State of Florida

Public Service Commission

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COMMISSION CLERK

DATE: April 3, 2013

TO: Ann Cole, Commission Clerk, Office of Commission Clerk

FROM: Phillip O. Ellis, Engineering Specialist III, Division of Engineering POE
Kevin D. Dawkins, Engineering Specialist I, Division of Engineering KD

RE: 2013 Ten-Year Site Plan from City of Tallahassee Utilities

Attached is City of Tallahassee Utilities' 2013 Ten-Year Site Plan, submitted on April 1, 2013, consistent with Rule 25-22.071, Florida Administrative Code (F.A.C.). Please place this item in Docket No. 130000 – Undocketed Filings for 2013, as it relates to the annual undocketed staff Ten-Year Site Plan Review project.

If you have any additional questions, please contact me.

POE

Attachment

DOCUMENT NUMBER-DATE
01657 APR-4 13
FPSC-COMMISSION CLERK

Ten-Year Site Plan: 2013-2022

City of Tallahassee Utilities

Photo: Substation 21

Report prepared by: City of Tallahassee Electric Utility System Planning

#1 Public Utility in America

City of Tallahassee
Your Own Utilities℠

CITY OF TALLAHASSEE
TEN YEAR SITE PLAN FOR ELECTRICAL GENERATING FACILITIES AND ASSOCIATED TRANSMISSION LINES
2013-2022
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Chapter I

Description of Existing Facilities

1.0 INTRODUCTION

The City of Tallahassee (City) owns, operates, and maintains an electric generation, transmission, and distribution system that supplies electric power in and around the corporate limits of the City. The City was incorporated in 1825 and has operated since 1919 under the same charter. The City began generating its power requirements in 1902 and the City's Electric Utility presently serves approximately 115,200 customers located within a 221 square mile service territory (see Figure A). The Electric Utility operates three generating stations with a total summer season net generating capacity of 794 megawatts (MW).

The City has two fossil-fueled generating stations, which contain combined cycle (CC), steam and combustion turbine (CT) electric generating facilities. The Sam O. Purdom Generating Station, located in the town of St. Marks, Florida has been in operation since 1952; and the Arvah B. Hopkins Generating Station, located on Geddie Road west of the City, has been in commercial operation since 1970. The City has also been generating electricity at the C.H. Corn Hydroelectric Station, located on Lake Talquin west of Tallahassee, since August of 1985.

1.1 SYSTEM CAPABILITY

The City maintains six points of interconnection with Progress Energy Florida ("Progress"); three at 69 kV, two at 115 kV, and one at 230 kV; and a 230 kV interconnection with Georgia Power Company (a subsidiary of the Southern Company ("Southern")).

As shown in Table 1.1 (Schedule 1), 222 MW (net summer rating) of CC generation, 48 MW (net summer rating) of steam generation and 20 MW (net summer rating) of CT generation facilities are located at the City's Sam O. Purdom Generating Station. The Arvah B. Hopkins Generating Station includes 300 MW (net summer rating) of CC generation, 76 MW (net summer rating) of steam generation and 128 MW (net summer rating) of CT generation facilities.

The City's Hopkins 1 steam generating unit can be fired with natural gas, residual oil or both while the Purdom 7 steam unit can only be fired with natural gas. The CC and CT units can be fired on either natural gas or diesel oil but cannot burn these fuels concurrently. The total capacity of the three units at the C.H. Corn Hydroelectric Station is 11 MW. However, because the hydroelectric generating units are effectively run-of-river (dependent upon rainfall, reservoir and downstream conditions), the City considers these units as “energy only” and not as dependable capacity for planning purposes.

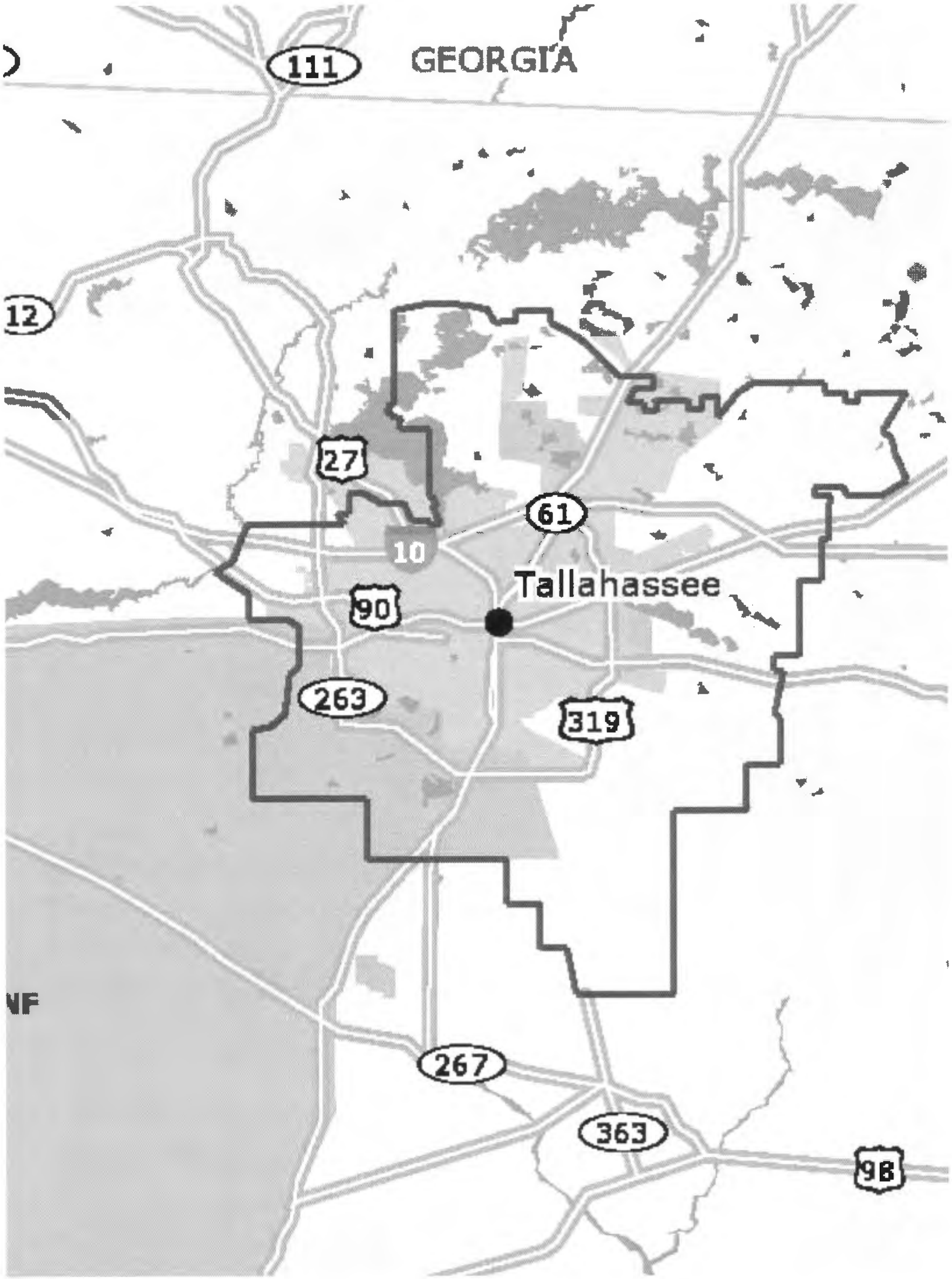
The City’s total net summer installed generating capability is 794 MW. The corresponding winter net peak installed generating capability is 870 MW. Table 1.1 contains the details of the individual generating units.

1.2 PURCHASED POWER AGREEMENTS

The City has no long-term firm capacity and energy purchase agreements. By mutual agreement the former purchase agreement with Progress for 11.4 MW was terminated on December 31, 2012.

City of Tallahassee, Electric Utility

Service Territory Map



City Of Tallahassee

Schedule 1
Existing Generating Facilities
As of December 31, 2012

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				Fuel		Fuel Transport		Alt. Fuel Days	Commercial In-Service	Expected Retirement	Gen. Max. Nameplate	Net Capability	
Plant	Unit No.	Location	Unit Type	Pri	Alt	Pri	Alt	Use	Month/Year	Month/Year	(kW)	Summer (MW)	Winter (MW)
Sam O. Purdom	7	Wakulla	ST	NG	NA	PL	NA	[1]	6/66	12/13	50,000	48	48
	8		CC	NG	FO2	PL	TK	[2, 3]	7/00	12/40	247,743	222	258 [8]
	GT-1		GT	NG	FO2	PL	TK	[2, 3]	12/63	10/15	15,000	10	10
	GT-2		GT	NG	FO2	PL	TK	[2, 3]	5/64	10/15	15,000	10	10
											Plant Total	290	326
A. B. Hopkins	1	Leon	ST	NG	FO6	PL	TK	[4]	5/71	3/20	75,000	76	78
	2		CC	NG	FO2	PL	TK	[3]	6/08 [5]	Unknown	358,200 [6]	300	330 [8]
	GT-1		GT	NG	FO2	PL	TK	[3]	2/70	3/15	16,320	12	14
	GT-2		GT	NG	FO2	PL	TK	[3]	9/72	3/17	27,000	24	26
	GT-3		GT	NG	FO2	PL	TK	[3]	9/05	Unknown	60,500	46	48
	GT-4		GT	NG	FO2	PL	TK	[3]	11/05	Unknown	60,500	46	48
											Plant Total	504	544
C. H. Corn	1	Leon/	HY	WAT	WAT	WAT	WAT	NA	9/85	Unknown	4,440	0	0
Hydro Station	2	Gadsden	HY	WAT	WAT	WAT	WAT	NA	8/85	Unknown	4,440	0	0
[7]	3		HY	WAT	WAT	WAT	WAT	NA	1/86	Unknown	3,430	0	0
											Plant Total	0	0
									Total System Capacity as of December 31, 2012			794	870

Notes

[1] Purdom Unit 7 is limited to natural gas fuel only.

[2] Due to the Purdom facility-wide emissions caps, utilization of liquid fuel at this facility is limited.

[3] The City maintains a minimum distillate fuel oil storage capacity equivalent to approximately 12 peak load days at the Purdom plant and approximately 21 peak load days at the Hopkins plant.

[4] The City maintains a minimum residual fuel oil storage capacity equivalent to approximately 19 peak load days at the Hopkins plant.

[5] Reflects the commercial operations date of Hopkins 2 repowered to a combined cycle generating unit with a new General Electric Frame 7A combustion turbine. The original commercial operations date of the existing steam turbine generator was October 1977.

[6] Hopkins 2 nameplate rating is based on combustion turbine generator (CTG) nameplate and modeled steam turbine generator (STG) output in a 1x1 combined cycle (CC) configuration with supplemental duct firing.

[7] Because the C. H. Corn hydroelectric generating units are effectively run-of-river (dependent upon rainfall, reservoir and downstream conditions), the City considers these units as "energy only" and not as dependable capacity for planning purposes.

[8] Summer and winter ratings are based on 95 °F and 29 °F ambient temperature, respectively.

CHAPTER II

Forecast of Energy/Demand Requirements and Fuel Utilization

2.0 INTRODUCTION

Chapter II includes the City's forecasts of demand and energy requirements, energy sources and fuel requirements. This chapter also explains the impacts attributable to the City's current Demand Side Management (DSM) plan. The City is not subject to the requirements of the Florida Energy Efficiency and Conservation Act (FEECA) and, therefore, the Florida Public Service Commission (FPSC) does not set numeric conservation goals for the City. However, the City expects to continue its commitment to the DSM programs that prove beneficial to the City's ratepayers.

2.1 SYSTEM DEMAND AND ENERGY REQUIREMENTS

Historical and forecast energy consumption and customer information are presented in Tables 2.1, 2.2 and 2.3 (Schedules 2.1, 2.2, and 2.3). Figure B1 shows the historical total energy sales and forecast energy sales by customer class. Figure B2 shows the percentage of energy sales by customer class (excluding the impacts of DSM) for the base year of 2013 and the horizon year of 2022. Tables 2.4 through 2.12 (Schedules 3.1.1 - 3.3.3) contain historical and base, high, and low forecasts of seasonal peak demands and net energy for load. Table 2.13 (Schedule 4) compares actual and two-year forecast peak demand and energy values by month for the 2012-2014 period.

2.1.1 SYSTEM LOAD AND ENERGY FORECASTS

The peak demand and energy forecasts contained in this plan are the results of the load and energy forecasting study performed by the City. The forecast is developed utilizing a methodology that the City first employed in 1980, and has since been updated and revised every one or two years. The methodology consists of thirteen multi-variable linear regression models based on detailed examination of the system's historical growth, usage patterns and population statistics. Several key regression formulas utilize econometric variables.

Table 2.14 lists the econometric-based linear regression forecasting models that are used as predictors. Note that the City uses regression models with the capability of separately predicting commercial customers and consumption by rate sub-class: general service non-demand (GS), general service demand (GSD), and general service large demand (GSLD). These, along with the residential class, represent the major classes of the City's electric customers. In addition to these customer class models, the City's forecasting methodology also incorporates into the demand and energy projections estimated reductions from interruptible and curtailable customers. The key explanatory variables used in each of the models are indicated by an "X" on the table.

Table 2.15 documents the City's internal and external sources for historical and forecast economic, weather and demographic data. These tables summarize the details of the models used to generate the system customer, consumption and seasonal peak load forecasts. In addition to those explanatory variables listed, a component is also included in the models that reflect the acquisition of certain Talquin Electric Cooperative (Talquin) customers over the study period consistent with the territorial agreement negotiated between the City and Talquin and approved by the FPSC.

The customer models are used to predict the number of customers by customer class, which in turn serve as input into the customer class consumption models. The customer class consumption models are aggregated to form a total base system sales forecast. The effects of DSM programs and system losses are incorporated in this base forecast to produce the system net energy for load (NEL) requirements.

Since 1992, the City has used two econometric models to separately predict summer and winter peak demand. Table 2.14 also shows the key explanatory variables used in the demand models. The seasonal peak demand forecasts are developed first by forecasting expected system load factor. Based on the historical relationship of seasonal peaks to annual NEL, system load factors are projected separately relative to both summer and winter peak demand. The predictive variables for projected load factors versus summer peak demand include maximum summer temperature, maximum temperature on the day prior to the peak, annual degree-days cooling and real residential price of electricity. For projected load factors versus winter peak demand minimum winter temperature, degree-days heating the day prior to the winter peak day, deviation from a base minimum temperature of 22 degrees and annual degree-days cooling are used as input. The projected load factors are then applied to the forecast of NEL to obtain the summer and winter peak demand forecasts.

Some of the most significant input assumptions for the forecast are the incremental load modifications at Florida State University (FSU), Florida A&M University (FAMU), Tallahassee Memorial Hospital (TMH) and the State Capitol Center. These four customers represented approximately 16% of the City's 2012 energy sales. Their incremental additions are highly dependent upon annual economic and budget constraints, which would cause fluctuations in their demand projections if they were projected using a model. Therefore, each entity submits their proposed incremental additions/reductions to the City and these modifications are included as submitted in the load and energy forecast.

The rate of growth in residential and commercial customers and energy use has decreased in recent years. The City's energy efficiency and demand-side management (DSM) programs (discussed in Section 2.1.3) played a role in these decreases along with the economic conditions during and following the 2008-2009 recession. According to the U.S. Energy Information Administration's 2013 Annual Energy Outlook recovery from the recession is expected to continue on a slow path. The slower economic growth in the near term has implications for the long term, with a lower economic growth rate leading to a slower recovery in employment. Therefore, it is not expected that base demand and energy growth will return to pre-recession levels in the near future.

The City believes that the routine update of forecast model inputs, coefficients and other minor model refinements continue to improve the accuracy of its forecast so that they are more consistent with the historical trend of growth in seasonal peak demand and energy consumption. The changes made to the forecast models for seasonal peak demands and annual sales/net energy for load requirements has resulted in 2013 base forecasts for these characteristics that are lower than the corresponding 2012 base forecasts.

2.1.2 LOAD FORECAST UNCERTAINTY & SENSITIVITIES

To provide a sound basis for planning, forecasts are derived from projections of the driving variables obtained from reputable sources. However, there is significant uncertainty in the future level of such variables. To the extent that economic, demographic, weather, or other conditions occur that are different from those assumed or provided, the actual load can be expected to vary from the forecast. For various purposes, it is important to understand the amount by which the forecast can be in error and the sources of error.

To capture this uncertainty, the City produces high and low range results that address potential variance in driving population and economic variables from the values assumed in the base case. The base case forecast relies on a set of assumptions about future population and economic activity in Leon County. However, such projections are unlikely to exactly match actual experience.

Population and economic uncertainty tends to result in a deviation from the trend over the long term. Accordingly, separate high and low forecast results were developed to address population and economic uncertainty. These ranges are intended to capture approximately 80% of occurrences (i.e., 1.3 standard deviations). The high and low forecasts shown in this year's report use statistics provided by Woods & Poole Economics, Inc. (Woods & Poole) to develop a range of potential outcomes. Woods & Poole publishes several statistics that define the average amount by which various projections they have provided in the past are different from actual results. The City's load forecasting consultant, SAIC, interpreted these statistics to develop ranges of the trends of economic activity and population representing approximately 80% of potential outcomes. These statistics were then applied to the base case to develop the high and low load forecasts presented in Tables 2.5, 2.6, 2.8, 2.9, 2.11 and 2.12 (Schedules 3.1.2, 3.1.3, 3.2.2, 3.2.3, 3.3.2 and 3.3.3).

Sensitivities on the peak demand forecasts are useful in planning for future power supply resource needs. The graph shown in Figure B3 compares summer peak demand (multiplied by 117% for reserve margin requirements) for the three forecast sensitivity cases with reductions from proposed DSM portfolio and the base forecast without proposed DSM reductions against the City's existing and planned power supply resources. This graph allows for the review of the effect of load growth and DSM performance variations on the timing of new resource additions.

The highest probability weighting, of course, is placed on the base case assumptions, and the low and high cases are given a smaller likelihood of occurrence.

2.1.3 Energy Efficiency and Demand Side Management Programs

The City currently offers a variety of conservation and DSM measures to its residential and commercial customers, which are listed below:

Residential Measures	Commercial Measures
Energy Efficiency Loans	Energy Efficiency Loans
Gas New Construction Rebates	Demonstrations
Gas Appliance Conversion Rebates	Information and Energy Audits
Information and Energy Audits	Commercial Gas Conversion Rebates
Ceiling Insulation Grants	Ceiling Insulation Grants
Low Income Ceiling Insulation Grants	Solar Water Heater Rebates
Low Income HVAC/Water Heater Repair Grants	Solar PV Net Metering
Neighborhood REACH Weatherization Assistance	Demand Response (PeakSmart)
Energy Star Appliance Rebates	
High Efficiency HVAC Rebates	
Energy Star New Home Rebates	
Solar Water Heater Rebates	
Solar PV Net Metering	
Duct Leak Repair Grants	
Variable Speed Pool Pump Rebates	
Nights & Weekends Pricing Plan	

The City has a goal to improve the efficiency of customers' end-use of energy resources when such improvements provide a measurable economic and/or environmental benefit to the customers and the City utilities. During the City's last Integrated Resource Planning (IRP) Study potential DSM measures (conservation, energy efficiency, load management, and demand response) were tested for cost-effectiveness utilizing an integrated approach that is based on projections of total achievable capacity and energy reductions and their associated annual costs developed specifically for the City. The measures were combined into bundles affecting similar end uses and /or having similar costs per kWh saved.

An energy services provider (ESP) is under contract to assist staff in deploying a portion of the City's DSM program. This contract was renewed for an additional one-year term in September 2012 and the ESP's work continues. Staff has worked with consultants and the ESP to develop operational and pricing parameters, craft rate tariffs and solicit participants for a commercial pilot DR/DLC measure. This measure is currently at about 40% of targeted enrollment and the system is scheduled for testing in the coming months. Implementation of the City's residential demand response/direct load control (DR/DLC) measures has been delayed as some of the technology to be employed is still evolving. Otherwise, work continues with the City's Neighborhood REACH/Low-Income Assistance measure and participation in the City's other existing DSM measures continues to increase. Future activities include development of residential DR/DLC and expanding commercial demand reduction and energy efficiency measure offerings.

As discussed in Section 2.1.1 the growth in customers and energy use has been negatively impacted by the economic conditions observed during and following the 2008-2009 recession. It appears that many customers have taken steps on their own to reduce their energy use and costs in response to the changing economy - without taking advantage of the incentives provided through the City's DSM program. These "free drivers" effectively reduce potential participation in the DSM program in the future. And it is questionable whether these customers' energy use reductions will persist beyond the economic recovery. History has shown that post-recession energy use generally rebounds to pre-recession levels. In the meantime, however, demand and energy reductions achieved as a result of these voluntary customer actions as well as those achieved by customer participation in City-sponsored DSM measures appear to have had a considerable impact on forecasts of future demand and energy requirements.

For these reasons estimates of the actual demand and energy savings realized from 2007-2012 attributable to the City's DSM efforts are below those projected in the last IRP study. Due to reduced load and energy forecasts and based on the City's experience to date DSM program participation and thus associated demand and energy savings are not expected to increase as rapidly as originally projected, at least not in the near term. Therefore, the City has revised its projections of DSM demand and energy savings versus those reported in the 2012 TYSP. These revised projections reflect a slower growth of DSM savings in the near term while maintaining the program demand and energy savings objectives in the long-term.

Staff will continue to periodically review and, where appropriate, update technical and economic assumptions, expected demand and energy savings and re-evaluate the cost-effectiveness of current and prospective DSM measures. The City will provide further updates regarding its progress with and any changes in future expectations of its DSM program in subsequent TYSP reports.

Energy and demand reductions attributable to the DSM portfolio have been incorporated into the future load and energy forecasts. Tables 2.16 and 2.17 display, respectively, the cumulative potential impacts of the proposed DSM portfolio on system annual energy and seasonal peak demand requirements. Based on the anticipated limits on annual control events it is expected that DR/DLC will be predominantly utilized in the summer months. Therefore, while Table 2.17 reflects expected winter DR/DLC capability, Tables 2.7-2.9 reflect no expected utilization of that capability to reduce winter peak demand.

2.2 ENERGY SOURCES AND FUEL REQUIREMENTS

Tables 2.18 (Schedule 5), 2.19 (Schedule 6.1), and 2.20 (Schedule 6.2) present the projections of fuel requirements, energy sources by resource/fuel type in gigawatt-hours, and energy sources by resource/fuel type in percent, respectively, for the period 2013-2022. Figure B4 displays the percentage of energy by fuel type in 2013 and 2022.

The City's generation portfolio includes combustion turbine/combined cycle, combustion turbine/simple cycle, conventional steam and hydroelectric units. The City's combustion turbine/combined cycle and combustion turbine/simple cycle units are capable of generating energy using natural gas or distillate fuel oil. Natural gas and residual fuel oil may be burned concurrently in one of the City's steam units. This mix of generation types coupled with opportunities for firm and economy purchases from neighboring systems provides allows the City to satisfy its total energy requirements consistent with our energy policies that seek to balance the cost of power with the environmental quality of our community.

The projections of fuel requirements and energy sources are taken from the results of computer simulations using the PROSYM production simulation model (provided by Ventyx) and are based on the resource plan described in Chapter III.

City Of Tallahassee

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

Base Load Forecast

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Rural & Residential					Commercial [4]		
Year	Population [1]	Members Per Household	(GWh) [2]	Average No. of Customers [3]	Average kWh Consumption Per Customer	(GWh) [2]	Average No. of Customers [3]	Average kWh Consumption Per Customer
2003	258,627	-	1,035	82,219	12,583	1,555	17,289	89,942
2004	265,393	-	1,064	85,035	12,512	1,604	17,729	90,447
2005	269,619	-	1,088	89,468	12,164	1,622	18,312	88,564
2006	272,648	-	1,097	92,017	11,927	1,601	18,533	86,394
2007	273,684	-	1,099	93,569	11,744	1,657	18,583	89,169
2008	274,926	-	1,054	94,640	11,132	1,626	18,597	87,421
2009	275,059	-	1,050	94,827	11,071	1,611	18,478	87,180
2010	275,783	-	1,136	95,268	11,928	1,618	18,426	87,812
2011	277,014	-	1,117	95,794	11,665	1,598	18,418	86,772
2012	278,438	-	1,032	96,479	10,694	1,572	18,445	85,235
2013	280,372	-	1,096	97,337	11,258	1,611	18,563	86,781
2014	282,112	-	1,096	98,061	11,178	1,622	18,647	86,964
2015	284,154	-	1,098	98,910	11,100	1,638	18,745	87,378
2016	286,716	-	1,102	99,972	11,025	1,645	18,867	87,168
2017	289,303	-	1,107	101,045	10,952	1,651	18,991	86,951
2018	291,911	-	1,111	102,126	10,880	1,657	19,115	86,692
2019	294,542	-	1,116	103,217	10,811	1,662	19,241	86,394
2020	297,121	-	1,120	104,287	10,744	1,666	19,364	86,052
2021	299,588	-	1,125	105,310	10,679	1,669	19,482	85,657
2022	302,076	-	1,129	106,342	10,615	1,670	19,601	85,223

[1] Population data represents Leon County population.
[2] Values include DSM Impacts.
[3] Average end-of-month customers for the calendar year. Marked increase in residential customers between 2004 and 2005 due to change in internal customer accounting practices.
[4] As of 2007 "Commercial" includes General Service Non-Demand, General Service Demand, General Service Large Demand Interruptible (FSU and Goose Pond), Curtailable (TMH), Traffic Control, Security Lights and Street & Highway Lights

City Of Tallahassee

Schedule 2.2
History and Forecast of Energy Consumption and Number of Customers by Customer Class

Base Load Forecast

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Industrial						
Year	(GWh)	Average No. of Customers [1]	Average kWh Consumption Per Customer	Railroads and Railways (GWh)	Street & Highway Lighting (GWh) [2]	Other Sales to Public Authorities (GWh)	Total Sales to Ultimate Consumers (GWh) [3]
2003	-	-	-		12		2,602
2004	-	-	-		14		2,682
2005	-	-	-		14		2,724
2006	-	-	-		15		2,714
2007	-	-	-		0		2,756
2008	-	-	-		0		2,679
2009	-	-	-		0		2,661
2010	-	-	-		0		2,754
2011	-	-	-		0		2,716
2012	-	-	-		0		2,604
2013	-	-	-		0		2,707
2014	-	-	-		0		2,718
2015	-	-	-		0		2,736
2016	-	-	-		0		2,747
2017	-	-	-		0		2,758
2018	-	-	-		0		2,768
2019	-	-	-		0		2,778
2020	-	-	-		0		2,787
2021	-	-	-		0		2,793
2022	-	-	-		0		2,799

[1] Average end-of-month customers for the calendar year.
[2] As of 2007 Security Lights and Street & Highway Lighting use is included with Commercial on Schedule 2.1.
[3] Values include DSM Impacts.

City Of Tallahassee

Schedule 2.3
History and Forecast of Energy Consumption and Number of Customers by Customer Class

Base Load Forecast

(1)	(2)	(3)	(4)	(5)	(6)
Year	Sales for Resale (GWh)	Utility Use & Losses (GWh)	Net Energy for Load (GWh) [1]	Other Customers (Average No.)	Total No. of Customers [2]
2003	0	153	2,755	0	99,508
2004	0	160	2,841	0	102,764
2005	0	164	2,887	0	107,780
2006	0	154	2,868	0	110,550
2007	0	158	2,914	0	112,152
2008	0	154	2,834	0	113,237
2009	0	140	2,801	0	113,305
2010	0	177	2,931	0	113,693
2011	0	83	2,799	0	114,212
2012	0	106	2,710	0	114,924
2013	0	161	2,868	0	115,901
2014	0	162	2,879	0	116,708
2015	0	163	2,898	0	117,655
2016	0	163	2,910	0	118,839
2017	0	164	2,922	0	120,036
2018	0	165	2,933	0	121,242
2019	0	165	2,943	0	122,459
2020	0	166	2,952	0	123,651
2021	0	166	2,959	0	124,793
2022	0	166	2,966	0	125,944

[1] Values include DSM Impacts.
[2] Average number of customers for the calendar year.

History and Forecast Energy Consumption By Customer Class (Including DSM Impacts)

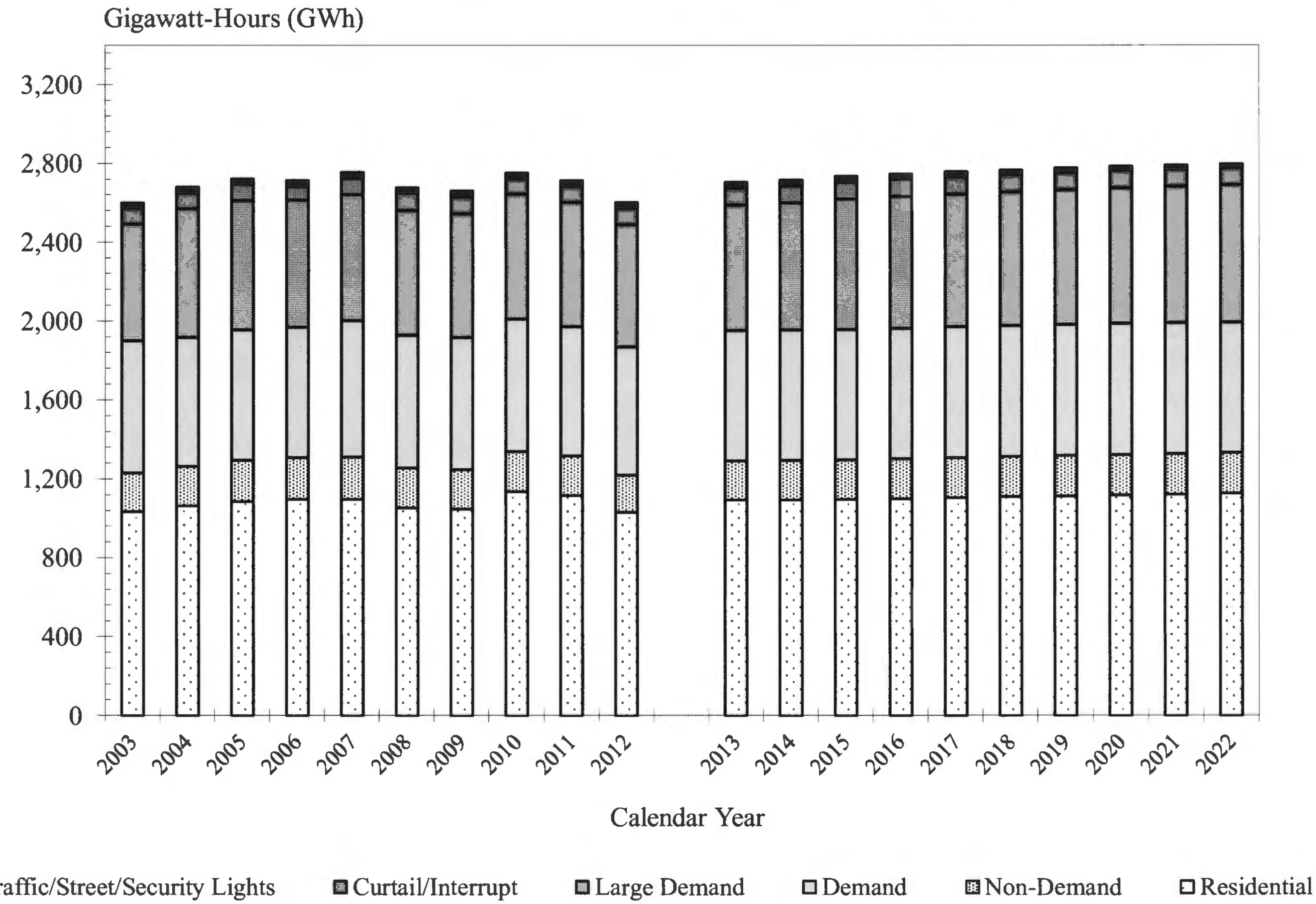
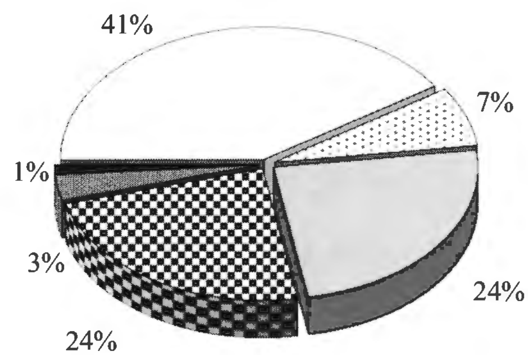


Figure B1

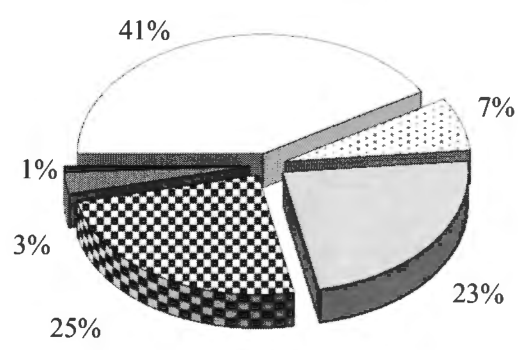
Energy Consumption By Customer Class
(Excluding DSM Impacts)

Calendar Year 2013



Total 2013 Sales = 2,722 GWh

Calendar Year 2022



Total 2022 Sales = 2,967 GWh

Residential	Non-Demand	Demand
Large Demand	Curtail/Interrupt	Traffic/Street/Security Lights

City Of Tallahassee

Schedule 3.1.1
History and Forecast of Summer Peak Demand
Base Forecast
(MW)

(1) Year	(2) Total	(3) Wholesale	(4) Retail	(5) Interruptible	(6) Residential Load Management [2]	(7) Residential Conservation [2], [3]	(8) Comm./Ind Load Management [2]	(9) Comm./Ind Conservation [2], [3]	(10) Net Firm Demand [1]
2003	549		549						549
2004	565		565						565
2005	598		598						598
2006	577		577						577
2007	621		621						621
2008	587		587						587
2009	605		605						605
2010	601		601						601
2011	590		590						590
2012	558		558		0	1	0	0	557
2013	591		591		0	2	8	1	579
2014	597		597		0	4	17	2	574
2015	604		604		5	6	17	4	572
2016	609		609		11	8	17	5	567
2017	615		615		16	10	17	7	564
2018	621		621		21	12	17	10	561
2019	627		627		23	15	17	12	560
2020	633		633		24	17	17	15	560
2021	639		639		24	19	17	18	560
2022	645		645		24	22	18	21	560

[1] Values include DSM Impacts.
[2] Reduction estimated at busbar. 2012 DSM is actual at peak.
[3] 2012 values reflect incremental increase from 2011.

City Of Tallahassee

Schedule 3.1.2
History and Forecast of Summer Peak Demand
High Forecast
(MW)

(1) Year	(2) Total	(3) Wholesale	(4) Retail	(5) Interruptible	(6) Residential Load Management [2]	(7) Residential Conservation [2], [3]	(8) Comm./Ind Load Management [2]	(9) Comm./Ind Conservation [2], [3]	(10) Net Firm Demand [1]
2003	549		549						549
2004	565		565						565
2005	598		598						598
2006	577		577						577
2007	621		621						621
2008	587		587						587
2009	605		605						605
2010	601		601						601
2011	590		590						590
2012	558		558		0	1	0	0	557
2013	605		605		0	2	8	1	593
2014	614		614		0	4	17	2	591
2015	624		624		5	6	17	4	592
2016	634		634		11	8	17	5	592
2017	644		644		16	10	17	7	593
2018	654		654		21	12	17	10	594
2019	664		664		23	15	17	12	597
2020	674		674		24	17	17	15	601
2021	684		684		24	19	17	18	605
2022	694		694		24	22	18	21	609

[1] Values include DSM Impacts.
[2] Reduction estimated at busbar. 2012 DSM is actual at peak.
[3] 2012 values reflect incremental increase from 2011.

City Of Tallahassee

Schedule 3.1.3
History and Forecast of Summer Peak Demand
Low Forecast
(MW)

(1) Year	(2) Total	(3) Wholesale	(4) Retail	(5) Interruptible	(6) Residential Load Management [2]	(7) Residential Conservation [2], [3]	(8) Comm./Ind Load Management [2]	(9) Comm./Ind Conservation [2], [3]	(10) Net Firm Demand [1]
2003	549		549						549
2004	565		565						565
2005	598		598						598
2006	577		577						577
2007	621		621						621
2008	587		587						587
2009	605		605						605
2010	601		601						601
2011	590		590						590
2012	558		558		0	1	0	0	557
2013	578		578		0	2	8	1	566
2014	580		580		0	4	17	2	557
2015	583		583		5	6	17	4	551
2016	585		585		11	8	17	5	543
2017	587		587		16	10	17	7	536
2018	589		589		21	12	17	10	529
2019	590		590		23	15	17	12	523
2020	592		592		24	17	17	15	519
2021	594		594		24	19	17	18	515
2022	595		595		24	22	18	21	510

[1] Values include DSM Impacts.
[2] Reduction estimated at busbar. 2012 DSM is actual at peak.
[3] 2012 values reflect incremental increase from 2011.

City Of Tallahassee

Schedule 3.2.1
History and Forecast of Winter Peak Demand
Base Forecast
(MW)

(1) Year	(2) Total	(3) Wholesale	(4) Retail	(5) Interruptible	(6) Residential Load Management [2], [3]	(7) Residential Conservation [2], [4]	(8) Comm./Ind Load Management [2], [3]	(9) Comm./Ind Conservation [2], [4]	(10) Net Firm Demand [1]
2003 -2004	590		590						590
2004 -2005	509		509						509
2005 -2006	532		532						532
2006 -2007	537		537						537
2007 -2008	528		528						528
2008 -2009	526		526						526
2009 -2010	579		579						579
2010 -2011	633		633						633
2011 -2012	584		584						584
2012 -2013	518		518		0	2	0	0	516
2013 -2014	547		547		0	5	0	2	540
2014 -2015	554		554		0	7	0	3	544
2015 -2016	559		559		0	10	0	4	546
2016 -2017	564		564		0	12	0	5	547
2017 -2018	570		570		0	14	0	7	549
2018 -2019	575		575		0	16	0	9	550
2019 -2020	581		581		0	18	0	11	552
2020 -2021	586		586		0	20	0	13	552
2021 -2022	591		591		0	23	0	16	552
2022 -2023	597		597		0	25	0	19	554

[1] Values include DSM Impacts.
[2] Reduction estimated at busbar. 2012 DSM is actual at peak.
[3] Reflects no expected utilization of demand response (DR) resources in winter. Winter DR capability presented in Table 2.17.
[4] 2012 values reflect incremental increase from 2011.

Table 2.7

City Of Tallahassee

Schedule 3.2.2
History and Forecast of Winter Peak Demand
High Forecast
(MW)

(1) Year	(2) Total	(3) Wholesale	(4) Retail	(5) Interruptible	(6) Residential Load Management [2], [3]	(7) Residential Conservation [2], [4]	(8) Comm./Ind Load Management [2], [3]	(9) Comm./Ind Conservation [2], [4]	(10) Net Firm Demand [1]
2003 -2004	590		590						590
2004 -2005	509		509						509
2005 -2006	532		532						532
2006 -2007	537		537						537
2007 -2008	528		528						528
2008 -2009	526		526						526
2009 -2010	579		579						579
2010 -2011	633		633						633
2011 -2012	584		584						584
2012 -2013	518		518		0	2	0	0	516
2013 -2014	563		563		0	5	0	2	556
2014 -2015	573		573		0	7	0	3	563
2015 -2016	582		582		0	10	0	4	569
2016 -2017	591		591		0	12	0	5	574
2017 -2018	600		600		0	14	0	7	579
2018 -2019	609		609		0	16	0	9	584
2019 -2020	618		618		0	18	0	11	589
2020 -2021	628		628		0	20	0	13	594
2021 -2022	637		637		0	23	0	16	598
2022 -2023	647		647		0	25	0	19	604

[1] Values include DSM Impacts.
[2] Reduction estimated at busbar. 2012 DSM is actual at peak.
[3] Reflects no expected utilization of demand response (DR) resources in winter. Winter DR capability presented in Table 2.17.
[4] 2012 values reflect incremental increase from 2011.

Table 2.8

City Of Tallahassee

Schedule 3.2.3
History and Forecast of Winter Peak Demand
Low Forecast
(MW)

(1) Year	(2) Total	(3) Wholesale	(4) Retail	(5) Interruptible	(6) Residential Load Management [2], [3]	(7) Residential Conservation [2], [4]	(8) Comm./Ind Load Management [2], [3]	(9) Comm./Ind Conservation [2], [4]	(10) Net Firm Demand [1]
2003 -2004	590		590						590
2004 -2005	509		509						509
2005 -2006	532		532						532
2006 -2007	537		537						537
2007 -2008	528		528						528
2008 -2009	526		526						526
2009 -2010	579		579						579
2010 -2011	633		633						633
2011 -2012	584		584						584
2012 -2013	518		518		0	2	0	0	516
2013 -2014	532		532		0	5	0	2	525
2014 -2015	535		535		0	7	0	3	525
2015 -2016	537		537		0	10	0	4	524
2016 -2017	538		538		0	12	0	5	521
2017 -2018	540		540		0	14	0	7	519
2018 -2019	542		542		0	16	0	9	517
2019 -2020	544		544		0	18	0	11	515
2020 -2021	545		545		0	20	0	13	511
2021 -2022	546		546		0	23	0	16	507
2022 -2023	548		548		0	25	0	19	505

[1] Values include DSM Impacts.
[2] Reduction estimated at busbar. 2012 DSM is actual at peak.
[3] Reflects no expected utilization of demand response (DR) resources in winter. Winter DR capability presented in Table 2.17.
[4] 2012 values reflect incremental increase from 2011.

City Of Tallahassee

Schedule 3.3.1
History and Forecast of Annual Net Energy for Load
Base Forecast
(GWh)

(1) Year	(2) Total Sales	(3) Residential Conservation [2], [3]	(4) Comm./Ind Conservation [2], [3]	(5) Retail Sales [1]	(6) Wholesale	(7) Utility Use & Losses	(8) Net Energy for Load [1]	(9) Load Factor % [1]
2003	2,602			2,602		153	2,755	57
2004	2,682			2,682		160	2,841	57
2005	2,724			2,724		164	2,887	55
2006	2,714			2,714		154	2,868	57
2007	2,756			2,756		158	2,914	54
2008	2,679			2,679		154	2,834	55
2009	2,661			2,661		140	2,801	53
2010	2,754			2,754		177	2,931	56
2011	2,716			2,716		83	2,799	54
2012	2,611	7	0	2,604		106	2,710	56
2013	2,722	11	4	2,707		161	2,868	57
2014	2,746	20	8	2,718		162	2,879	57
2015	2,778	30	13	2,736		163	2,898	58
2016	2,804	39	19	2,747		163	2,910	59
2017	2,831	48	25	2,758		164	2,922	59
2018	2,859	58	33	2,768		165	2,933	60
2019	2,887	67	41	2,778		165	2,943	60
2020	2,914	76	51	2,787		166	2,952	60
2021	2,940	86	61	2,793		166	2,959	60
2022	2,967	95	72	2,799		166	2,966	61

[1] Values include DSM Impacts.
[2] Reduction estimated at customer meter. 2012 DSM is actual.
[3] 2012 values reflect incremental increase from 2011.

City Of Tallahassee

Schedule 3.3.2
History and Forecast of Annual Net Energy for Load
High Forecast
(GWh)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Total Sales	Residential Conservation [2], [3]	Comm./Ind Conservation [2], [3]	Retail Sales [1]	Wholesale	Utility Use & Losses	Net Energy for Load [1]	Load Factor % [1]
2003	2,602			2,602		153	2,755	57
2004	2,682			2,682		160	2,841	57
2005	2,724			2,724		164	2,887	55
2006	2,714			2,714		154	2,868	57
2007	2,756			2,756		158	2,914	54
2008	2,679			2,679		154	2,834	55
2009	2,661			2,661		140	2,801	53
2010	2,754			2,754		177	2,931	56
2011	2,716			2,716		83	2,799	54
2012	2,611	7	0	2,604		106	2,710	56
2013	2,783	11	4	2,768		164	2,932	56
2014	2,825	20	8	2,796		166	2,962	57
2015	2,873	30	13	2,831		168	2,999	58
2016	2,917	39	19	2,860		170	3,030	58
2017	2,963	48	25	2,890		172	3,062	59
2018	3,009	58	33	2,919		173	3,092	59
2019	3,057	67	41	2,949		175	3,124	60
2020	3,103	76	51	2,975		177	3,152	60
2021	3,149	86	61	3,002		178	3,180	60
2022	3,196	95	72	3,028		180	3,208	60

[1] Values include DSM Impacts.
[2] Reduction estimated at customer meter. 2012 DSM is actual.
[3] 2012 values reflect incremental increase from 2011.

City Of Tallahassee

Schedule 3.3.3
History and Forecast of Annual Net Energy for Load
Low Forecast
(GWh)

(1) Year	(2) Total Sales	(3) Residential Conservation [2], [3]	(4) Comm./Ind Conservation [2], [3]	(5) Retail Sales [1]	(6) Wholesale	(7) Utility Use & Losses	(8) Net Energy for Load [1]	(9) Load Factor % [1]
2003	2,602			2,602		153	2,755	57
2004	2,682			2,682		160	2,841	57
2005	2,724			2,724		164	2,887	55
2006	2,714			2,714		154	2,868	57
2007	2,756			2,756		158	2,914	54
2008	2,679			2,679		154	2,834	55
2009	2,661			2,661		140	2,801	53
2010	2,754			2,754		177	2,931	56
2011	2,716			2,716		83	2,799	54
2012	2,611	7	0	2,604		106	2,710	56
2013	2,661	11	4	2,646		157	2,804	57
2014	2,668	20	8	2,640		157	2,797	57
2015	2,684	30	13	2,641		157	2,798	58
2016	2,692	39	19	2,635		157	2,791	59
2017	2,700	48	25	2,627		156	2,783	59
2018	2,710	58	33	2,619		156	2,775	60
2019	2,718	67	41	2,609		155	2,765	60
2020	2,727	76	51	2,600		155	2,755	61
2021	2,734	86	61	2,587		154	2,741	61
2022	2,740	95	72	2,573		153	2,726	61

[1] Values include DSM Impacts.
[2] Reduction estimated at customer meter. 2012 DSM is actual.
[3] 2012 values reflect incremental increase from 2011.

City Of Tallahassee

Schedule 4
Previous Year and 2-Year Forecast of Retail Peak Demand and Net Energy for Load by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2012 Actual		**2013 Forecast [1][2]**		**2014 Forecast [1]**	
Month	Peak Demand (MW)	NEL (GWh)	Peak Demand (MW)	NEL (GWh)	Peak Demand (MW)	NEL (GWh)
January	516	213	539	233	541	234
February	494	195	470	211	471	212
March	394	206	384	209	386	210
April	469	204	452	211	454	212
May	515	244	535	249	537	250
June	518	245	579	272	574	273
July	557	276	579	288	574	290
August	528	265	579	294	574	295
September	493	247	538	261	540	262
October	432	219	454	219	456	219
November	400	192	359	197	360	198
December	395	205	421	224	422	225
TOTAL		2,710		2,868		2,879

[1] Peak Demand and NEL include DSM Impacts.
[2] Represents forecast values for 2013.

City of Tallahassee, Florida

2013 Electric System Load Forecast

Key Explanatory Variables

Ln. No.	Model Name	Leon County Population	Residential Customers	Cooling Degree Days	Heating Degree Days	Tallahassee Per Capita Taxable Sales	Price of Electricity	State of Florida Population	Minimum Winter Peak day Temp.	Maximum Summer Peak day Temp.	Appliance Saturation	R Squared [1]
1	Residential Customers	X										0.994
2	Residential Consumption		X	X	X	X	X				X	0.920
3	Florida State University Consumption			X				X				0.930
4	Florida A&M University Consumption			X				X				0.926
5	General Service Non-Demand Customers		X									0.996
6	General Service Demand Customers		X									0.987
7	General Service Non-Demand Consumptio	X		X	X		X					0.956
8	General Service Demand Consumption	X		X	X							0.979
9	General Service Large Demand Consumption	X		X	X							0.933
10	Summer Peak Demand			X			X			X		0.914
11	Winter Peak Demand			X	X				X			0.880

[1] R Squared, sometimes called the coefficient of determination, is a commonly used measure of goodness of fit of a linear model. If the observations fall on the model regression line, R Squared is 1. If there is no linear relationship between the dependent and independent variable, R Squared is 0. A reasonably good R Squared value could be anywhere from 0.6 to 1.

City of Tallahassee

2013 Electric System Load Forecast

Sources of Forecast Model Input Information

Energy Model Input Data	Source
1. Leon County Population	Bureau of Economic and Business Research
2. Talquin Customers Transferred	City Power Engineering
3. Cooling Degree Days	NOAA reports
4. Heating Degree Days	NOAA reports
5. AC Saturation Rate	Appliance Saturation Study
6. Heating Saturation Rate	Appliance Saturation Study
7. Real Tallahassee Taxable Sales	Florida Department of Revenue, CPI
8. Florida Population	Bureau of Economic and Business Research
9. State Capitol Incremental	Department of Management Services
10. FSU Incremental Additions	FSU Planning Department
11. FAMU Incremental Additions	FAMU Planning Department
12. GSLD Incremental Additions	City Utility Services
13. Other Commercial Customers	City Utility Services
14. Tall. Memorial Curtailable	System Planning/ Utilities Accounting
15. System Peak Historical Data	City System Planning
16. Historical Customer Projections by Class	System Planning & Customer Accounting
17. Historical Customer Class Energy	System Planning & Customer Accounting
18. GDP Forecast	Blue Chip Economic Indicators
19. CPI Forecast	Blue Chip Economic Indicators
20. Interruptible, Traffic Light Sales, & Security Light Additions	System Planning & Customer Accounting
21. Historical Residential Real Price of Electricity	Calculated from Revenues, kWh sold, CPI
22. Historical Commercial Real Price Of Electricity	Calculated from Revenues, kWh sold, CPI

Banded Summer Peak Load Forecast Vs. Supply Resources
(Load Includes 17% Reserve Margin)

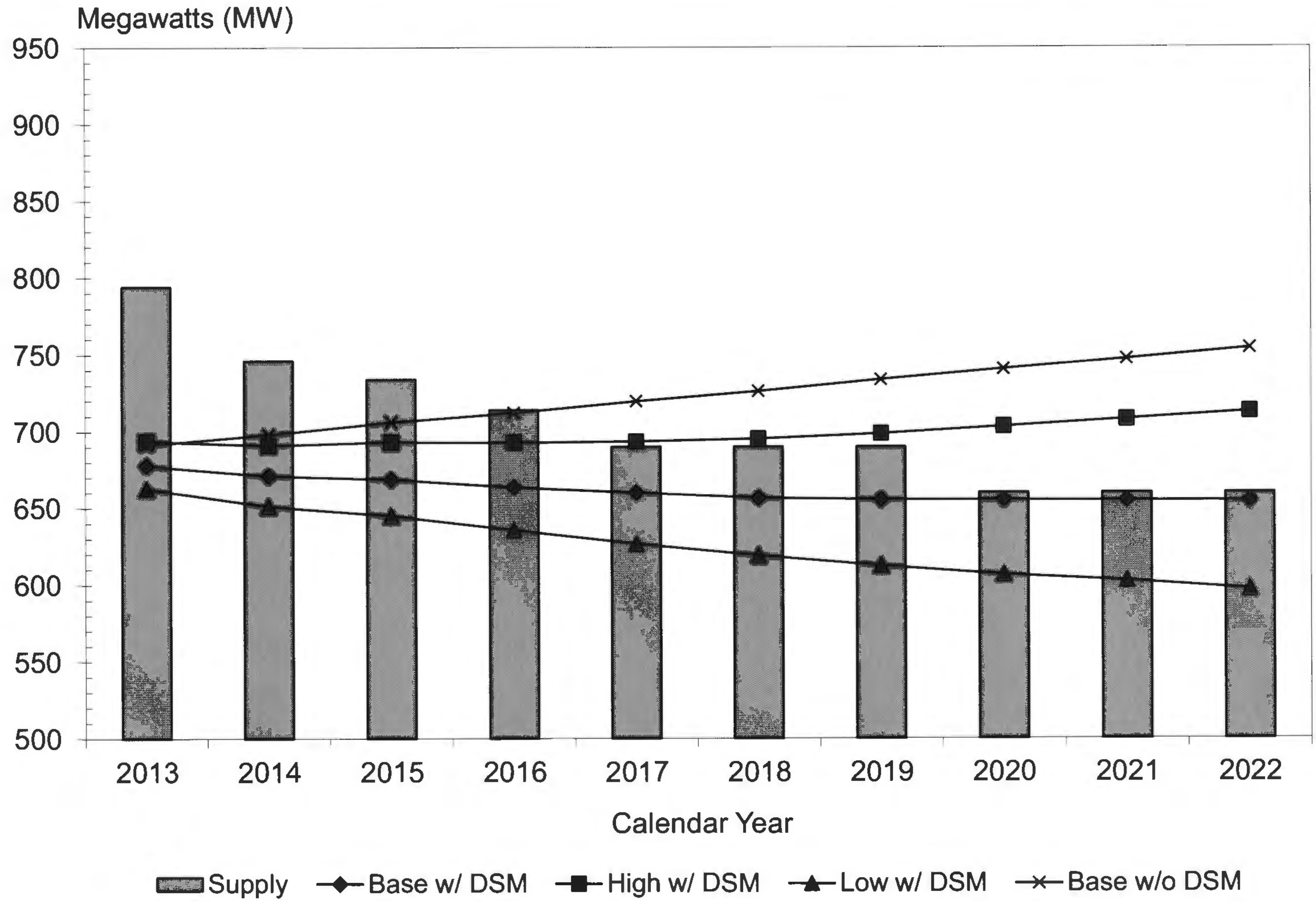


Figure B3

City Of Tallahassee

2013 Electric System Load Forecast

Projected Demand Side Management Energy Reductions [1]

Calendar Year Basis

Year	Residential Impact (MWh)	Commercial Impact (MWh)	Total Impact (MWh)
2013	11,345	4,556	15,902
2014	21,306	8,632	29,938
2015	31,265	13,692	44,957
2016	41,222	19,736	60,958
2017	51,178	26,764	77,941
2018	61,131	34,776	95,907
2019	71,083	43,772	114,855
2020	81,034	53,751	134,785
2021	90,982	64,715	155,698
2022	100,929	76,663	177,592

[1] Reductions estimated at generator busbar.

City Of Tallahassee

2013 Electric System Load Forecast

Projected Demand Side Management
Seasonal Demand Reductions [1]

Year		Residential Energy Efficiency Impact		Commercial Energy Efficiency Impact		Residential Demand Response Impact		Commercial Demand Response Impact		Demand Side Management Total	
Summer	Winter	Summer (MW)	Winter (MW)	Summer (MW)	Winter (MW)	Summer (MW)	Winter [2] (MW)	Summer (MW)	Winter [2] (MW)	Summer (MW)	Winter (MW)
2013	2013-2014	2	5	1	2	0	0	8	17	12	23
2014	2014-2015	4	7	2	3	0	5	17	17	23	32
2015	2015-2016	6	10	4	4	5	11	17	17	32	42
2016	2016-2017	8	12	5	5	11	16	17	17	42	51
2017	2017-2018	10	14	7	7	16	21	17	17	51	59
2018	2018-2019	12	16	10	9	21	23	17	17	60	66
2019	2019-2020	15	18	12	11	23	24	17	17	67	71
2020	2020-2021	17	20	15	13	24	24	17	17	73	75
2021	2021-2022	19	23	18	16	24	24	17	18	79	80
2022	2022-2023	22	25	21	19	24	24	18	18	85	85

[1] Reductions estimated at busbar.

[2] Represents projected winter peak reduction capability associated with demand response (DR) resource. However, as reflected on Schedules 3.1.1-3.2.3 (Tables 2.4-2.9), DR utilization expected to be predominantly in the summer months.

City Of Tallahassee

Schedule 5
Fuel Requirements

(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Fuel Requirements		Units	Actual 2011	Actual 2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Nuclear		Billion Btu	0	0	0	0	0	0	0	0	0	0	0	0
Coal		1000 Ton	0	0	0	0	0	0	0	0	0	0	0	0
Residual	Total	1000 BBL	4	0	0	0	0	0	0	0	0	0	0	0
	Steam	1000 BBL	4	0	0	0	0	0	0	0	0	0	0	0
	CC	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
	CT	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
	Diesel	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
Distillate	Total	1000 BBL	1	0	0	0	0	0	0	0	0	0	0	0
	Steam	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
	CC	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
	CT	1000 BBL	1	0	0	0	0	0	0	0	0	0	0	0
	Diesel	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
Natural Gas	Total	1000 MCF	21,745	20,691	22,121	22,770	22,062	22,163	22,089	22,194	22,150	21,863	21,830	21,845
	Steam	1000 MCF	1,746	2,209	1,299	1,233	851	949	1,085	867	966	32	0	0
	CC	1000 MCF	19,209	17,621	19,436	19,006	20,082	19,894	19,811	20,243	19,925	20,161	21,028	21,402
	CT	1000 MCF	790	862	1,386	2,531	1,129	1,320	1,193	1,084	1,259	1,670	802	443
	Diesel	1000 MCF	0	0	0	0	0	0	0	0	0	0	0	0
Other (Specify)		Trillion Btu	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.18

City Of Tallahassee

Schedule 6.1
Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Energy Sources		Units	Actual 2011	Actual 2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
(1)	Annual Firm Interchange		GWh	97	98	24	25	25	28	29	27	28	36	27	27
(2)	Coal		GWh	0	0	0	0	0	0	0	0	0	0	0	0
(3)	Nuclear		GWh	0	0	0	0	0	0	0	0	0	0	0	0
(4)	Residual	Total	GWh	2	0	0	0	0	0	0	0	0	0	0	0
(5)		Steam	GWh	2	0	0	0	0	0	0	0	0	0	0	0
(6)		CC	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(7)		CT	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(8)		Diesel	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(9)	Distillate	Total	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(10)		Steam	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(11)		CC	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(12)		CT	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(13)		Diesel	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(14)	Natural Gas	Total	GWh	2,703	2,509	2,867	2,884	2,896	2,903	2,911	2,928	2,928	2,929	2,946	2,954
(15)		Steam	GWh	131	168	105	104	71	80	92	74	82	3	0	0
(16)		CC	GWh	2501	2265	2,632	2,571	2718	2697	2694	2,741	2714	2751	2862	2908
(17)		CT	GWh	71	76	130	209	107	126	125	113	132	175	84	46
(18)		Diesel	GWh	0	0	0	0	0	0	0	0	0	0	0	0
(19)	Hydro		GWh	5	6	10	10	10	8	10	10	10	10	10	10
(20)	Economy Interchange[1]		GWh	-8	97	-34	-41	-33	-29	-28	-33	-23	-22	-24	-25
(21)	Renewables		GWh	0	0	0	0	0	0	0	0	0	0	0	0
(22)	Net Energy for Load		GWh	2,799	2,710	2,868	2,879	2,898	2,910	2,922	2,933	2,943	2,952	2,959	2,966

[1] Negative values reflect expected need to sell off-peak power to satisfy generator minimum load requirements, primarily in winter and shoulder months.

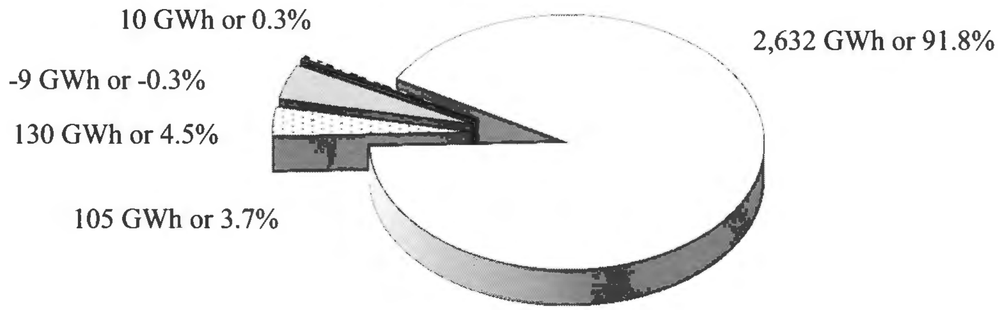
City Of Tallahassee

Schedule 6.2
Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Energy Sources		Units	Actual 2010	Actual 2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
(1)	Annual Firm Interchange		%	3.5	3.6	0.8	0.9	0.9	1.0	1.0	0.9	1.0	1.2	0.9	0.9
(2)	Coal		%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(3)	Nuclear		%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(4)	Residual	Total	%	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(5)		Steam	%	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(6)		CC	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(7)		CT	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(8)		Diesel	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(9)	Distillate	Total	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(10)		Steam	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(11)		CC	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(12)		CT	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(13)		Diesel	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(14)	Natural Gas	Total	%	96.6	92.6	100.0	100.2	99.9	99.8	99.6	99.8	99.5	99.2	99.6	99.6
(15)		Steam	%	4.7	6.2	3.7	3.6	2.4	2.7	3.1	2.5	2.8	0.1	0.0	0.0
(16)		CC	%	89.4	83.6	91.8	89.3	93.8	92.7	92.2	93.5	92.2	93.2	96.7	98.0
(17)		CT	%	2.5	2.8	4.5	7.3	3.7	4.3	4.3	3.8	4.5	5.9	2.8	1.6
(18)		Diesel	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(19)	Hydro		%	0.2	0.2	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3
(20)	Economy Interchange		%	-0.3	3.6	-1.2	-1.4	-1.1	-1.0	-1.0	-1.1	-0.8	-0.8	-0.8	-0.8
(21)	Renewables		%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(22)	Net Energy for Load		%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

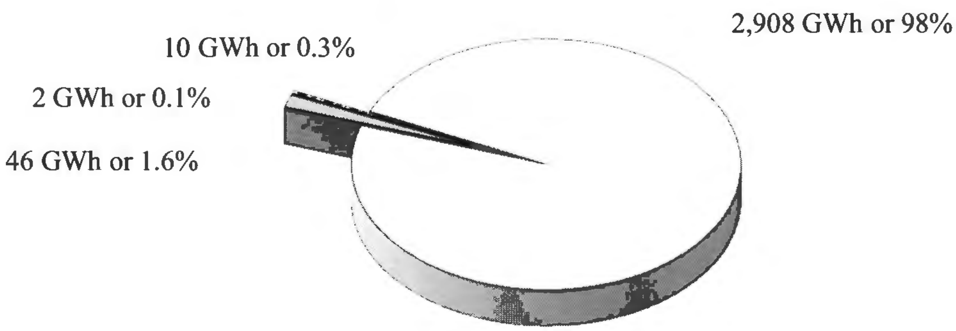
Generation By Resource/Fuel Type

Calendar Year 2013



Total 2013 NEL = 2,868 GWh

Calendar Year 2022



Total 2022 NEL = 2,966 GWh

CC - Gas | Steam - Gas | CT/Diesel - Gas | Net Interchange | Hydro

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Chapter III

Projected Facility Requirements

3.1 PLANNING PROCESS

In December 2006 the City completed its last comprehensive IRP Study. The purpose of this study was to review future DSM and power supply options that are consistent with the City's policy objectives. Included in the IRP Study was a detailed analysis of how the DSM and power supply alternatives perform under base and alternative assumptions.

The preferred resource plan identified in the IRP Study included the repowering of Hopkins Unit 2 to combined cycle operation, renewable energy purchases, a commitment to an aggressive DSM portfolio and the latter year addition of peaking resources to meet future energy demand.

Based on more recent information including but not limited to the updated forecast of the City's demand and energy requirements (discussed in Chapter II) the City has made revisions to its resource plan. These revisions will be discussed in this chapter.

3.2 PROJECTED RESOURCE REQUIREMENTS

3.2.1 TRANSMISSION LIMITATIONS

The City's projected transmission import capability continues to be a major determinant of the need for future power supply resource additions. The City's internal transmission studies have reflected a gradual deterioration of the system's transmission import (and export) capability into the future, due in part to the lack of investment in the regional transmission system around Tallahassee as well as the impact of unscheduled power flow-through on the City's transmission system. The City has worked with its neighboring utilities, Progress and Southern, to plan and maintain, at minimum, sufficient transmission import capability to allow the City to make emergency power purchases in the event of the most severe single contingency, the loss of the system's largest generating unit.

The prospects for significant expansion of the regional transmission system around Tallahassee hinges on the City's ongoing discussions with Progress and Southern, the Florida Reliability Coordinating Council's (FRCC) regional transmission planning process, and the evolving set of mandatory reliability standards issued by the North American Electric Reliability Corporation (NERC. Unfortunately, none of these efforts is expected to produce substantive improvements to the City's transmission import/export capability in the short-term. In consideration of the City's limited transmission import capability the results of the IRP Study and other internal analysis of options tend to favor local generation alternatives as the means to satisfy future power supply requirements. To satisfy load, planning reserve and operational requirements in the reporting period, the City may need to advance the in-service date of new power supply resources to complement available transmission import capability.

3.2.2 RESERVE REQUIREMENTS

For the purposes of this year's TYSP report the City uses a load reserve margin of 17% as its resource adequacy criterion. This margin was established in the 1990s then re-evaluated via a loss of load probability (LOLP) analysis of the City's system performed in 2002. The City periodically conducts LOLP analyses to determine if conditions warrant a change to its resource adequacy criteria. The results of more recent LOLP analyses suggest that reserve margin may no longer be suitable as the City's sole resource adequacy criterion. This issue is discussed further in Section 3.2.4.

3.2.3 RECENT AND NEAR TERM RESOURCE ADDITIONS

At their October 17, 2005 meeting the City Commission gave the Electric Utility approval to proceed with the repowering of Hopkins Unit 2 to combined cycle operation. The repowering was completed and the unit began commercial operation in June 2008. The former Hopkins Unit 2 boiler was retired and replaced with a combustion turbine generator (CTG) and a heat recovery steam generator (HRSG). The Hopkins 2 steam turbine and generator is now powered by the steam generated in the HRSG. Duct burners have been installed in the HRSG to provide additional peak generating capability. The repowering project provides additional capacity as well as increased efficiency versus the unit's capabilities prior to the repowering project. The repowered unit has achieved official seasonal net capacities of 300 MW in the summer and 330 MW in the winter.

No new resource additions are expected to be needed in the near term (2013-2017). Resource additions expected in the longer term (2018-2022) are discussed in Section 3.2.6, "Future Power Supply Resources".

3.2.4 POWER SUPPLY DIVERSITY

Resource diversity, particularly with regard to fuels, has long been a priority concern for the City because of the system's heavy reliance on natural gas as its primary fuel source. This issue has received even greater emphasis due to the historical volatility in natural gas prices. The City has addressed this concern in part by implementing an Energy Risk Management (ERM) program to limit the City's exposure to energy price fluctuations. The ERM program established an organizational structure of interdepartmental committees and working groups and included the adoption of an Energy Risk Management Policy. This policy identifies acceptable risk mitigation products to prevent asset value losses, ensure price stability and provide protection against market volatility for fuels and energy to the City's electric and gas utilities and their customers.

Another important consideration in the City's planning process is the number and diversity of power supply resources in terms of their sizes and expected duty cycles. To satisfy expected electric system requirements the City assesses the adequacy of its total capability of power supply resources versus the 17% load reserve margin criterion. But the evaluation of reserve margin is made only for the annual electric system peak demand and assuming all power supply resources are available. Resource adequacy must also be evaluated during other times of the year to determine if the City is maintaining the appropriate amount and mix of power supply resources.

Currently, about two-thirds of the City's power supply comes from two generating units, Purdom 8 and Hopkins 2. The outage of either of these units can present operational challenges especially when coupled with transmission limitations (as discussed in Section 3.2.1). Further, the projected retirement of older generating units will reduce the number of power supply resources available to ensure resource adequacy throughout the reporting period. For these reasons the City has evaluated alternative and/or supplemental metrics to its current load reserve margin criterion that may better balance resource adequacy and operational needs with utility and customer costs. The results of this evaluation suggest that the City's current deterministic load reserve margin criterion may need to be supplemented by a probabilistic criterion that takes into account the number and sizes of power supply resources to ensure adequacy and reliability. One such criterion that the City might consider adopting is an LOLP of one day in ten years (or 0.1 days per year). An update of the City's efforts in this regard will be provided in a future TYSP report(s).

Purchase contracts can provide some of the diversity desired in the City's power supply resource portfolio. The City's last IRP Study evaluated both short and long-term purchased power options based on conventional sources as well as power offers based on renewable resources. A consultant-assisted study completed in 2008 evaluated the potential reliability and economic benefits of prospectively increasing the City's transmission import (and export) capabilities. The results of this study indicate the potential for some electric reliability improvement resulting from addition of facilities to achieve more transmission import capability. However, the study's model of the Southern and Florida markets reflects, as with the City's generation fleet, natural gas-fired generation on the margin the majority of the time. Therefore, the cost of increasing the City's transmission import capability could not likely be offset by the potential economic benefit from increased power purchases from conventional sources.

As an additional strategy to address the City's lack of power supply diversity, planning staff has investigated options for a significantly enhanced DSM portfolio. Commitment to this expanded DSM effort (see Section 2.1.3) and an increase in customer-sited renewable energy projects (primarily solar panels) improve the City's overall resource diversity. However, due to limited availability and uncertain performance, studies indicate that DSM and solar projects would not improve resource adequacy (as measured by LOLP) as much as the addition of conventional generation resources.

3.2.5 Renewable Resources

The City believes that offering green power alternatives to its customers is a sound business strategy: it will provide for a measure of supply diversification, reduce dependence on fossil fuels, promote cleaner energy sources, and enhance the City's already strong commitment to protecting the environment and the quality of life in Tallahassee. As part of its continuing commitment to explore clean energy alternatives, the City has continued to invest in opportunities to develop viable solar photovoltaic (PV) projects as part of our efforts to offer "green power" to our customers. There are ongoing concerns regarding the potential impact on service reliability associated with reliance on a significant amount of intermittent resources like PV on the City's relatively small electric system. The City will continue to monitor the proliferation of PV and other intermittent resources and work to integrate them so that service reliability is not jeopardized.

As of the end of calendar year 2012 the City has a portfolio of 137 kW of solar PV operated and maintained by the Electric Utility and a cumulative total of 1,397 kW of solar PV has been installed by customers. The City promotes and encourages environmental responsibility in our community through a variety of programs available to citizens. The commitment to renewable energy sources (and particularly to solar PV) by its customers is made possible through the Go Green Tallahassee initiative, that includes many options related to becoming a greener community such as the City's Solar PV Net Metering offer. Solar PV Net Metering promotes customer investment in renewable energy generation by allowing residential and commercial customers with small to moderate sized PV installations to return excess generated power back to the City at the full retail value.

In 2011, the City of Tallahassee signed contracts with SunnyLand Solar and Solar Developers of America (SDA) for over 3 MWs of solar PV. These demonstration projects are to be built within the City's service area and will utilize new technology pioneered by Florida State University. As of December 31, 2012 both of these projects have been delayed due to manufacturing issues associated with the technology. Such delays are to be expected with projects involving the demonstration of emerging technologies. The City remains optimistic that the technology will mature into a viable energy resource.

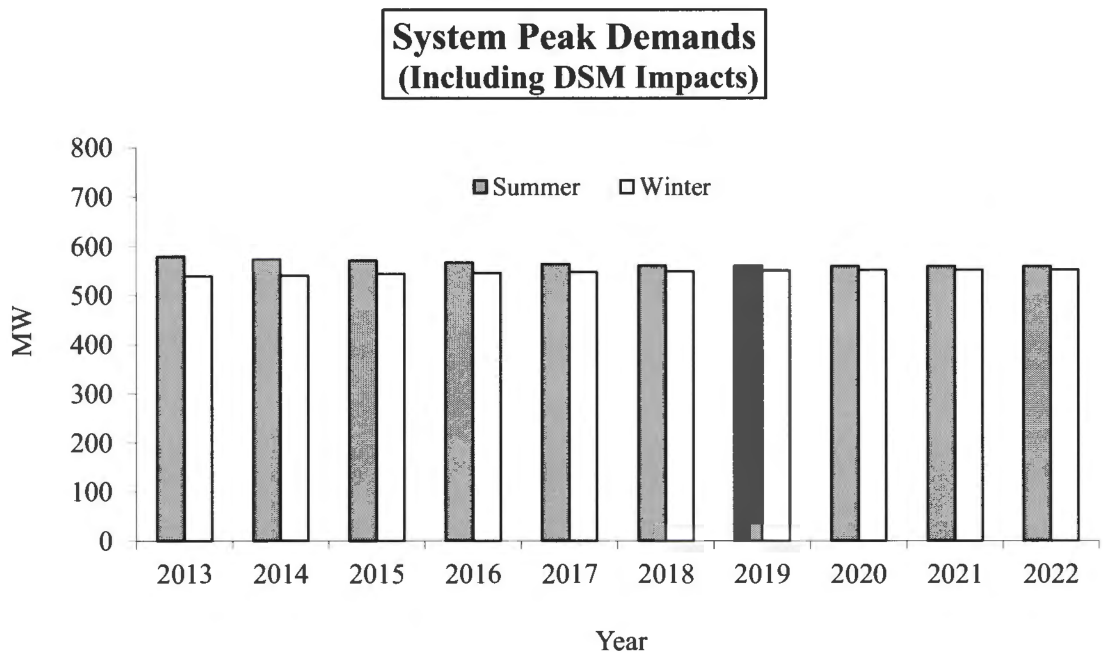
The City continues to seek out suitable projects that utilize the renewable fuels available within the big bend and panhandle of Florida.

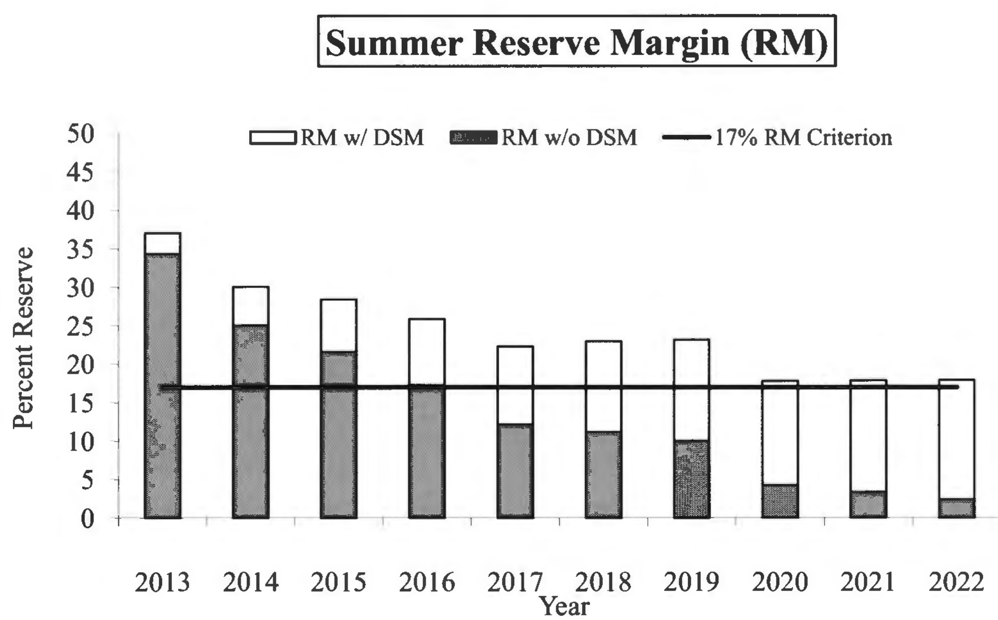
3.2.6 FUTURE POWER SUPPLY RESOURCES

The City currently projects that additional power supply resources will be needed to maintain electric system adequacy and reliability through the 2022 horizon year. The City has identified the need for additional capacity in the summer of 2020 following the retirement of Hopkins 1 in order to satisfy its 17% reserve margin criterion. The timing, site, type and size of any new power supply resource may vary dependent upon the metric(s) used to determine resource adequacy and as the nature of the need becomes better defined. Any proposed addition could be a generator or a peak season purchase. The suitability of this resource plan is dependent on the performance of the City's aggressive DSM portfolio (described in Section 2.1.3 of this report) and the City's projected transmission import capability. If only 50% of the projected annual DSM peak demand reductions are achieved, the City would require less than 10 MW of additional power supply resources to meet its planning reserve requirements in the summer of 2018.

The City continues to monitor closely the performance of the DSM portfolio and, as mentioned in Section 2.1.3, will be revisiting and, where appropriate, updating assumptions regarding and re-evaluating cost-effectiveness of our current and prospective DSM measures. This will also allow a reassessment of expected demand and energy savings attributable to DSM.

Tables 3.1 and 3.2 (Schedules 7.1 and 7.2) provide information on the resources and reserve margins during the next ten years for the City's system. The City has specified its planned capacity changes on Table 3.3 (Schedule 8). These capacity resources have been incorporated into the City's dispatch simulation model in order to provide information related to fuel consumption and energy mix (see Tables 2.18, 2.19 and 2.20). Figure C compares seasonal net peak load and the system reserve margin based on summer peak load requirements. Table 3.4 provides the City's generation expansion plan for the period from 2013 through 2022.


System Peak Demands
(Including DSM Impacts)
Summer
Winter
MW
800
700
600
500
400
300
200
100
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year


Summer Reserve Margin (RM)
RM w/ DSM
RM w/o DSM
17% RM Criterion
Percent Reserve
50
45
40
35
30
25
20
15
10
5
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
Year

City Of Tallahassee

Schedule 7.1
Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Summer Peak [1]

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Total Installed Capacity	Firm Capacity Import	Firm Capacity Export	QF	Total Capacity Available	System Firm Summer Peak Demand	Reserve Margin Before Maintenance		Scheduled Maintenance	Reserve Margin After Maintenance	
Year	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	% of Peak	(MW)	(MW)	% of Peak
2013	794	0	0	0	794	579	215	37	0	215	37
2014	746	0	0	0	746	574	172	30	0	172	30
2015	734	0	0	0	734	572	162	28	0	162	28
2016	714	0	0	0	714	567	147	26	0	147	26
2017	690	0	0	0	690	564	126	22	0	126	22
2018	690	0	0	0	690	561	129	23	0	129	23
2019	690	0	0	0	690	560	130	23	0	130	23
2020	660	0	0	0	660	560	100	18	0	100	18
2021	660	0	0	0	660	560	100	18	0	100	18
2022	660	0	0	0	660	560	100	18	0	100	18

[1] All installed and firm import capacity changes are identified in the proposed generation expansion plan (Table 3.4).

City Of Tallahassee

Schedule 7.2
Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Winter Peak [1]

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
							Reserve Margin Before Maintenance			Reserve Margin After Maintenance	
Year	Total Installed Capacity (MW)	Firm Capacity Import (MW)	Firm Capacity Export (MW)	QF (MW)	Total Capacity Available (MW)	System Firm Winter Peak Demand (MW)	(MW)	% of Peak	Scheduled Maintenance (MW)	(MW)	% of Peak
2013/14	822	0	0	0	822	540	282	52	0	282	52
2014/15	822	0	0	0	822	544	278	51	0	278	51
2015/16	788	0	0	0	788	546	242	44	0	242	44
2016/17	788	0	0	0	788	547	241	44	0	241	44
2017/18	762	0	0	0	762	549	213	39	0	213	39
2018/19	762	0	0	0	762	550	212	38	0	212	38
2019/20	762	0	0	0	762	552	210	38	0	210	38
2020/21	732	0	0	0	732	552	180	33	0	180	33
2021/22	732	0	0	0	732	552	180	33	0	180	33
2022/23	732	0	0	0	732	554	178	32	0	178	32

[1] All installed and firm import capacity changes are identified in the proposed generation expansion plan (Table 3.4).

City Of Tallahassee

Schedule 8
Planned and Prospective Generating Facility Additions and Changes

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
								Const.	Commercial	Expected	Gen. Max.	Net Capability		
	Unit		Unit	Fuel		Fuel Transport		Start	In-Service	Retirement	Nameplate	Summer	Winter	
Plant Name	No.	Location	Type	Pri	Alt	Pri	Alt	Mo/Yr	Mo/Yr	Mo/Yr	(kW)	(MW)	(MW)	Status
Purdom	7	Wakulla	ST	NG	NA	PL	NA	NA	6/66	12/13	50,000	-48	-48	RT
Hopkins	CT-1	Leon	GT	NG	DFO	PL	TK	NA	2/70	3/15	16,320	-12	-14	RT
Purdom	CT-1	Wakulla	GT	NG	DFO	PL	TK	NA	12/63	10/15	15,000	-10	-10	RT
Purdom	CT-2	Wakulla	GT	NG	DFO	PL	TK	NA	5/64	10/15	15,000	-10	-10	RT
Hopkins	CT-2	Leon	GT	NG	DFO	PL	TK	NA	9/72	3/17	27,000	-24	-26	RT
Hopkins	1	Leon	ST	NG	RFO	PL	TK	NA	5/71	3/20	75,000	-76	-78	RT
Hopkins	5 [1]	Leon	GT	NG	DFO	PL	TK	5/17	5/20	NA	50,000	46	48	P

[1] For the purposes of this report, the City has identified the addition of a GE LM 6000 combustion turbine generator (similar to the City's existing Hopkins CT3 and CT4) at its existing Hopkins Plant site. The timing, site, type and size of this new power supply resource may vary as the nature of the need becomes better defined. Alternatively, this proposed addition could be a generator(s) of a different type/size at the same or different location or a peak season purchase.

Acronyms

GT	Gas Turbine
ST	Steam Turbine
Pri	Primary Fuel
Alt	Alternate Fuel
NG	Natural Gas
DFO	Diesel Fuel Oil
RFO	Residual Fuel Oil
PL	Pipeline
TK	Truck
kW	Kilowatts
MW	Megawatts
RT	Existing generator scheduled for retirement
P	Planned for installation but not utility authorized. Not under construction

Table 3.3

City Of Tallahassee

Generation Expansion Plan

Year	Load Forecast & Adjustments: Forecast Peak Demand (MW)	DSM [1] (MW)	Net Peak Demand (MW)	Existing Capacity Net (MW)		Firm Imports (MW)	Firm Exports (MW)	Resource Additions (Cumulative) (MW)		Total Capacity (MW)	Res %
2013	591	12	579	794	[2]					794	37
2014	597	23	574	746						746	30
2015	604	32	572	734	[3,4]					734	28
2016	609	42	567	714						714	26
2017	615	51	564	690	[5]					690	22
2018	621	60	561	690						690	23
2019	627	67	560	690						690	23
2020	633	73	560	614	[6]			46	[7]	660	18
2021	639	79	560	614				46		660	18
2022	645	85	560	614				46		660	18

Notes

[1] Demand Side Management includes energy efficiency and demand response/control measures. Identified as maximum achievable reductions in the City's integrated resource planning (IRP) study completed in December 2006.

[2] Purdom ST 7 official retirement currently scheduled for December 2013.

[3] Hopkins CT 1 official retirement currently scheduled for March 2015.

[4] Purdom CTs 1 and 2 official retirement currently scheduled for October 2015.

[5] Hopkins CT 2 official retirement currently scheduled for March 2017.

[6] Hopkins ST 1 official retirement currently scheduled for March 2020.

[7] For the purposes of this report, the City has identified the addition of a GE LM 6000 combustion turbine generator (similar to the City's existing Hopkins CT3 and CT4) at its existing Hopkins Plant site. The timing, site, type and size of this new power supply resource may vary as the nature of the need becomes better defined. Alternatively, this proposed addition could be a generator(s) of a different type/size at the same or different location or a peak season purchase.

Table 3.4

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Chapter IV

Proposed Plant Sites and Transmission Lines

4.1 Proposed Plant Site

As discussed in Chapter 3 the City currently expects that additional power supply resources will be required in the reporting period to meet future system needs (see Table 4.1). For the purposes of this report, the City has identified the addition of a GE LM 6000 combustion turbine generator (similar to the City's existing Hopkins CT3 and CT4) at its existing Hopkins Plant site. The timing, site, type and size of this new power supply resource may vary as the nature of the need becomes better defined. Alternatively, this proposed addition could be a generator(s) of a different type/size at the same or different location or a peak season purchase.

4.2 Transmission Line Additions/Upgrades

Internal studies of the transmission system have identified a number of system improvements and additions that will be required to reliably serve future load. The majority of these improvements are planned for the City's 115 kV transmission network.

As discussed in Section 3.2, the City has been working with its neighboring utilities, Progress and Southern, to identify improvements to assure the continued reliability and commercial viability of the transmission systems in and around Tallahassee. At a minimum, the City attempts to plan for and maintain sufficient transmission import capability to allow for emergency power purchases in the event of the most severe single contingency, the loss of the system's largest generating unit. The City's internal transmission studies have reflected a gradual deterioration of the system's transmission import (and export) capability into the future. This reduction in capability is driven in part by the lack of investment in facilities in the panhandle region as well as the impact of unscheduled power flow-through on the City's transmission system. The City is committed to continue to work with Progress and Southern as well as existing and prospective regulatory bodies in an effort to pursue improvements to the regional transmission systems that will allow the City to continue to provide reliable and affordable electric service to the citizens of Tallahassee in the future. The City will provide the FPSC with information regarding any such improvements as it becomes available.

Beyond assessing import and export capability, the City also conducts annual studies of its transmission system to identify further improvements and expansions to provide increased reliability and respond more effectively to certain critical contingencies both on the system and in the surrounding grid in the panhandle. These evaluations indicate that additional infrastructure projects are needed to address (i) improvements in capability to deliver power from the Hopkins Plant (on the west side of the City's service territory) to the load center, and (ii) the strengthening of the system on the east side of the City's service territory to improve the voltage profile in that area and enhance response to contingencies.

The City's transmission expansion plan includes a 230 kV loop around the City to be completed by summer 2016 to address these needs and ensure continued reliable service consistent with current and anticipated FERC and NERC requirements. For this proposed transmission project, the City intends to tap its existing Hopkins-PEF Crawfordville 230 kV transmission line and extend a 230 kV transmission line to the east terminating at the existing Substation BP-5 as the first phase of the project to be in service by December 2013. The City will then upgrade existing 115 kV lines to 230 kV from Substation BP-5 to Substation BP-4 to Substation BP-7 as the second phase of the project completing the loop by summer 2016. This new 230 kV loop would address a number of potential line overloads for the single contingency loss of other key transmission lines in the City's system. Additional 230/115 kV transformation along the new 230 kV line is expected to be added at Substations BP-5 and BP-4. Table 4.2 summarizes the proposed new facilities or improvements from the transmission planning study that are within this Ten Year Site Plan reporting period.

The City's budget planning cycle for FY 2014 is currently ongoing, and any revisions to project budgets in the electric utility will not be finalized until the summer of 2013. Some of the construction of the aforementioned 230 kV transmission projects is currently underway. If these improvements do not remain on schedule the City has prepared operating solutions to mitigate adverse system conditions that might occur as a result of the delay in the in-service date of these improvements.

City Of Tallahassee

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1)	Plant Name and Unit Number:	Hopkins 5	[1]
(2)	Capacity		
	a.) Summer:	46	
	b.) Winter:	48	
(3)	Technology Type:	CT	
(4)	Anticipated Construction Timing		
	a.) Field Construction start - date:	May-17	
	b.) Commercial in-service date:	May-20	
(5)	Fuel		
	a.) Primary fuel:	NG	
	b.) Alternate fuel:	DFO	
(6)	Air Pollution Control Strategy:	BACT compliant	
(7)	Cooling Status:	Unknown	
(8)	Total Site Area:	Unknown	
(9)	Construction Status:	Not started	
(10)	Certification Status:	Not started	
(11)	Status with Federal Agencies:	Not started	
(12)	Projected Unit Performance Data		
	Planned Outage Factor (POF):	5.77%	
	Forced Outage Factor:	3.33%	
	Equivalent Availability Factor (EAF):	89.57%	
	Resulting Capacity Factor (%):	4.86	[2]
	Average Net Operating Heat Rate (ANOHR):	9,877 Btu/kWh	[3]
(13)	Projected Unit Financial Data		
	Book Life (Years)	30	
	Total Installed Cost (In-Service Year $/kW)	1216	[4]
	Direct Construction Cost ($/kW):	1023	[5]
	AFUDC Amount ($/kW):	NA	
	Escalation ($/kW):	193	
	Fixed O & M ($kW-Yr):	7.33	[5]
	Variable O & M ($/MWH):	15.44	[5]
	K Factor:	NA	

Notes

[1] For the purposes of this report, the City has identified the addition of a GE LM 6000 combustion turbine generator (similar to the City's existing Hopkins CT3 and CT4) at its existing Hopkins Plant site. The timing, site, type and size of this new power supply resource may vary as the nature of the need becomes better defined. Alternatively, this proposed addition could be a generator(s) of a different type/size at the same or different location or a peak season purchase.

[2] Expected first year capacity factor.
[3] Expected first year net average heat rate.
[4] Estimated 2020 dollars.
[5] Estimated 2013 dollars.

Figure D-1 – Hopkins Plant Site

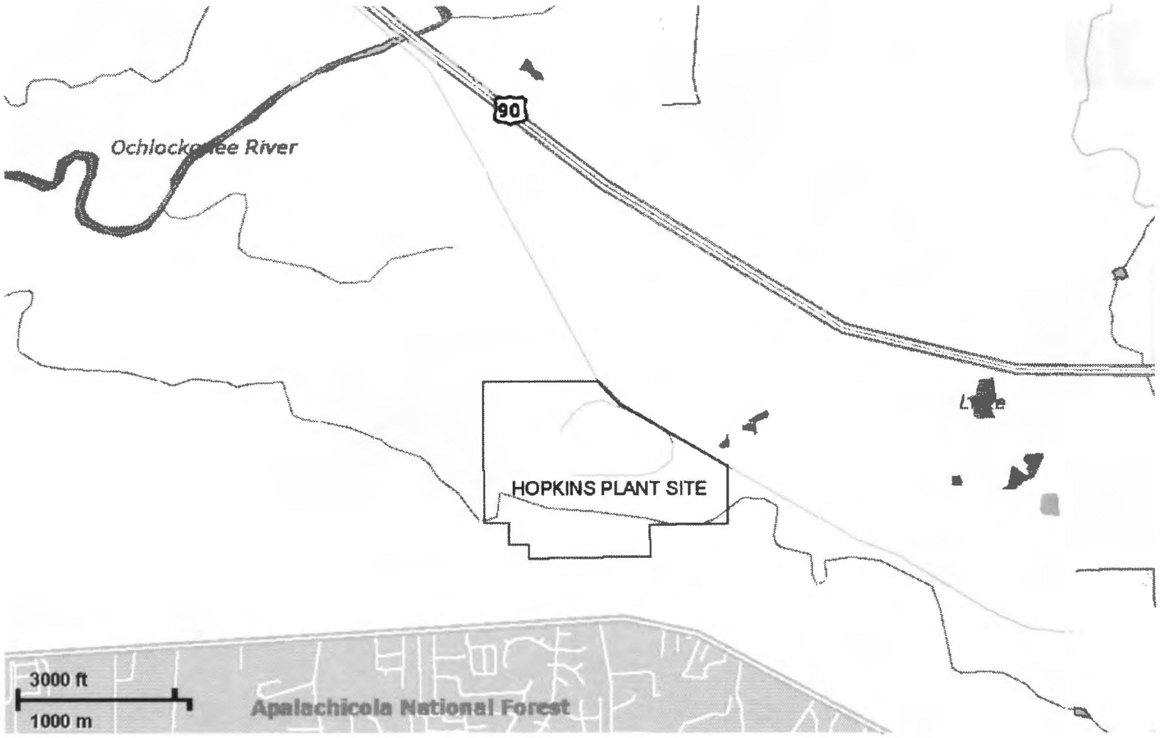

Figure D-2 – Purdom Plant Site

City Of Tallahassee

Planned Transmission Projects, 2013-2022

Project Type	Project Name	From Bus Name	From Bus Number	To Bus Name	To Bus Number	Expected In-Service Date	Voltage (kV)	Line Length (miles)
New Lines	230 Loop Phase I - Line33	Hopkins S	7610	Sub 5	7605	12/31/13	230	8.0
	Line 53	Sub 21	7521	Sub 17	7517	3/31/14	115	6.0
	Line 54	Sub 17	7517	Sub 14	7514	3/31/14	115	4.0
	Line 55	Sub 14	7514	Sub 7	7507	6/30/15	115	6.0
	230 Loop Phase II	Sub 5	7605	Sub 7	7607	6/1/16	230	12.8
Line Rebuild/ Reconductor	Line 15A	Sub 5	7505	Sub 4	7504	6/30/14	115	9.0
	Line 15B	Sub 5	7505	Sub 9	7509	6/30/14	115	6.0
	Line 15C	Sub 9	7509	Sub 4	7504	6/30/14	115	4.0
Transformers	Sub 5 230/115 Auto	Sub 5 230	7605	Sub 5 115	7505	12/31/13	NA	NA
	Sub 4 230/115 Auto	Sub 4 230	7604	Sub 4 115	7504	6/1/16	NA	NA
Substations	Sub 17 (Bus 7517)	NA	NA	NA	NA	12/30/13	115	NA
	Sub 23 (Bus 7523)	NA	NA	NA	NA	12/30/14	115	NA
	Sub 22 (Bus 7522)	NA	NA	NA	NA	6/30/15	115	NA

Table 4.2

City Of Tallahassee

Schedule 10
Status Report and Specifications of Proposed Directly Associated Transmission Lines

(1)	Point of Origin and Termination:	Substation 32 - Substation 5
(2)	Number of Lines:	1
(3)	Right-of -Way:	TAL Owned and New Acquisitions
(4)	Line Length:	8 miles
(5)	Voltage:	230 kV
(6)	Anticipated Capital Timing:	Start - 2009 End - 2013
(7)	Anticipated Capital Investment:	$7.3 million
(8)	Substations:	Substation 32 (tap Hopkins-Crawfordville 230 kV) [1]
(9)	Participation with Other Utilities:	None

Notes

[1] New substation to serve as west terminus for new 230 kV line. Existing Substation 5 will be east terminus.

City Of Tallahassee

Schedule 10
Status Report and Specifications of Proposed Directly Associated Transmission Lines

(1)	Point of Origin and Termination:	Substation 5 - Substation 4 - Substation 7
(2)	Number of Lines:	1
(3)	Right-of -Way:	TAL Owned
(4)	Line Length:	12.8 miles
(5)	Voltage:	230 kV
(6)	Anticipated Capital Timing:	Not yet determined; target in service summer 2016
(7)	Anticipated Capital Investment:	$19.2 million
(8)	Substations:	See note [1]
(9)	Participation with Other Utilities:	None

Notes

[1] North terminus will be existing Substation 7; south terminus will be existing Substation 5; intermediate terminus will be existing Substation 4.

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