFG's projections are based on data derived from the Energy Information Administration's (EIA) South Atlantic Census Division. This forecast reflects the most recent appliance and efficiency standards established by the Energy Independence and Security Act (EISA) of 2007. The EISA of 2007 highlights standard efficiency ratings for household appliances like dishwashers, washing machines, etc…It will also require light bulbs to use 20 to 30 percent less energy than most current incandescent bulbs. The phase-in period for these standards is between 2012 and 2014. By 2020, it is estimated that light bulbs will be required to use at least 50 percent less energy than today. The impacts of these standards are reflected in the forecast and will have a significant impact on future residential electricity usage.

Heating and cooling degree days are variables that attempt to explain a customer's usage 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.

These heating and cooling degree day variables are used in the forecasting process to correlate electric consumption with weather. The weather variables are weighted (prior month and current month) to capture the impacts of weather on revenue month billed consumption.

Normal temperatures at time of peak are used for peak modeling. Heating and cooling degree days are calculated for each monthly peak. Then, the weather variables are ranked from the highest to lowest value within each year. Normal peak day HDD and CDD's are then defined as an average across the rankings. The last step is to map the average values back to the month during which the highest HDD or CDD typically occurs.

All of the models of the forecast are developed using historical 20-year normal weather. The weather information is obtained from the Utility's own weather stations. Several weather stations are strategically placed throughout the electric service territory to provide the best estimate of overall temperature for the Lakeland service area.

Historical monthly data was available and analyzed for the 20-year period from Fiscal Years 1990 - 2009. However, after careful evaluation of the data and model statistics, most models were developed using only a 10-year estimation period.

The reader may notice some variation in the forecast when comparing one year or one month to another. This can be explained by the following reasons:

1) Some actual data was used in the models to generate the current forecast. Therefore, October 2009 – December 2009 is actual data and *not* predicted values based on normal weather.

2) There may also be some variation seen in the projected data for the commercial sector (Industrial and GSD classes) due to rate migration.

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 by comparing projections to historical patterns.

Lakeland also utilizes the Statistically Adjusted End-Use (SAE) modeling approach for the residential and commercial sectors. The SAE approach is designed to capture the impact of changing end-use saturation and efficiency trends as well as economic conditions on long-term residential and commercial energy sales and demand.

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

Lakeland has historically been a winter peaking utility with peak loads typically occurring on January weekdays between the hours of 7 and 8 a.m. Summer peaks typically occur on August weekdays between 3 and 6 p.m. These assumptions continue throughout the 10-year forecast period.

Lakeland currently does not have any Demand Side Management (DSM), and therefore, does not assume any deductions in peak load for the forecast period.

The results of the energy sales forecasts for all revenue classes are added together to create a total sales forecast. A loss-factor of approximately 4.3% (based on 4-years of historical monthly data) is applied to convert total energy sales into net energy for load (NEL).

Twenty-four hourly regression models were developed in MetrixND to generate the 20-year hourly load forecast. Each of these models relates weather 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.

3.1 Service Territory Population Forecast

Population Estimate

Lakeland's electric service area comprises approximately 246 square miles of which approximately 199 square miles are outside Lakeland's corporate limits. The electric service territory population estimate for Lakeland for Fiscal Year 2009 is 253,084.

Population Forecast

Lakeland's electric service territory population is projected to increase at a 1.0% average annual growth rate (AAGR) from Fiscal Year 2010 through Fiscal Year 2019. Polk County's population (Lakeland/Winter-Haven MSA) is growing at 1.4% AAGR for the same 10-year period.

3.2 Account Forecasts

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

Residential

- Commercial
  - General Service
  - General Service Demand
- Industrial
  - General Service Large Demand
  - Contract
  - Interruptible
  - ELDC (Extra Large Demand Customer)
- Other
  - Private Area Lighting
  - Roadway Lighting
  - Electric
  - Water
  - Municipal

3.2.1 Residential Accounts

Regression analysis was used to develop the residential (RS) account forecast using monthly customer data from January 2000 – December 2009. Total RS accounts were projected as a function of the number of households. The number of RS accounts for outside the corporate limits was developed using an exponential smoothing share model.

Projected AAGR for total RS accounts is 1.1% for Fiscal Year 2010 through Fiscal Year 2019.

3.2.2 Commercial Accounts

The General Service (GS) projections for the number of new small commercial accounts are a function of RS accounts and total employment.

GS accounts are expected to increase at an AAGR of 1.0% from Fiscal Year 2010-2019.

The number of GSD commercial accounts for inside and outside city limits was developed using historical relationships and growth rates. These forecasts were developed outside of MetrixND and later integrated with the Total Account Forecast.

The GSD total account class is expected to grow at a rate of 0.6 % from Fiscal Year 2010-2019.

Total commercial (GS and GSD) accounts are projected to increase by an AAGR of 0.8% for the 10-year reporting period.

3.2.3 Industrial Accounts

The Industrial account category is comprised of those accounts within the General Service Large Demand (GSLD), Contract, Interruptible and Extra Large Demand Customer (ELDC) customer classes.

Projections for the Industrial accounts were modeled independently of MetrixND. Special consideration was given to account for new major commercial and industrial development projects that may impact future demand and energy requirements.

There may be some variation seen in the data when comparing historical to projected data. This is due to some Industrial accounts (Contract) migrating into the commercial (GSD) rate class.

3.2.4 Other Accounts

The Other accounts category is comprised of those accounts within the municipal, electric, and water departments. It also includes those accounts for 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 relationships. Lakeland also took into consideration any future projects and developments. These forecasts were developed outside of MetrixND and were later integrated with the other rate class forecasts to generate the Total Account Forecast.

The Other account category is expected to increase at 0.50% AAGR over the 10-year reporting period.

3.2.5 Total Accounts

The Total Account Forecast for Lakeland is the sum of all the individual forecasts mentioned above. Total accounts are expected to increase at 1.0% AAGR over the 10-year reporting period.

3.3 Energy Sales Forecast

Lakeland forecasts monthly energy sales for the following categories and subcategories:

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

3.3.1 Residential Energy Sales Forecast

The residential (RS) energy sales forecast was developed using the SAE modeling approach. The SAE approach is designed to capture the impact of changing end-use saturation and efficiency trends as well as economic conditions on long-term residential energy and demand.

The RS average use models for inside and outside Lakeland's corporate limits are driven by the number of residential customers, disposable personal income per household, household size, appliance saturation and efficiency trends, and weather. Binary variables were also used to explain outliers in historical billing data.

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

$$\boldsymbol{Res\ Sales_t = Cust_t \times AvgUse_t}$$

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

$$\boldsymbol{AvgUse_t = B_0 + B_1XCool_t + B_2XHeat_t + B_3XOther_t + e_t}$$

Where:

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

$$\mathrm{XCool}_{y,m} = \mathrm{CoolIndex}_y \times \mathrm{CoolUse}_{y,m}$$

$$\mathrm{CoolIndex}_y = \mathrm{StructuralIndex}_y \times \sum_{\mathrm{Type}} \mathrm{Weight}_y^{\mathrm{Type}} \times \frac{\left(\mathrm{Sat}_y^{\mathrm{Type}} / \mathrm{Eff}_y^{\mathrm{Type}}\right)}{\left(\mathrm{Sat}_{01}^{\mathrm{Type}} / \mathrm{Eff}_{01}^{\mathrm{Type}}\right)}$$

$$\mathrm{CoolUse}_{y,m} = \left(\frac{\mathrm{CDD}_{y,m}}{\mathrm{CDD}_{01}}\right) \times \left(\frac{\mathrm{HHSize}_{y,m}}{\mathrm{HHSize}_{01}}\right)^{0.20} \times \left(\frac{\mathrm{Income}_{y,m}}{\mathrm{Income}_{01}}\right)^{0.20} \times \left(\frac{\mathrm{Price}_{y,m}}{\mathrm{Price}_{by}}\right)^{-0.20}$$

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

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

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

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

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
- Price

The Total Residential Energy Sales Forecast is projected to increase at 0.8% AAGR over the 10-year reporting period.

3.3.2 Commercial Energy Sales

The General Service (GS) and General Service Demand (GSD) energy sales forecasts were developed using the SAE modeling approach.

GS and GSD energy sales were projected for both inside and outside the corporate limits. Non-residential sales models are driven by: gross state product, weather, and appliance saturations and efficiencies. 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 1.8% AAGR over the 10-year reporting period.

3.3.3 Industrial Energy Sales

The large Industrial class demand and energy sales forecasts were modeled independently of MetrixND and later imported into the model to generate the Total Sales Forecast. Each customer was evaluated individually to account for their expected future energy and demand consumption. The Utility's Account Managers, who monitor the activity for all large customers, were also involved in the forecasting process.

There may be some variation seen in the data when comparing historical to projected data. This is due to some Industrial accounts (Contract) migrating into the commercial (GSD) rate class.

Total Industrial energy sales are projected to increase at a 0.5% AAGR over the 10-year reporting period.

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) rate classes. 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 comprise 3.65% of total sales and are expected to increase at 0.6% AAGR over the 10-year reporting period.

3.3.5 Total Sales

The Total Energy Sales Forecast for Lakeland is the sum of the individual forecasts mentioned above. Total energy sales are projected to grow at 1.0% AAGR over the 10-year reporting period.

3.4 Net Energy for Load Forecast

Regression models are estimated in MetrixND to forecast monthly sales by customer class (Res, GS, GSD, Industrial, Other). The results of these forecasts are then summed together to create a total sales forecast.

To determine the total system net energy for load (NEL) a loss-factor was applied to the total sales forecast to convert sales into NEL. Electric losses, the measure of the amount of energy lost during the generation, transmission, and distribution of electricity were developed using a four year historical average. Electric losses are expected to be approximately 4.3% for the 10-year forecast horizon.

NEL is projected to increase at 1.0% AAGR over the 10-year reporting period.

3.5 Peak Demand

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

The new EISA lighting standards will have more of an impact on the winter peak than summer peaks as there is more lighting load at the time of winter peak. This will cause the growth for the winter and summer peaks to grow slightly different.

Lakeland currently does not have any Demand Side Management (DSM), and therefore, does not assume any deductions in peak load for the forecast period.

Historically, Lakeland has been a winter peaking utility and the forecast assumes this will continue over the 10-year forecast horizon.

The 2011 base case forecast for summer peak is 652 MW with winter expected to be 725 MW. The Total Annual Peak Demand Forecast is expected to increase at approximately 7.5 MW's a year over the 10-year reporting period, or at an AAGR of 1.0%.

3.6 Hourly Load

Twenty-four hourly regression models were developed in MetrixND to generate the 20-year hourly load forecast. Each of these models relates weather 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 produced out of MetrixND.

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

YEAR	HDD 65	CDD 65
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	407	3415
2008	305	3426
2009	782	2955
2010	581	3,189
2011	581	3,189
2012	581	3,189
2013	581	3,189
2014	581	3,189
2015	581	3,189
2016	581	3,189
2017	581	3,189
2018	581	3,189
2019	581	3,189

Table 3-2
Historical Monthly Peaks and Date

	2007		2008		2009	
Jan	565	30-Jan	684	03-Jan	710	22-Jan
Feb	596	17-Feb	533	28-Feb	703	05-Feb
Mar	471	6-Mar	445	16-Mar	546	03-Mar
Apr	510	26-Apr	483	03-Apr	471	24-Apr
May	558	4-May	563	31-May	568	11-May
Jun	571	25-Jun	615	05-Jun	625	22-Jun
Jul	633	18-Jul	613	21-Jul	601	16-Jul
Aug	648	9-Aug	613	27-Aug	608	11-Aug
Sep	616	12-Sep	587	11-Sep	579	21-Sep
Oct	562	22-Oct	526	08-Oct	587	08-Oct
Nov	442	27-Nov	494	19-Nov	444	01-Nov
Dec	489	18-Dec	532	03-Dec	505	29-Dec

3.6 Sensitivity Cases

3.6.1 High & Low Load Sensitivity

A forecast is generated based on the projections of its drivers and assumptions at time of forecast development. It should be noted, especially due to current economic conditions, that there may be some conditions that arise that may cause variation from what was expected. For these reasons, a high and low case scenario forecast was developed for system energy and peak demand.

The high and low scenarios were based on variations of the primary drivers including customer growth, economic growth and weather. The extreme peak day weather conditions were also used to generate the high and low system peak demand scenarios.

Table 3-3 Summer Peak Demand (MW)			
Year	Low	Base	High
2010	615	645	677
2011	622	652	686
2012	630	659	695
2013	638	667	704
2014	645	675	713
2015	653	682	722
2016	660	689	731
2017	668	697	740
2018	675	704	749
2019	682	711	758
AAGR	1.16%	1.09%	1.26%

Table 3-4 Winter Peak Demand (MW)			
Year	Low	Base	High
2010/11	620	725	811
2011/12	627	733	822
2012/13	630	736	829
2013/14	636	743	839
2014/15	642	751	849
2015/16	650	759	861
2016/17	657	767	871
2017/18	664	775	882
2018/19	671	783	894
2019/20	678	790	904
AAGR	1.00%	0.96%	1.21%

Table 3-5
Net Energy for Load (GWH)

Year	Low	Base	High
2010	2927	2972	3082
2011	2946	2999	3118
2012	2986	3035	3157
2013	3018	3060	3189
2014	3057	3096	3229
2015	3094	3134	3273
2016	3135	3176	3321
2017	3170	3212	3364
2018	3207	3249	3410
2019	3246	3289	3457
AAGR	1.16%	1.13%	1.28%

Model Evaluation and Statistics

Lakeland tests all models used in the forecast for statistical significance. 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)

4.0 Energy Conservation & Management Programs

Lakeland Electric is committed to the efficient use of electric energy and is committed to providing cost-effective energy conservation and demand reduction programs for all its consumers. Lakeland is not subject to FEECA rules but has in place several Energy Conservation & Management Programs and remains committed to utilizing cost-effective conservation and Energy Conservation & Management 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 Energy Conservation & Management Programs

Lakeland has the following energy conservation & management programs that are currently available and address two major areas of energy conservation & 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 consumption and generation 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 the usage of high energy-efficiency appliances 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 public awareness 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 usage.

4.1.1.1.3 Speakers Bureau.

Lakeland holds 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 devices for customers to consider in their efforts to reduce costs associated with their electric usage.

4.1.2 Energy Conservation & Management Technology Research

Lakeland has made a commitment to study and review promising technologies in the area of energy conservation & management programs. 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 2009

In keeping with Lakeland Electric's plan to promote retail conservation programs, the utility is continuing the following Energy Efficiency & Conservation Programs during 2009:

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.
- Compact Fluorescent Lighting – giveaway at audits, up to 3 per residence
- On-line Energy Audit

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 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 energy conservation & management programs. 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. In August 2009, Lakeland Electric approved a contract with the vendor with plans to resume installations of solar water heaters during 2010. 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 Net Metered Photovoltaic Systems

This project started as a collaborative effort between the Florida Energy Office (FEO), Florida Solar Energy Center (FSEC), Lakeland Electric, and Shell Solar Industries. The primary objective of this program was 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. By the end of 2009 only one of these three original systems was still in operation.

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. 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.

During 2009 twenty-one customers chose to purchase PV systems. There are now 30 PV systems that have been privately purchased in the Lakeland Electric service territory. These systems now generate a total of 257 kw of electric capacity. Lakeland Electric has allowed the interconnection of these systems in "net meter" fashion.

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 (FSER) and Education Foundation, Florida Solar Energy Center (FSEC) and the Solar Electric Power Association (SEP), 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.

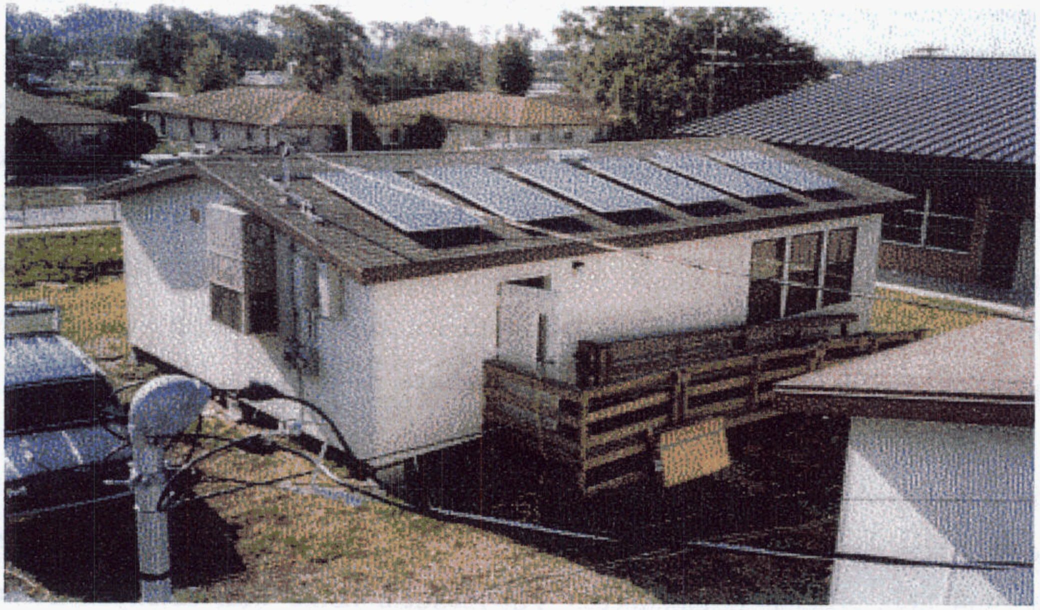


Figure 4-2
Portable Classroom Topped by PV Panels

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.

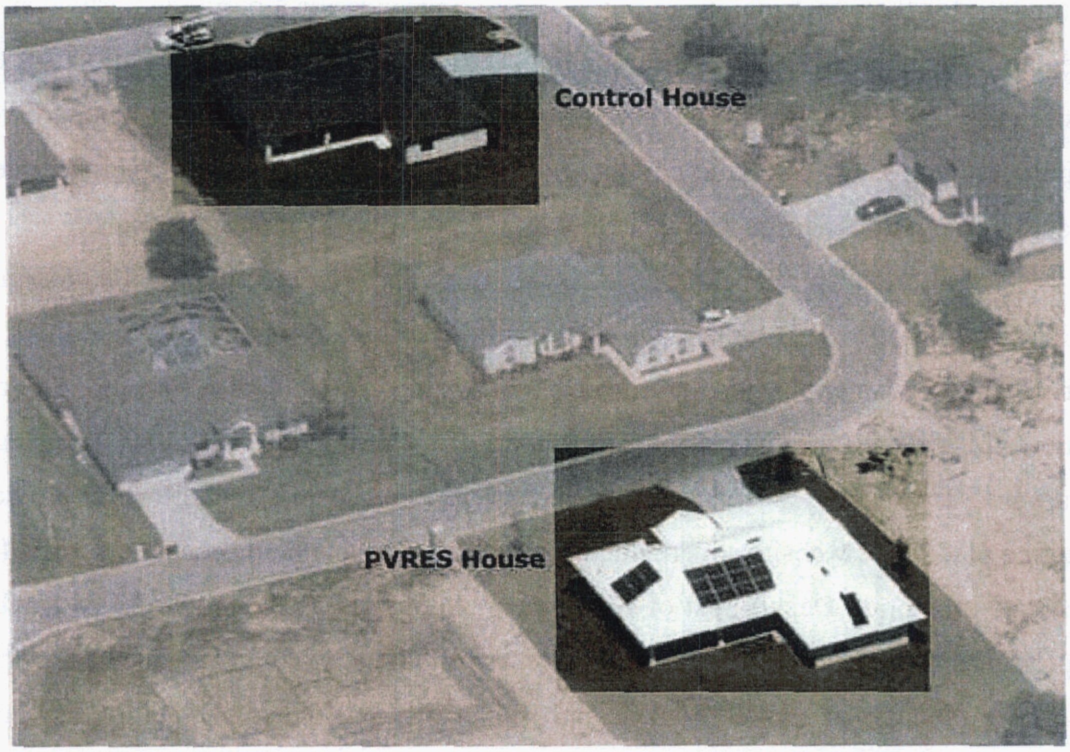


Figure 4-3
Solar House and Control House

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. In October 2008, Lakeland Electric approved the contract with the vendor. Installation of these PV systems will begin in 2010. 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: 2009	**Utility: Lakeland Electric**					
		Gross (MW) Capability				**Net Energy For Load**	
	Generation by Primary Fuel	**Summer (MW)**	**Summer (%)**	**Winter (MW)**	**Winter (%)**	**GWh**	**%**
1	Coal	219.0	23.3%	219.0	22.1%	964.0	51.8%
2	Nuclear					0.0	
3	Residual	82.0	8.7%	82.0	8.3%	1.0	0.1%
4	Distillate	55.0	5.8%	55.0	5.5%	0.0	0.1%
5	Natural Gas	586.0	62.2%	637.0	64.1%	1,664.0	29.6%
6	Renewables (Purchases)						
7	Renewable (Owned)						
8	Purchases (Other)					363.0	18.4%
9	Total	942.0	100.0%	993.0	100.0%	2,992.0	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 2009 calendar year.

Table 4-2

Existing <u>FIRM</u> Renewable Report by Fuel Type

	Base Year: 2009	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 <u>NON-FIRM</u> Renewable Report by Fuel Type

	Base Year: 2009	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	0.5	100.0%	0.5	100.0%	955	100.0%
7	Ocean Energy						
8	Wind						
9	Other						
10	Total	0.5	100.0%	0.5	100.0%	955	100.0%

<u>Notes</u>

> Capacities requested are Gross MW.

Table 4-3

Existing NON-FIRM Self-Service Renewable Generation Facilities

Base Year: 2009	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)		0.3	0.3	Sunlight			1998-2009

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 energy conservation, 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 energy conservation programs. 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 5.5 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 5.5 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 5.5 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]
2010	3.59	5.46	13.62	14.16	14.41
2011	4.10	6.15	14.80	15.34	15.59
2012	4.23	6.39	15.68	16.22	16.47
2013	4.51	6.54	16.05	18.71	16.71
2014	4.54	6.72	16.19	19.63	17.40
2015	4.54	6.93	16.62	20.15	17.87
2016	4.59	7.13	17.03	20.65	18.74
2017	4.66	7.34	17.57	21.30	19.40
2018	4.73	7.54	18.01	21.85	20.04
2019	4.77	7.75	18.26	22.16	20.45
Average Annual Growth Rate	3.21%	3.97%	3.31%	5.10%	3.97%

[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 into Florida, and several projects in the Gulf of Mexico along the Louisiana coast.

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.

FGT is currently marketing its Phase VIII Expansion Project. Phase VIII Expansion Project will consist of approximately 483.2 miles of multi diameter pipeline in Alabama, Mississippi and Florida with approximately 365.8 miles built parallel to existing pipelines. The project will add 213,600 horsepower of additional mainline compression with one new compressor station to be built in Highlands County, Fla. The project will provide an annual average of 820,000 MMbtu/day of additional firm transportation capacity. Currently, Lakeland has no plans to purchase additional pipeline capacity.

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 was placed in service in May, 2002. Phase II was completed in 2005.

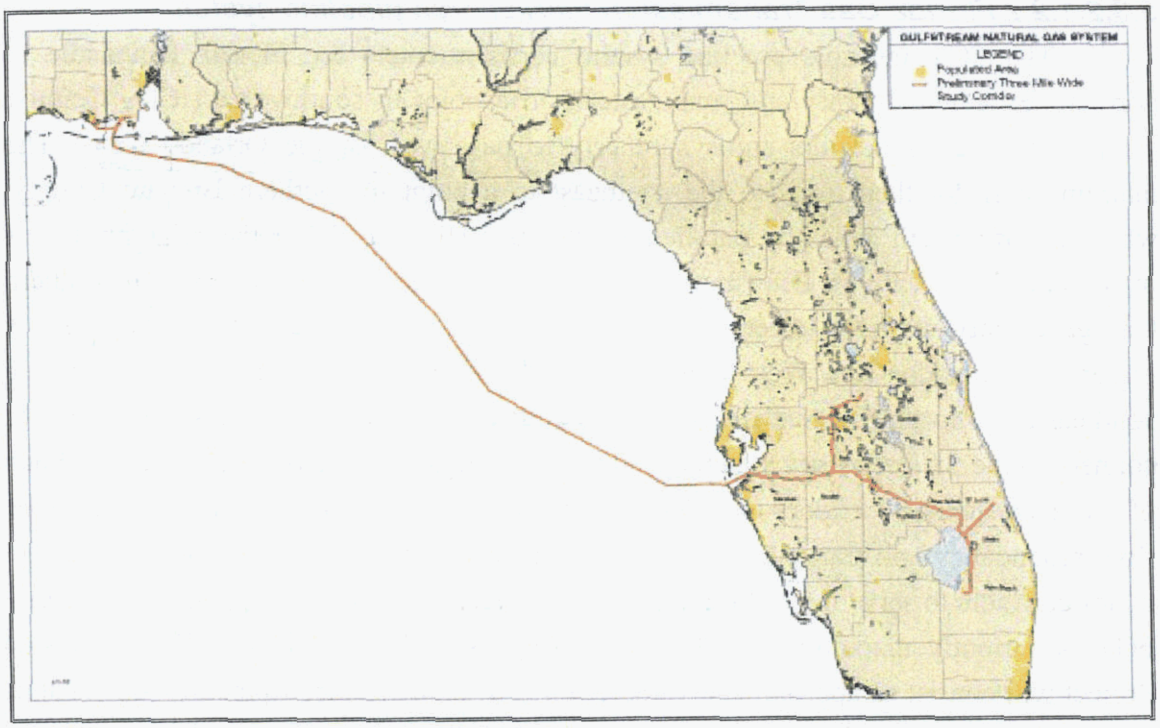


Figure 5-1
Gulfstream Natural Gas Pipeline

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 (through May, 2011) 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 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 any future expansions will be set by the Federal Energy Regulatory Commission (FERC) rate cases at the completion of the projects. 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	40.55	76.90	57.98	55.00
Usage	1.55	(1.22)	0.00	2.19
Total	**42.10**	**75.68**	**57.98**	**57.19**
Fuel Charge (%)	2.78%	2.78%	3.25%	2.08%

* 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 20 – 30 day coal supply reserve (60,000 – 90,000 tons).

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 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, primarily from the nation of Columbia. Coal transportation for U.S. rail origins are provided under a contract signed with CSX in late 2008. The contract period is from January 1, 2009 through December 31, 2013.

5.3.2.2.3 Coal price forecast

Currently, Lakeland's long-term purchase of coal for McIntosh 3 is under three contracts which extend through 2010. Lakeland's coal costs will most likely increase due to the expiration of two lower-priced contracts at the end of 2010.

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 Loss of Load Probability (LOLP) and Energy Use Efficiency (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 and 6-2 which show the projected reliability levels for winter and summer base case 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.

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. 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.

As Lakeland expects to continue to be a winter peaking utility, Table 6-1 also indicates that no additional capacity is needed during the summer peak seasons for the current ten year planning cycle.

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)
2010/2011	961	0	0	961	725	725	32.6	32.6	127	127
2011/2012	961	0	0	961	733	733	31.1	31.1	118	118
2012/2013	961	0	0	961	736	736	30.6	30.6	115	115
2013/2014	961	0	0	961	743	743	29.3	29.3	107	107
2014/2015	961	0	0	961	751	751	28.0	28.0	97	97
2015/2016	961	0	0	961	759	759	26.6	26.6	88	88
2016/2017	961	0	0	961	767	767	25.3	25.3	79	79
2017/2018	961	0	0	961	775	775	24.0	24.0	70	70
2018/2019	961	0	0	961	783	783	22.7	22.7	61	61
2019/2020	961	0	0	961	790	790	21.6	21.6	53	53

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: 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)
2010	908	0	0	908	645	645	40.8	40.8	166	166
2011	908	0	0	908	652	652	39.3	39.3	158	158
2012	908	0	0	908	659	659	37.8	37.8	150	150
2013	908	0	0	908	667	667	36.1	36.1	141	141
2014	908	0	0	908	675	675	34.5	34.5	132	132
2015	908	0	0	908	682	682	33.1	33.1	124	124
2016	908	0	0	908	689	689	31.8	31.8	116	116
2017	908	0	0	908	697	697	30.3	30.3	106	106
2018	908	0	0	908	704	704	29.0	29.0	98	98
2019	908	0	0	908	711	711	27.7	27.7	90	90

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

[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.

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 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.

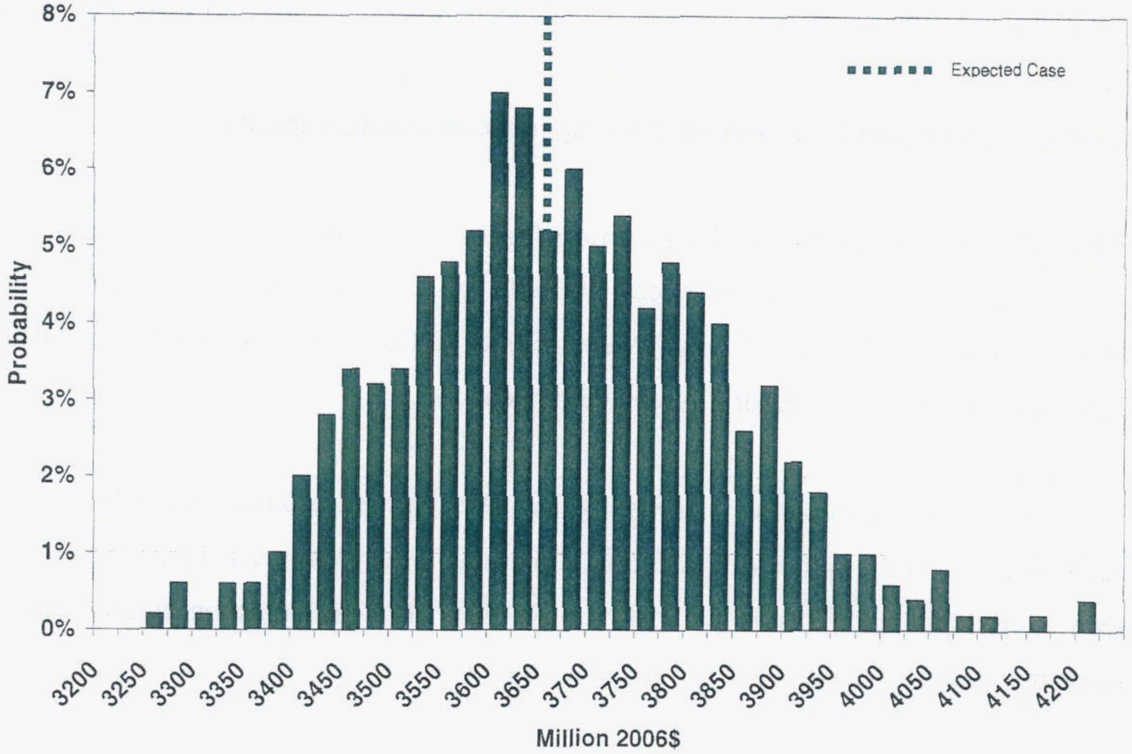
7.1.2 Future Capacity Additions Investment Decisions

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.

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, Municipal Solid Waste (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. 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 Energy Conservation & Management Programs

Lakeland continues to actively monitor Energy Conservation & Efficiency Options to find the most cost-effective way to meet our customers' needs. 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 energy conservation & management programs 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 the 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 2010 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, 2009

(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	76	93
Plant Total												124	151

[1]Net Normal.

Source: Lakeland Energy Supply Unit Rating Group

Table 9-1a
Schedule 1.0: Existing Generating Facilities as of December 31, 2009

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	TK	NR	09/82	Unknown	363,870	205	205
	5		CT	NG	DFO	PL	TK	NR	05/01	Unknown	292,950	207	232
	5		CA	WH	---	---	---	NR	05/02	Unknown	135,000	115	113
Plant Total												734	760
System Total												**908**	**961**

[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		[4]Fuel Type		[5]Fuel Transportation Method	
CA	Combined Cycle Steam Part	DFO	Distillate Fuel Oil	PL	Pipeline
CT	Combined Cycle Combustion Turbine	RFO	Residual Fuel Oil	TK	Truck
GT	Combustion Gas Turbine	BIT	Bituminous Coal	RR	Railroad
ST	Steam Turbine	WH	Waste Heat		
		NG	Natural Gas		

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
2000	224,882	2.53	1,279	88,740	14,413	664	10,553	62,920
2001	231,044	2.56	1,310	90,332	14,502	663	10,637	62,330
2002	234,210	2.55	1,391	91,875	15,140	691	10,639	64,950
2003	236,890	2.54	1,408	93,126	15,119	689	11,013	62,562
2004	243,576	2.60	1,391	93,620	14,858	690	11,248	61,344
2005	247,942	2.58	1,443	96,205	14,999	733	11,480	63,850
2006	253,405	2.62	1,438	96,860	14,846	753	11,832	63,641
2007	253,027	2.52	1,444	100,523	14,365	769	11,898	64,633
2008	252,731	2.51	1,383	100,739	13,729	762	11,913	63,964
2009	253,084	2.52	1,419	100,628	14,101	749	11,837	63,276
Forecast								
2010	253234	2.51	1,379	100,862	13,672	765	11,782	64,930
2011	254336	2.50	1,385	101,631	13,678	781	11,875	65,768
2012	256701	2.49	1,399	102,893	13,597	800	12,044	66,423
2013	259023	2.48	1,408	104,466	13,478	814	12,227	66,574
2014	263368	2.49	1,425	105,983	13,446	828	12,383	66,866
2015	266664	2.48	1,445	107,516	13,440	843	12,520	67,332
2016	270132	2.48	1,469	108,998	13,477	859	12,653	67,889
2017	273348	2.48	1,488	110,401	13,478	872	12,783	68,216
2018	276503	2.47	1,510	111,742	13,513	885	12,907	68,567
2019	279595	2.47	1,532	113,026	13,554	899	13,028	69,005

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
2000	502	83	6,048,193	0	18	86	2549
2001	493	80	6,162,500	0	19	81	2566
2002	520	89	5,842,697	0	19	80	2701
2003	541	90	5,922,222	0	19	80	2729
2004	534	91	5,945,055	0	20	82	2724
2005	541	83	6,518,072	0	19	84	2820
2006	586	87	6,712,644	0	16	87	2878
2007	615	88	6,897,727	0	21	87	2928
2008	607	87	6,988,506	0	21	87	2861
2009	590	85	6,941,176	0	21	83	2862
Forecast							
2010	601	81	7,419,753	0	21	83	2849
2011	604	80	7,550,000	0	21	84	2875
2012	605	80	7,562,500	0	21	84	2909
2013	607	80	7,587,500	0	21	84	2934
2014	608	80	7,600,000	0	21	85	2967
2015	609	81	7,518,519	0	21	85	3003
2016	610	81	7,530,864	0	21	85	3044
2017	611	81	7,543,210	0	21	86	3078
2018	612	81	7,555,556	0	21	86	3114
2019	614	81	7,580,247	0	22	86	3153

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
2000	0	117	2,666	10,614	100,993
2001	0	128	2,694	10,699	102,536
2002	0	70	2,771	10,583	104,130
2003	0	169	2,,898	10,517	105,144
2004	0	142	2,866	10,362	113,500
2005	0	122	2,942	10,206	118,002
2006	0	127	3,005	10,016	120,615
2007	0	117	3,045	9,869	122,378
2008	0	114	2,975	9,685	122,424
2009	0	130	2,992	9,431	121,981
Forecast					
2010	0	123	2,972	9,358	122,083
2011	0	124	2,999	9,379	122,965
2012	0	126	3,035	9,391	124,408
2013	0	126	3,060	9,401	126,174
2014	0	129	3,096	9,413	127,859
2015	0	131	3,134	9,424	129,541
2016	0	132	3,176	9,437	131,169
2017	0	134	3,212	9,449	132,714
2018	0	135	3,249	9,461	134,191
2019	0	136	3,289	9,474	135,609

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
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
2008	615	0	615	0	0	0	0	0	615
2008	625	0	625	0	0	0	0	0	625
Forecast									
2010	645	0	645	0	0	0	0	0	645
2011	652	0	652	0	0	0	0	0	652
2012	659	0	659	0	0	0	0	0	659
2013	667	0	667	0	0	0	0	0	667
2014	675	0	675	0	0	0	0	0	675
2015	682	0	682	0	0	0	0	0	682
2016	689	0	689	0	0	0	0	0	689
2017	697	0	697	0	0	0	0	0	697
2018	704	0	704	0	0	0	0	0	704
2019	711	0	711	0	0	0	0	0	711

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 Load Management	Residential Conservation	Comm./Ind. Load Management	Comm./Ind. Conservation	Net Firm Demand
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	684	0	684	0	0	0	0	0	684
2008/09	710	0	710	0	0	0	0	0	710
2009/10	717	0	717	0	0	0	0	0	717
Forecast									
2010/11	725	0	725	0	0	0	0	0	725
2011/12	733	0	733	0	0	0	0	0	733
2012/13	736	0	736	0	0	0	0	0	736
2013/14	743	0	743	0	0	0	0	0	743
2014/15	751	0	751	0	0	0	0	0	751
2015/16	759	0	759	0	0	0	0	0	759
2016/17	767	0	767	0	0	0	0	0	767
2017/18	775	0	775	0	0	0	0	0	775
2018/19	783	0	783	0	0	0	0	0	783
2019/20	790	0	790	0	0	0	0	0	790

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 %
2000	2,549	0	0	2,549	0	117	2,666	44.4%
2001	2,566	0	0	2,566	0	128	2,694	46.7%
2002	2,701	0	0	2,701	0	70	2,771	45.6%
2003	2,729	0	0	2,729	0	169	2,898	58.0%
2004	2,724	0	0	2,724	0	142	2,866	50.5%
2005	2,820	0	0	2,820	0	122	2,942	49.4%
2006	2,878	0	0	2,878	0	127	3,005	57.6%
2007	2,928	0	0	2,928	0	117	3,045	50.8%
2008	2,861	0	0	2,861	0	114	2,975	47.8%
2009	2,862	0	0	2,862	0	130	2,992	47.6%
Forecast								
2010	2849	0	0	2849	0	123	2,972	46.8%
2011	2,875	0	0	2,875	0	124	2,999	46.7%
2012	2,909	0	0	2,909	0	126	3,035	47.1%
2013	2,934	0	0	2,934	0	126	3,060	47.0%
2014	2,967	0	0	2,967	0	129	3,096	47.1%
2015	3,003	0	0	3,003	0	131	3,134	47.1%
2016	3,044	0	0	3,044	0	132	3,176	47.3%
2017	3,078	0	0	3,078	0	134	3,212	47.3%
2018	3,114	0	0	3,114	0	135	3,249	47.4%
2019	3,153	0	0	3,153	0	136	3,289	47.5%

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)
	Actual		2010 Forecast		2011 Forecast	
Month	Peak Demand[1] MW	NEL GWh	Peak Demand[1] MW	NEL GWh	Peak Demand[1] MW	NEL GWh
January	710	236	717	242	725	241
February	703	209	592	208	598	209
March	546	224	496	223	502	225
April	471	224	517	222	523	224
May	568	258	573	262	580	264
June	625	285	608	271	615	274
July	601	288	641	279	648	281
August	608	297	645	310	652	314
September	579	280	597	266	604	269
October	587	263	556	251	562	254
November	444	204	469	207	474	210
December	505	224	527	231	533	234

[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	2009-Actual	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
(1)	Nuclear		Trillion Btu	0	0	0	0	0	0	0	0	0	0	0
(2)	Coal[1]		1000 Ton	422	545	530	545	527	534	538	546	550	554	561
(3)	Residual	Steam	1000 BBL	2	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	2	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	3	0	1	0	0	0	0	0	0	0	0
(10)		Total	1000 BBL	3	0	1	0	0	0	0	0	0	0	0
(11)	Natural Gas	Steam	1000 MCF	657	260	395	510	376	383	394	412	475	459	486
(12)		CC	1000 MCF	11,953	7,256	11,744	6,978	6,990	6,932	7,740	8,197	9,928	9,588	10,305
(13)		CT	1000 MCF	14	0	9	1	0	0	0	0	0	0	0
(14)		Total	1000 MCF	12,624	7,516	12,148	7,489	7,366	7,315	8,134	8,609	10,303	10,047	10,791
(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	2009-Actual	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
(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	964	1385	1343	1385	1334	1353	1364	1389	1398	1411	1432
(4)	Residual	Steam	GWh	1	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	1	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	0	0	1	0	0	0	0	0	0	0	0
(11)		Total	GWh	0	0	1	0	0	0	0	0	0	0	0
(12)	Natural Gas	Steam	GWh	33	24	36	46	35	36	37	38	44	43	45
(13)		CC	GWh	1,630	1011	1642	964	964	952	1069	1135	1241	1340	1442
(14)		CT	GWh	1	0	0	0	0	0	0	0	0	0	0
(15)		Total	GWh	1,664	1035	1678	1010	999	988	1105	1173	1285	1383	1487
(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]			363	553	-23	639	727	755	665	614	528	455	370
(19)	Net Energy for Load		GWh	2992	2972	2999	3035	3060	3096	3134	3176	3212	3249	3289

[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	2009-Actual	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
(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]		%	32.22	46.60	44.78	45.63	43.63	43.70	43.52	43.73	43.52	43.43	43.54
(4)	Residual	Steam	%	0.03	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	%	0.03	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	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(11)		Total	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(12)	Natural Gas	Steam	%	1.10	0.81	1.20	1.52	1.14	1.16	1.18	1.20	1.37	1.32	1.37
(13)		CC	%	54.48	33.98	54.72	31.76	31.50	30.78	34.11	35.74	38.67	41.24	43.84
(14)		CT	%	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
(15)		Total	%	55.61	34.79	55.95	33.28	32.65	31.94	35.29	36.93	40.04	42.57	45.21
(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]		%	12.13	18.61	-0.73	21.09	23.73	24.35	21.19	19.33	16.44	14.00	11.25
(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	%
2010	908	0	0	0	908	645	263	40.8	0	263	40.8
2011	908	0	0	0	908	652	256	39.3	0	256	39.3
2012	908	0	0	0	908	659	249	37.8	0	249	37.8
2013	908	0	0	0	908	667	241	36.1	0	241	36.1
2014	908	0	0	0	908	675	233	34.5	0	233	34.5
2015	908	0	0	0	908	682	226	33.1	0	226	33.1
2016	908	0	0	0	908	689	219	31.8	0	219	31.8
2017	908	0	0	0	908	697	211	30.3	0	211	30.3
2018	908	0	0	0	908	704	204	29.0	0	204	29.0
2019	908	0	0	0	908	711	197	27.7	0	197	27.7

[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	%
2010/11	961	0	0	0	961	725	236	32.6	0	236	32.6
2011/12	961	0	0	0	961	733	228	31.1	0	228	31.1
2012/13	961	0	0	0	961	736	225	30.6	0	225	30.6
2013/14	961	0	0	0	961	743	218	29.3	0	218	29.3
2014/15	961	0	0	0	961	751	210	28.0	0	210	28.0
2015/16	961	0	0	0	961	759	202	26.6	0	202	26.6
2016/17	961	0	0	0	961	767	194	25.3	0	194	25.3
2017/18	961	0	0	0	961	775	186	24.0	0	186	24.0
2018/19	961	0	0	0	961	783	178	22.7	0	178	22.7
2019/20	961	0	0	0	961	790	171	21.6	0	171	21.6

[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.