



Achieving Maximum Energy Efficiency

FY 07 First Quarter Report



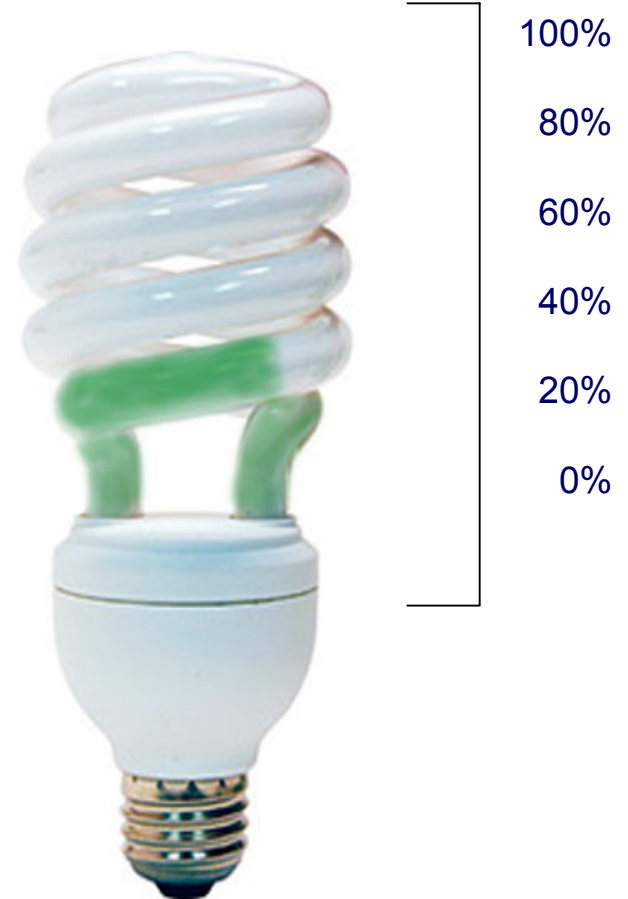


Good News!

- On target to reach FY07 energy efficiency goals

- 2.7 MW
- 13,652 MWh

1st Quarter Progress Toward Goal





Foundation to Achieve Maximum Energy Efficiency

- Education
- Regulation
- Incentives
- Rates
- Research



Current Programs

- High Efficiency Central Air Conditioner
- High Efficiency Room Air Conditioner
- Central Air Conditioner Maintenance
- Duct Leak Repair
- Heat Recovery Unit
- Heat Pipe Enhanced Air Conditioner
- Reflective Roof Coating
- ENERGY STAR® Certification of Affordable Housing
- Added Insulation
- Refrigerator Buyback and Recycling
- Solar Electric (PV)
- Solar Water Heater
- Natural Gas Water Heaters
- Natural Gas Central Heat
- GRUGreen Program
- Green Building
- Natural Gas Range
- Natural Gas Dryer
- LP Gas Conversion
- Smart Vend
- LED Exit Sign
- Customized Business Program
- Free on-line, mail-in, self service, or on-site energy efficiency service
- CFL giveaway programs
- Energy Efficiency School Curriculum
- Public presentations
- Demonstration of Energy Efficient Developments Program (DEED)
- Low income whole house program
- Low interest loan program



Customer Awareness

- Speaker's Bureau
- Workshop with Doug McKenzie-Mohr on Behavior Change
- Contractor Workshops
- Online Tools and Energy Efficiency Kit
- Energy Star "Change a Light Campaign"
- Customer Bulletin, Direct Mail, Print, Radio and TV messages
- CFL Lobby Display

Lobby Lighting Display





Lincoln Estates Customer Education Pilot

- Partnership with Cultural Arts Coalition
- Environmental Ambassadors installed in customer homes
 - GRU provided energy efficiency information and CFLs
 - 2,622 CFLs installed in 237 homes
 - \$34 per household
 - Cost to the utility of \$22.30 per MWh reduced
 - IB Eastside High School students are evaluating savings

Lincoln CFL Ambassadors





CFL: What We've Learned

- Two different techniques
 - Home Depot/Lowes discount pricing
 - Lincoln/Tanglewood CFL installation
- Both techniques have pros and cons

Energy hogs are on their way out!



Tanglewood Apartments



Regulation

- City Commission added Energy Efficiency to 2007 State of Florida Legislative Agenda
- Staff provided a list of GRU energy efficiency incentives and suggestions to the Florida League of Cities (on behalf of the House of Representatives)
- Continued discussion with Community Development Committee on ways to get energy efficiency improvements in single family homes, especially rentals



Regulation

- Continued participation in the Florida Energy Commission meetings and responding to legislative proposals
- Worked with Florida Municipal Energy Committee (FMEC) and Florida Energy Commission to monitor legislation on energy efficiency measures



Recently Added Incentives (residential)

- Added Insulation
 - Implemented in December ahead of schedule
 - \$ 0.125/ft² of insulation up to \$375 Rebate
 - A minimum of R19 in attic
 - Batting, blanket, board, sprayed-on or blown-in
 - A minimum of R11 under raised floors
 - Batting, blanket or board form



Recently Added (residential/small business)

- Photovoltaic
 - Implemented in December ahead of schedule
 - \$1.50/Watt, up to \$15,000
 - One already approved in second quarter



Recently Added (residential)

- Refrigerator Buy Back
 - Implemented in January on schedule
 - \$75 Rebate
 - Refrigerators, freezers or combination units that are 10 cubic feet or larger and in use
 - Old units must be removed from the home and proof of removal or destruction is required
 - Old units are collected by Waste Management for recycling



Programs that may need changes

- Room Air Conditioner
- Reflective Roof Coating
- Heat Recovery Unit
- Heat Pipe Enhanced Air Conditioning



Shining Star Smart Vend

- 86 units installed or 63% of annual goal
- Partnerships with local vending machine providers Canteen and Corporate Services
- Nearing agreements with Pepsi and Coca Cola
- School Board requires Smart Vend units in all vending machines



Shining Star Customized Business

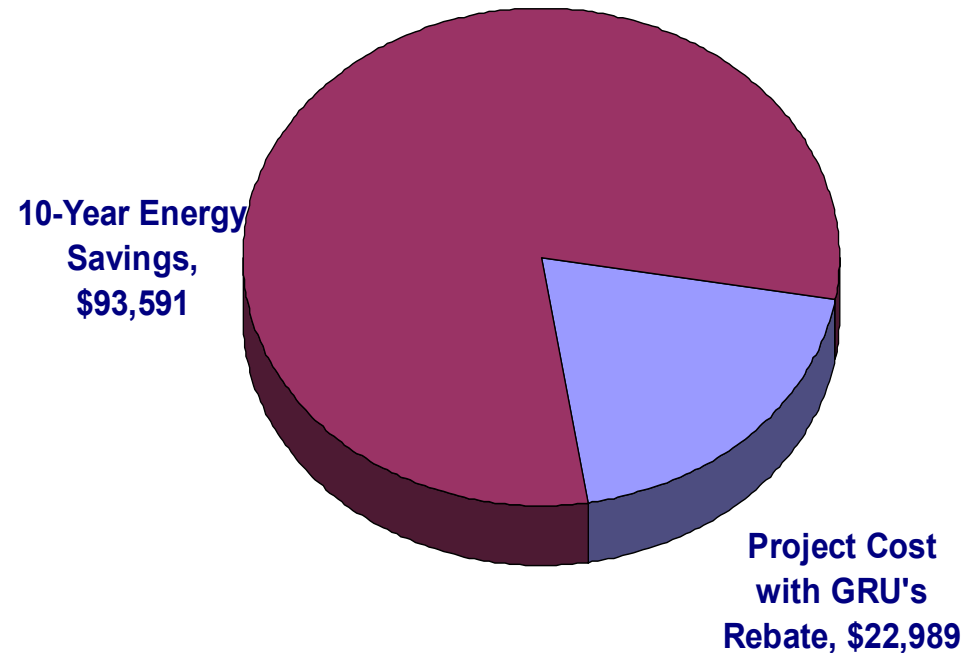
- Five projects accounting for reductions of 154% demand target and 95% energy of 1st quarterly target
- Estimated rebates of \$52,983
- Diverse participants: Schools, Manufacturing Facilities, Small Business, Office Space and Government
- 15 additional projects identified to date



Fort Clark Middle School Customized Rebate Proposal

- Lighting upgrade
 - Cost of \$45,978
 - School pays \$22, 989
 - GRU rebate of \$22,989
 - 81,546 kWh saved annually
 - Payback < four years

**Ft. Clark Lighting Project
Savings vs. project cost**





Coming Attractions

- Energy and Water Efficiency Team Recommendation
 - Due in March
- LEED
 - Staff workshop with UF
 - Joined U.S. Green Building Council
 - Pursuing LEED Silver for two new facilities
- Energy Efficiency Home Makeover
- Online Business Efficiency Tool



Coming Attractions



DEED Study

- Renters have higher energy intensity than owners
- Most problems occur either in building envelope or HVAC system
- Awareness and understanding of energy efficiency issues such as equipment maintenance and equipment settings are severely lacking



Low Interest Loan

- Sent RFP in early January – two no bids received
- Staff interviewed local banks
- Sited “lack of time” and “bad timing” as reasons
- Will resend RFP and allow more response time



Whole House Low Income Pilot

- Owner-occupied single family and mobile homes
- Rebate up to \$2750 per house for 40 households
- Eligible for other applicable rebates
- Must be an electric customer
- Must meet and be able to show proof of HUD income requirements
- Must participate in energy efficiency education



Whole House Sample Measures

- Insulation (attic and/or floor)
- Duct Repair
- Weatherstripping
- Central air conditioner maintenance/repair
- Room air conditioner replacement
- Refrigerator replacement
- Installing CFLs
- Exterior door replacement
- Water heater repair/replacement
- Ceiling and/or floor repairs (prevent air infiltration)



Whole House Applicant Selection

- Request for application
- Time-certain deadline to apply
- Qualify applicants
 - Need Income
 - HUD certification
 - Geographically Dispersed?
- Drawing to pick 40



Rates, Research and Measurement



Statewide Effort

- Florida Municipal Energy-Efficiency Committee (FMEC)
 - Statewide Database
 - \$125,000 Contract (GRU share is \$31,250)
 - First and best source for Florida specific energy conservation measure data since 1991
 - Solar Contractor Workshop (February)
 - CFL Buy Down Program (October)



Rate Design

- Began assembling data to develop time of use rates
 - Residential Time of Use Rate to be Presented with FY08 Budget
- Began tracking results of baseline rate
 - Preliminary evaluation results available in May



DEED Study

Summary Statistics for Total Energy Use and Energy Intensity (169 DEED Households vs. 362 Randomly Sampled GRU Customer Single Family Detached Households)

	DEED		Appliance Survey	
	Mean	St. Dev.	Mean	St. Dev.
kWh Total (kWh/month)	1118	767	1134	580
kWh Intensity (kWh/month/1000ft ²)	878	584	680	635
Therm Total (therm/month, DEED N=103)	28.1	17	26.6	17
Therm Intensity (therm/month/1000ft ² , DEED N=103)	21.5	14	15.3	10
Btu Total (MMBtu/month)	5.5	3	5.5	3
Btu Intensity (MMBtu/month/1000ft ²)	4.3	2	3.3	2
Household Square Footage (conditioned area, ft ²)	1333	450	1901	776



Load Control Demand Response

- FY08 budget is \$250,000 for study
- FMEC considering joint study in FY08
- Could increase quality of results



Advanced Metering Infrastructure (AMI)

- RFP issued in January for pilot program
- Pilot goals
 - Test technology including interface with CIS
 - Define true benefits of AMI
 - Develop plan to utilize benefits in a full scale implementation



Advanced Metering Infrastructure (AMI)

- **Greater Customer Satisfaction**
 - Accuracy of meter reading
 - Rapid resolution of high bill calls
 - Access to all meters electronically (no more fences, dogs)
 - Customers may have online access to more detailed usage information
 - More accurate power outage/restoration data for customers
 - Potential for rate choice (TOU rates)



Advanced Metering Infrastructure (AMI)

- **Innovative Rate Support**
 - Data collection
 - Measurement and verification
- **Revenue Improvements**
 - Tamper detection
 - Stopped meter alarms
 - Remote Disconnect
- **Outage and Restoration Management**
 - Faster and more accurate outage notification
 - Confirmation of restorations
- **Decreased O&M Costs**
 - Remote meter testing
 - Reduced trips



Customer Research

- Commercial DSM Potential Study
 - Contracted with UF Rinker School of Building Construction
- Completed analysis of 2006 Residential Appliance Saturation Survey
 - DSM potential studies
 - Program design

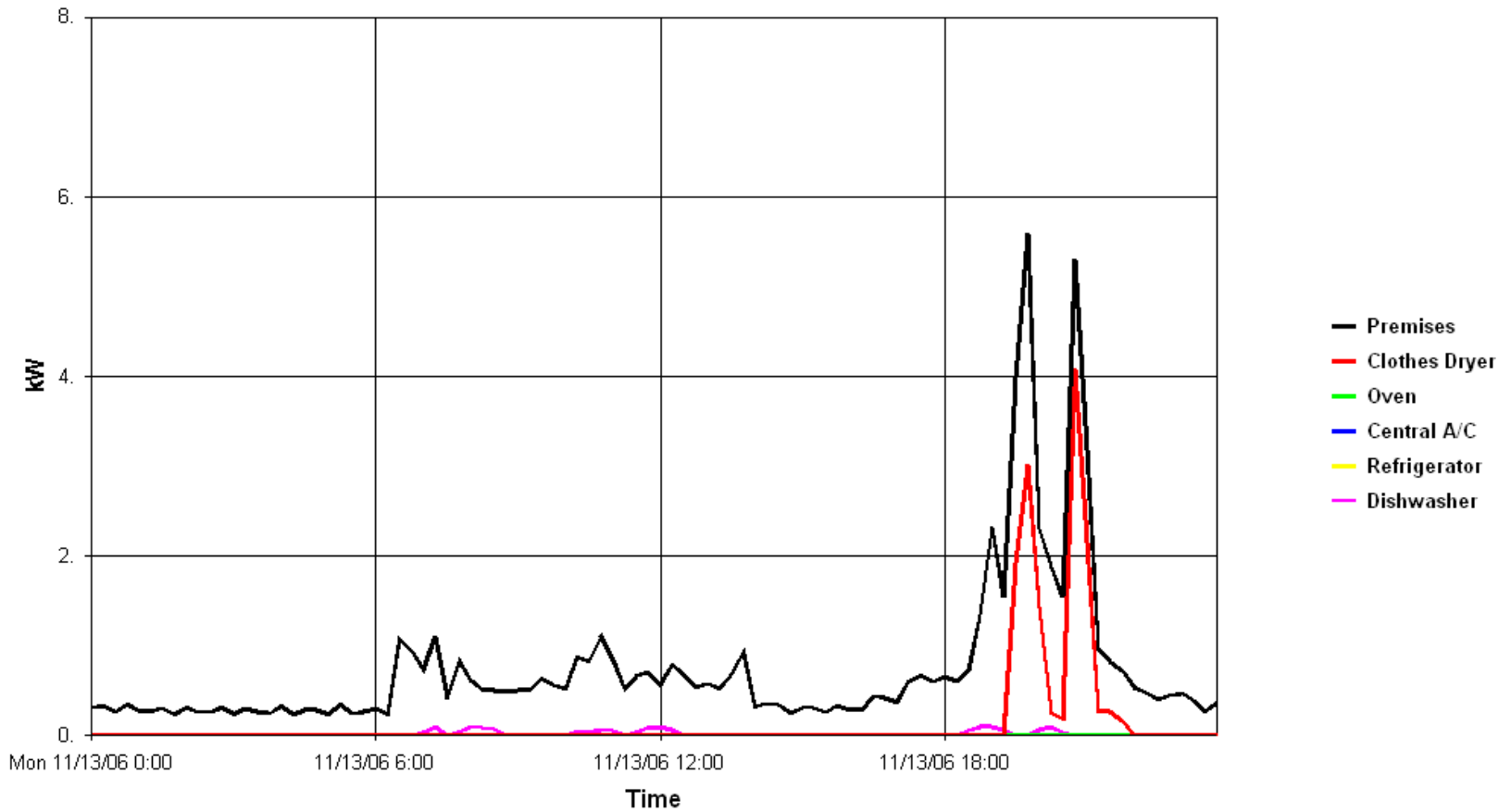


Load Research

- Successful completed end-use pilot
- Additional meters needed to establish load research program
 - \$525,000 included in FY07 budget
 - End-use and whole house recorders to be installed on homes
 - Information will be combined with Residential Appliance Saturation Surveys and FMEC database

Karen's Dirty Laundry

2222 (11/13/06 - 11/14/06)





Energy Monitor Evaluation

- Devices report real time energy usage in dollars inside customer's home
- Blue Line and The Energy Detective
 - Pilot to be completed March 07



Measurement Verification

- Definition: Confirmation of savings from energy efficiency programs
 - Database for tracking energy efficiency programs
 - Third party evaluation
 - Ensures accountability
 - More costly
 - Requires at least one full year of data



Program Evaluation

- First annual program evaluation
 - May 2007
 - Led by Roger Duncan, Deputy General Manager, Austin Energy



First Quarter Results



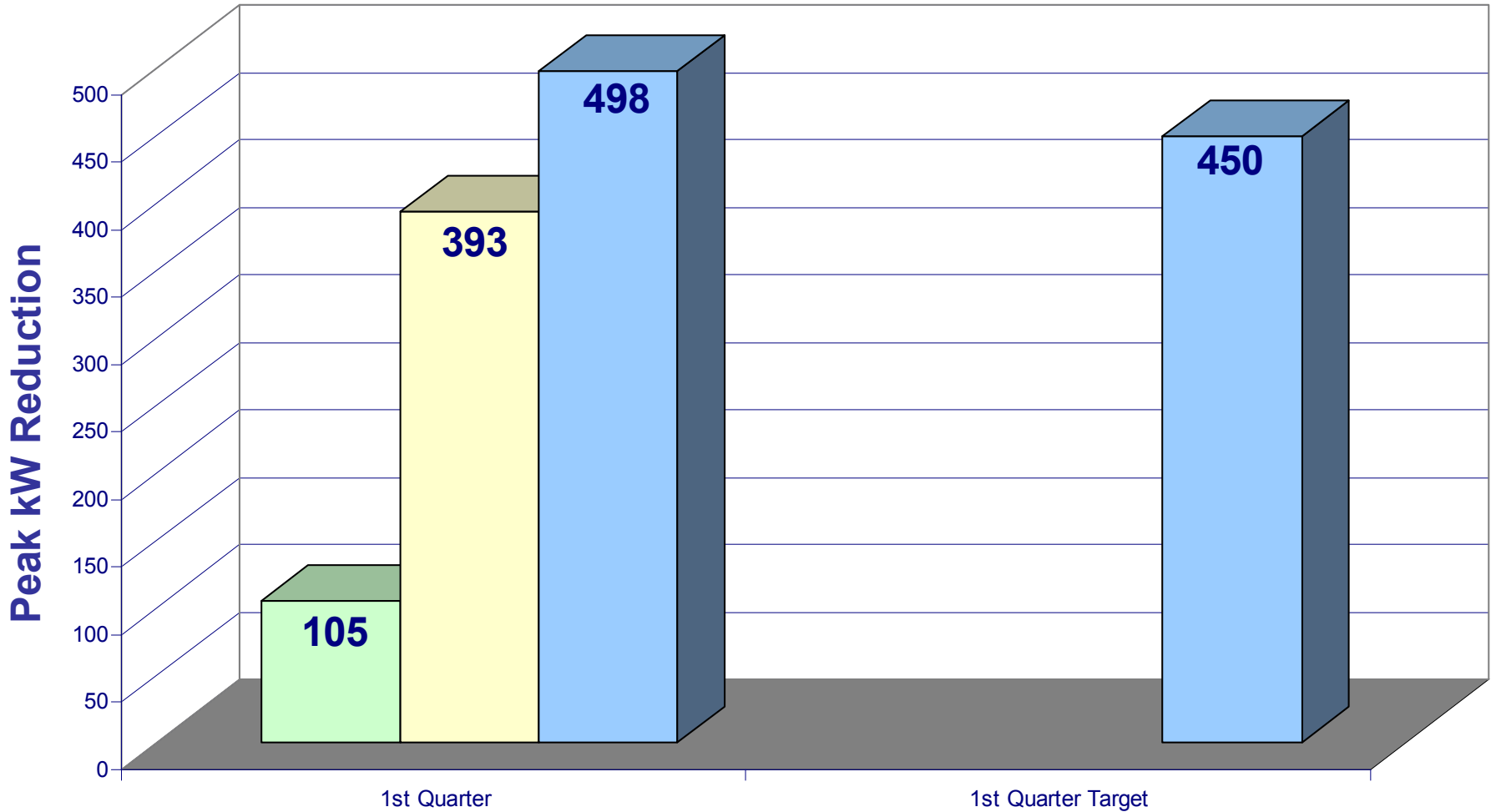
Sprint vs. Marathon

- **Short Term Goal FY07:** Establish foundation for energy efficiency in the community
 - 2.7 MW - equivalent to 900 AC units
 - 13,652 MWh - equivalent to 1,137 homes
- **Long Term Goal Next 20+ Years:** Pursue all cost effective and feasible demand side measures

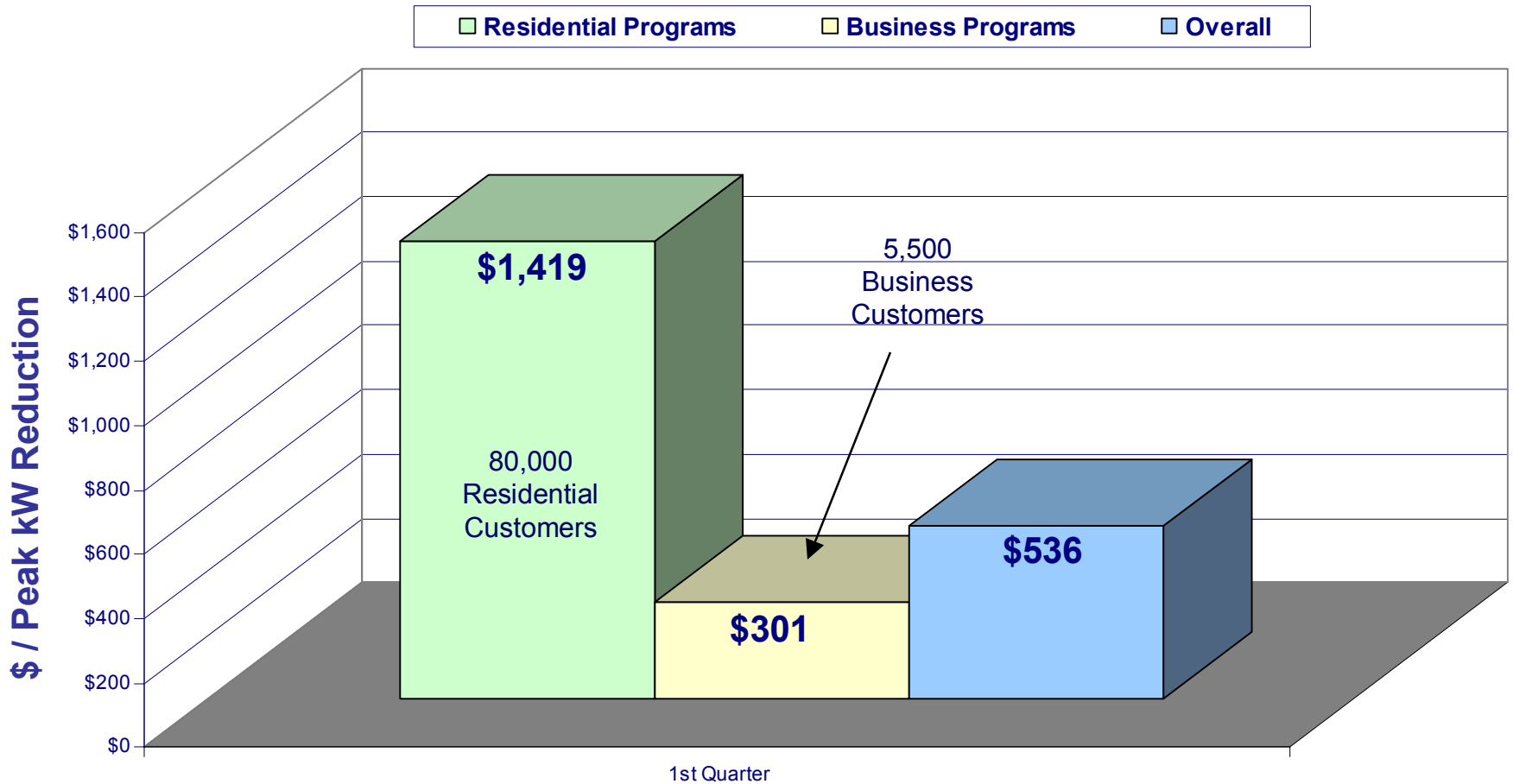


First Quarter Demand Reductions

First Quarter Demand Reduction



\$ Spent Per Peak kW Reduced



\$1,800 – 2,600 kW for Base Load Capacity

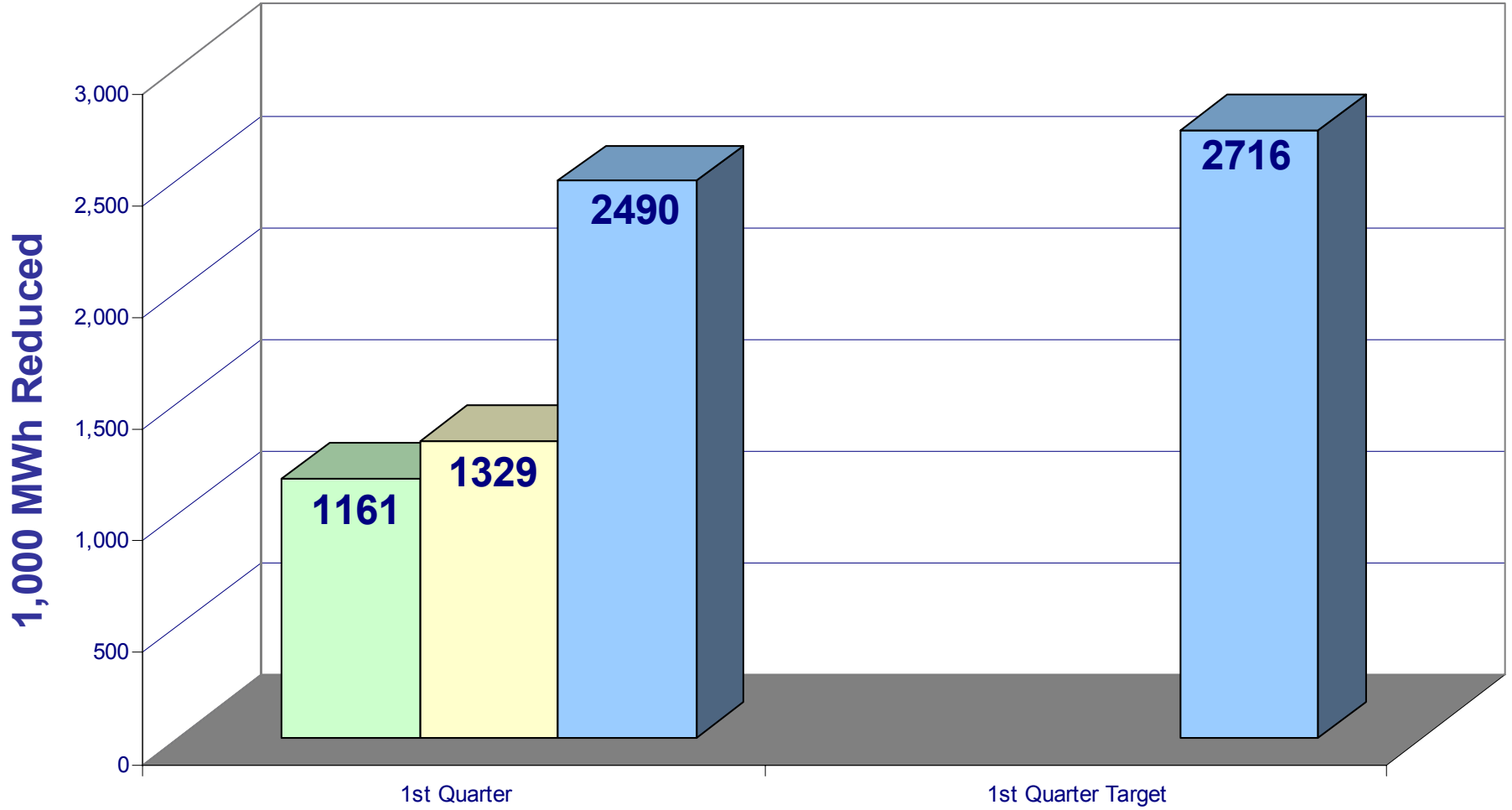
\$400 – 800 kW for Peak Capacity



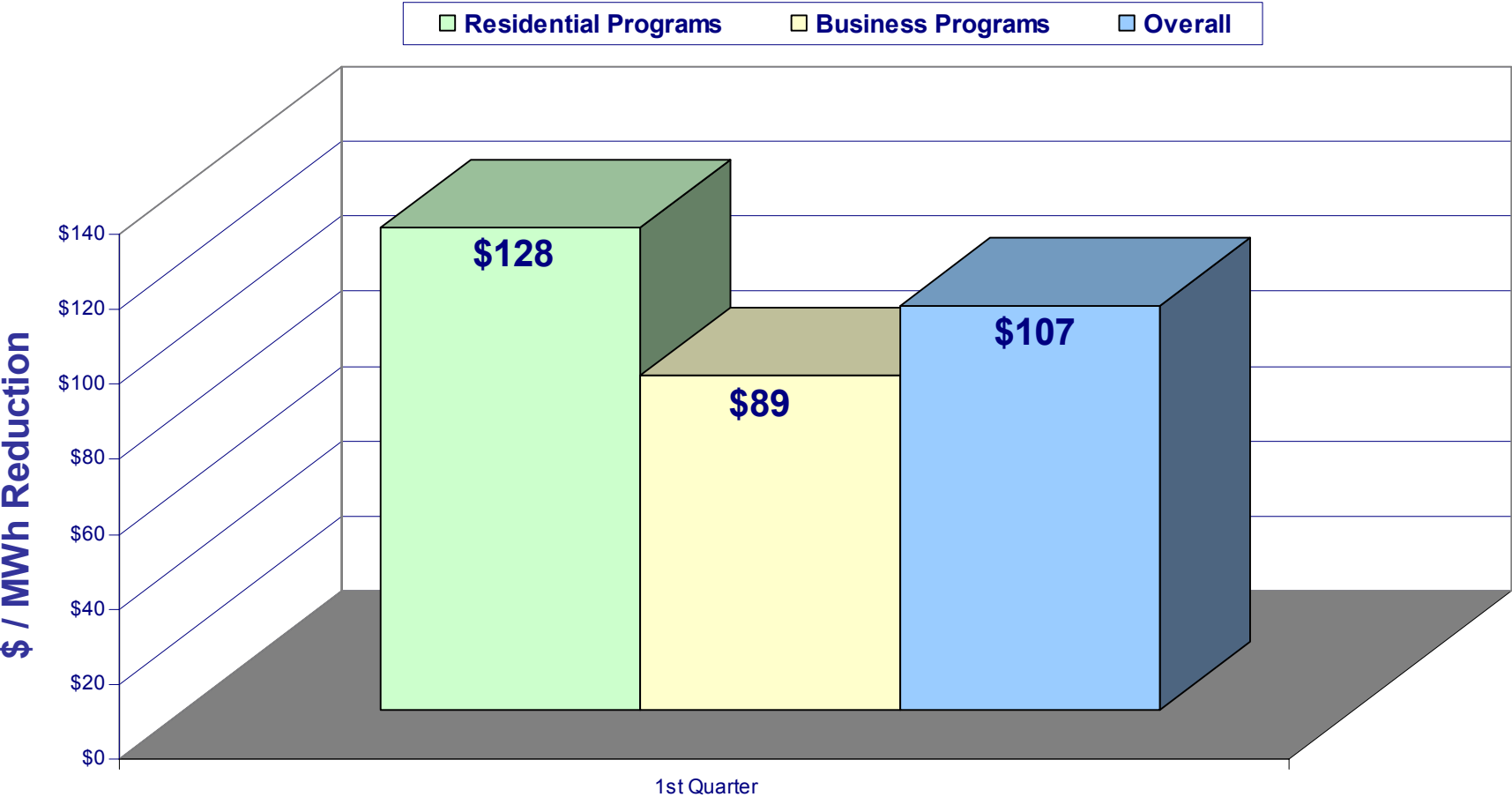
First Quarter Energy Reductions

First Quarter Energy Reduction

Residential Business Overall



\$ Spent Per MWh Reduced



ICF Report: *“Many of the potential DSM programs are less costly than the supply-side alternatives, with levelized average costs of only \$23/MWh.”*



Good News!

- On target to reach FY07 energy efficiency goals
 - 2.7 MW
 - 13,652 MWh
- There's more work to be done

