

**BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION**

**DOCKET NO. 080677-EI
FLORIDA POWER & LIGHT COMPANY**

**IN RE: PETITION FOR RATE INCREASE BY
FLORIDA POWER & LIGHT COMPANY**

TESTIMONY & EXHIBITS OF:

DR. ROSEMARY MORLEY

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2 **FLORIDA POWER & LIGHT COMPANY**

3 **DIRECT TESTIMONY OF DR. ROSEMARY MORLEY**

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5

6 **Q. Please state your name and business address.**

7 A. My name is Dr. Rosemary Morley, and my business address is Florida Power
8 & Light Company, 700 Universe Blvd., Juno Beach, Florida 33408.

9 **Q. By whom are you employed and what is your position?**

10 A. I am employed by Florida Power & Light Company (“FPL” or the
11 “Company”) as the Director of Load Forecasting and Analysis.

12 **Q. Please describe your duties and responsibilities as FPL’s Director of Load
13 Forecasting and Analysis.**

14 A. I am responsible for the development of FPL’s peak demand, energy,
15 customer and economic forecasts.

16 **Q. Please describe your educational background and professional
17 experience.**

18 A. I hold a bachelor’s degree (B.A.) with honors in economics from the
19 University of Maryland and a master’s degree (M.A.) in economics from
20 Northwestern University. In 2005, I earned a Doctorate in Business
21 Administration (D.B.A.) from Nova Southeastern University. I began my
22 career with FPL in 1983 as an Assistant Economist. I have since held a
23 variety of positions in the forecasting, planning and regulatory areas.

1 Between 1996 and 2007, I was the Rate Development Manager for FPL.
2 During that time I testified on a number of issues, including the forecast of
3 billing determinants by rate class and the Company's load research studies. I
4 am a member of the National Association of Business Economists and the
5 Institute of Business Forecasting and Planning.

6 **Q. Are you sponsoring any exhibits in this case?**

7 A. Yes. I am sponsoring the following exhibits:

- 8 • RM-1 Cumulative Customer Growth Since 1985
- 9 • RM-2 Cumulative Increase in NEL Since 1985
- 10 • RM-3 NSAs, Customer Growth, and the Change in Inactive Meters
- 11 • RM-4 Population Forecasts from the University of Florida
- 12 • RM-5 Increase in the Average Annual Number of Customers
- 13 • RM-6 Annual NSAs
- 14 • RM-7 Increase in Minimal Usage Customers
- 15 • RM-8 Forecasting Variance
- 16 • RM-9 Annual Energy Use per Customer
- 17 • RM-10 NEL Forecast and Actuals
- 18 • RM-11 Billed Sales, Customers and Use by Class

1 **Q. Are you sponsoring or co-sponsoring any Minimum Filing Requirements**
2 **(MFRs) in this case?**

3 A. Yes. I am sponsoring the following MFRs:

- 4 • C-40, O & M Compound Multiplier Calculation
- 5 • E-18, Monthly Peaks
- 6 • F-6, Forecasting Models – Sensitivity of Output to Changes in Input
7 Data
- 8 • F-7, Forecasting Models – Historical Data

9 I am co-sponsoring the following MFRs:

- 10 • C-12, Administrative Expenses
- 11 • C-15, Industry Association Dues
- 12 • C-33, Performance Indices
- 13 • C-34, Statistical Information
- 14 • C-36, Non-Fuel Operation and Maintenance Expense Compared to
15 CPI
- 16 • C-37, O&M Benchmark Comparison by Function
- 17 • E-9, Cost of Service – Load Data
- 18 • E-11, Development of Coincident and Noncoincident Demands for
19 Cost Study
- 20 • E-12, Adjustment to Test Year Revenue
- 21 • E-15, Projected Billing Determinants - Derivation
- 22 • E-16, Customers by Voltage Level
- 23 • E-19a, Demand and Energy Losses

- 1 • E-19b, Energy Losses
- 2 • E-19c, Demand Losses
- 3 • F-5, Forecasting Models
- 4 • F-8, Assumptions

5 In addition, I am sponsoring or cosponsoring the following 2009 supplemental
6 MFR schedules that FPL has agreed with the Florida Public Service
7 Commission (“FPSC” or the “Commission”) Staff and the Office of Public
8 Counsel to file:

- 9 • C-12, Administrative Expenses
- 10 • C-15, Industry Association Dues
- 11 • C-34, Statistical Information
- 12 • C-37, O&M Benchmark Comparison by Function
- 13 • F-5, Forecasting Models
- 14 • F-6, Forecasting Models – Sensitivity of Output to Changes in Input
15 Data
- 16 • F-7, Forecasting Models – Historical Data
- 17 • F-8, Assumptions

18 **Q. What is the purpose of your testimony?**

19 A. The purpose of my testimony is to: (i) describe FPL’s load forecasting
20 process; (ii) give a historical perspective of FPL’s customer and sales growth
21 between 1985 and 2005; (iii) discuss the load forecast presented by the
22 Company in its last rate proceeding and the factors which have driven the
23 actual level of customers and sales since that time; (iv) identify the underlying

1 methodologies and assumptions of the customer growth, energy use per
2 customer, and Net Energy for Load (NEL) forecasts; and (v) present the
3 customer and sales forecast by revenue class. The forecast of customers and
4 sales by revenue class forms the basis for the base revenue forecast supported
5 by FPL witness Deaton. Finally, (vi) my testimony discusses the inflation
6 forecast, including the Consumer Price Index (CPI) forecast used in
7 computing the Commission's operations and maintenance (O&M)
8 Benchmark.

9 **Q. Please summarize your testimony.**

10 A. My testimony presents FPL's customer and load projections through 2011,
11 and discusses the growth FPL has experienced since 1985 as well as the
12 slowdown in customer and sales growth experienced since 2006. The average
13 number of FPL customers was virtually flat in 2008 while NEL contracted by
14 2.9%. Hampered by slower population growth, the number of customers is
15 expected to increase by only 0.2% in 2009 and 0.6% in 2010 before
16 rebounding to 1.3% in 2011. Likewise, FPL's forecast indicates that the
17 contraction in total energy sales will continue in the near term with a 1.4%
18 decline in NEL in 2009. Due to higher customer growth and the addition of
19 new wholesale load, NEL is projected to increase by 0.7% in 2010 and 1.6%
20 in 2011.

1 **I. OVERVIEW OF LOAD FORECASTING PROCESS**

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Q. What principles does FPL rely on in developing its load forecast?

A. FPL relies on three principles in developing its load forecast. First, a load forecast depends on an understanding of the underlying data. As a result, the most relevant and timely data should be carefully examined. This includes a review not only of the variables to be forecast, but also of the factors which may influence future values. Accordingly, FPL reviews demographic and economic projections from a number of industry experts, including the University of Florida and Global Insight. Second, a load forecast should be based on statistically sound models. In this regard, FPL relies on econometrics as the primary tool for projecting future levels of customers and sales. An econometric model is a numerical representation, obtained through statistical estimation techniques, of the degree of relationship between a dependent variable, e.g., NEL, and the independent (explanatory) variables. FPL has consistently relied on econometric models for various planning purposes and the modeling results have been reviewed and accepted by this Commission in past proceedings. Third, a load forecast must reflect sound judgment. While intangible, sound judgment is critical, particularly during periods of rapid change and uncertainty.

Q. What are the primary elements of the load forecast?

A. Two of the primary elements of the load forecast are total customers and NEL. NEL is energy generated net of plant use. A superior econometric forecasting

1 model is obtained if NEL, instead of billed energy sales, is matched to the
2 explanatory variables. This is because the NEL data does not have to be
3 attuned to account for billing cycle adjustments, which might distort the real
4 time match between the production and consumption of electricity.
5 Accordingly, FPL first develops the forecast of total customers and energy use
6 per customer. The forecasts of total customers and energy use per customer
7 yield the NEL forecast. Forecasts of customers and billed sales by revenue
8 class are then developed and calibrated with the forecast of total customers
9 and NEL. Jurisdictional billed sales are computed by totaling the retail
10 revenue classes.

11

12 II. HISTORICAL PERSPECTIVE

13

14 **Q. Please describe FPL's service territory.**

15 A. FPL's service territory covers approximately 27,650 square miles within
16 peninsular Florida, which ranges from St. Johns County in the north to Miami-
17 Dade County in the south, and westward to Manatee County. FPL serves
18 customers in 35 counties within this region. FPL currently serves about 4.5
19 million customers. This amounts to a population of about 8.8 million people.

20 **Q. What customer and sales growth has FPL experienced since 1985?**

21 A. As shown in Exhibit RM-1, FPL has added almost 1.9 million customers since
22 1985, the equivalent of more than 82,000 customers per year or an annual
23 growth rate of 2.4%. Energy use per customer, defined as NEL divided by the

1 total number of customers, increased at an annual rate of 0.6% or 140 kWh
2 per year between 1985 and 2008 for a cumulative increase of 15%. An
3 increasing customer base combined with higher use per customer resulted in
4 substantial increases in NEL. Between 1985 and 2008 NEL increased at an
5 annual rate of 2,399 GWh or 3.0% per year. As shown in Exhibit RM-2, this
6 represents a cumulative increase of more than 55,000 GWh, a 98% increase
7 from the 1985 NEL. Peak demand increased at comparable rates during this
8 time. The 2008 summer peak was 10,423 MW above its 1985 level, a 98%
9 increase.

10 **Q. Has customer and sales growth been consistent since 1985?**

11 A. No. Customer and sales growth was very high between 1985 and 2005 but
12 has slowed since 2006. Between 1985 and 2005, FPL's customer base grew
13 at an average annual rate of about 85,200 customers per year or 2.5%
14 annually. During the same time period, energy use per customer grew at an
15 average annual rate of 0.9% or 218 kWh per customer per year. NEL grew at
16 an annual rate of 3.5% or 2,765 GWh per year between 1985 and 2005.
17 Effectively, this rate meant that FPL's electric sales were doubling every 20
18 years. Between 1985 and 2005 growth was the norm and declines in NEL
19 occurred only sporadically, typically the result of abnormal weather.

20 **Q. What factors accounted for the tremendous customer and sales growth**
21 **between 1985 and 2005?**

22 A. Population growth and an expanding economy were the two principal drivers
23 behind this growth. During much of this time, the state's population growth

1 was one of the fastest in the nation. Florida's population expanded from 11.3
2 million in 1985 to more than 17.9 million in 2005. This represents an annual
3 growth rate of 2.3% or about 330,000 new Floridians a year. Likewise, the
4 state's economy, measured in terms of Gross Domestic Product (GDP),
5 increased by approximately 125% between 1985 and 2005, effectively more
6 than doubling the size of the state's economy. The state's population growth
7 and economic expansion were strongly interrelated during this time and both
8 contributed to FPL's customer and sales growth.

9 **Q. Please explain this interrelationship between the state's population**
10 **growth and economic expansion and how it impacted FPL's customer**
11 **and sales growth between 1985 and 2005.**

12 A. As described by the Office of Economic and Demographic Research,
13 population growth has traditionally been one of the primary drivers of the
14 state's economy. Most of the population growth between 1985 and 2005 was
15 the result of net migration (more permanent residents moving into the state
16 than out of the state). Net migration, in turn, increased the demand for
17 housing and services, key sectors of the state's economy. The state's total
18 non-agricultural employment increased by 77% between 1985 and 2005 and at
19 times led the nation in job growth. An expanding economy supported
20 additional population growth. According to demographic experts, working
21 age adults seeking new job opportunities accounted for a sizeable share of in-
22 migration between 1985 and 2005. Together, population growth and an
23 expanding economy stimulated demand for goods and services of all kinds,

1 including electricity. Population growth resulted in increases in the number of
2 electric customers thereby leading to higher sales between 1985 and 2005.
3 Likewise, the expanding economy between 1985 and 2005 led to increasing
4 energy use per customer across the company's major customer segments
5 (residential and commercial).

6

7 **III. FPL'S LOAD FORECAST FROM ITS LAST RATE PROCEEDING**

8

9 **Q. How well did FPL forecast customers and sales in the last rate case?**

10 A. In the last rate case, total customers for the 2006 test year were projected to be
11 4,371,957. In part, this forecast reflected an adjustment FPL made to the
12 forecast for the assumption that lower customer growth would result from the
13 2004 hurricane season. The actual number of customers was 4,409,563,
14 which is 0.9% higher than projected. NEL for 2006 was projected to be
15 115,463 GWh while the actual level was 113,137 GWh, which is 2.0% lower
16 than projected.

17 **Q. Wasn't FPL's assumption that the customer forecast should be lowered
18 to reflect the 2004 hurricane season proven unnecessary?**

19 A. No, I don't believe so. Although FPL under-forecasted customers by 0.9%,
20 FPL's forecasted energy use per customer was 26,410 kWh, more than 2.9%
21 higher than the actual 2006 energy use per customer of 25,657 kWh. As
22 discussed in the next section of my testimony, 2006 marked the beginning of
23 the trend in lower energy use per customer we are currently experiencing. In

1 any event, FPL's assumption that the customer forecast should be lowered to
2 reflect the 2004 hurricane season improved the overall accuracy of the 2006
3 NEL forecast by offsetting the over-forecast of energy use per customer.

4

5 **IV. CUSTOMER GROWTH, NSAs, AND SALES GROWTH SINCE FPL'S**
6 **LAST RATE PROCEEDING**

7

8 **Q. What customer growth has FPL experienced since 2005?**

9 A. The average number of customers increased by 87,667 in 2006 or a
10 percentage gain of 2.0%. On an annual average basis customer growth
11 remained strong in 2007 with an increase of 87,027 for another 2.0% gain.
12 However, monthly data show that by the second half of 2007 customer growth
13 was decelerating. The slowdown became more pronounced in 2008 and by
14 August 2008 FPL began experiencing monthly declines in the number of
15 customers on a year over year basis. In other words, the total number of
16 customers in August 2008 was less than the total number in August 2007.
17 Based on available records extending back to 1965, this was the first year over
18 year decline in customers in the Company's history. Exhibit RM-3 shows the
19 change in FPL's monthly customers on a year over year basis. By December
20 2008 the year over year decline in customers had reached 11,239. Due to
21 stronger growth in the first months of the year, average number of customers
22 increased by 13,140 in 2008, a minimal gain of 0.3%. Again based on

1 available records extending back to 1965, this represented the lowest rate of
2 customer growth in the Company's history.

3 **Q. Has the decline in customer growth led to a reduction in the number of**
4 **new service accounts?**

5 A. Although below prior years, the absolute level of NSAs has remained high.
6 Over 58,000 NSAs were added in 2008. Cumulatively, this brings the total
7 number of NSAs added since 2006 to over 280,000. As shown in Exhibit
8 RM-3, the decline in customer growth has been more dramatic than the
9 change in the number of NSAs. Despite the 58,000 NSAs added in 2008,
10 there was a net loss of more than 11,000 customers between December 2007
11 and December 2008.

12 **Q. What accounts for the discrepancy between customer growth and NSAs?**

13 A. NSAs are based on the gross number of new service installations. Customer
14 growth, on the other hand, reflects the net impact of new service installations,
15 combined with changes in the number of inactive accounts and other factors.
16 As shown in Exhibit RM-3, there has been a substantial buildup in inactive
17 meters since 2007. The growth in inactive meters diminishes the customer
18 growth that would otherwise result from new service installations.

19 **Q. What energy use per customer and sales growth has FPL experienced**
20 **since 2006?**

21 A. Energy use per customer has declined consistently since 2006. Energy use per
22 customer declined by 0.4% in 2006, then by 0.9% in 2007 and by another
23 3.1% in 2008. By 2008 energy use per customer had fallen to its lowest level

1 since 1999. The combination of slower customer growth and declining use
2 per customer has resulted in dramatically lower and ultimately negative sales
3 growth. The growth in NEL fell from an annual increase of 1.7% in 2006 to a
4 1.0% increase in 2007. In 2008 there was a 2.9% contraction in NEL.

5 **Q. What factors explain the stagnant customer and sales growth experienced**
6 **since 2006?**

7 A. Reduced population growth and the economic slowdown are responsible for
8 much of the stagnation in customer and sales growth. Slower population
9 growth has curtailed FPL's customer growth while the economic slowdown
10 has dampened energy use per customer. Due to the economic slowdown,
11 customers have become more apprehensive about their expenditures and have
12 been restricting their consumption of goods and services, including electricity.
13 Moreover, the slowdown in Florida's population growth and economic
14 recession are reinforcing one another, just as the converse did earlier in the
15 decade. With the collapse of the housing boom, employment in the
16 construction sector, previously one of the state's leading sources of job
17 creation, began growing at a much slower pace in 2006. By January 2007
18 employment in the construction sector was contracting in absolute terms. Led
19 by losses in the construction sector, total non-agricultural employment began
20 falling in the second half of 2007. As of December 2008, the state was losing
21 jobs at an annual rate of 3.2% or 255,200 jobs per year. With fewer job
22 opportunities the in-migration of job seekers stalled. Population growth

1 slowed from 2.4% in 2006 to 1.8% in 2007. By 2008 population growth had
2 fallen to 0.7% a year.

3

4 **V. UNDERLYING METHODOLOGIES AND ASSUMPTIONS OF THE**
5 **CUSTOMER GROWTH, ENERGY USE PER CUSTOMER, AND NEL**
6 **FORECASTS**

7

8 **A. CUSTOMER GROWTH FORECAST**

9

10 **Q. What is the primary determinant of customer growth?**

11 A. Customer growth is primarily determined by changes in population.
12 Accordingly, FPL forecasts total customers using an econometric model with
13 population and seasonal factors as the explanatory variables.

14 **Q. What source does FPL rely on for its population projections?**

15 A. FPL relies on population projections produced by the University of Florida's
16 Bureau of Economic and Business Research. FPL's customer growth forecast
17 is based on the University of Florida's October 2008 population projections,
18 the most recent projections available at the time the forecast was developed.

19 **Q. How do the October 2008 population projections compare with prior**
20 **projections?**

21 A. The October 2008 population projections are significantly below prior
22 projections. As shown in Exhibit RM-4 the University of Florida revised its
23 population projections four times between November 2007 and October 2008.

1 Each revision has been progressively more pessimistic about the state's
2 population growth through 2011. The University of Florida's October 2008
3 population projections assume minimal net migration into Florida through
4 2010. As a result, the University of Florida's October 2008 projections show
5 an annual rate of population growth of only 0.4% in 2009 and 0.5% in 2010.
6 By 2011 a modest rebound of 1.2% is projected.

7 **Q. How does FPL's forecast of total customers compare with recent actual**
8 **customer growth?**

9 A. FPL's forecast shows a continued slowdown in customer growth consistent
10 with recent actuals. On an average annual basis there was a 0.3% increase in
11 customers in 2008. FPL is projecting a 0.2% increase for 2009 followed by a
12 0.6% increase in 2010. Driven by a higher rate of population growth,
13 customer growth in 2011 should rebound to 1.3%. The forecasted changes in
14 the annual number of customers are provided in Exhibit RM-5.

15 **Q. What is FPL's forecast of NSAs?**

16 A. While below their historical levels the forecasted number of NSAs remains
17 large. As shown in Exhibit RM-6 the number of NSAs is expected to fall
18 from over 58,000 in 2008 to 44,000 in 2009 and then increase slightly to
19 47,000 in 2010. By contrast, the annual number of NSAs consistently
20 exceeded 100,000 between 2001 and 2006. The forecast of NSAs is based on
21 an econometric model which uses current and lagged housing starts as
22 explanatory variables. The forecast of housing starts was provided by Global
23 Insight.

1 **Q. How does FPL's forecast of total customers compare with the projected**
2 **number of NSAs?**

3 A. Consistent with recent actuals, the absolute number of NSAs is projected to
4 remain high relative to customer growth. Thus while customer and sales
5 growth have both dropped dramatically, from 2006 through 2010 FPL is still
6 projected to add over 370,000 NSAs. These 2006 through 2010 NSAs are
7 roughly equivalent to the total number of customers FPL serves in Sarasota
8 and St Lucie Counties. This is significant because FPL must build the
9 necessary infrastructure required to serve these new accounts.

10 **Q. Is FPL's projected number of total customers reasonable?**

11 A. Yes. The forecast incorporates the most recent population projections from
12 the University of Florida available at the time the forecast was developed.
13 The customer forecast is based on sound statistical methods previously
14 reviewed and approved by the Commission. A comparison of the forecasted
15 number of total customers with recent actuals further supports the
16 reasonableness of the forecast.

17

18 **B. FORECAST OF ENERGY USE PER CUSTOMER AND NEL**

19

20 **Q. What are the primary determinants of energy use per customer?**

21 A. The primary determinants of energy use per customer include the economy,
22 weather, the price of electricity, changes in the appliance stock and the
23 addition of new wholesale contracts. Accordingly, FPL's forecast of energy

1 use per customer reflects each of these factors. FPL forecasts energy use per
2 customer using an econometric model with explanatory variables representing
3 a number of these factors. The remaining factors are used to adjust the output
4 of the econometric model.

5 **Q. How does FPL measure the influence of the economy in forecasting**
6 **energy use per customer?**

7 A. Real household disposable income is used as an explanatory variable in FPL's
8 econometric model of energy use per customer. Real household disposable
9 income is defined as total personal income less income taxes, adjusted for
10 inflation and divided by the total number of households. Real household
11 disposable income reflects the income households have available to spend on
12 goods and services of all kinds, including electricity. Consistent with energy
13 use per customer, real household disposable income is expressed on a per
14 household basis. Unlike other measures of income, real household disposable
15 income incorporates the impact of income taxes and thus reflects the income
16 available for consumption.

17 **Q. How did FPL develop its forecast of real household disposable income?**

18 A. FPL developed its forecast after reviewing forecasts of real household
19 disposable income from a number of sources, including Global Insight,
20 Moody's Economy.com, and the Florida State Legislature. FPL also studied
21 the past cycles in real household disposable income, particularly the declines
22 experienced during past recessions. Finally, FPL considered other indicators,
23 such as the consumer confidence index and employment data. To an extent,

1 such indicators can provide a more timely view of the economy than that
2 available in formal projections which may only be released a few times a year.

3 **Q. What is FPL's outlook for real household disposable income?**

4 A. Real household disposable income is projected to decline by 2.3% in 2009
5 followed by a 0.6% decline in 2010 and a positive 0.7% growth rate in 2011.
6 The depth of the decline in real household disposable income is consistent
7 with the forecast developed by Global Insight in July 2008. Specifically, FPL,
8 like Global Insight, assumes that the largest monthly declines in real
9 household disposable income will be experienced in early 2009 with a 4.3%
10 decline over the prior year. Thus, the most severe declines in real household
11 disposable income are forecasted to occur in early 2009. FPL's forecast then
12 assumes a lingering recession followed by a gradual recovery. The timing of
13 this recovery is based on the historical performance of real household
14 disposable income in severe recessions. During severe recessions, such as
15 that experienced in the mid-1970s, real household disposable income may
16 continue to decline (albeit at progressively slower rates) for several quarters
17 before reaching a trough. In fact, during the mid-1970's recession real
18 household disposable income continued to contract for more than a year
19 following the official end of the recession. Accordingly, FPL's forecast of
20 real household disposable income assumes that positive growth in real
21 household disposable income will not occur until 2011.

1 **Q. How does FPL's forecast of real household disposable income compare**
2 **with past recessions?**

3 A. The forecasted declines in real household income are less severe than those
4 experienced in the mid-1970s but are more severe than those experienced
5 during recessions in the early 1990s and 2000s. In making comparisons with
6 past recessions it is important to remember that the Florida economy has
7 generally performed better than the U.S. economy as a whole. This is not
8 expected to be the case in the current recession. Indeed, the state's weaker
9 performance is already evident in employment figures which show that
10 Florida is shedding jobs at a faster rate than the national economy. Likewise,
11 the housing crisis has been more acute in Florida than in the U.S. as a whole.

12 **Q. Is FPL's forecast of real household disposable income reasonable?**

13 A. Yes. FPL's forecast of real household disposable income reflects reasonable
14 adjustments to Global Insight's forecast. Based on the most timely and
15 relevant information available, Global Insight's forecasts appear to be overly
16 optimistic in terms of the speed of the recovery. Global Insight's July 2008
17 forecast indicated a significant drop in real household disposable income in
18 early 2009 followed by a rapid recovery. Forecasts from other sources
19 suggested a more pessimistic outlook. Moody's Economy.com indicated a
20 much sharper drop and more gradual recovery in real household disposable
21 income while forecasts from the state legislature assumed consistently lower
22 income levels. Perhaps more importantly, key developments in late 2008,
23 including the credit freeze and federal bailout of major financial institutions,

1 further depressed the consensus view of the economy. By November 2008,
2 the National Association of Business Economists announced that most of its
3 members were forecasting a prolonged recession. Likewise, in October 2008
4 the National Economic Estimating Conference of the Florida Legislature
5 announced that it was using a combination of baseline and pessimistic
6 forecasts from Global Insight rather than the single baseline forecast normally
7 used. Given all of these factors, the adjustments to Global Insight's forecast
8 incorporated in FPL's forecast of real household disposable income were
9 warranted. Accordingly, FPL adjusted Global Insight's forecast of real
10 household disposable income to reflect a lingering recession.

11 **Q. How does FPL measure the influence of weather in forecasting energy use**
12 **per customer?**

13 A. FPL measures the influence of weather based on cooling and heating degree
14 hours. Historical cooling and heating degree hours are explanatory variables
15 in the energy use per customer model. The forecasted number of cooling and
16 heating degree hours is based on twenty year averages.

17 **Q. How does FPL measure the influence of price in forecasting energy use**
18 **per customer?**

19 A. FPL uses the real price of electricity as an explanatory variable in forecasting
20 energy use per customer. The real price of electricity is determined by
21 adjusting the nominal price for inflation. The forecasted price of electricity is
22 consistent with fuel cost projections incorporated in FPL's most recent fuel
23 filing.

- 1 **Q. Does FPL capture the influence of changes in the appliance stock and**
2 **efficiency standards in its forecast?**
- 3 A. Yes. FPL adjusts the output of its econometric model for changes in the
4 appliance stock. FPL relies on estimates developed by ITRON, a leading
5 energy consulting firm. ITRON's estimates quantify the reduction in energy
6 use resulting from federally mandated efficiency standards, such as those
7 codified in the National Energy Policy Act (NEPACT) and the Energy
8 Independence and Security Act (EISA). ITRON's estimates also incorporate
9 the impact of compact fluorescent light bulbs which are projected to
10 significantly reduce lighting loads in advance of the new incandescent
11 standards required in EISA.
- 12 **Q. Has the Commission previously reviewed and accepted load forecasts**
13 **incorporating adjustments for changes in the appliance stock?**
- 14 A. Yes. All of the load forecasts in FPL's recent need determination filings have
15 incorporated similar adjustments based on ITRON's estimates.
- 16 **Q. How does FPL adjust the output of its econometric model for ITRON's**
17 **estimates of the energy savings resulting from NEPACT, EISA and**
18 **compact fluorescent light bulbs?**
- 19 A. The output of the econometric model is first reduced by an estimate of
20 incremental NEPACT, EISA and compact fluorescent light bulb energy
21 savings not fully embedded in the historical data. The resulting forecast is
22 then calibrated or anchored to the average level of 2008 sales.

1 **Q. Are there any other adjustments to the output of econometric model?**

2 A. Yes. In addition to its role in the general economic decline, the housing crisis
3 has had a direct impact on energy use per customer. There has been an
4 unprecedented increase in the number of homes left vacant as a result of the
5 housing crisis. This increase in the number of empty homes has spurred the
6 increase in the number of inactive meters discussed earlier. In many cases,
7 however, these empty homes continue to be counted as active FPL accounts
8 because the electric service has not been disconnected. By maintaining an
9 active electric account, the owners of these homes are able to show the home
10 to potential buyers and avoid the mildew damage that occurs without proper
11 ventilation. Nevertheless, the electric usage of these homes is a fraction of the
12 use typical of occupied homes. As shown in Exhibit RM-7, the percentage of
13 residential customers using a minimal amount of electricity monthly, between
14 1 and 200 kWh, has risen dramatically with the onset of the housing crisis.
15 While there has always been a portion of customers using minimal amounts of
16 electricity, historically around 7% of residential customers have fallen into
17 this group. By the end of 2008 the percentage of residential customers using
18 minimal amounts of electricity had risen to 8.7%. As a result, FPL has
19 adjusted its forecasted energy use per customer for the increase in the number
20 of minimal usage customers.

1 **Q. Is the trend in minimal usage customers really significant in terms of**
2 **FPL's energy use per customer?**

3 A. Absolutely. A one percentage point increase in the percentage of residential
4 customers using between 1 and 200 kWh per month amounts to an increase of
5 almost 40,000 in the number of minimal usage customers. Residential usage,
6 moreover, is a significant component of FPL's sales. Residential customers
7 account for 88% of FPL's customers and 51% of FPL's sales. As a result,
8 shifts in residential usage can have a profound impact on energy use per
9 customer.

10 **Q. Isn't the increase in the number of minimal usage customers reflected in**
11 **other variables already included in the forecast?**

12 A. No. The adjustment for the increase in the number of minimal usage
13 customers is designed to reflect information not otherwise incorporated into
14 the forecast. First, the magnitude of the number of empty homes is almost
15 without historic precedent. The increase in the number of minimal usage
16 customers has paralleled the rise in vacancy rates during this recession.
17 Therefore, it's helpful to consider the data on vacancy rates gathered by the
18 Census Bureau. According to the Census Bureau, national vacancy rates by
19 the end of 2008 were well above the levels experienced in past recessions,
20 including the severe mid-1970's recession. Moreover, during the current
21 recession vacancy rates in Florida have been consistently above the national
22 average. Second, the trend in empty homes has been accelerating in recent
23 months. Again, this can be seen both in terms of the increase in the number of

1 minimal usage customers and in terms of the reported vacancy rates. At the
2 start of 2008 the number of minimal usage customers was about 328,000. By
3 the start of 2009 the number of minimal usage customers had risen to more
4 than 350,000. Likewise, the Census Bureau reports that Florida's quarterly
5 vacancy rates in 2008 were consistently above the prior year's level.

6 **Q. Is adjusting the output of an econometric model for additional**
7 **information in this manner an accepted forecasting technique?**

8 A. Yes. The Commission has reviewed and accepted other adjustments to FPL's
9 econometric models in past cases. These have included adjustments for
10 energy efficiency and additional wholesale contracts in FPL's most recent
11 need determination filing. In addition, industry and academic experts have
12 recognized that the performance of forecasts reflecting such adjustments is
13 frequently superior to that of forecasts produced on a purely mechanical basis.

14 **Q. Is FPL making any adjustments to the output of its econometric model**
15 **for new wholesale contracts in its forecast?**

16 A. Yes. FPL is adjusting the output of its econometric model to reflect the
17 addition of two new wholesale contracts. First, a 75 MW power sale to
18 Seminole Electric Cooperative is projected for December 2008 through
19 December 2009. Second, partial requirements service to the Lee County
20 Cooperative begins in 2010. Lee County is projected to add an additional
21 1,228 GWh to NEL in 2010.

1 **Q. Do the adjustments FPL is making to the output of its econometric model**
2 **improve the accuracy of the forecast?**

3 A. Yes. Although the econometric model is statistically sound and accurately
4 reflects the historical data upon which it is based, it cannot reflect changes in
5 the environment not fully embedded in the historical data. For example,
6 events such as the rise in the number of empty homes and recent changes in
7 appliance standards are not adequately reflected in the model which is based
8 on historical data from January 1998 through October 2008. Thus, absent the
9 adjustments FPL is making to the output of its econometric model, energy use
10 per customer and ultimately NEL would likely be over-forecasted. As
11 discussed in FPL witness Hanser's testimony, this is evident in the pattern of
12 consistently negative residuals between March 2008 and October 2008.
13 Recent actuals provide additional support for FPL's position that the
14 adjustments to the econometric model are appropriate. Exhibit RM-8 shows
15 the output of the econometric model, the forecasted energy use per customer
16 with FPL's adjustments, and the actual energy use per customer for the
17 November 2008 through January 2009 time period. The exhibit shows that
18 the adjustments to the output of the econometric model significantly improve
19 the accuracy of the forecast based on the most recent period for which actuals
20 are available.

21 **Q. What is FPL's forecasted energy use per customer?**

22 A. FPL is forecasting a 1.7% decline in energy use per customer in 2009
23. followed by a 0.1% increase in 2010. The decline in 2009 is a continuation of

1 the three year trend in declining energy use per customer FPL has experienced
2 since 2006. Indeed, the forecasted decline in 2009 actually represents a
3 slower rate of decline than the 3.1% decline experienced in 2008. With the
4 additional load from Lee County and modest improvements in the economy,
5 energy use per customer in 2010 is expected to remain virtually flat. With
6 stronger economic growth, the projected energy use per customer increases by
7 0.3% in 2011. Exhibit RM-9 shows the actual and forecasted energy use per
8 customer.

9 **Q. What is FPL's forecasted NEL?**

10 A. Based on the forecast of total customers and energy use per customer, FPL is
11 forecasting a 1.4% decline in NEL in 2009 followed by a 0.7% increase in
12 2010. With higher customer growth and economic improvements, NEL is
13 projected to grow at a rate of 1.6% in 2011. Exhibit RM-10 shows the
14 forecasted levels of NEL.

15 **Q. Is FPL's NEL forecast reasonable?**

16 A. Yes. The forecast reflects a careful review of the factors influencing energy
17 use per customer. The forecast is based on sound statistical methods
18 previously reviewed and approved by the Commission. In addition, a
19 comparison of the forecast with recent actuals suggests that the forecast is
20 reasonable.

1 **VI. CUSTOMERS AND SALES BY REVENUE CLASS**

2

3 **Q. How does FPL forecast customers by revenue class?**

4 A. As discussed in detail in MFR F-5, econometric models are developed to
5 forecast customers in the residential, commercial, industrial, and street &
6 highway revenue classes. Customer forecasts for the public authority, metro-
7 rail and wholesale classes are based on class specific information. The
8 residential customer forecast is adjusted for the difference between the sum of
9 the revenue classes and the overall customers derived from the total customer
10 model.

11 **Q. What are the primary inputs to determine the growth in customers by**
12 **class?**

13 A. The growth in customers is primarily driven by population and economic
14 activity. Population projections are the key inputs in forecasting of residential
15 customers, which account for 88% of FPL’s total customers. Economic
16 activity is a key driver to both the commercial and industrial customers
17 forecast. The number of street & highway lighting customers is projected as a
18 function of residential customers. The customer forecast for other revenue
19 classes is customer specific.

20 **Q. How does FPL forecast billed sales?**

21 A. A line loss factor and a billing cycle adjustment are applied to the NEL
22 forecast to arrive at a forecast of total billed sales. Revenue class models are
23 then developed to distribute the forecast of total billed sales to the different

1 revenue classes. Billed sales for the residential and commercial sector are
2 adjusted proportionately for the difference between the sum of the revenue
3 classes and the forecast of total billed sales. FPL's process and models used
4 for forecasting billed sales are discussed in detail in MFR F-5.

5 **Q. How does FPL forecast billed sales by revenue class?**

6 A. Separate econometric models are developed for the residential, commercial,
7 and industrial revenue classes. Sales forecasts for the public authority, metro-
8 rail and wholesale classes are based on class specific information.

9 **Q. What are the primary inputs to determine the growth in energy sales by**
10 **class?**

11 A. The key drivers for the revenue class models are similar to the assumptions
12 discussed earlier for the NEL forecast. These include real household
13 disposable income, the real price of electricity, cooling & heating degree
14 hours and changes in the appliance stock and efficiency standards which are
15 used to forecast residential sales. The commercial sales model relies upon a
16 similar mix of inputs, but uses employment rather than real household
17 disposable income. The industrial model incorporates housing starts as an
18 economic driver.

19 **Q. What is FPL's customer and billed sales forecast by class?**

20 A. A summary of FPL's billed sales, billed use per customer, and number of
21 customers by class can be found in Exhibit RM-11. Residential customers are
22 projected to grow at an annual rate of 0.05% in 2009, 0.4% in 2010 and 1.1%
23 in 2011. Residential billed sales are projected to decline by 2.2% in 2009, by

1 1.2% in 2010, and grow by 0.4% in 2011. Commercial customers are
2 expected to grow by 1.8% in 2009, 2.3% in 2010, and 2.5% in 2011.
3 Commercial billed sales are projected to decline by 1.5% in 2009 and grow by
4 1.2% and 2.6% in 2010 and 2011 respectively.

5 **Q. Is FPL's forecast of customers and billed sales by revenue class**
6 **reasonable?**

7 A. Yes. A forecast is considered reasonable if good judgment is used in
8 estimating and testing the models and if the results make sense when
9 compared to prior similar situations. FPL followed this approach in preparing
10 the forecast.

11

12 **VII. JURISDICTIONAL SALES**

13

14 **Q. How is FPL's forecast of billed jurisdictional sales determined?**

15 A. FPL's forecast of billed jurisdictional sales, or retail sales, is based on the
16 summation of the billed sales by retail revenue class.

17 **Q. What is FPL's forecast of billed jurisdictional sales?**

18 A. FPL is forecasting billed jurisdictional sales of 101,078 GWh for 2009, a
19 decline of 1.8% from 2008. This represents a lower rate of decline than the
20 2.4% experienced in 2008. For 2010 FPL is forecasting billed jurisdictional
21 sales of 101,029 GWh, a decline of 0.05% from 2009. By 2011 billed
22 jurisdictional sales is forecasted to rebound to a 1.5% growth rate and reach
23 102,514 GWh.

1 **Q. How does FPL's forecast of billed jurisdictional sales compare with**
2 **historical data?**

3 A. The level of forecasted billed jurisdictional sales is below the growth in sales
4 FPL has historically experienced. For example, billed jurisdictional sales
5 grew by 2.9% between 1999 and 2006. This growth was comprised of 2.3%
6 annual growth in the average number of customers and 0.6% annual growth in
7 jurisdictional use per customer. By contrast, the average number of customers
8 is projected to grow by only 0.8% per year between 2006 and 2010 while
9 jurisdictional use per customer is projected to decline by 1.4% per year during
10 the same time period. As a result, billed jurisdictional sales is projected to
11 decline at an average annual rate of 0.6% between 2006 and 2010. On a
12 weather normalized basis, the decline is slightly higher with a 0.8% average
13 annual rate of decline in jurisdictional billed sales between 2006 and 2010.
14 Nevertheless, the forecasted declines in billed jurisdictional sales are not
15 extreme given recent trends. The forecast declines in billed jurisdictional
16 sales in 2009 and 2010 are less severe than the 2.4% decline experienced in
17 2008. Likewise, the 1.5% increase in billed jurisdictional sales forecasted for
18 2011 is comparable to the increases experienced in 2006 and 2007.

19 **Q. Is FPL's forecast of billed jurisdictional sales reasonable?**

20 A. Yes. The forecast is consistent with the forecasts of NEL and billed sales by
21 revenue class previously discussed. The forecast is based on statistical
22 methods previously reviewed and accepted by the Commission. In addition,
23 the forecast appears reasonable based on historical billed jurisdictional sales.

1 **VIII. MONTHLY PEAKS**

2

3 **Q. How does FPL develop its forecast of annual peaks?**

4 A. The summer and winter peaks are each forecasted using an econometric
5 model. The summer peak model incorporates real household disposable
6 income, the real price of electricity, cooling degree hours in the day prior to
7 the peak, and the average temperature on the day of the peak as explanatory
8 variables. The winter peak model uses real household disposable income,
9 heating degree hours the day before and the morning of the peak, and average
10 temperature on the day of the peak as explanatory variables. The summer and
11 winter peak forecasts are also adjusted for changes in the appliance stock, new
12 wholesale contracts, and the impact of empty homes.

13 **Q. How does FPL develop its forecast of monthly peaks?**

14 A. Monthly peaks, other than summer and winter, are developed using the
15 average historical ratios of monthly peaks to summer peak. This monthly
16 average is then multiplied by the corresponding summer peak to estimate the
17 monthly peak in any given year of the forecast period.

18

19 **IX. INFLATION FORECAST**

20

21 **Q. What measures of inflation does FPL incorporate into its budget**
22 **assumptions?**

1 A. FPL incorporates a number of measures of inflation in its budget assumptions
2 including CPI, the Producer Price Index (PPI) for all commodities, PPI for
3 intermediate goods, PPI for finished goods, and the Gross Domestic Product
4 deflator, among others. The CPI forecast is also used in computing the
5 Commission's O&M Benchmark.

6 **Q. How did FPL develop its CPI forecast?**

7 A. FPL developed its CPI forecast based on a review of multiple inflation
8 scenarios from Global Insight and other publicly available forecasts. FPL also
9 considered the historical trends in CPI. FPL's forecast was ultimately derived
10 by averaging baseline and pessimistic scenarios from Global Insight.

11 **Q. What is FPL's forecast of CPI?**

12 A. FPL is forecasting a 2.0% increase in the CPI in 2009 and 2010. This
13 represents a decline from the 3.8% rate of inflation experienced in 2008. The
14 forecasted decline in the rate of inflation is consistent with the consensus view
15 that the recession will dampen pressure on prices. Overall from 2006 to 2010,
16 the cumulative effect of inflation as measured by CPI is approximately 11%.

17 **Q. How does FPL's CPI forecast compare with the historical rate of
18 inflation?**

19 A. The forecast for 2009 and 2010 is below the long-term average rate of
20 inflation. The CPI has averaged a 2.8% annual increase in the last ten years
21 and a 3.1% annual increase since 1985. An inflation forecast below the long-
22 run average rate of inflation is to be expected given the lingering recession
23 projected thru 2010.

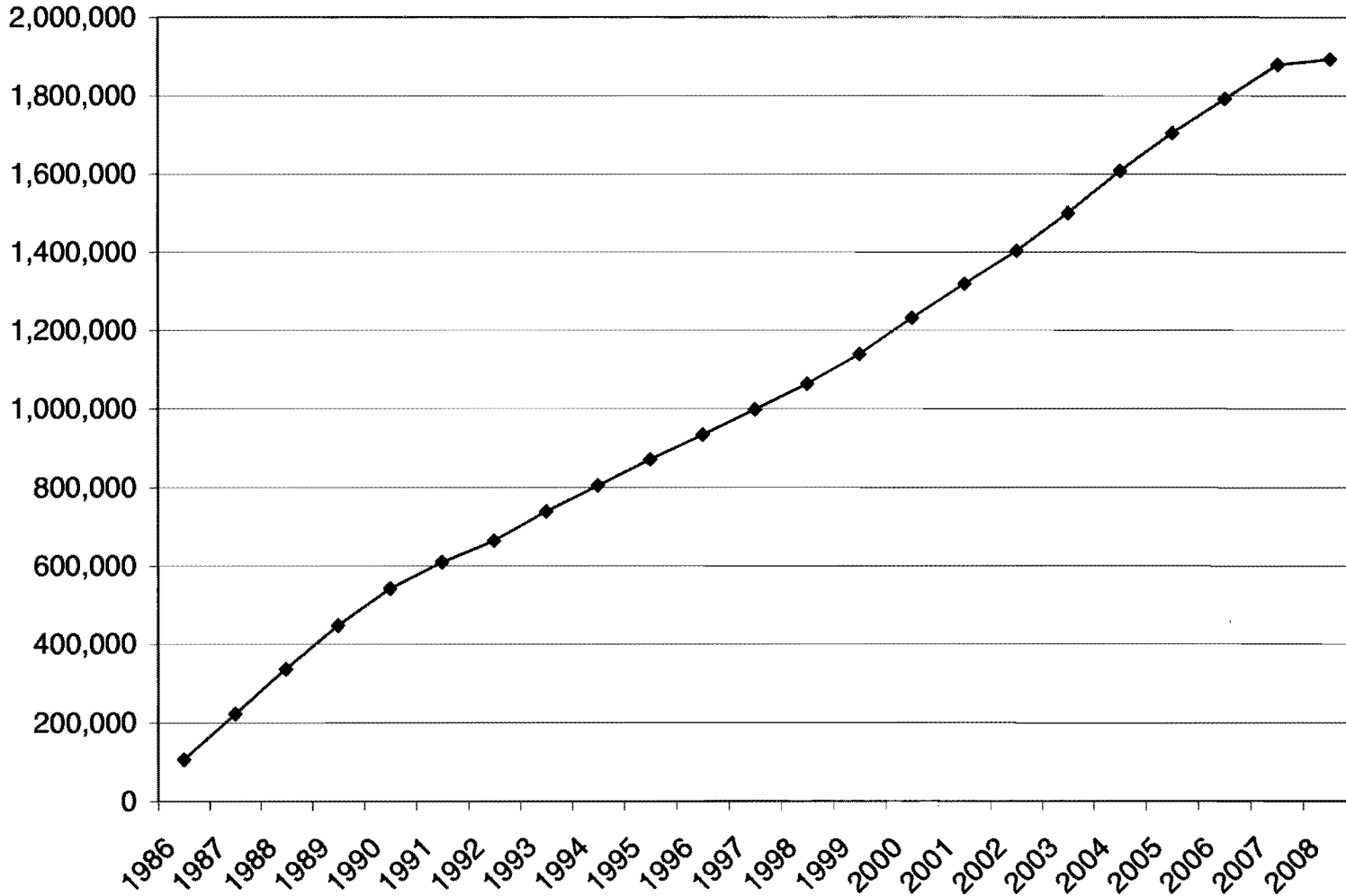
1 **Q. Is FPL's CPI forecast reasonable?**

2 A. Yes. FPL's forecast is consistent with the consensus view that inflation will
3 moderate as a result of the economic slowdown. In addition, FPL's forecast
4 appears reasonable when compared with historical trends in inflation.

5 **Q. Does this conclude your direct testimony?**

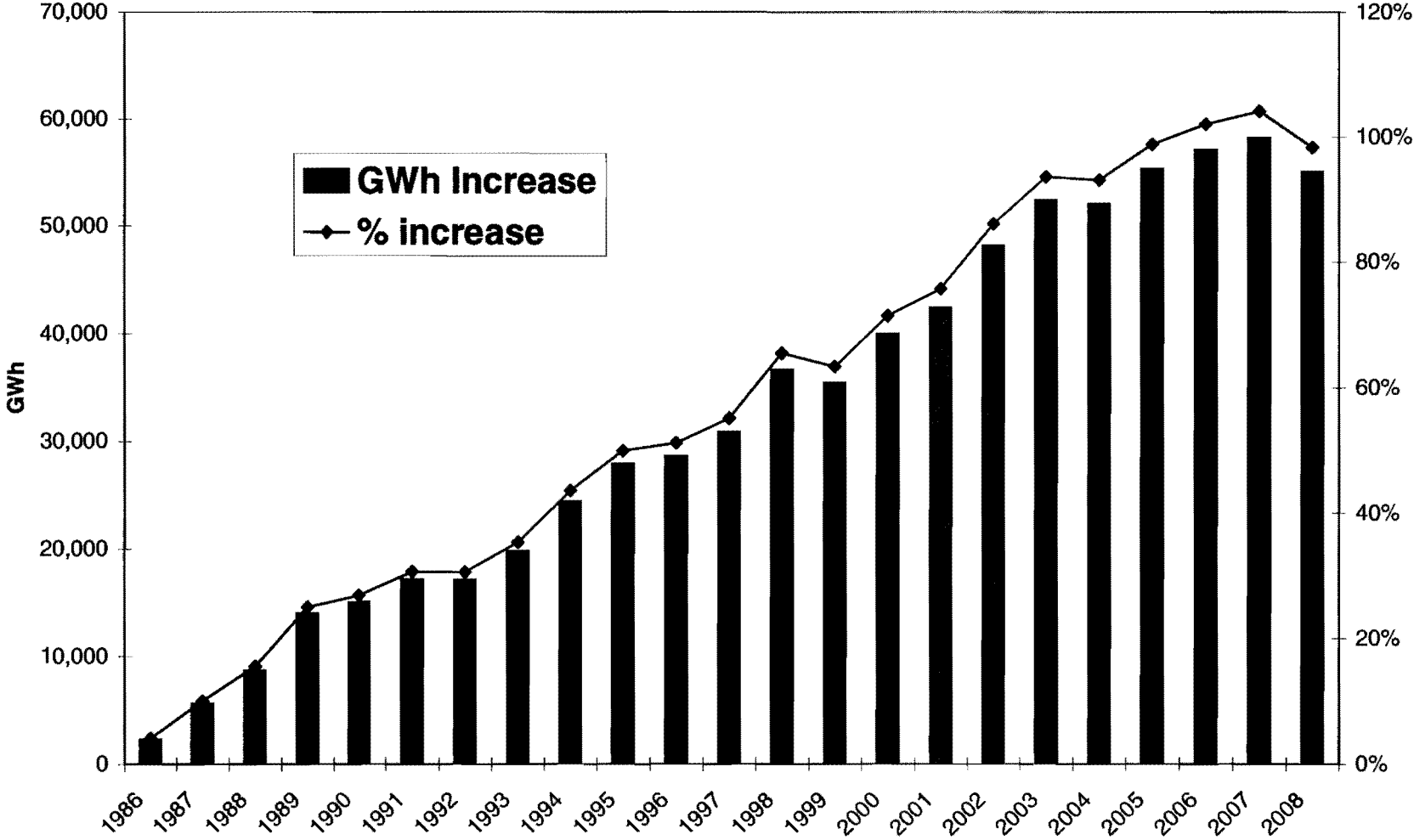
6 A. Yes.

Cumulative Customer Growth Since 1985



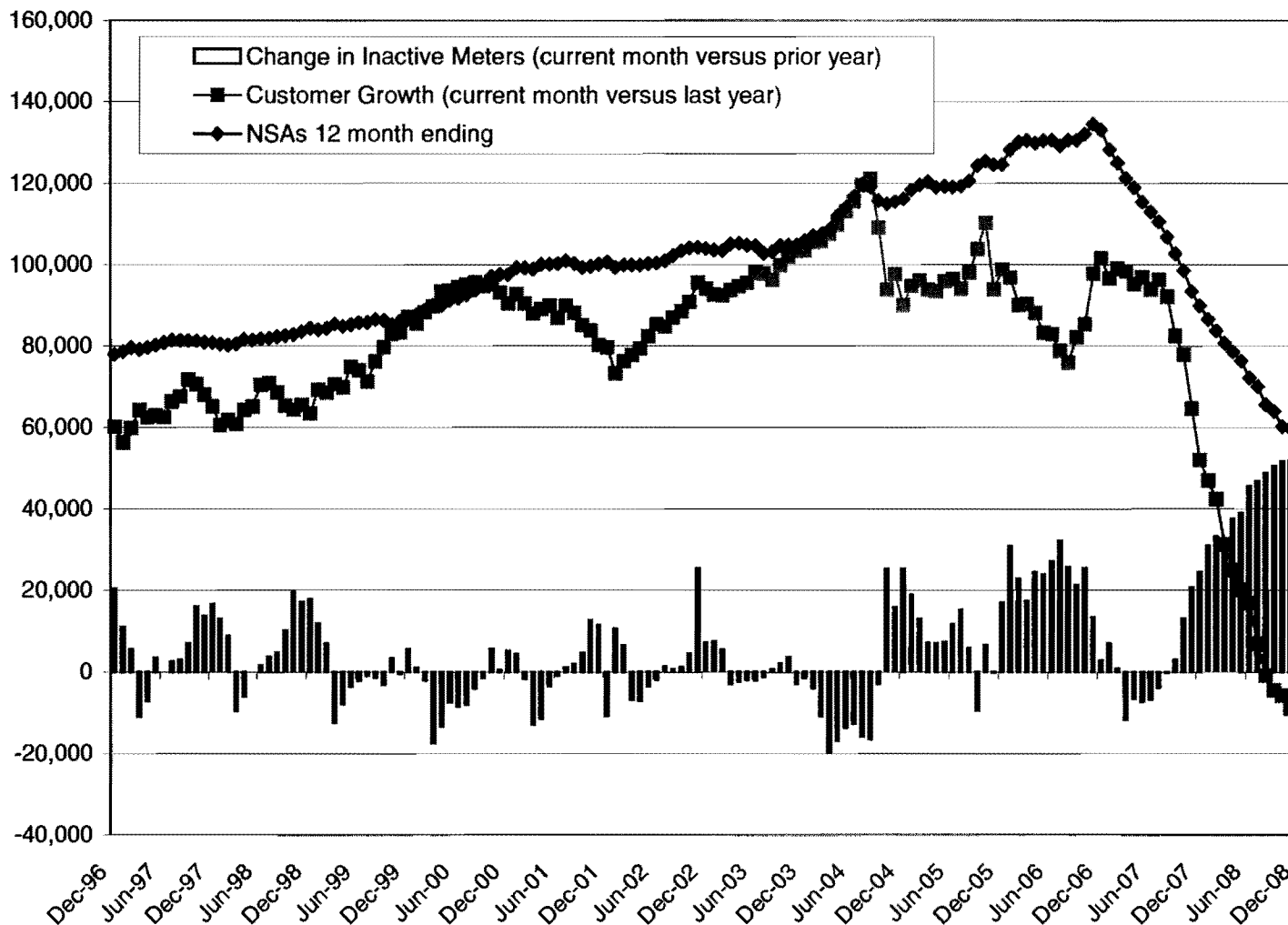
THE NUMBER OF CUSTOMERS HAS INCREASED BY ALMOST 1.9 MILLION SINCE 1985.

Cumulative Increase in NEL Since 1985



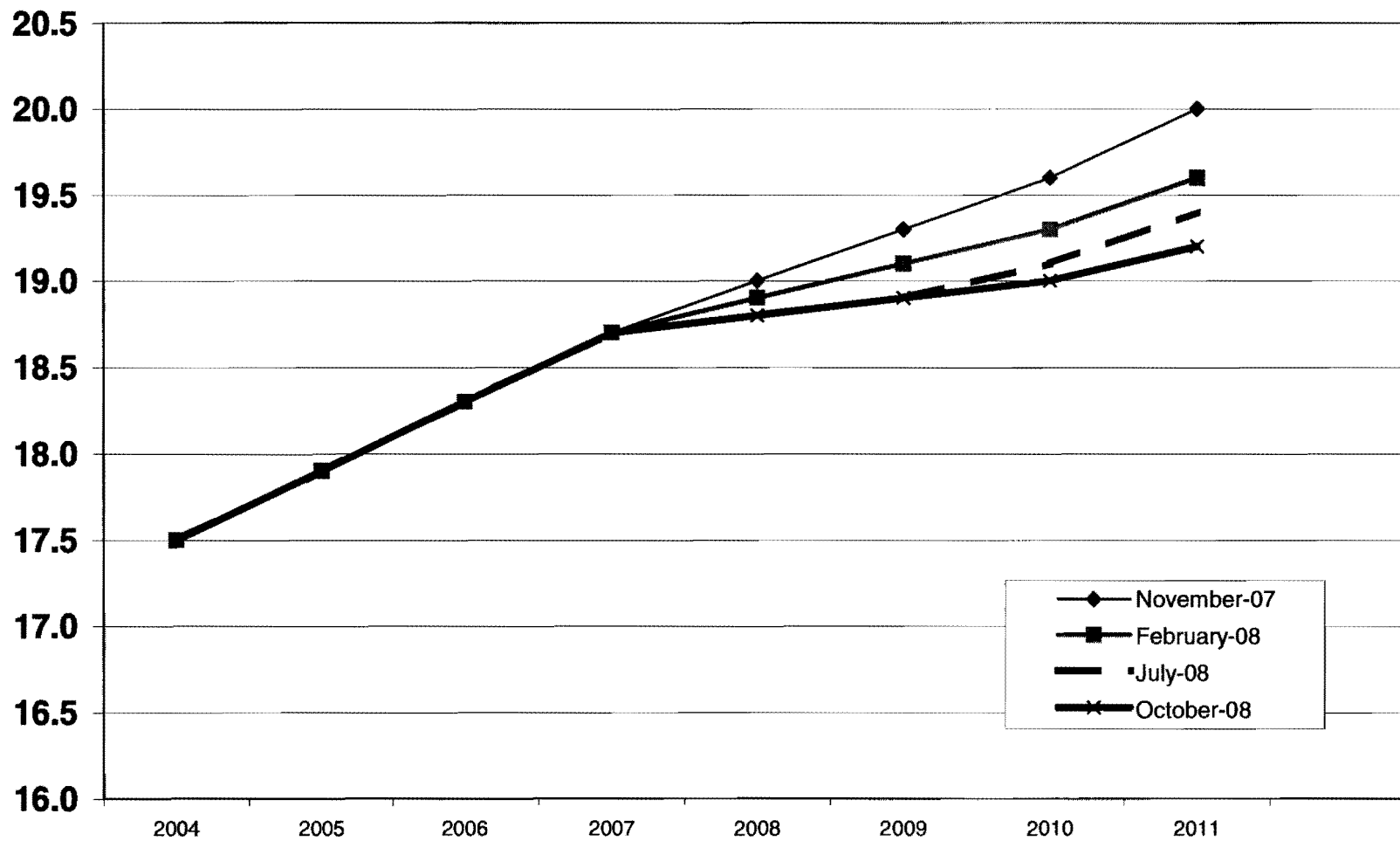
ENERGY SALES HAS INCREASED BY 98% SINCE 1985.

NSAs, Customer Growth and the Change in Inactive Meters



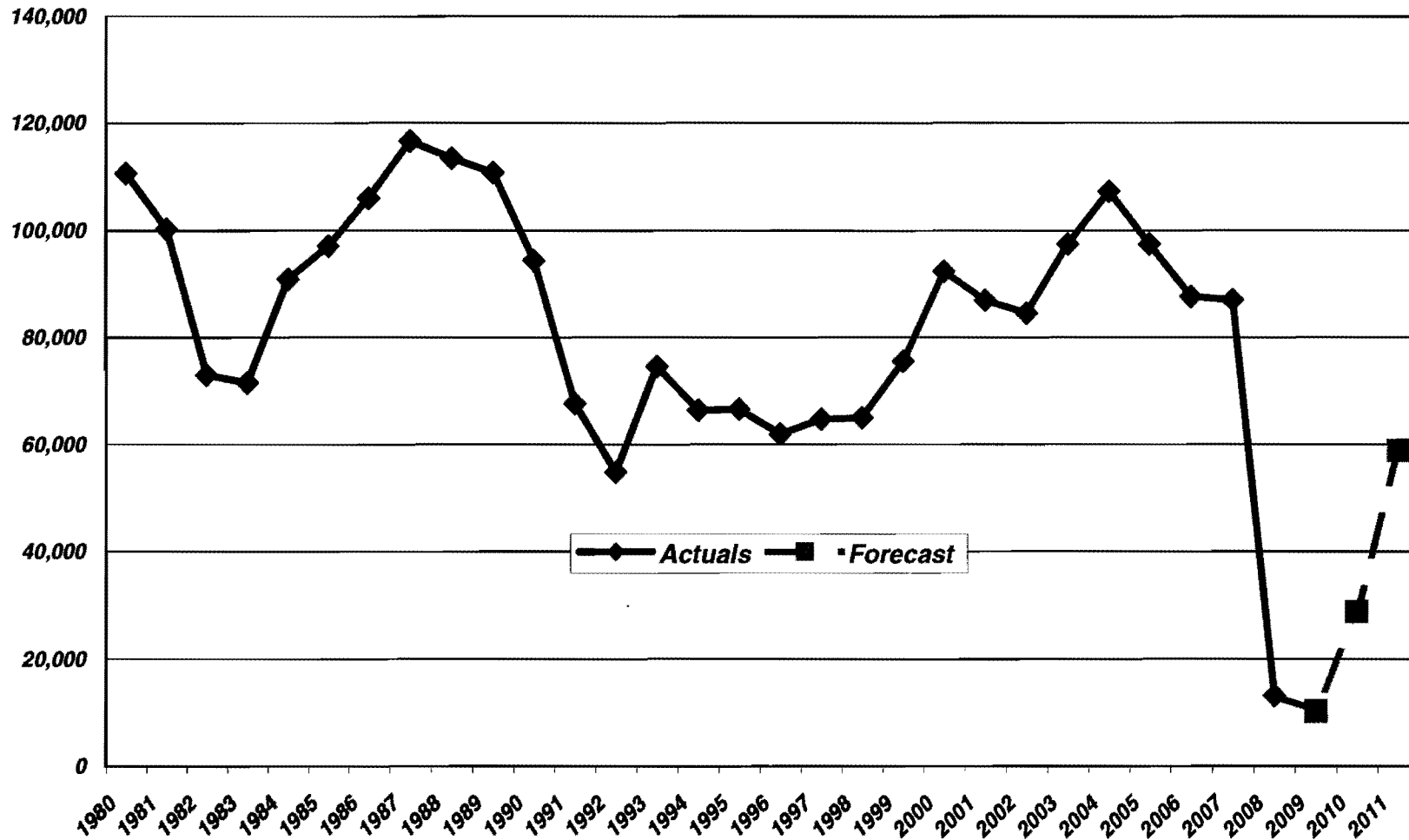
THE NUMBER OF CUSTOMERS IS NOW DECLINING DESPITE A LARGE NUMBER OF NSAs. THE EXPANDING NUMBER OF INACTIVE METERS IS DEPRESSING CUSTOMER GROWTH.

Population Forecasts from the University of Florida (millions)



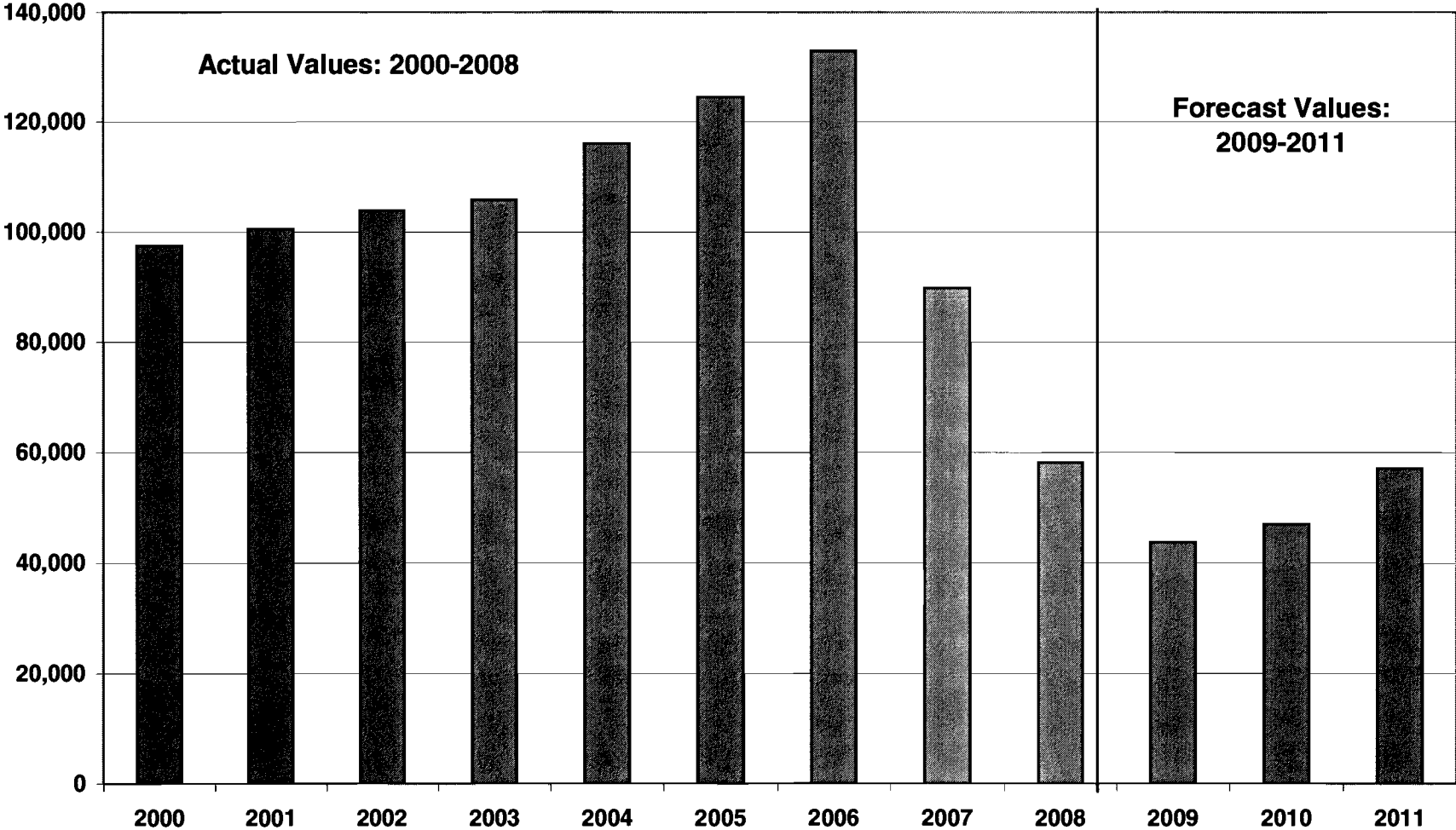
THE UNIVERSITY OF FLORIDA HAS BEEN REVISING THE STATE'S POPULATION FORECAST DOWNWARD.

Increase in the Average Annual Number of Customers



THE FORECAST SHOWS CUSTOMER GROWTH BELOW HISTORICAL LEVELS THRU 2011.

Annual NSAs

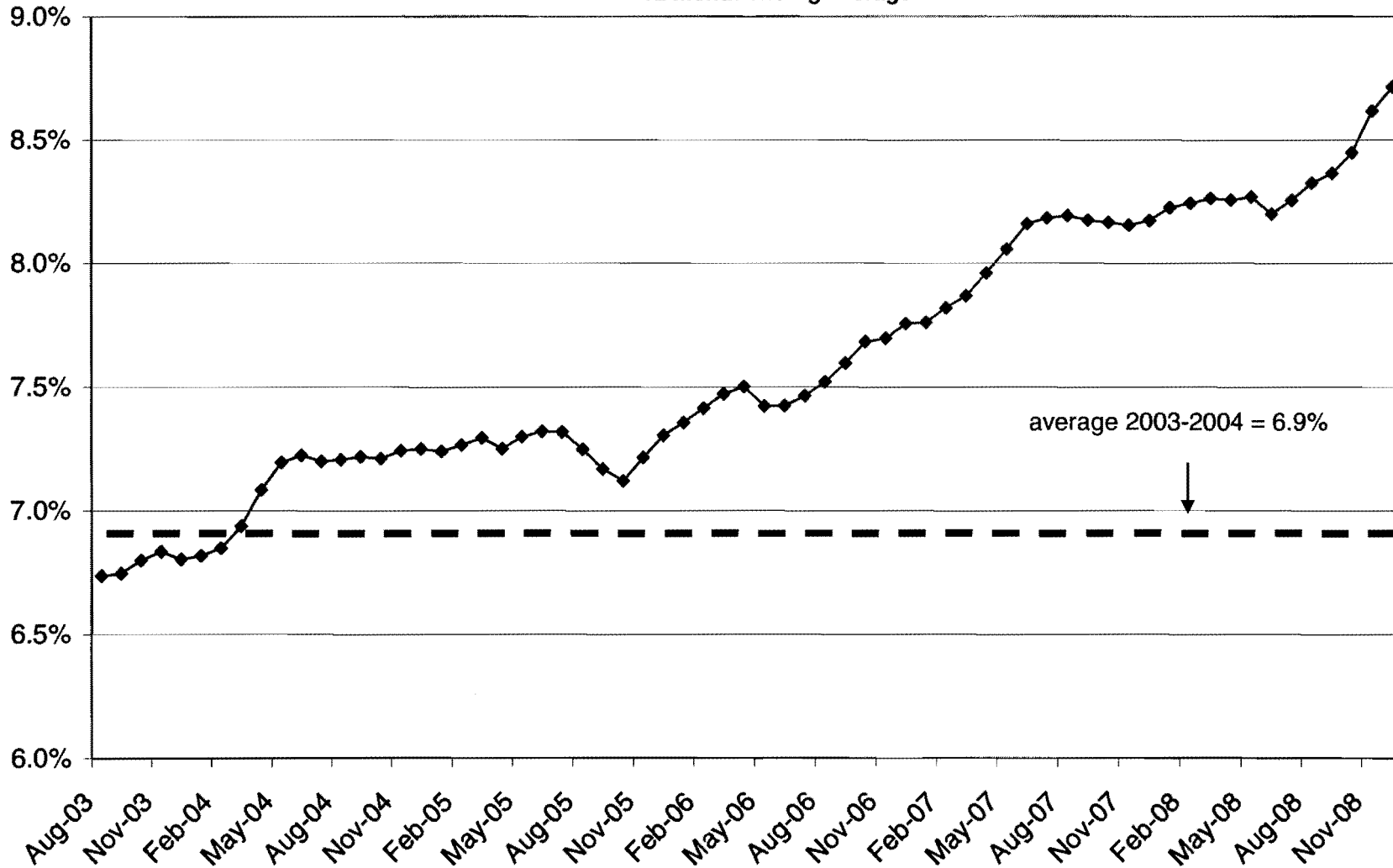


WHILE BELOW PAST LEVELS, THE ABSOLUTE NUMBER OF NSAs FORECASTED REMAINS HIGH.

Increase in Minimal Usage Customers

Percentage of Residential Customers Using 1 kWh and 200 kWh

12 month-ending average



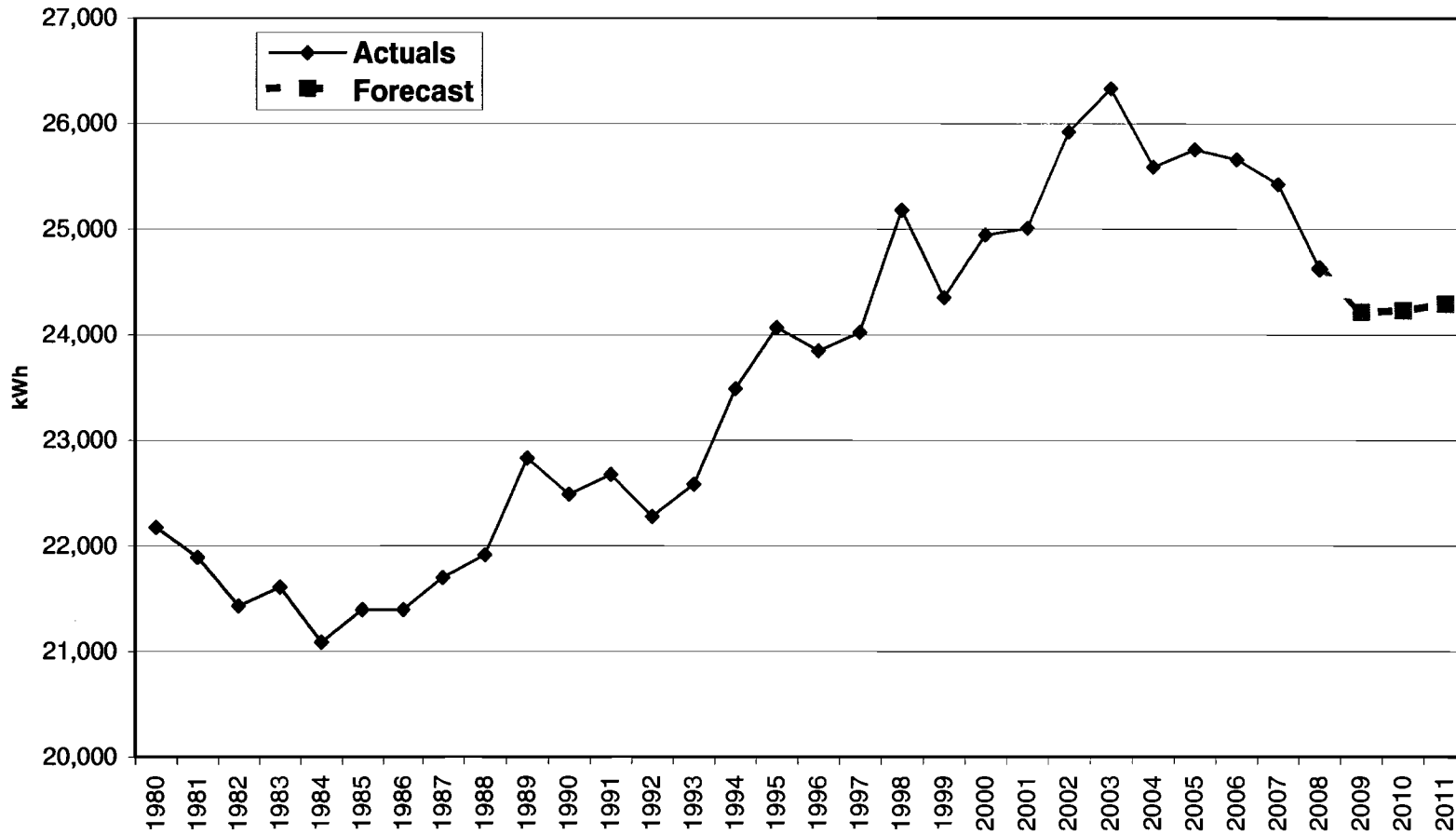
AN INCREASE IN THE NUMBER OF RESIDENTIAL CUSTOMERS USING MINIMAL AMOUNTS OF ELECTRICITY HAS COINCIDED WITH THE ONSET OF THE HOUSING CRISIS.

**Forecasting Variance
Energy Use per Customer (kWh)**

	Output of Econometric Model	Forecast with adjustments	Actual	Actual Weather Normalized
Nov-08	1,830	1,766	1,753	1,805
Dec-08	1,764	1,706	1,668	1,722
Jan-09	1,838	1,765	1,775	1,769
Total	5,432	5,237	5,195	5,296
Absolute Variance (% of Actuals)	4.6%	0.8%		
Absolute Variance (% of Weather Normalized Actuals)	2.6%	1.1%		

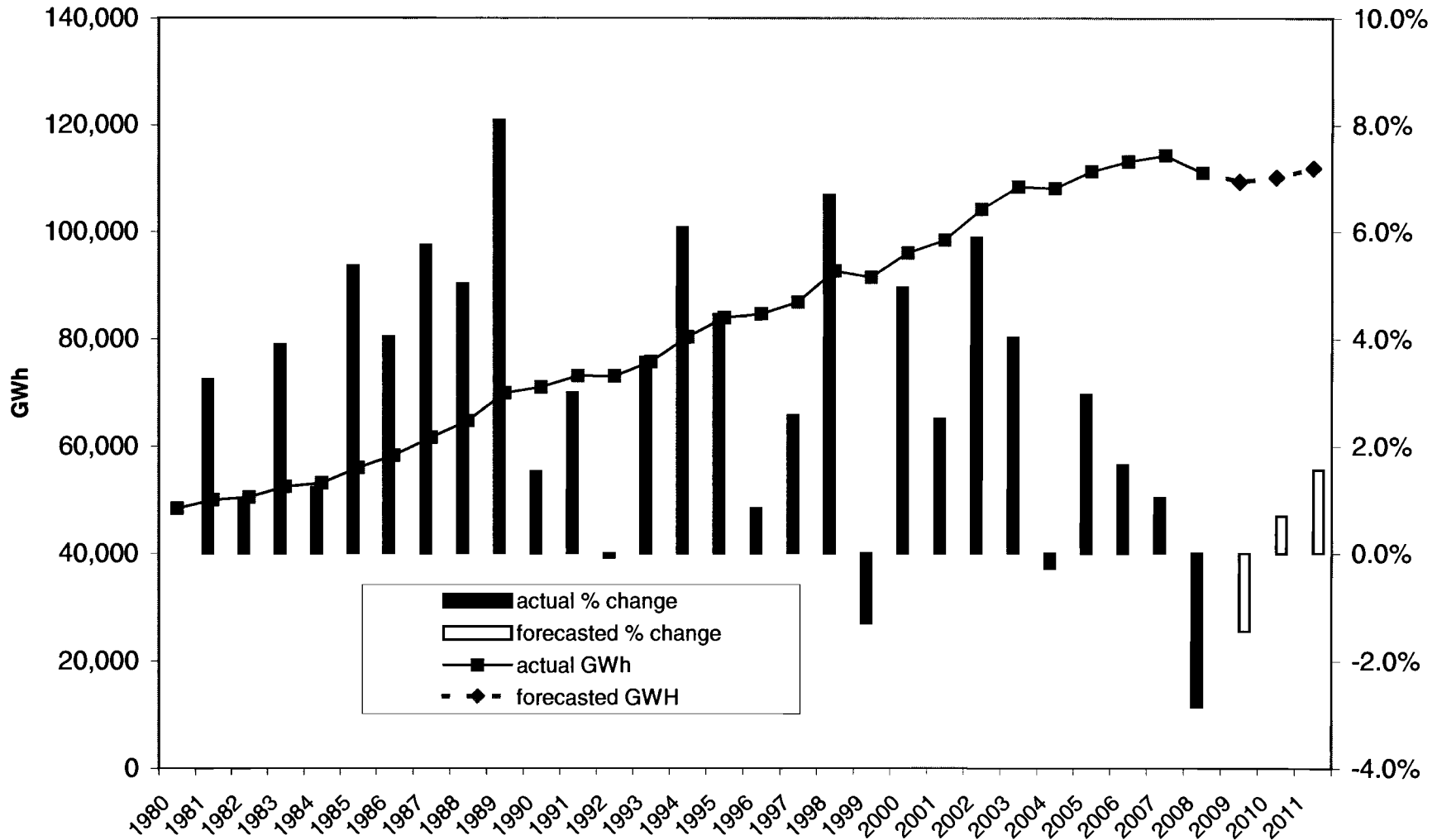
THE ADJUSTMENTS TO THE OUTPUT OF THE ECONOMETRIC MODEL ARE APPROPRIATE.

Annual Energy Use per Customer kWh



THE FORECAST SHOWS THE TREND IN DECLINING ENERGY USE PER CUSTOMER CONTINUING IN 2009 FOLLOWED BY RELATIVELY STABLE USE PER CUSTOMER IN 2010.

NEL Forecast and Actuals



THE FORECAST SHOWS A DROP NEL IN 2009 FOLLOWED BY SMALL INCREASES IN 2010 AND 2011.

**2008 MONTHLY ACTUALS OF
BILLED SALES, CUSTOMERS AND USE BY CLASS**

	January	February	March	April	May	June	July	August	September	October	November	December	Total
SYSTEM SALES (mWh)													
Residential	4,234,068	3,604,218	3,598,528	3,779,247	4,283,255	5,282,805	5,301,896	5,331,471	5,632,133	4,805,005	3,672,851	3,703,339	53,228,815
Commercial	3,783,449	3,491,304	3,442,605	3,509,771	3,717,190	4,108,255	4,103,113	4,016,556	4,261,071	3,926,048	3,580,327	3,621,740	45,561,429
Industrial	332,838	317,152	282,857	296,408	292,756	323,011	308,290	280,430	300,916	288,124	275,331	289,109	3,587,220
Street & Highway	36,111	31,207	37,034	32,584	34,399	35,670	34,633	35,472	35,449	37,889	36,156	36,252	422,854
Other	5,750	3,526	3,602	3,498	3,487	3,342	2,394	2,229	2,462	2,465	2,280	2,359	37,394
Railroads & Railways	7,558	6,695	6,300	6,711	6,383	6,832	7,158	6,762	6,863	6,662	6,730	6,442	81,095
TOTAL JURISDICTIONAL SALES	8,399,773	7,454,102	7,370,925	7,628,219	8,337,469	9,759,915	9,757,484	9,672,919	10,238,893	9,066,193	7,573,675	7,659,241	102,918,808
Resale	70,977	70,732	75,435	83,930	82,920	94,216	95,495	97,640	97,219	84,715	77,558	62,338	993,176
TOTAL SALES	8,470,750	7,524,834	7,446,360	7,712,149	8,420,389	9,854,131	9,852,979	9,770,559	10,336,112	9,150,908	7,651,234	7,721,579	103,911,984
CUSTOMERS													
Residential	3,995,414	4,001,651	4,003,023	4,001,785	3,996,910	3,996,829	3,991,810	3,989,187	3,985,030	3,983,523	3,981,138	3,980,785	3,992,257
Commercial	498,674	499,460	499,080	499,289	500,326	500,723	501,265	501,848	501,941	502,471	502,192	501,710	500,748
Industrial	15,142	14,695	14,221	13,923	13,597	13,372	13,155	12,920	12,797	12,548	12,249	11,902	13,377
Street & Highway	3,073	3,083	3,095	3,095	3,099	3,107	3,113	3,132	3,141	3,150	3,155	3,170	3,118
Other	207	207	206	205	205	204	204	204	201	199	199	199	203
Railroads & Railways	23	23	23	23	23	23	23	23	23	23	23	23	23
TOTAL JURISDICTIONAL CUSTOMERS	4,512,533	4,519,119	4,519,648	4,518,320	4,514,160	4,514,258	4,509,570	4,507,314	4,503,133	4,501,914	4,498,956	4,497,789	4,509,726
Resale	3	3	3	3	3	3	3	3	3	3	3	3	3
TOTAL CUSTOMERS	4,512,536	4,519,122	4,519,651	4,518,323	4,514,163	4,514,261	4,509,573	4,507,317	4,503,136	4,501,917	4,498,959	4,497,792	4,509,729
USE PER CUSTOMER													
Residential	1,060	901	899	944	1,072	1,322	1,328	1,336	1,413	1,206	923	930	13,333
Commercial	7,587	6,990	6,898	7,030	7,430	8,205	8,186	8,004	8,489	7,813	7,129	7,219	90,987
Industrial	21,981	21,582	19,890	21,289	21,531	24,156	23,435	21,705	23,515	22,962	22,478	24,291	268,168
Street & Highway	11,751	10,122	11,966	10,528	11,100	11,480	11,125	11,326	11,286	12,028	11,460	11,436	135,628
Other	27,779	17,035	17,485	17,062	17,008	16,383	11,735	10,929	12,247	12,387	11,458	11,852	183,904
Railroads & Railways	328,589	291,078	273,913	291,783	277,520	297,059	311,217	293,985	298,383	289,652	292,600	280,091	3,525,870
TOTAL JURISDICTIONAL USE PER CUSTOMER	1,861	1,649	1,631	1,688	1,847	2,162	2,164	2,146	2,274	2,014	1,683	1,703	22,822
Resale	23,659,038	23,577,379	25,144,927	27,976,706	27,639,891	31,405,372	31,831,667	32,546,709	32,406,485	28,238,333	25,852,787	20,779,368	331,058,660
TOTAL USE PER CUSTOMER	1,877	1,665	1,648	1,707	1,865	2,183	2184.902872	2,168	2,295	2,033	1,701	1,717	23,042

**2009 MONTHLY FORECAST OF
BILLED SALES, CUSTOMERS AND USE BY CLASS**

	January	February	March	April	May	June	July	August	September	October	November	December	Total
SYSTEM SALES (mWh)													
Residential	4,130,323	3,468,481	3,497,491	3,489,545	4,115,788	4,842,751	5,361,699	5,381,235	5,500,354	4,520,380	3,971,898	3,761,406	52,041,349
Commercial	3,453,620	3,322,308	3,421,457	3,367,760	3,712,611	3,964,249	4,160,403	4,080,752	4,232,494	3,750,863	3,707,423	3,703,695	44,877,633
Industrial	295,357	295,036	295,093	295,759	297,154	299,256	301,488	302,591	303,048	302,409	299,949	297,293	3,584,431
Street & Highway	37,920	37,405	37,468	37,118	36,933	36,798	36,585	36,564	36,233	36,315	38,515	38,368	446,222
Other	3,472	3,373	3,462	3,379	3,359	3,250	2,335	2,169	2,425	2,447	3,456	3,448	36,573
Railroads & Railways	6,462	8,981	7,349	7,364	7,359	7,825	7,900	7,480	7,747	7,452	7,415	8,048	91,381
TOTAL JURISDICTIONAL SALES													
	7,927,154	7,135,583	7,262,320	7,200,924	8,173,203	9,154,127	9,870,409	9,810,791	10,082,301	8,619,865	8,028,656	7,812,258	101,077,590
Resale	77,790	77,463	76,996	81,612	85,056	101,091	114,674	117,991	119,961	116,916	95,312	84,056	1,148,917
TOTAL SALES	8,004,944	7,213,046	7,339,316	7,282,536	8,258,258	9,255,218	9,985,083	9,928,782	10,202,261	8,736,781	8,123,968	7,896,314	102,226,507
CUSTOMERS													
Residential	3,994,841	4,000,974	4,002,451	4,000,158	3,997,866	3,996,663	3,989,592	3,988,999	3,986,185	3,985,374	3,990,606	3,996,362	3,994,173
Commercial	504,972	505,822	506,676	507,532	508,430	509,331	510,234	511,183	512,135	513,090	514,085	515,084	509,881
Industrial	12,526	12,522	12,518	12,514	12,513	12,513	12,512	12,521	12,530	12,539	12,552	12,565	12,527
Street & Highway	3,161	3,165	3,169	3,173	3,176	3,179	3,183	3,185	3,188	3,190	3,193	3,195	3,180
Other	198	198	198	198	198	199	199	198	198	198	197	197	198
Railroads & Railways	23	23	23	23	23	23	23	23	23	23	23	23	23
TOTAL JURISDICTIONAL CUSTOMERS													
	4,515,721	4,522,705	4,525,035	4,523,597	4,522,207	4,521,908	4,515,743	4,516,110	4,514,260	4,514,414	4,520,656	4,527,425	4,519,982
Resale	4	4	4	4	4	4	4	4	4	4	4	4	4
TOTAL CUSTOMERS	4,515,725	4,522,709	4,525,039	4,523,601	4,522,211	4,521,912	4,515,747	4,516,114	4,514,264	4,514,418	4,520,660	4,527,429	4,519,986
USE PER CUSTOMER													
Residential	1,034	867	874	872	1,029	1,212	1,344	1,349	1,380	1,134	995	941	13,029
Commercial	6,839	6,568	6,753	6,636	7,302	7,783	8,154	7,983	8,264	7,310	7,212	7,190	88,016
Industrial	23,579	23,561	23,573	23,634	23,747	23,916	24,096	24,167	24,186	24,117	23,897	23,661	286,133
Street & Highway	11,997	11,820	11,825	11,700	11,628	11,574	11,495	11,479	11,366	11,382	12,063	12,007	140,334
Other	17,535	17,035	17,485	17,063	16,962	16,297	11,735	10,926	12,249	12,387	17,535	17,535	184,705
Railroads & Railways	280,947	390,487	319,520	320,168	319,973	340,213	343,484	325,229	336,820	323,978	322,385	349,897	3,973,101
TOTAL JURISDICTIONAL USE PER CUSTOMER													
	1,755	1,578	1,605	1,592	1,807	2,024	2,186	2,172	2,233	1,909	1,776	1,726	22,362
Resale	19,447,476	19,365,695	19,249,118	20,403,016	21,263,888	25,272,647	28,668,620	29,497,824	29,990,161	29,228,959	23,827,903	21,013,976	287,229,282
TOTAL USE PER CUSTOMER	1,773	1,595	1,622	1,610	1,826	2,047	2,211	2,199	2,260	1,935	1,797	1,744	22,617

**2010 MONTHLY FORECAST OF
BILLED SALES, CUSTOMERS AND USE BY CLASS**

	January	February	March	April	May	June	July	August	September	October	November	December	Total
SYSTEM SALES (mWh)													
Residential	4,242,969	3,404,335	3,442,757	3,429,560	4,043,322	4,756,140	5,282,639	5,305,529	5,422,914	4,455,862	3,916,982	3,723,874	51,426,883
Commercial	3,624,458	3,325,762	3,440,263	3,384,942	3,736,630	3,986,343	4,195,773	4,119,301	4,276,342	3,797,661	3,757,979	3,771,717	45,417,171
Industrial	295,958	295,873	296,179	297,086	298,616	300,842	303,181	304,582	305,380	305,126	302,933	300,536	3,606,295
Street & Highway	38,368	37,837	37,892	37,531	37,336	37,193	36,972	36,950	36,615	36,699	38,926	38,783	451,102
Other	3,440	3,334	3,414	3,324	3,297	3,160	2,270	2,109	2,358	2,379	3,360	3,353	35,798
Railroads & Railways	6,462	8,981	7,349	7,364	7,359	7,825	7,900	7,480	7,747	7,452	7,415	8,048	91,381
TOTAL JURISDICTIONAL SALES													
	8,211,655	7,076,123	7,227,855	7,159,807	8,126,560	9,091,503	9,828,736	9,775,951	10,051,356	8,605,179	8,027,595	7,846,312	101,028,630
Resale	78,703	165,059	158,777	171,513	176,254	198,137	198,684	203,533	209,795	206,224	197,103	172,900	2,136,682
TOTAL SALES													
	8,290,357	7,241,182	7,386,632	7,331,320	8,302,814	9,289,640	10,027,420	9,979,484	10,261,151	8,811,403	8,224,699	8,019,211	103,165,312
CUSTOMERS													
Residential	4,002,627	4,009,268	4,012,140	4,010,136	4,007,646	4,007,873	4,005,317	4,008,166	4,008,647	4,010,581	4,019,246	4,028,401	4,010,837
Commercial	516,085	517,111	518,139	519,170	520,219	521,270	522,324	523,364	524,406	525,451	526,519	527,589	521,804
Industrial	12,577	12,594	12,611	12,627	12,649	12,671	12,692	12,715	12,737	12,759	12,787	12,815	12,686
Street & Highway	3,198	3,201	3,204	3,208	3,211	3,214	3,216	3,219	3,222	3,224	3,227	3,230	3,214
Other	196	196	195	195	194	194	193	193	193	192	192	191	194
Railroads & Railways	23	23	23	23	23	23	23	23	23	23	23	23	23
TOTAL JURISDICTIONAL CUSTOMERS													
	4,534,707	4,542,393	4,546,312	4,545,359	4,543,942	4,545,245	4,543,766	4,547,680	4,549,227	4,552,230	4,561,993	4,572,249	4,548,759
Resale	4	4	4	4	4	4	4	4	4	4	4	4	4
TOTAL CUSTOMERS													
	4,534,711	4,542,397	4,546,316	4,545,363	4,543,946	4,545,249	4,543,770	4,547,684	4,549,231	4,552,234	4,561,997	4,572,253	4,548,763
USE PER CUSTOMER													
Residential	1,060	849	858	855	1,009	1,187	1,319	1,324	1,353	1,111	975	924	12,822
Commercial	7,023	6,431	6,640	6,520	7,183	7,647	8,033	7,871	8,155	7,227	7,137	7,149	87,039
Industrial	23,531	23,493	23,486	23,527	23,608	23,743	23,887	23,955	23,976	23,915	23,691	23,453	284,271
Street & Highway	11,997	11,820	11,825	11,700	11,628	11,574	11,495	11,479	11,366	11,382	12,063	12,007	140,334
Other	17,535	17,035	17,485	17,063	16,962	16,297	11,735	10,926	12,249	12,387	17,535	17,535	184,836
Railroads & Railways	280,947	390,487	319,520	320,168	319,973	340,213	343,484	325,229	336,820	323,978	322,385	349,897	3,973,101
TOTAL JURISDICTIONAL USE PER CUSTOMER													
	1,811	1,558	1,590	1,575	1,788	2,000	2,163	2,150	2,209	1,890	1,760	1,716	22,210
Resale	19,675,692	41,264,747	39,694,336	42,878,207	44,063,408	49,534,211	49,671,083	50,883,161	52,448,812	51,556,031	49,275,807	43,224,941	534,170,435
TOTAL USE PER CUSTOMER													
	1,828	1,594	1,625	1,613	1,827	2,044	2,206.85	2,194	2,256	1,936	1,803	1,754	22,680

**2011 MONTHLY FORECAST OF
BILLED SALES, CUSTOMERS AND USE BY CLASS**

	January	February	March	April	May	June	July	August	September	October	November	December	Total
SYSTEM SALES (mWh)													
Residential	4,205,520	3,422,508	3,467,383	3,452,826	4,065,227	4,777,527	5,305,231	5,331,705	5,449,741	4,475,101	3,944,523	3,757,184	51,654,477
Commercial	3,693,122	3,424,469	3,546,713	3,485,743	3,841,280	4,088,869	4,297,703	4,217,854	4,380,674	3,894,960	3,860,985	3,887,724	46,620,096
Industrial	299,385	299,487	299,973	301,072	302,794	305,247	307,822	309,156	309,884	309,472	307,178	304,672	3,656,141
Street & Highway	38,790	38,262	38,327	37,972	37,785	37,651	37,438	37,427	37,099	37,197	39,469	39,338	456,755
Other	3,345	3,242	3,320	3,232	3,205	3,072	2,207	2,050	2,293	2,314	3,267	3,260	34,808
Railroads & Railways	6,462	8,981	7,349	7,364	7,359	7,825	7,900	7,480	7,747	7,452	7,415	8,048	91,381
TOTAL JURISDICTIONAL SALES													
	8,246,624	7,196,949	7,363,064	7,288,209	8,257,651	9,220,191	9,958,302	9,905,673	10,187,438	8,726,496	8,162,837	8,000,225	102,513,658
Resale	170,530	167,045	160,706	173,534	178,316	200,365	200,861	205,714	212,034	208,451	199,311	174,901	2,251,766
TOTAL SALES	8,417,154	7,363,994	7,523,770	7,461,743	8,435,967	9,420,555	10,159,163	10,111,387	10,399,471	8,934,946	8,362,149	8,175,125	104,765,424
CUSTOMERS													
Residential	4,037,677	4,046,784	4,052,670	4,053,034	4,050,346	4,051,364	4,051,462	4,056,273	4,058,638	4,062,138	4,072,801	4,083,943	4,056,428
Commercial	528,661	529,748	530,836	531,928	533,032	534,138	535,247	536,360	537,476	538,595	539,724	540,856	534,717
Industrial	12,842	12,865	12,888	12,911	12,938	12,964	12,991	13,019	13,046	13,074	13,099	13,123	12,980
Street & Highway	3,233	3,237	3,241	3,245	3,250	3,253	3,257	3,260	3,264	3,268	3,272	3,276	3,255
Other	191	190	190	189	189	189	188	188	187	187	186	186	188
Railroads & Railways	23	23	23	23	23	23	23	23	23	23	23	23	23
TOTAL JURISDICTIONAL CUSTOMERS													
	4,582,628	4,592,847	4,599,849	4,601,332	4,599,777	4,601,931	4,603,168	4,609,123	4,612,635	4,617,285	4,629,104	4,641,406	4,607,590
Resale	4	4	4	4	4	4	4	4	4	4	4	4	4
TOTAL CUSTOMERS	4,582,632	4,592,851	4,599,853	4,601,336	4,599,781	4,601,935	4,603,172	4,609,127	4,612,639	4,617,289	4,629,108	4,641,410	4,607,594
USE PER CUSTOMER													
Residential	1,042	846	856	852	1,004	1,179	1,309	1,314	1,343	1,102	969	920	12,734
Commercial	6,986	6,464	6,681	6,553	7,206	7,655	8,029	7,864	8,150	7,232	7,154	7,188	87,187
Industrial	23,312	23,279	23,275	23,319	23,404	23,545	23,696	23,747	23,752	23,670	23,451	23,217	281,675
Street & Highway	11,997	11,820	11,825	11,700	11,628	11,574	11,495	11,479	11,366	11,382	12,063	12,007	140,334
Other	17,535	17,035	17,485	17,063	16,962	16,297	11,735	10,926	12,249	12,387	17,535	17,535	184,836
Railroads & Railways	280,947	390,487	319,520	320,168	319,973	340,213	343,484	325,229	336,820	323,978	322,385	349,897	3,973,101
TOTAL JURISDICTIONAL USE PER CUSTOMER													
	1,800	1,567	1,601	1,584	1,795	2,004	2,163	2,149	2,209	1,890	1,763	1,724	22,249
Resale	42,632,505	41,761,327	40,176,387	43,383,443	44,579,041	50,091,213	50,215,135	51,428,508	53,008,412	52,112,637	49,827,840	43,725,163	562,941,610
TOTAL USE PER CUSTOMER	1837	1603	1636	1622	1834	2047	2207	2194	2255	1935	1806	1761	22738