



Energy Efficiency, Integrated Resource Planning and the Role of the Public Service Commission

Presentation by:

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Florida Public Service Commission

to the:

Southeast Energy Efficiency Alliance

Florida Outreach Meeting

September 6, 2006

Topics

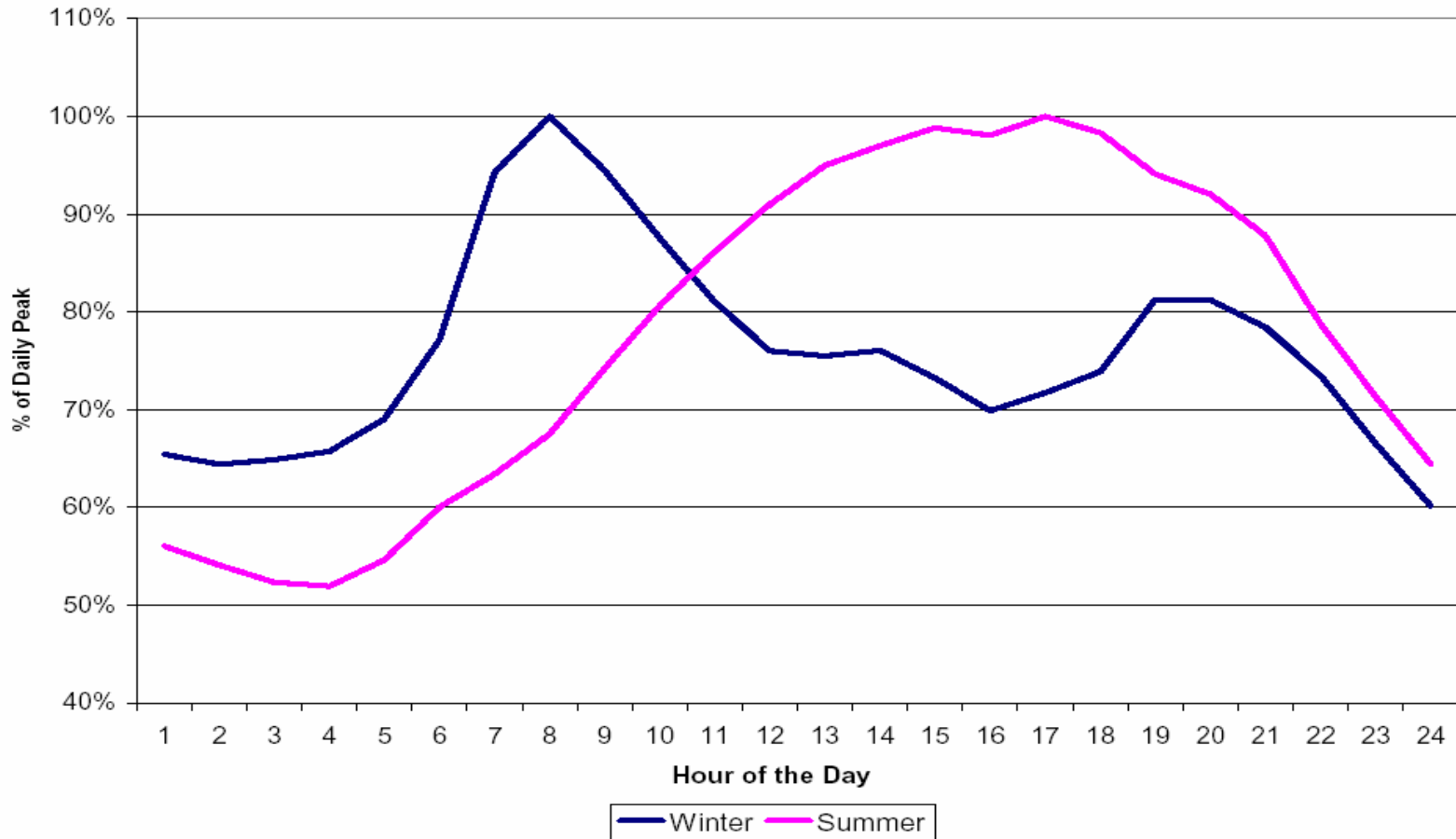
- Florida Demand Fundamentals
- Integrated Resource Planning
- Florida Energy Efficiency and Conservation Act (FEECA)
- Role of the Public Service Commission
- Alternative Energy Initiatives

Energy Demand in Florida

- Customer base heavily weighted toward residential customers
 - Percent of Electricity Sales (2005)
 - Residential 52.8%
 - Commercial 36.4%
 - Industrial 10.8%
- Residential usage varies more throughout the day
- Industrial usage is more uniform
- High proportion of residential usage leads to more pronounced summer and winter peak demands

Energy Demand in Florida

Daily Load Shapes for Summer and Winter



Load Growth in Florida

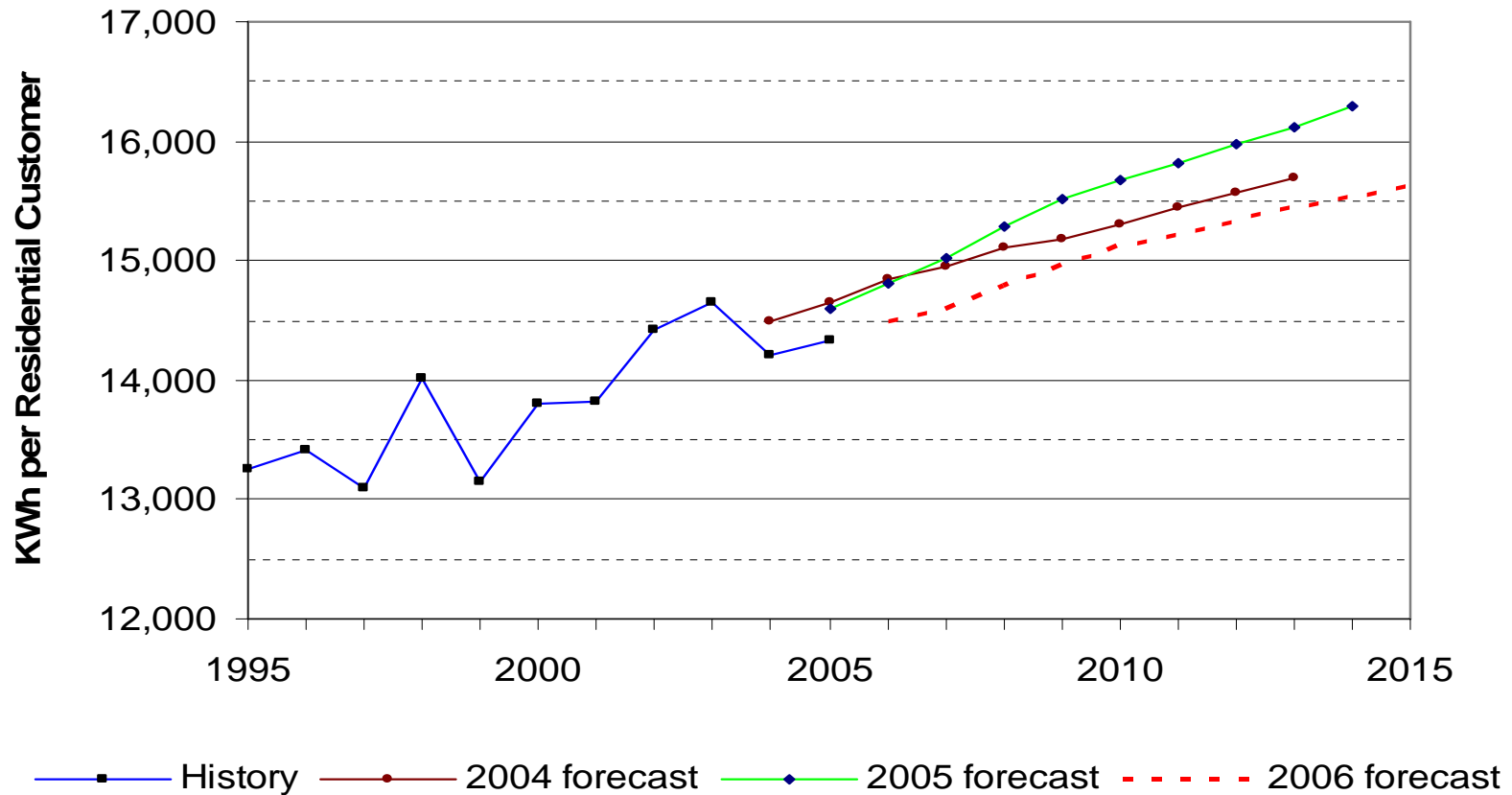
- Over 3.8 million persons will move to the state over the next ten years
- Over 1.6 million new residential electric customers
- Increased customer demand for electricity, by an average of 1,100 MW per year
- Growth in Peak Demand

	2006	2015
Summer	48,307 MW	59,461 MW
Winter	51,034 MW	62,374 MW

- FPL, PEF, TECO must plan to meet a 20% reserve margin criterion

Load Growth in Florida

Energy Consumption per Residential Customer




Integrated Resource Planning (IRP)

- Determine the timing and magnitude of electricity needs
 - Load Forecast
 - Existing Generation; Purchases; Demand Side Management
- Identification of resource options to meet needs
- Development of resource plans
- Economic evaluation to identify the plan with the lowest system cost

IRP Results Submitted to the PSC

- Ten-Year Site Plans
 - Submitted by the generating utilities
 - Forecasts of load growth
 - Identifies DSM resources
 - Forecasts needed generation
 - Identifies potential sites for new generation

- Determination of need for new power plants
 - Must identify a need for power
 - Most cost-effective alternative
 - Review of conservation measures which could mitigate need
 - Must contribute to reliability and integrity of the grid



Energy Efficiency and
Demand Side Management (DSM)
Activities of the
Florida Public Service Commission

Florida Public Service Commission Jurisdiction

- Regulation over rates and quality of service of investor owned electric utilities and distribution natural gas companies
- Rate structure authority over municipal and rural co-op utilities
- Authority over grid reliability
- Determines need for new steam power plants greater than 75 MWs and transmission lines greater than 240 kV that cross county lines
- Authority to determine energy efficiency goals for IOUs and two municipal electric utilities
- Determines the buy back rates for eligible non-utility generators and distributed generators such as biomass and solar

Florida Energy Efficiency and Conservation Act (FEECA)

Section 366.80-.82, Florida Statutes

- Enacted in 1980
- Emphasis on reducing the growth rates of peak demand, reducing and controlling the growth rates of electricity consumption
- Required the PSC to adopt goals related to the conservation of electric energy
- Authorized the PSC to require each utility to develop plans and implement cost-effective programs for increasing energy efficiency and conservation within its service area
- Provides for recovery of program costs

Florida Energy Efficiency and Conservation Act (FEECA)

■ Amended in 1989

- Size threshold – only utilities with sales > 500 gWh
- 12 utilities comprising 94% of sales were subject to FEECA

■ Amended in 1996

- Size threshold for municipals and cooperatives with sales of 2,000 gWh or greater on July 1, 1993
- Utilities subject to FEECA: FPL, PEF, TECO, Gulf, FPUC, JEA, OUC
- Comprises 86% of sales

PSC Implementation of FEECA

- Rules requiring numeric goals for each FEECA utility
 - Annual winter, summer demand and energy reduction goals
 - Goals revised every five years
- DSM plans and programs submitted for review
- Programs must be cost-effective
 - Exception – energy audits required by FEECA
- Energy Conservation Cost Recovery (ECCR) Clause
- An annual public hearing is conducted to review IOU DSM program costs and set a rate applied to all customer bills

DSM Program Cost-Effectiveness Tests

■ Participant Test

- Measures impact of the program on the participating customer
- Benefits: Incentive payments, bill reductions
- Costs: Equipment costs

■ Total Resource Cost (TRC) Test

- Measures the net costs of a program based on total program costs
- Benefits: Avoided supply costs
- Costs: Program administration, equipment costs

■ Rate Impact Measure (RIM) Test – “No losers test”

- Indirect measure of the program’s impact on rates
- Benefits: Avoided supply costs
- Costs: Program administration, incentives, revenue losses

DSM Program Approval Criteria

- IOUs must file, at a minimum, cost effectiveness data on a DSM program:
 - Participant Test
 - TRC Test
 - RIM Test
- Historically, DSM programs approved by the PSC have benefited all utility ratepayers
- The RIM test ensures that all ratepayers benefit from a DSM program, not just program participants
- The PSC does not regulate the rates of municipals and cooperatives and therefore does not address cost recovery of these utilities' DSM programs

Utility DSM Programs

- **Audits** – Required by FEECA; free to residential customers; introduces customers to other programs
- **Efficiency** – Utility pays an incentive to participating customers for the installation of more efficient equipment, such as air conditioners, heat pumps and insulation
- **Load Management** – Utility pays an incentive to participating customers to all the utility to “turn off” air conditioners, water heaters, or pool pumps during peak demand periods
- **Interruptible Service** – Industrial and commercial customers pay a lower rate and allow certain segments of their load to be interrupted during peak demand periods

DSM Program Achievements (cumulative since 1980)

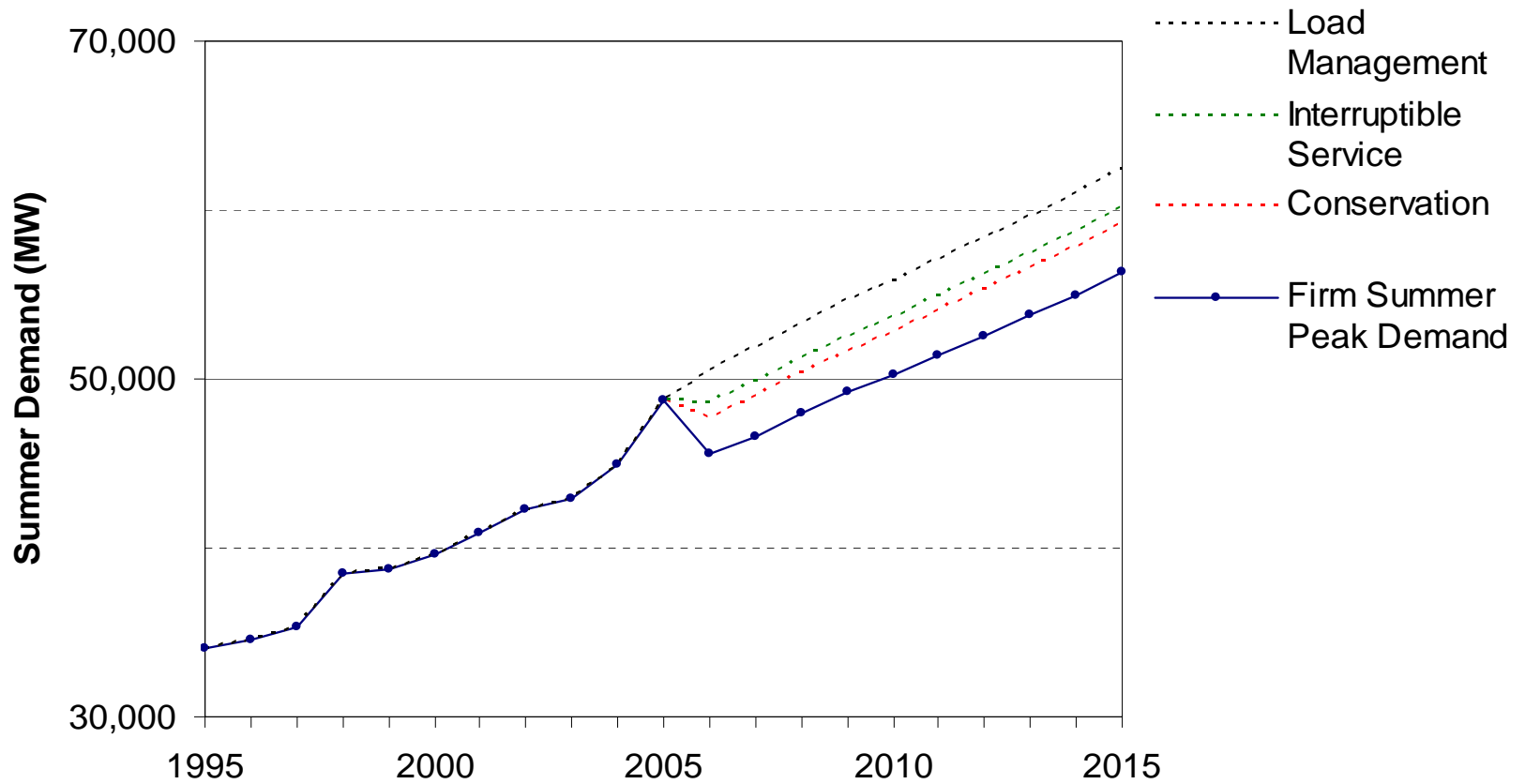
	2005	By 2014
Summer Peak Demand Savings	4,951 MW	5,511 MW
Winter Peak Demand Savings	5,563 MW	6,068 MW
Energy Reduction	5,488 GWh	6,883 GWh

Note: Utility DSM programs have deferred the need for eleven 500 MW plants, or enough capacity to serve approximately 1.6 million households.

DSM Program Achievements

Impact of DSM on Summer Peak Demand

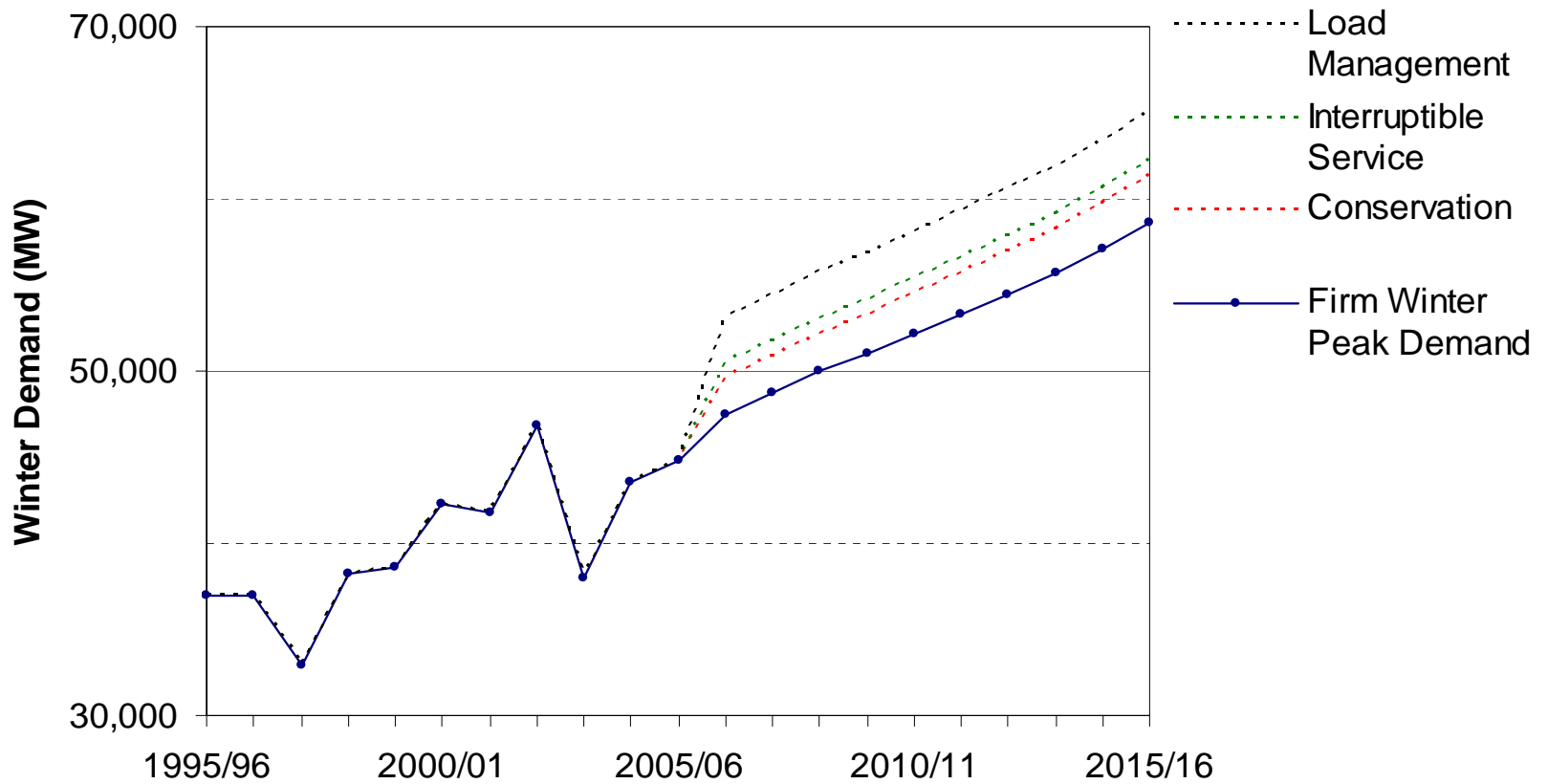
State of Florida



DSM Program Achievements

Impact of DSM on Winter Peak Demand

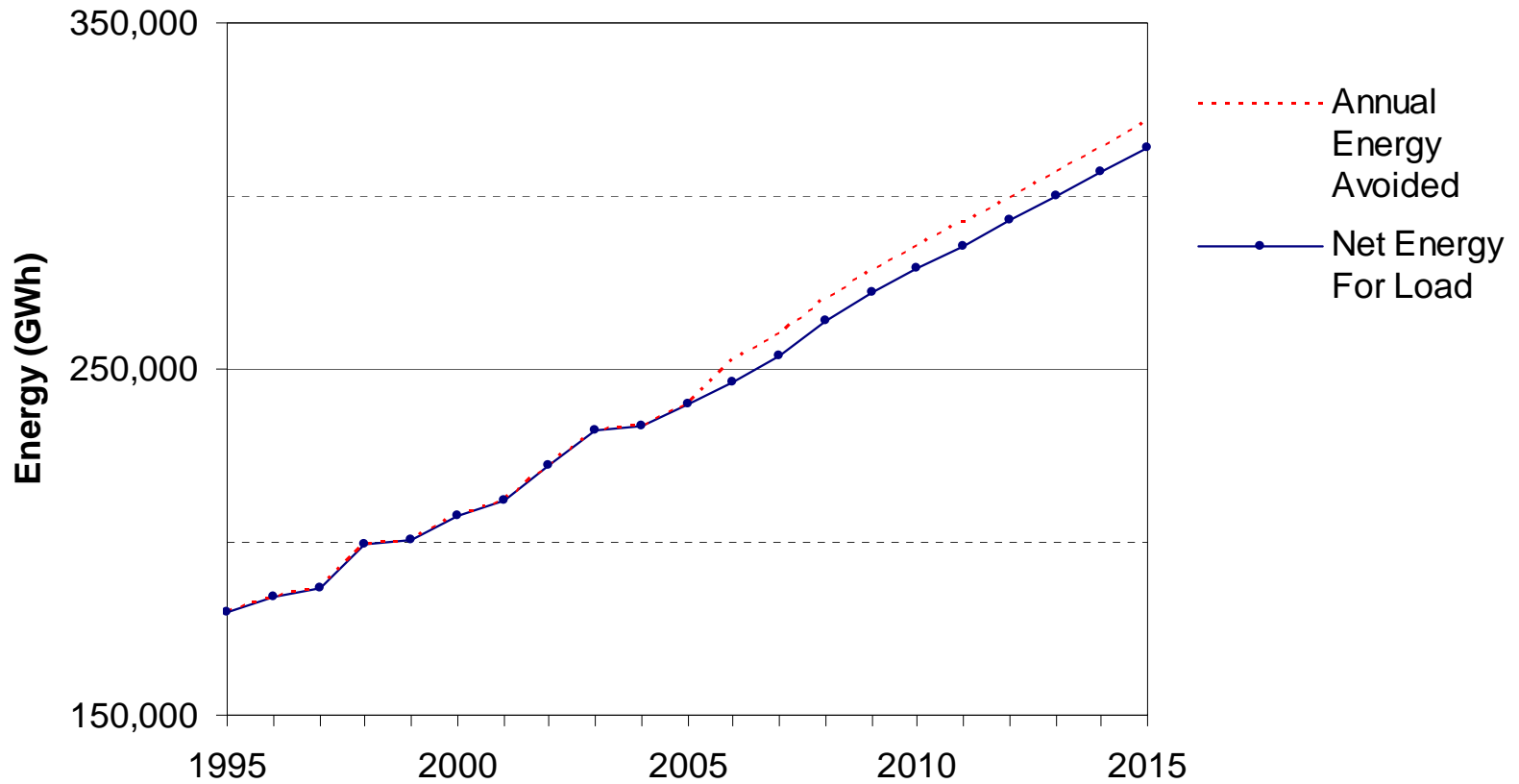
State of Florida



DSM Program Achievements

Impact of DSM on Energy Consumption

State of Florida



DSM Program Costs Recovered Through the ECCR Clause

	1981- 2005
Florida Power and Light Company	\$2,410,421,507
Progress Energy Florida, Inc.	1,299,506,118
Tampa Electric Company	362,749,194
Gulf Power Company	73,885,677
Florida Public Utilities Company	2,797,739
Total	\$4,384,215,686

Residential DSM Program Bill Impacts 2006

	Conservation Cost Recovery Factor (cents per kWh)	Typical Residential Monthly Bill Impact (based on 1,000 kWh)
Florida Power and Light Company	.142	\$1.42
Florida Public Utilities Company	.046	\$0.46
Gulf Power Company	.088	\$0.88
Progress Energy Florida, Inc.	.169	\$1.69
Tampa Electric Company	.076	\$0.76

DSM Program Monitoring and Evaluation

- Cost-Effectiveness of DSM programs change over time
 - Customer participation levels
 - Generation plans
 - Forecasted fuel prices
- IOUs annually submit updated cost-effectiveness tests for existing programs
- Reports filed annually on progress in achieving numeric goals
- Utilities may modify existing programs (adjust incentives, etc.) and/or propose new programs depending upon changing costs and benefits



Alternative Energy Initiatives of the PSC

Alternative Energy Initiatives

- Renewable Standard Offer Contracts
 - FEECA utilities must offer a minimum 10-year purchase contract to renewable energy producers
 - Qualified renewables include biomass, solar, geothermal, wind, hydroelectric, ocean, waste heat from sulfuric acid manufacturing, and hydrogen produced from non-fossil fuel sources

- Interconnection of small photovoltaic (PV) systems
 - PSC rule to facilitate the interconnection of small (10 kW or less) PV systems to the electric grid
 - Provides standards of interconnection and a standard agreement
 - 25 PV systems have been connected through December 2005



For Additional Information:

FPSC Home Page:

<http://www.floridapsc.com/>

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