Peer Review

of

ICF Consulting's Draft Report

to the

City of Gainesville Electrical Supply Needs
(RFP No. 2005-147)

February 28, 2006

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SECTION 1 - EXECUTIVE SUMMARY

GDS has concluded its high level peer review of the draft ICF Study provided to the City of Gainesville dated February 14, 2006, and this report summarizes our findings.

Key conclusions of this report include:

- The ICF draft study is what it is. That is, the study analyzes four specific, prescribed options for meeting the City of Gainesville's long term electrical needs. It only evaluates a narrow list of options, and does not pretend to be a fully developed power supply study reflecting a comprehensive review of all possible options to meet the City's needs.

- There are numerous feasible energy efficiency, load management, and demand response measures that ICF did not examine. Additional demand side measures could produce greater savings and could along with the addition of a small generator delay the need for additional supply side resources until 2020 (see attachment to this executive summary).

- ICF's estimate of potential demand side kWh savings (as a percent of annual GRU kWh sales) is very low compared to other studies.

- The ICF DSM analysis methodology "cripples" the potential energy and peak savings impacts of cost effective energy efficiency measures because of ICF's use of extremely low "applicability factors".

- The ICF study does not give weight to reduced risk from cost effective investments in DSM equipment and building materials. Investments in such efficiency measures will be dispersed throughout the homes and businesses in the City. Once these energy efficiency measures are installed, they operate quietly and economically with no fuel costs year after year after year, and with no emissions. Because hundreds of pieces of energy efficient equipment are installed in numerous residential and commercial businesses, the risk of failure is minuscule, while the risk of failure for a large, central station power plant is dramatically larger. This risk minimization benefit from DSM is an essential consideration for the City Commission.

- ICF did not evaluate a scenario where supply side options were delayed until such time as the resources were fully needed.

- It is unclear from ICF's results which is the best course of action of the four options evaluated. The ICF report in fact does not make any recommendations about which alternative the City should select.

- The criteria used by ICF may not adequately represent the stakeholders that have an interest in this important decision for the City.

- None of the supply side options evaluated by ICF are conventional technologies, meaning there is not a history of widespread use, and as a result they each carry technological risk to varying degrees.

- ICF's supply side modeling assumptions appear to generally be in the range of reasonableness, though we do note some exceptions, including in particular the financing costs associated with larger, less conventional technologies.

- The ICF draft study does not evaluate transmission solutions. It models GRU as an island from a capacity planning perspective (not day-to-day energy) and limits new supply side resources to only local options.

- The study does not give any weight to the reliability risk associated with large units supplying a major portion of the system's needs.

REVISED FIGURE ES-1 WITH GDS ADJUSTMENTS
Alternative Scenarios Analyzed by GDS

					ICF DSM Adjusments		Additional DSM Adjustments		Additional Demand Response Adjustments		Wholesale Load Adjustments		Addition of 25 MW Generator in 2018	
Year	Peak Demand	Peak Demand Plus Reserve Requirements	Existing Capacity Net of Retirements	Deficit/Surplus Relative to Existing Capacity	Decrease in Peak Demand Due to DSM Based on ICF Draft Report	Revised Capacity Surplus / (Shortfall)	Additional DSM from Measures Not Examined by ICF	Revised Capacity Surplus / (Shortfall)	Additional Demand Reduction from demand response and interruptible rate programs	Revised Capacity Surplus / (Shortfall)	Demand associated with wholesale customer loads	Revised Capacity Surplus / (Shortfall)	Addition of 25 MW plant in 2018	Revised Capacity Surplus / (Shortfall)
2006	470	541	611	71	1	72	0	72	12	85	36	127	0	127
2007	483	555	611	56	2	58	0	58	12	72	38	116	0	116
2008	495	569	611	42	6	49	1	50	12	64	39	109	0	109
2009	508	584	611	27	9	37	2	39	13	54	40	100	0	100
2010	520	598	602	4	12	18	2	21	13	36	41	83	0	83
2011	532	612	579	(33)	17	(13)	3	(9)	13	6	42	54	0	54
2012	544	626	579	(47)	22	(21)	4	(16)	14	(1)	44	50	0	50
2013	556	639	579	(60)	28	(28)	6	(22)	14	(6)	45	46	0	46
2014	569	654	579	(75)	34	(36)	7	(28)	14	(12)	46	41	0	41
2015	580	667	579	(88)	40	(42)	8	(33)	15	(16)	47	38	0	38
2016	592	681	579	(102)	44	(51)	9	(41)	15	(24)	48	31	0	31
2017	603	693	579	(114)	49	(58)	10	(47)	15	(29)	49	27	0	27
2018	614	706	551	(155)	54	(93)	11	(81)	15	(63)	50	(5)	25	20
2019	625	719	537	(182)	59	(114)	12	(100)	16	(82)	51	(24)	25	1
2020	636	731	537	(194)	63	(122)	13	(107)	16	(89)	52	(29)	25	(4)
2021	648	745	537	(208)	65	(133)	13	(119)	16	(100)	53	(39)	25	(14)
2022	659	758	537	(221)	66	(145)	13	(130)	16	(111)	54	(49)	25	(24)
2023	671	772	454	(318)	68	(239)	14	(224)	17	(205)	55	(141)	25	(116)
2024	683	785	454	(331)	69	(252)	14	(236)	17	(217)	56	(152)	25	(127)
2025	694	798	454	(344)	71	(262)	14	(246)	17	(226)	57	(161)	25	(136)

SECTION 2 – INTRODUCTION

1. GDS Scope of Work

The City asked GDS to perform a peer review of the draft report developed by ICF Consulting. GDS was provided two weeks with which to read and understand the report, the ICF analyses, and conclusions, prepare our opinion of the review and its results, and submit our report to the Commission as requested. GDS did not engage in analysis or modeling. Our report simply provides our findings relating to the analyses and assumptions included in ICF's draft study.

The criteria we have used in our review include the thoroughness of the ICF review, the validity of underlying costs and performance characteristics of supply-side and demand-side options, the depth and breadth of the alternatives included in the review, the viability of the alternative scenarios analyzed and the quality of the analysis associated with those scenarios, and the overall reasonableness of the results. GDS' was asked to perform this analysis for a not-to-exceed cost of $12,500.

Given the limited time and budget, GDS' report is largely a high level review of the ICF report for reasonableness. We have reviewed the report and herein report our reactions and opinions.

2. Contingent Nature of GDS' Findings

The ICF study is in draft form, still under review, and ICF indicates that changes are expected. GDS' comments obviously are based on the draft and could be invalidated to the extent that ICF's final study differs with respect to the issues addressed by GDS.

SECTION 3 – GENERAL ISSUES

1. ICF Criteria

One of the issues we considered was the criteria used by ICF to evaluate the four options selected, and we question whether the criteria used by ICF adequately represent the needs of the stakeholders that have a standing in this resource decision.

The criteria represent the bases for measuring the relative attractiveness, or lack thereof, of certain aspects of the four options. To include particular criteria is to say that it is important to measure that particular aspect and use it as a basis for comparison among the options.

The criteria used by ICF include cost, environmental and health impacts, and socioeconomic impacts. While not specifically stated, it appears the most important criteria, given the highest weighting, was cost. This is consistent with traditional utility least cost planning which places a priority on minimizing the cost to provide electric service, consistent with the regulatory paradigm associated with governing regulated monopoly utilities. Because natural monopolies if not regulated would be able to extract exorbitant prices, regulators typically demand that utilities show that what they are proposing to do is prudent in terms of cost.

However, we are not sure that so much weight should be put on cost in this case. The criteria used should reflect what is important to the City in its evaluation of these options. While cost is usually used by utilities to demonstrate prudence in planning, it is only a relevant measure if the other objectives of the utility are being met. For example the cost of a particular power supply plan is not relevant if the plan does not meet required reliability standards. This is obviously an extreme example, but it illustrates the point.

In GRU's case, the ICF study does not demonstrate that the criteria used by ICF have any basis within the stakeholders that have a standing in this important decision for the City. Without study it is not clear what the important criteria are for the stakeholders, however it is fairly clear that cost may be far from the most important criterion for the citizens that have participated in the various meetings hosted by the City throughout this process.

Clearly when and if the City must go before the state with a siting request for a new power plant, it will need to demonstrate that it has met the criteria considered important by the state to be eligible for a determination of need. The state and places the burden of proof on the applicant to demonstrate that it has considered all relevant factors. Of course cost is a factor often used by regulators as previously discussed, and we would expect that cost would be considered in this case. The following is from section 403.519 of the 2005 Florida Statutes:

> "In making its determination, the commission shall take into account the need for electric system reliability and integrity, the need for adequate electricity at a reasonable cost, and whether the proposed plant is the most cost-effective alternative available. The commission shall also expressly consider the conservation measures taken by or reasonably available to the applicant or its members which might mitigate the need for the proposed plant and other matters within its jurisdiction which it deems relevant."

However, in addition to cost, there are other important factors, including the other criteria used by ICF. So the question becomes what weight should be placed on the criteria, including cost, and should costs be the predominant factor relative to the others. GDS does not possess the answer to this question, as it can only be answered after considering the needs of all the stakeholders involved in this decision, including the citizens of Gainesville, the ratepayers of GRU, the financial community, and the citizens of the state as represented by the Public Service Commission and its generation siting rules. In our experience, input from the affected stakeholders is needed before the relevant criteria, and the appropriate weightings for each, can be defined.

2. ICF Scoring of Options

ICF reported the results of its evaluation of the four options in terms of the individual criteria identified, including cost, environmental and health impacts, and socioeconomic impacts. ICF measured each option using metrics associated with each of these criteria.

It is not clear which of the four options evaluated is the best in ICF's view; which option receives the highest score. In reviewing the draft report, we were looking for a recommended option based on a scoring of the options using the combined results of the various evaluations performed, something that for each option would pull together the results for each of the criteria into a single score for the option. We assume that this would be within ICF's scope of work.

One approach ICF could have taken would be to rank the alternatives by each of the criteria and then compute a weighted average score for each option using the relative weightings of the criteria. For example, using illustrative numbers, an option might have an overall score of 7.0 on a scale of 1 to 10 after combining its results for cost, environmental, health, and socioeconomic impacts. Then the four options would be able to be ranked in terms of their attractiveness, factoring in all the criteria included in the study. Ideally each of the criteria would have a different weighting recognizing its relative importance as compared to the others. For example, cost might have a weighting of 50% while socioeconomic impacts may only be weighted at 20%.

At the risk of going too far to illustrate the point, consider someone trying to decide on the purchase of a new car and the important criteria are price and color. The first car is twice as attractive as the second in terms of price but only half as attractive in terms of the color. If the two criteria are equally weighted then the two cars tie. However if cost is four times as important as color then the first car wins easily by a factor of 1.5 to 1.

One reason why this type of scoring is essential in a situation such as this is because it provides a way to combine qualitative and quantitative results into a framework that produces a single score for a given option and thus rankings for all the options.

It also forces decision makers to define the needed criteria and, importantly, the relative weight of each. Consistent with our previous discussion, the weighting of the criteria can heavily influence the result of the decision.

We considered attempting to score the options ourselves based on the ICF results, but refrained for several reasons. First the ICF results that we have at this point are not final. Second, we would be performing analytical work which arguably would be outside the scope of our assignment. And third, as previously stated we do not know the appropriate weightings to be applied to each of the criteria. Input from affected stakeholders will be needed to determine those weightings.

Another way that the development and weighting of other non-cost criteria becomes important is in the event that the results are desired to be examined without cost as a criteria. In the ICF study, the preliminary results show only modest differences in costs of 5-7% between the highest and lowest cases. Arguably this is within the margin of error given the inherent uncertainty associated with many of the major assumptions (natural gas prices have been known to move 5-7% in a day). With cost differences at relatively minor levels, it becomes much more difficult to make a decision without other criteria defined and weighted.

SECTION 4 – DEMAND SIDE ISSUES

1. Introduction

GDS has carefully reviewed Chapter 3 of the draft ICF Study and the appendices that relate to DSM options and we have determined that the analysis of DSM options conducted by ICF is a good start, but there are numerous energy efficiency, load management, and demand response measures that ICF did not examine.

GDS has identified several other underlying DSM assumptions and methodology decisions made by ICF that certainly need further review and discussion before they should be accepted by the City Commission. Further, we have determined that the maximum achievable reduction in peak demand of 6.8% by 2015, and the 4.2% potential for additional kWh sales reductions by 2015 identified by ICF, are unrealistically low when compared to findings of other recent energy efficiency potential studies, and when compared to actual DSM achievements made by other leading DSM municipal utilities (for example, the Sacramento Municipal Utility District). In fact, ICF's recent 2005 study for the State of Georgia estimated maximum achievable cost effective kWh savings of 9% by 2015, **over twice** ICF's 4% estimate for the GRU service area. GDS recommends that the Gainesville City Commission request that ICF address all of the DSM methodology and assumptions issues listed in the GDS report, and that ICF report back to the City Commission with updated estimates of MW, MWH and dollar savings as soon as possible for the two alternative scenarios that involve DSM.

There exist other municipal electric utilities in the United States that have achieved far higher electricity savings from DSM programs than the City of Austin, Texas. The City of Gainesville should examine the DSM savings achievements of such municipal utilities as the following:

- City of Burlington, Vermont (has saved **17%** of annual kWh sales, **22%** of peak demand)
- City of Eugene, Oregon (has saved **17%** of annual kWh sales, **15%** of peak demand)
- Sacramento Municipal Utility District (has saved **10%** of annual kWh sales, **15%** of peak demand)

GDS has included in our review a detailed comparison of how GRU's DSM savings compare to other electric utilities in the US. It is clear that other municipal utilities have achieved far, far more than the 4% kWh savings (savings as a percent of annual kWh sales) that ICF has estimated as the maximum achievable savings for GRU. GDS has included all of the statistical data on the DSM performance of electric utilities in the U.S. in Appendix A to this report. GDS recommends that GRU aim for DSM performance of the top-ranked DSM utilities in the country, such as the three municipal utilities listed above.

The City of Gainesville is at key decision point in its energy and environmental future. GDS has determined that there are several additional very cost effective DSM and demand response options that need to be examined by ICF in order for the City Commission to have a complete foundation on which to base a decision on whether to build a new 232 MW coal plant. In addition, the City Commission must recognize that if a new 232 MW coal plant is constructed, and the GRU grid has excess capacity, GRU will have little or no incentive to pursue aggressive DSM programs. A decision to build a new 232 MW coal plant will be the "death knell" for aggressive DSM programs.

The key findings from our review of the ICF DSM analysis are provided below.

2. Energy Efficiency and Load Management Options Not Examined by ICF

The maximum achievable cost effective amount of peak load reduction from DSM of 40 MW by ten years from 2006 (in 2015) appears to be a realistic figure given the limited DSM measures and technologies that ICF included in its analysis. There are, however, numerous additional commercially available energy efficiency and load management measures that ICF did not include in its analysis that should be considered. Notably absent, for example, from the list of programs (see Figure 3-29 on page 79 of the ICF report) is a commercial new construction program. **If ICF had included these additional energy efficiency and load management measures and program, the potential peak savings and kWh savings would be much, much greater.**

Examples of residential sector energy efficiency measures that ICF apparently did not examine include the following measures:

- LED lighting in the residential sector
- Inefficient room air conditioner buy-back program[1]
- Instantaneous electric water heaters
- 1 kWh/day refrigerator (for residential sector)
- High efficiency pool pump system
- Residential solar photovoltaic systems
- Zero energy homes

Examples of commercial and industrial sector energy efficiency measures that ICF did not examine include the following measures:

- LED signage in the commercial sector
- Advanced unitary HVAC compressors
- Advanced HVAC fan motors
- High efficiency pool pump system
- Commercial T-5 lighting
- High performance T8 lamps and ballasts
- CFL fixtures
- CFL torchieres

[1] In a buyback program, a utility pays a "bounty" (a financial incentive) to buyback an old, inefficient appliance to remove it from the electric grid. Southern California Edison is an example of a utility that has implemented such buyback programs.

- Solid state exit signs
- Vending miser
- Water source heat pumps
- Air to air heat pumps
- Fluorescent daylighting dimming controls
- Daylighting dimming and high-low controls
- High intensity fluorescent (HIF)
- Pendant mounted indirect fluorescent fixtures
- High efficiency fluorescent fixtures
- Fluorescent fixtures with reflectors
- Heat recovery options from compressors and condensers
- Heat pump water heaters

Examples of agricultural sector energy efficiency measures that ICF did not examine include the following measures:

- Plate exchanger
- Vacuum pump with VFD
- Scroll compressor
- High volume low speed fans

Examples of fuel switching technologies that ICF did not examine include the following measures:

- Electric-to-gas water heating (residential and all commercial categories)
- Engine-driven chillers and unitary equipment (large commercial buildings)
- Absorption Chillers (for large institutional applications, e.g., university campuses and hospitals)
- Combined heat and power applications

3. ICF Analysis of Solar Water Heating

The draft ICF report finds that residential solar hot water heating is not cost effective. This finding is at odds with a June 2004 report from the Florida Solar Energy Center titled "Florida's Energy Future: Opportunities for Our Economy, Environment and Security". This report found the following about solar water heating for the residential sector:

> "Solar thermal systems have been available for decades and despite a variety of economic incentives, including state sales tax exemptions to promote their use, solar applications are far fewer than they could be. Solar thermal systems are much more cost-effective in the marketplace than solar photovoltaics (PV) that generate electricity. **The state should take steps to dramatically increase the use of solar systems for domestic water use.** Historically, solar domestic hot water has been envisioned as competitive with electricity but not as competitive with natural gas. However, the cost of natural gas has continued to increase over the years, making the economics of solar more favorable in many commercial

> and large building installations regardless of fuel type. Solar systems have higher first costs than their competition but are generally viewed as more cost effective where life cycle costs are considered. Figure 20 of this Florida Solar Energy Center report shows that solar hot water is a **highly cost-competitive** option for improvement in new buildings, occurring before options like R-13 walls and R-38 ceilings. The minimum present value of the life-cycle costs is reached after the solar hot water system is installed."

At a minimum, GDS recommends that ICF redo its analysis of residential solar water heating to consider these systems as off-grid distributed generation, similar to the way that the City of Lakeland, Florida operates its program. GDS understands that the City of Lakeland finds its solar water heating program to be cost effective based on the way this utility implements its program. It is important for the City of Gainesville to determine if it could replicate the City of Lakeland approach in the City of Gainesville. The City of Lakeland treats this solar water heating technology as "off-grid distributed generation". The City of Lakeland also found that this technology passes the total resource cost test and the rate impact measure test. If this could be done, the demand for new, on-grid, central electric generation could be significantly reduced in Gainesville. The City of Lakeland utility also does not have an obligation to sell solar water heating equipment to every residential customer that requests it from the utility. In this solar water heating program at the City of Lakeland, the city utility only needs to serve those residential customers that have the best technical and economic potential to heat water with solar technology.

GDS also notes that the ICF assumption for the annual kWh savings per household due to installation of a solar water heating system is only 1,466 kWh a year. GDS has collected data from a few other electric utilities in Florida that run solar water heating programs, and the kWh savings experience is substantially higher. The municipal utility of the City of Lakeland, Florida, for example, reports that annual kWh savings for a solar water heating system are likely on the order of 2,700 kWh a year or more. In addition, the City of Lakeland reports that the average cost experienced in their program for purchase and installation of solar water heating equipment is $2,200 per installation, significantly less that the $3,600 figure used by ICF (ICF reports this $3,656 figure on page 192 of the ICF draft report).

GDS also notes that the 2005 Integrated Resource Plan for the City of Lakeland[2] municipal utility found that a residential solar water heating program is cost effective and passes the Total Resource Cost Test as well as the Rate Impact Measure Test. It seems odd to GDS that ICF is reporting a Total Resource Cost Test benefit/cost ratio of .27 (see page 192 of the ICF report) when the City of Lakeland finds this technology to be cost effective with a TRC ratio over 1.0. It is clear that the ICF assumptions for solar water heating need to be closely re-examined and revised as appropriate.

GDS has reviewed the twenty-five pages of underlying assumptions for all of the DSM measures examined by ICF, including solar water heating, to determine if the assumptions used by ICF are consistent with the underlying assumptions used by other

[2] This 2005 IRP was prepared for the City of Lakeland by Black and Veatch.

utilities in Florida and in the Southeast. In its draft report, ICF did not provide any information or documentation on the data sources for any of the underlying assumptions on energy efficiency measures costs, savings, or useful lives. This is a major and serious deficiency in the draft ICF report, and GDS would expect that for ICF's final report to be credible for the City Commission, this information should be provided in the final report. If this information is not provided in the final report, GDS recommends that the City Commission obtain this information, and GDS will review this information when it becomes available. This detailed review of these underlying assumptions and their data sources needs to be done in order to determine if ICF's findings relating to solar water heating and other DSM and demand response measures are reasonable, and are supported by up-to-date and reliable data sources.

4. Lack of Basis for Applicability Factors and Other Factors Used by ICF

Third, the ICF DSM analysis methodology "cripples" the potential energy and peak impacts of cost effective energy efficiency measures because of ICF's use of extremely low "applicability factors". While it is appropriate to apply applicability factors, ICF has provided no basis or foundation for the factors used. For example, in the residential sector, ICF examined 70 individual DSM measures. The ICF applicability factor for each energy efficiency measure varies from "0" to "1", and reflects the engineering feasibility of implementing a measure in a particular end use.[3] It is very interesting to note that ICF has assigned a "1" value for applicability **to only 13** of the 70 measures (this is only 18% of the measures). ICF has assigned 18 measures with an applicability factor of .25 or less (in fact, ten measures have been assigned an applicability factor of "0" by ICF). ICF has assigned a "0" applicability factor for duct insulation, and it is not clear to GDS why ICF finds that duct insulation has zero applicability from an engineering feasibility perspective.

ICF provides no explanation or documentation in its draft report on the basis for any of these applicability factors. It is also interesting to note that ICF has applied an applicability factor of .25 for solar water heating, but provides no basis or explanation for this applicability factor. GDS is very concerned about the lack of documentation for these factors, especially since they drastically reduce the potential kWh and kW savings for numerous technologies.

GDS has conducted a detailed comparison of the residential efficiency measure applicability factors used in the draft ICF report to those used in the November 2002 California Statewide Residential Sector Energy Efficiency Potential Study. This comparison is shown below. The average applicability factor used by ICF is **.55** for the 70 residential measures examined by ICF. On the other hand, the average applicability factor for these same measures is **.95** (almost double) for the applicability factors used

[3] Definition of ICF Applicability Factor: It is stated in the ICF draft report that "Applicability factors, varying from 0 to 1, determine the engineering feasibility of implementing a measure in a particular end-use. For instance, the applicability factor for a CFL would represent the percentage of inefficient incandescent light bulbs that could feasibly be upgraded to CFLs from a purely technical perspective (accounting for the fact that due to their size and performance characteristics, CFLs cannot universally be used to replace all incandescent bulbs)". ICF draft Report for the City of Gainesville, February 13, 2006, page 65.

in the November 2002 California Study for the Southern California Edison service area. This is a dramatic difference, and ICF has provided no basis for using such extraordinarily low applicability factors. Thus not only has ICF failed to consider numerous cost effective DSM measures in its analysis, as noted previously, but ICF's use of very low applicability factors contributes to a maximum achievable cost effective potential savings estimate that is far too low.

Comparison of Residential DSM Applicabiity Factors - Draft ICF Report Versus KEMA California Report				
Technology Number	End Use	Measure Name Used in ICF Draft Report	ICF Applicability (Feasibility) Factors for Residential Measures - GRU Service Area	California Secret Surplus Report - Applicability Factors for Southern California Edison Service Area
1	Central A/C	solar gain controls	50.00%	100.00%
2	Central A/C	shade screens	0.00%	100.00%
3	Central A/C	window film	50.00%	100.00%
4	Central A/C	central a/c retrofit	100.00%	100.00%
5	Central A/C	central a/c retrofit charge testing	75.00%	100.00%
6	Central A/C	air sealing (caulking, weatherstripping)	75.00%	100.00%
7	Central A/C	two speed a/c	0.00%	100.00%
8	Central A/C	Energy star or better windows	0.00%	100.00%
9	Central A/C	Central A/C filter cleaning and/or replacement	75.00%	100.00%
10	Central A/C	landscape shading	0.00%	100.00%
11	Central A/C	insulated metal or fiberglass doors	80.00%	100.00%
12	Central A/C	whole house fan	50.00%	100.00%
13	Central A/C	duct insulation	0.00%	70.00%
14	Central A/C	shell insulation upgrades	5.00%	90.00%
15	Central A/C	programmable thermostat	75.00%	100.00%
16	Central A/C	reflective roof coatings	50.00%	100.00%
17	Central A/C	duct sealing	80.00%	100.00%
18	Central A/C	solar control glazing	0.00%	100.00%
19	Clothes Dryer	Energy Star or better clothes dryer	100.00%	100.00%
20	Clothes Washer	Energy Star Clothes Washer - all electric	100.00%	100.00%
21	Diswasher	Energy Star Dishwasher - electric dhw	100.00%	100.00%
22	Freezer	remove second freezer	20.00%	100.00%
23	Freezer	Energy Star or better freezer	100.00%	100.00%
24	Lighting	CFLs	60.00%	68.00%
25	Lighting	outdoor floodlight	50.00%	68.00%
26	Lighting	motion detectors	50.00%	68.00%
27	Refrigerator	remove second refrigerator	20.00%	100.00%
28	Refrigerator	Energy Star or better refrigerator	100.00%	100.00%
29	Room A/C	solar gain controls such as exterior shades	80.00%	100.00%
30	Room A/C	room A/C - various retrofits	100.00%	100.00%
31	Room A/C	refrigerant charge testings and recharging	75.00%	100.00%
32	Room A/C	air sealing (caulking, weatherstripping)	75.00%	100.00%
33	Room A/C	ceiling fan	0.00%	100.00%
34	Room A/C	Energy Star or better windows	80.00%	100.00%
35	Room A/C	filter cleaning and/or replacement	75.00%	100.00%
36	Room A/C	Attic, roof, wall insulation	5.00%	90.00%
37	Room A/C	insulated metal or fiberglass doors	80.00%	100.00%
38	Room A/C	solar control glazing	0.00%	100.00%
39	Space Heat	air sealing (caulking, weatherstripping)	80.00%	100.00%

Technology Number	End Use	Measure Name Used in ICF Draft Report	ICF Applicability (Feasibility) Factors for Residential Measures - GRU Service Area	California Secret Surplus Report - Applicability Factors for Southern California Edison Service Area
40	Space Heat	insulated metal or fiberglass doors	80.00%	100.00%
41	Space Heat	programmable thermostat	100.00%	100.00%
42	Space Heat	duct insulation	0.00%	70.00%
43	Space Heat	furnace upgrades	100.00%	100.00%
44	Space Heat	attic radiant barriers	50.00%	100.00%
45	Space Heat	shell insulation upgrades	5.00%	90.00%
46	Space Heat	duct sealing	80.00%	100.00%
47	Space Heat	Energy star or better windows	80.00%	100.00%
48	Space Heat	air sealing (caulking, weatherstripping)	75.00%	100.00%
49	Space Heat	insulated metal or fiberglass doors	80.00%	100.00%
50	Space Heat	Energy Star or better heat pump upgrade	100.00%	100.00%
51	Space Heat	Energy star or better windows	80.00%	100.00%
52	Space Heat	programmable thermostat	100.00%	100.00%
53	Space Heat	duct insulation	0.00%	70.00%
54	Space Heat	duct sealing	80.00%	100.00%
55	Space Heat	shell insulation upgrades	5.00%	90.00%
56	Space Heat	two speed heat pump with elec. Resist. Htr.	50.00%	70.00%
57	Space Heat	two speed heat pump	50.00%	70.00%
58	Space Heat	attic radiant barriers	50.00%	100.00%
59	Space Heat	heat pump maintenance	100.00%	100.00%
60	Space Heat	groiund source heat pump	50.00%	100.00%
61	Space Heat	ground source heat pump - electric resistance heat	50.00%	100.00%
62	Space Heat	heat pump - load control	68.00%	100.00%
63	Water Heat	pipe wrap for hot water pipes	50.00%	75.00%
64	Water Heat	water heater tank wraps	20.00%	75.00%
65	Water Heat	low flow showerheads	50.00%	95.00%
66	Water Heat	faucet aerators	50.00%	95.00%
67	Water Heat	vapor compression cycle	50.00%	100.00%
68	Water Heat	heater efficiency upgrades	100.00%	100.00%
69	Water Heat	heat trap - water lines	25.00%	100.00%
70	Water Heat	solar water heater	25.00%	75.00%
Average factor			**55.97%**	**94.70%**
Source:			ICF draft report, page 193	November 2002 California Statewide Energy Efficiency Potential Study, Appendix C, page C.6-1. Factors listed are for single-family homes

More importantly, while the draft ICF report provides the underlying assumptions for incremental costs, kWh and kW savings and useful lives of energy efficiency and load management measures, the ICF report does not provide the data sources used for each of these estimates. This makes it very, very difficult to determine if these estimates are credible and reliable.

5. Basis for Avoided Costs Due to Implementation of DSM Programs

The draft ICF report provides its forecast of electric avoided costs used in the study in Attachment 3, Figure A3-4. GDS has at least two questions about these avoided costs:

- For 2006 to 2011, there is no value for avoiding generation, transmission or distribution capacity. If energy efficiency and load management programs can "free-up" energy and capacity that can be sold on the wholesale market, then there should be a positive value for avoided generation capacity costs in these six years. It is GDS' understanding that GRU believes that there is large market for wholesale power sales, and in fact, GRU believes that unused capacity and energy from a new GRU coal plant could be sold to wholesale power customers.

- Second, energy efficiency and load management programs can help defer or eliminate the need for new T&D infrastructure. There is a positive value associated with deferring or eliminating the need for new T&D infrastructure. It is obvious that ICF has not included such avoided costs in the first six years of its analysis (or perhaps it has not included such avoided T&D costs in any year?). GDS recommends that the City Commission find out what avoided costs for capacity has ICF assumed for avoided T&D infrastructure. If such avoided T&D costs were not included in ICF's analysis, then the benefits of the maximum DSM alternative are significantly understated.

- Third, it is important to note that ICF used the 8/31/2006 GRU avoided costs for the initial screening of individual DSM measures. For the evaluation of overall programs and the determination of the maximum DSM case, an integrated, dynamic analysis was done in ICF's IPM model using the cases, scenarios, and assumptions listed in the ICF draft report. According to ICF, CO2 prices were not explicitly included in the initial measure screening, except as they may be included in the GRU avoided costs. ICF did include CO2 prices in the program cost-effectiveness screening at the prices documented in the ICF draft report. GDS agrees with ICF's approach with respect to CO2 prices.

6. Interruptible Load and Other Demand Response Options Not Considered

It is GDS' understanding that ICF did not examine other DSM options, such as an expanded interruptible load program or other demand response and electricity pricing options. Other demand response options that were not considered by ICF include mandatory time-of-use rates; inverted block rates; real time pricing and special incentive tariffs for new homes that are built to Energy Star standards.

Electricity pricing options are a very powerful tool available to electric utilities that want to reduce the need to build new generation, transmission and distribution facilities. There are several pricing options that allow a utility to charge customers for electricity in ways that discourage using electricity during periods of peak demand (when electricity is most costly to produce), and encourage using it during off-peak periods (when electricity production is less costly). Currently GRU customers pay a flat rate that gives them no indication that electricity costs vary by time of day. Even small reductions in energy usage during these peak periods could significantly delay the need for new generation capacity. But the flat rates GRU charges provide no incentive to customers to change their patterns of energy usage, or reduce total usage.

No study of opportunities for DSM is complete without an analysis of the options open to the City Commission to incorporate incentives in the rates charged to residential and commercial customers. Shaping customer energy use by informing them when energy is expensive to produce and when it is cheap, and using rate incentives to persuade them to use less expensive energy and more cheap energy is termed "Demand Response". There are many kinds of demand response programs, and the 2005 Energy Policy Act includes a requirement for investigating the benefits of demand response and recommendations for achieving these benefits[4]. Mayor Hanrahan's February 24th comments on the draft ICF report question whether such demand response and pricing alternatives exist, and rightly so. These options do exist, they are very cost effective, and they are not addressed in the draft ICF report.

A reasonable first step for residential customers could include progressive rates whereby the charge per kWh increases steeply with increases in the total monthly kWh usage. GRU uses two rates at present, charging X cents per kWh for the first 750 kWh used each month, and Y for all usage above 750 kWh.

At present, GRU's current portfolio of rates do not offer incentives to encourage customers to participate in DSM or conservation programs. Electricity rates are the same throughout the day and year for all customers.

Much DSM is oriented toward reducing peak demand or persuading customers to shift their energy usage from times of day when it is most expensive to produce to other times when production is cheaper for the utility. However, if the financial benefits are small, customers will be less likely to adopt these programs.

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[4] See "Benefits of Demand Response in Electricity Markets and Recommendations for Achieving Them: A Report to the United States Congress Pursuant to Section 1242 of the Energy Policy Act of 2005". US Department of Energy, February 2006.

A very effective way to reduce peak demand is to charge customers more for using energy at peak times, and less for using it at time when it is inexpensive to employ. However, like many vertically-integrated utilities, GRU charges all customers the same rate for energy regardless of when it is used. For this reason, customers see no financial benefit in shifting their use of electricity from peak time periods to off-peak periods when the utility can produce electricity more efficiently and for a lower price.

7. ICF's Estimate of Potential kWh Savings (as a percent of annual GRU kWh sales) Is Very Low Compared to Other Studies

GDS has reviewed several recent energy efficiency potential studies. These studies are listed in the table below. These studies indicate that the maximum achievable cost effective potential for kWh savings is far higher than the 4% figure estimated by ICF for the GRU service area. For example, the recent studies done in California, Florida, Kentucky, the Southwest, and Georgia, all show a kWh savings potential of 10% or more of annual kWh sales within 10 years, over double ICF's figure of 4 percent for the GRU service area. None of the recent energy efficiency potential studies have kWh savings as low as projected by ICF (4% by 2015). In fact, the 2005 energy efficiency potential study done by ICF for the State of Georgia (study sponsored by the Georgia Environmental Facilities Authority) found that the maximum achievable cost effective potential for energy efficiency in that State was over 9% of annual kWh sales by 2015, **over twice** ICF's 4% estimate for the GRU service area. Thus there are many indications that ICF has significantly underestimated the potential for cost effective kWh savings in the GRU service area.

Summary of Electricity (or All Fuels) Savings Potential Studies - US

Technical potential is defined as the complete penetration of all measures analyzed in applications where they were deemed to be technically feasible from an engineering perspective.
Economic potential refers to the technical potential of those energy conservation measures that are cost-effective when compared to supply-side alternatives.
Maximum Technically Achievable potential is defined as the amount of technical potential that could be achieved over time under the most aggressive program scenario possible.
Maximum Economically Achievable potential is defined as the amount of economic potential that could be achieved over time under the most aggressive program scenario possible.
Budget Constrained potential refers to the amount of savings that would occur in response to specific program funding and measure incentive levels.

Area(s) Covered	Type of Savings Potential	Year Completed	Author(s)	Estimated DSM kWh Savings as % of Annual kWh Sales				Estimated Summer Peak Savings as % of Total Capacity	Years to Achieve Estimated Savings Potential	Comments
				Res.	Comm.	Indus.	Total			
California	Technical Economic Max. Economically Achievable Budget Constrained	2002	Xenergy	21% 15% 10% 8%	17% 13% 10% 7%	13% 12% 11% 4%	19% 14% 10% 6%	25% 16% 10% 6%	10	Integrated measures not addressed; agriculture included in industrial sector
Connecticut	Technical Max. Technically Achievable Max. Economically Achievable	2003	GDS Associates/ Quantum Consulting	21% 17% 13%	25% 17% 14%	20% 15% 13%	24% 17% 13%	24% N.A. 13%	10	Also includes results for Southwest CT region
Georgia	Max. Economically Achievable	2004	Alliance to Save Energy	N.A.	N.A.	N.A.	25%	17%	10	
Florida	Max. Economically Achievable	2004	Alliance to Save Energy	N.A.	N.A.	N.A.	22%	16%	10	
Kentucky	Max. Economically Achievable	2005	Big Rivers Electric Cooperative	N.A.	N.A.	N.A.	12%	N.A.	10	
Massachusetts	Max. Economically Achievable	2001	RLW Analytics / SFMC	25%	16% - C&I		N.A.	N.A.	5	Excludes non-utility impacts & low income savings/sales
New York	Technical Economic	2002	OEI / VEIC / ACEEE	37% 26%	41% 38%	22% 16%	37% 30%	N.A.	10	Also 5- and 20-year scenarios
Oregon	Technical	2003	Ecotope / ACEEE / Tellus	28%	32%	35%	31%	N.A.	10	Residential includes manufactured housing
Puget Sound Energy	Max. Technically Achievable Max. Economically Achievable	2003	KEMA-XENERGY / Quantec LLC	17% 7%	7% 6%	0% 0%	12% 6%	33% 11%	20	
Vermont	Max. Technically Achievable	2002	OEI / VEIC	30%	32% - C&I		31%	37%	10	Includes fuel switching; also 5-year scenario
VELCO	Max. Technically Achievable	2002	OEI / VEIC	18%	17% - C&I		17%	23%	10	Excludes measures with little peak demand, that require regional coordination, and emerging technologies; includes fuel switching; also 5-year scenario
AZ,CO,NV,NM,UT,WY	Max. Economically Achievable	2002	SWEEP / ACEEE / Tellus	14%	20%	19%	18%	N.A.	8	Also 18-year scenario
NJ, NY, PA	Max. Economically Achievable	1997	ACEEE	35%	35%	41%	N.A.	N.A.	14	Residential savings are for all fuels, not just electricity
National	Budget Constrained	1997	U.S. DOE	9%	8%	11%	10%	14%	13	Addresses all fuel; also 23-year scenario

8. Comparison of GRU's Existing DSM Program Efforts to Other Utilities in the U.S.

As part of our review of the DSM analysis done for the City of Gainesville, GDS examined the portion of the report that examines GRU's existing DSM programs. Figures 3-33 and 3-34 in the draft ICF report show the 2005 and 2006 GRU DSM budgets for 2005 and 2006. In order to compare GRU's DSM efforts to other utilities, GDS obtained the latest available DSM spending and electricity savings data (from the year 2004) from the US Department of Energy, Energy Information Administration (EIA) data base. This data is useful for comparing GRU's level of kWh and kW savings from DSM programs to all other utilities in the US. This data can be used by decision-makers to determine if a utility ranks high or low compared to other utilities in the US.

Several of Florida's electric utilities do offer energy efficiency programs. The actual kWh savings performance (kWh savings as a percent of total kWh sales) for the twenty-two Florida utilities (based on 2004 data from the EIA Form 861 database) in the year 2004 ranged from a low of **.00%** of annual kWh sales to a high of **8.06%** of annual kWh sales (see Table 1-1 below). It is interesting to note that nine of the twenty-two Florida utilities show zero savings from energy efficiency programs (because they do not offer energy efficiency programs). The EIA's 2004 data for GRU shows that the cumulative impact of GRU's DSM programs was 3.79% of annual kWh sales in 2004.

Table 1-1: Ranking of Florida Utilities on kWh savings from energy efficiency programs as a percent of total kWh sales

Utility Code	Name of Electric Utility	DSM Program kWh Savings as % of Total kWh Sales	Rank in US	# of Utilities in EIA Database
18445	City of Tallahassee	8.06%	18	1,118
7801	Gulf Power Co	5.41%	30	1,118
6909	Gainesville Regional Utilities	3.79%	44	1,118
6452	Florida Power & Light Company	3.45%	48	1,118
18454	Tampa Electric Co	3.15%	49	1,118
6455	Florida Power Corp	2.41%	63	1,118
18304	Sumter Electric Coop, Inc	1.80%	76	1,118
10857	Lee County Electric Coop, Inc	1.75%	79	1,118
9617	Jacksonville Electric Authority	0.58%	124	1,118
7264	Glades Electric Coop, Inc	0.31%	150	1,118
20885	Withlacoochee River Elec Coop	0.23%	157	1,118
15776	Reedy Creek Improvement Dist	0.14%	180	1,118
10623	City of Lakeland	0.04%	214	1,118
6443	Florida Keys El Coop Assn, Inc	0.00%	241	1,118
3245	Central Florida Elec Coop, Inc	0.00%	1,049	1,118
3774	City of Clewiston	0.00%	1,050	1,118
6616	Fort Pierce Utilities Auth	0.00%	1,051	1,118
7593	City of Green Cove Springs	0.00%	1,052	1,118
10376	Kissimmee Utility Authority	0.00%	1,053	1,118
13485	New Smyrna Beach City of	0.00%	1,054	1,118
13955	City of Ocala	0.00%	1,055	1,118
18360	Suwannee Valley Elec Coop Inc	0.00%	1,056	1,118

On the other hand, each of the top ten ranked DSM utilities in the EIA database saved over 10% of annual kWh sales per year with energy efficiency programs, far more than is being saved by GRU. Table 1-2 below shows the cumulative annual kWh percentage savings (as reported for 2004) for the top ten DSM utilities in the US. It is important to note that the number one DSM utility (for kWh savings as a percent of annual kWh sales) is a municipal utility, with cumulative annual kWh savings of over **17%** of annual kWh sales. Thus the future kWh savings potential of **only 4%** estimated by ICF for GRU appears very low compared to what has actually been achieved through aggressive energy efficiency programs at other electric utilities throughout the US. More importantly, the top three DSM utilities in the country for kWh savings as a percent of total sales are municipal electric utilities. In addition to examining the DSM programs at the City of Austin, the City of Gainesville needs to explore how these top three DSM utilities, all municipal utilities, have achieved such large kWh savings, ranging from 16.2% to 17.4% of 2004 annual kWh sales.

Table 1-2: Cumulative kWh Savings from DSM Programs for Top 10 DSM Utilities in US

Utility Code	Utility Name	Type of Utility	State	DSM Program kWh Savings as % of Total kWh Sales	Rank in US
2548	Burlington City of	Municipal	VT	17.4%	1
6022	Eugene City of	Municipal	OR	16.5%	2
15783	City of Redding	Municipal	CA	16.2%	3
19497	United Illuminating Co	Private	CT	11.9%	4
20455	Western Massachusetts Elec Co	Private	MA	10.9%	5
13781	Northern States Power Co	Private	SD	10.5%	6
20856	Wisconsin Power & Light Co	Private	WI	10.2%	7
16534	Sacramento Municipal Util Dist	Political Subdivision	CA	10.1%	8
17839	City of Springfield	Municipal	OR	10.1%	9
12647	Minnesota Power Inc	Private	MN	10.1%	10

Table 1-3 below shows the ranking of Florida electric utilities for peak demand (kW) savings (i.e., the percent of annual system peak load saved with energy efficiency programs in 2004). GRU saved 2.78% of its peak load with energy efficiency programs in 2004, and ranks 209^{th} from the top of the list. Only one Florida electric utility (Florida Power and Light Company) ranks in top 50 of all electric utilities that reported data on DSM program kW demand savings as a percent of system peak load in 2004. The peak demand savings from energy efficiency programs for the Florida electric utilities ranged from 0.0% to 15.1% of actual 2004 peak load. Based on this data, it is clear that GRU could do significantly more to save peak demand with expanded DSM and demand response programs.

Table 1-3: Ranking of Florida Utilities on kW savings from energy efficiency programs as a percent of total system peak load in 2004

Utility Code	Name of Electric Utility	DSM Program kW Savings as % of Total System Peak Load in 2004	Rank in US	# of Utilities in EIA Database
6452	Florida Power & Light Company	15.09%	42	1,118
18454	Tampa Electric Co	12.95%	51	1,118
7801	Gulf Power Co	9.95%	72	1,118
10857	Lee County Electric Coop, Inc	7.57%	91	1,118
18445	City of Tallahassee	7.08%	97	1,118
18304	Sumter Electric Coop, Inc	6.82%	102	1,118
6455	Florida Power Corp	5.41%	132	1,118
7264	Glades Electric Coop, Inc	4.29%	150	1,118
6909	Gainesville Regional Utilities	2.78%	181	1,118
6443	Florida Keys El Coop Assn, Inc	2.17%	200	1,118
20885	Withlacoochee River Elec Coop	2.07%	203	1,118
20910	Wolverine Pwr Supply Coop, Inc	2.07%	204	1,118
9617	Jacksonville Electric Authority	1.13%	242	1,118
10623	City of Lakeland	0.17%	277	1,118
3245	Central Florida Elec Coop, Inc	0.00%	1,055	1,118
3774	City of Clewiston	0.00%	1,056	1,118
6616	Fort Pierce Utilities Auth	0.00%	1,057	1,118
7593	City of Green Cove Springs	0.00%	1,058	1,118
10376	Kissimmee Utility Authority	0.00%	1,059	1,118
13485	New Smyrna Beach City of	0.00%	1,060	1,118
13955	City of Ocala	0.00%	1,061	1,118
15776	Reedy Creek Improvement Dist	0.00%	1,062	1,118
18360	Suwannee Valley Elec Coop Inc	0.00%	1,063	1,118

Table 1-4 below shows the annual kW percentage savings (as reported for 2004) for the top ten DSM utilities in the US. It is important to note that the number one DSM utility (for kW savings as a percent of annual system peak demand) is a municipal utility in Minnesota, with annual kW savings of over 50% of annual system peak demand. The top ten ranked DSM utilities (for peak savings) all saved over 31% of system peak demand in 2004 with their DSM programs. The peak demand savings from DSM programs for the Florida electric utilities ranged from 0.0% to 15.1% of actual 2004 peak demand. In addition to examining the DSM programs at the City of Austin, the City of Gainesville needs to explore how these top ten "peak savings" utilities, again all public power utilities, have achieved such large peak demand savings, ranging from 31.6% to 52.1% of 2004 system peak demand.

Table 1-4: Annual kW Savings from DSM Programs for Top 10 DSM Utilities in US					
Utility Code	**Utility Name**	**Type of Utility**	**State**	**DSM Program kW Savings as % of Total System Peak Demand**	**Rank in US for Peak Demand Savings**
16971	Shakopee Public Utilities Comm	Municipal	MN	52.1%	1
12301	Nodak Electric Coop Inc	Cooperative	ND	46.3%	2
2890	City of Camden	Municipal	SC	45.8%	3
16740	Scenic Rivers Energy Coop	Cooperative	WI	41.3%	4
10539	La Plata Electric Assn, Inc	Cooperative	NM	40.0%	5
24949	Cass County Electric Coop Inc	Cooperative	ND	39.0%	6
17868	St Croix Electric Coop	Cooperative	WI	34.4%	7
5780	Elkhorn Rural Public Pwr Dist	Political Subdivision	NE	34.3%	8
5585	Eastern Illinois Elec Coop	Cooperative	IL	32.6%	9
13050	Mountain Parks Electric, Inc	Cooperative	CO	31.6%	10

Figure 1-1 below shows how Florida electric utilities rank compared to other utilities in the United States on kWh savings from energy efficiency programs in 2004 as a percent of 2004 annual mWh sales. GRU ranks 44th from the top of this ranking. Figure 1-2 shows how Florida electric utilities rank compared to other utilities in the United States on MW savings from energy efficiency programs in 2004 as a percent of 2004 annual peak load. As noted above, GRU ranks 181st from the top of the list. Figure 1-3 shows how Florida electric utilities rank compared to other utilities in the United States on energy efficiency program spending in as a percent of 2004 annual retail revenues. The detailed data supporting these rankings is provided in Appendix A to this report. As one can see the Florida electric utilities rank far from the top ranked electric utilities in the US on all three attributes of energy efficiency program savings and spending.

Figure 1-1: Ranking of US Electric Utilities - 2004 DSM kWh Savings As % of 2004 kWh Sales

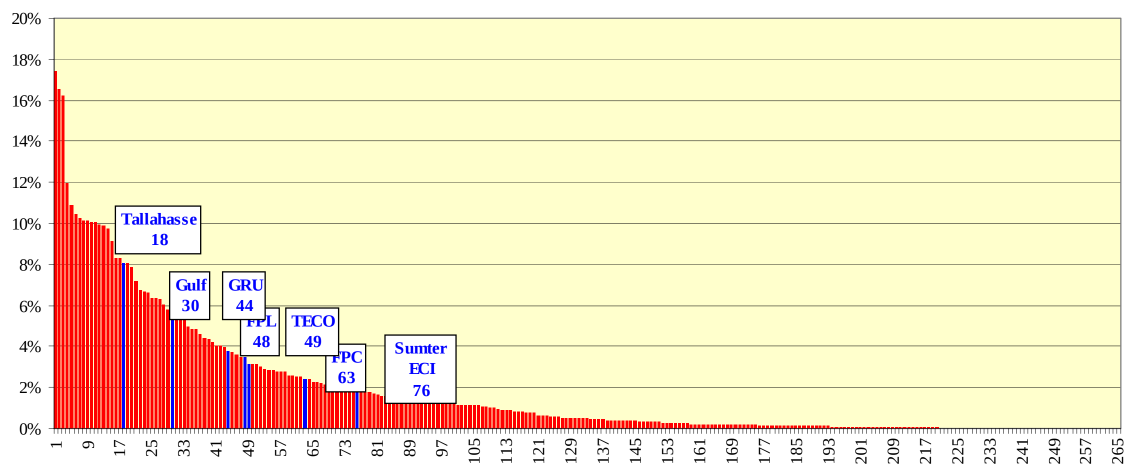


Figure 1-2: Ranking of US Electric Utilities - DSM MW Savings as % of Annual System Peak Demand

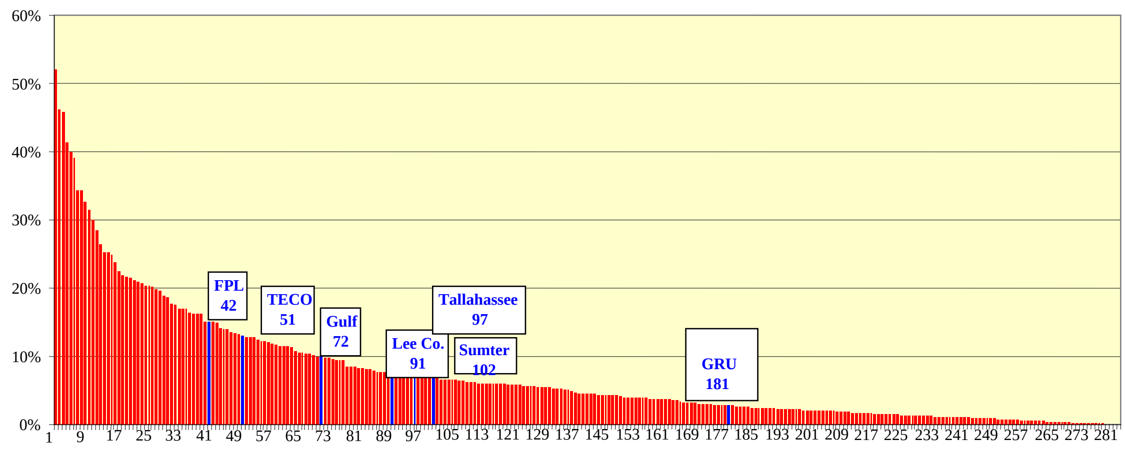
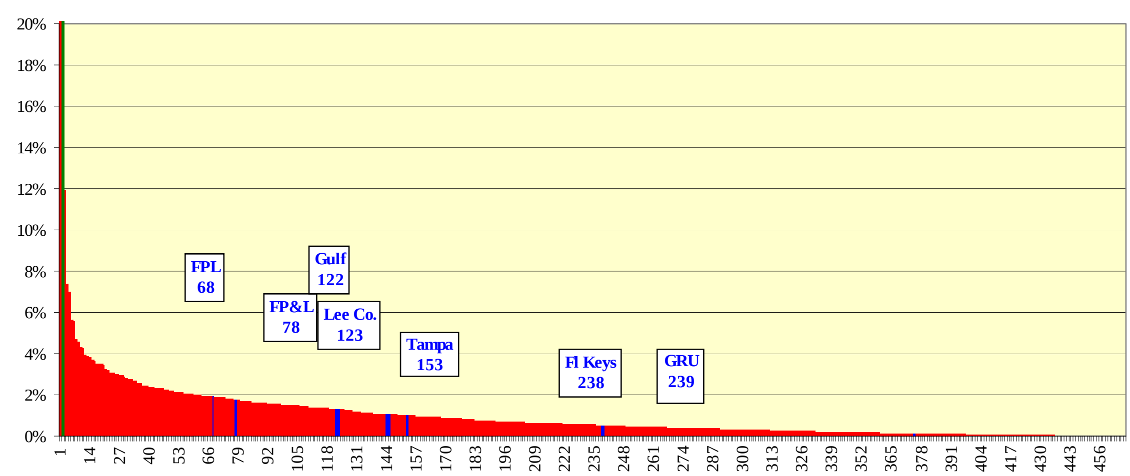


Figure 1-3 shows the ranking of US utilities for annual spending on DSM programs as a percent of annual utility revenues in 2004. As one can see GRU ranks 239th from the top of the list.

Figure 1-3: Ranking of US Utilities - % of Annual Revenues Spent on DSM Programs



9. Investing in DSM Has Risk Diversification Benefits

One major benefit of DSM programs that should be addressed in the ICF report is risk minimization. If the City were to build a 232 MW coal plant at the Deerhaven site, it would be putting "all its eggs in one basket". If this plant has a mechanical failure or if its fuel supply is disrupted, the City loses 232 MW of power immediately. This concept is also known as "single shaft risk". In fact, a recent Standard and Poor's credit rating report for the City of Gainesville noted that "GRU is contemplating constructing a new 220 MW solid fuel generating plant to be brought on line around 2013. The plant construction will require additional borrowing and would likely ad risk to the utility's overall financial profile."

On the other hand, cost effective investments in DSM equipment and building materials are dispersed throughout the homes and businesses in the City. Once these measures are installed, they operate quietly and economically **with no fuel costs** year after year after year. Because hundreds of pieces of energy efficient equipment are installed in numerous residential and commercial businesses, the risk of failure is minuscule, while the risk of failure for a large, central station power plant is dramatically larger. This risk minimization benefit from DSM is an essential consideration for the City Commission.

10. Impact of New Federal Energy Efficiency Standards

It is GDS' understanding that the effect of higher mandated federal HVAC efficiency requirements (SEER 10 raised to SEER 13) are not accounted for in the latest available GRU-developed load forecast. Because of these new Federal energy efficiency standards, the electricity use of HVAC systems will be lower than in the past. The City Commission should require GRU to update its load forecast to account for these new Federal energy efficiency standards.

11. New Estimates of DSM Savings Potential from the Florida Solar Energy Center

As noted above, GDS has determined that the draft ICF report underestimates the energy and peak demand savings from aggressive implementation of DSM programs. ICF concludes that implementation of the maximum DSM scenario will save only 4% of annual energy sales by 2015 (ten years from now). Yet the January 2006 report just presented to the Florida Legislature by the Florida Solar Energy Center projects a 26% reduction just in residential sales of electricity. This difference needs to be more thoroughly explored. This new report is available at the web site of the Florida Solar Energy Center. Dr. James Fenton, Director of the Center, made a presentation to the Florida Senate Committee on Public Utilities. Dr. Fenton cites FSEC studies based on Florida data that demonstrates significantly higher energy savings in the residential sector (26%) than assumed in the ICF analysis. Dr. Fenton noted that new buildings can be constructed to consume 70% to 92% less electricity than existing residential and commercial structures.

12. GRU's Sales to Wholesale Customers

GRU currently sells power on a wholesale basis to the City of Alachua and Seminole Electric Cooperative, the wholesale supplier for Clay Electric Cooperative. The GRU load forecast includes the peak demands that these wholesale customers place on the GRU grid. These two wholesale customers have contributed from 6% to 7% of the total GRU system peak demand between 1993 and 2004, and they are projected to contribute up to nearly 10% in the year 2022. (Note, these calculations are based on the forecasts in Table B-2 of the December 2003 IRP study produced by GRU.)

Some parties have raised the issue of whether or not service to these loads could be terminated to delay the need for new generation.

First, in the interest of full disclosure, Seminole Electric Cooperative is a client of GDS and has been for many years. As a result we will respectfully refrain from making any recommendations with regard to the issue of continued service to GRU's wholesale load.

To aid the discussion, however, we have a couple of observations. First, without having researched any applicable Florida laws or Commission rules with regard to the obligation to serve at wholesale versus at retail, we suspect that continuing to serve the wholesale load may be at GRU's option, subject only to the terms of the contracts between GRU and its wholesale customers. From the ICF report, it is not clear whether or not ICF studied the terms of these contracts and the potential implications regarding GRU's power supply requirements, nor does the IFC report indicate whether or not discontinuing service to the wholesale customers is feasible.

According to what appears to be GRU data in the ICF report (page 187), the amount of wholesale load is approximately 35 MW today at summer peak, and it is expected to grow to approximately 46 MW by 2014. These numbers are load numbers, and for generation planning they would need to be grossed up by the 15% reserve margin used by GRU. From the projections provided, the total of the projected load plus reserve margins appears to equate to approximately three years of GRU's retail load growth, meaning that without the wholesale load, generation addition needs could be deferred by three years.

While GDS is not making a recommendation on whether GRU should discontinue electricity sales to existing wholesale customers or whether such is contractually and legally feasible, we have developed new scenarios that include revised estimates for maximum achievable cost effective DSM, the inclusion of a 25 MW power plant, and the discontinuation of such wholesales sales. These scenarios are presented in the Executive Summary to this report, and they show that GRU may be able to defer the need for new generation until the year 2020.

SECTION 5 – SUPPLY SIDE ISSUES

1. Breadth of Supply Side Options Considered

One question that we have as a result of the ICF study is whether or not the range of supply side options considered, and the timing of those options, is sufficiently broad. In large part, the answer to this question depends upon the ultimate use of the ICF report in GRU's plans going forward.

After consultation with the City, ICF studied four options, including two options involving 220 MW plants installed by 2012, a third option involving a 75 MW biomass plant installed by 2012, and a fourth option using demand side management to the maximum extent possible. ICF screened and discussed other options, however detailed production costs were only calculated for the four main options.

The approach used in the ICF study is contrasted to a more involved approach commonly undertaken in which a broader range of options is considered. Rather than a select number of hand picked options, planners would consider multiple options including for example varying sizes of power plants and also offers received through bulk power solicitations. Demand side options can also be included.

Using this latter approach, planners could for example develop cost and operating characteristics for a number of technically feasible options and offer those to a computer program with optimization capabilities. There are readily available industry standard software packages that have this capability. The optimization routine would determine from the wide range of options presented which options offered the most attractive results over the study horizon based on the quantitative criteria presented, typically cost.

An optimization approach is important not only because it will select the appropriate resources but also because it will select the best timing for those resources. In the ICF study, relatively large 220 MW resources are being added by 2012 without regard to the fact that the capacity shortfall in 2011 is projected to be only 32 MW. The ICF model reflects the excess capacity by making excess energy sales into the market until the energy is fully needed by GRU. (The revenue requirements reported for the 220 MW options include the market sales revenues as offsets to cost.) Whether or not this scenario is optimal as compared to, for example, a smaller CFB plant being added by 2012, or for example the same 220 MW option being added in a later year, cannot be known since the model was not allowed to evaluate that option.

It also cannot be known whether the resources added are the best fit, in the context of base load versus intermediate (cycling) versus peaking resources. We cannot confirm for example that a base load plant is needed. It could be that a less expensive gas plant adequately serves the system's needs. We would also like to see a scenario where market interaction is turned off. It would be interesting to see how that change of assumptions affects the results. We suspect that the larger 220 MW options installed in

2012 would see a sizable increase in their costs due to the lack of excess energy sales revenue.

Along these lines, we note that in 2012 GRU would be operating some 448 megawatts of base load capacity if one of the 220 MW options was combined with the existing Deerhaven capacity, relative to a total resource requirement including installed reserves of 626 MW, meaning that approximately 72% of the resource need would be coming from base load resources. This is high in our experience, but it may be optimal compared to other options depending upon market prices, cost projections, and the like. The point is we cannot be sure without removing the restrictions from the modeling. There are a number of smaller options that could be considered on the supply side, including smaller CFB units, smaller combined cycle units, smaller biomass units, etc.

GDS notes that ICF found the biomass generation plant/DSM alternative as having the second lowest present value of revenue requirements after the "DSM Only" alternative, and as a result, GDS is concerned that ICF did not fully explore the biomass alternative. If GRU used more biomass fuels and less coal in the future, it may not only defer the need for a new coal plant, but it could significantly reduce GRU's atmospheric fossil fuel carbon dioxide emissions. A September 2005 report published by the Alachua County Environmental Protection Advisory Committee found that if GRU substituted 100 MW of biomass-based capacity for its proposed 220-MW CFB unit, annual fossil carbon dioxide emissions would drop over a million tons under the 100-MW biomass option, compared to GRU's proposal for the 220 MW CFB unit. Although biomass produces the greenhouse gas nitrous oxide, as does the CFB, the totals are insignificant in comparison to coal/pet coke carbon dioxide. ICF should closely examine the findings in this EPAC document and report back findings to the City Commission on whether a 20 to 30 MW biomass plant, coupled with aggressive DSM and demand response programs, can defer or eliminate the need for a new coal plant, and result in lower revenue requirements and power plant emissions.

The long position created by the large resources in the early years puts GRU in a selling position until it grows into the capacity. The study assumes that GRU will sell energy produced from this excess capacity, and the revenues from those sales offset costs and improve the feasibility of the given option. This affects the larger base load units more than it does the smaller technologies, because there is more excess energy. The result is that the feasibility of these large base load technologies depends more heavily on the ability of GRU to market the excess energy, and as a result the results are somewhat more speculative than they would be given a smaller plant producing less excess energy in its early years of operation.

ICF states that the supercritical pulverized coal option was not evaluated because, among other reasons, of "the City's desire to have a plant locally sited and well suited to its load." ICF goes on to state that, "If the City rejects the three solid fuel options, it should be aware that jointly owned solid fuel plant options are expected to be available to the City" (page 94). We agree that this could represent a viable option for GRU. It likely has lower costs due to economies of scale, however of course it would need to be studied, and transmission improvements in particular would be a concern.

We did not see any mention of the potential for life extensions at the four Kelly units that are projected to be retired in stages between 2011 and 2019. It appears that ICF assumed that these units would be retired, increasing the resource capacity shortfall, and their capacity would be replaced with new capacity from one of the selected options. We do not know the history of any re-powering or life extension studies that have been performed by GRU, however it may be of interest to GRU and ICF to study that option if it has not been done already. Oftentimes in our experience, life extensions offer a reasonably priced way of meeting capacity shortfalls. These units are existing units fueled by natural gas and would therefore presumably have few, if any, environmental issues.

In short, the study did not consider options typically pursued by a utility the size of GRU in need of roughly 50 MW, such as a participation in a jointly owned project, proposals received in response to a wholesale power solicitation, smaller technologies, and off-system resources resulting from improvements in transmission capabilities.

The relatively narrow range of options considered in the ICF report is only an issue if the results of the report are to be used to establish the need for one of the options analyzed. Because the model was not allowed to select from a broader range of technologies (including more conventional technologies, as we note that the three supply side options in the list are all newer technologies with relatively little operating history) with variable in-service dates, and also because the model does not evaluate any proposals received in response to a bulk power solicitation, it arguably could be described as inadequate to support proceeding forward with any of the options evaluated by ICF.

2. Technological Risk of Supply Side Options Considered in ICF Report

None of the supply side options evaluated by ICF are conventional technologies. By that we mean that they are newer technologies without the same level of technological comfort that is found with traditional pulverized coal units or simple cycle or combined cycle combustion turbine units, for example.

In a December 2005 article in Public Utilities Fortnightly, JEA said the following with regard to IGCC, "We feel IGCC still has too high of a technology risk . . . We continue to look at it, but for a 2012 start date we don't feel comfortable enough with the technology."

There are two operating utility scale IGCC plants in the United States. The Wabash River IGCC is a 262 MW plant operating in Indiana since 1995. The other is the 250 MW Polk Power Station operated by Tampa Electric ("TECO") and in service since September 1996. They both have troubled operating histories with multiple problems. TECO's unit has in recent months been performing better and achieving high availability. However, it has taken TECO a number of years to achieve these results.

ICF on page 13 discusses use of an "IGCC Flexible Solid Fuel Plant" that gasifies coal, petroleum coke, and biomass. The technology risk of this type of plant would be extremely high. We are not aware of any such plant in existence today. The TECO and Wabash plants run entirely on coal.

ICF assumes availability of 90% for the IGCC option (page 98) which seems very high to us for a relatively new technology, particularly in the early years of operation.

Large utility scale biomass installations are likewise somewhat rare. Of the supply side options evaluated by ICF, circulating fluidized bed designs are the most proven. They are certainly more common than IGCC plants, as there are a number of these type plants operating in the U.S. today. However, they would not be considered conventional, as operating history for traditional pulverized coal plants is much greater, and there are many times more pulverized coal plants operating in the country today.

On page 14 of the report, ICF mentions that a natural gas-fired combined cycle plant was considered but not evaluated, and other information we have reviewed suggests that the City may be considering this option on a separate track. We agree with ICF that there are many attractive features of a combined cycle project including lower CO_2 emissions, lower emissions and possible health impacts, lower capital costs, proven technology, and financial community receptivity, among other things.

ICF correctly included additional cost contingency for the less proven technologies, recognizing that the costs of these options is much harder to predict. For example, they included a 20% contingency factor in the cost of an IGCC plant (footnote 3, page 93). However, we believe that technological risk also needs to be considered in the performance assumptions associated with these less proven plants. One way to accomplish this would be through degradation in assumed performance in the early years. Another method would be to include separate criteria and separate scoring for the unknowns associated with the performance of the plant and the additional operations and maintenance costs associated with these less proven technologies.

3. ICF Supply Side Modeling Assumptions

We reviewed the most important assumptions associated with the supply-side modeling. (Some of these assumptions likewise affect the demand-side analysis).

A. Installed Cost of Generation Additions

The installed costs of each supply side option is critical to the analysis, and we agree with ICF that developing the installed cost assumptions for purposes of study is a real challenge. Little public data exists with regard to the costs of these plants, particularly at the sizes being considered in the report.

However, the supply side options being considered by ICF are capital intensive, meaning they are relatively expensive on a per kilowatt basis of installed capacity. As a result, a large part of the ongoing costs for these plants is tied up in debt service and asset amortization – generally about 40%. So the installed cost of the plant is an important, fundamental assumption, and the results of the ICF report are very sensitive to what is assumed for installed costs.

ICF cites confidential sources including confidential discussions with utilities, manufacturers, and developers (page 92). These are good sources, and may be the best available. However, because they are confidential, they are unfortunately sources that cannot be verified by us or anyone else. And without seeing the supporting data, we cannot confirm that what ICF has assumed is reasonable. ICF provides only the reference to their confidential sources and otherwise provides no detail or support for the installed cost estimates, and in our view it would be very difficult to make a decision of this magnitude without being informed and without solid costs for these resource types.

B. Fuel cost projections

Fuel cost projections are also extremely significant assumptions in supply side analyses, as fuel costs typically represent the single largest component of the all-in cost of a supply side resource. Fuel forecasts are key to the results, and the basis of these forecasts must be credible for the results to be credible.

We generally find ICF's fuel forecasts to be reasonable. In Chapter 5, the source of the forecasts is not provided, however we assume from earlier ICF presentations that the fuel price forecasts are proprietary forecasts developed by ICF.

Natural gas prices are of course very unpredictable given the recent history, and most every forecast of natural gas prices in recent years has been proven inaccurate, with the only question being the degree of inaccuracy. Over the study period, ICF projects delivered natural gas prices to range from a low of $7.48/MMBtu in 2010 to a high of $9.59/MMBtu in 2020 (Figure 5-5, page 106).

The Energy Information Administration projects somewhat lower prices for natural gas. In their February 2006 Annual Energy Outlook, EIA projects wellhead natural gas prices of $5.03/MMBtu in 2010 and $4.90/MMBtu in 2020 in 2004 dollars. Adjusting for inflation using the GDP index and using the same $0.39 delivery cost as used by ICF ($2003), the delivered prices in nominal dollars become $6.15/MMBtu in 2010 and $7.76/MMBtu in 2020.

Delivered coal prices have increased significantly over the last year, but are expected to stabilize. ICF forecasted coal prices may be on the low side in our view, primarily due to transportation concerns, and the GRU IRP forecast may be more realistic. Nonetheless, ICF's high coal forecast captures this potential case and therefore is properly inclusive.

The availability of petroleum coke is a question, and has been generally since it began being used in power plants a number of years ago. For example, at present, Central Louisiana Electric Company ("CLECO") is about to begin construction of a 2 x 330 MW (gross) petroleum coke fired CFB unit (RPS-3). It indicates that there may be more future competition for petroleum coke as a fuel (see page 118).

We have not studied in detail the concerns mentioned by ICF and some other parties with regard to large scale reliance on biomass as a dependable source of fuel. We agree it is an issue that should be studied further to the extent that large scale biomass is of interest.

C. Unit Performance Characteristics

We generally find that ICF's assumptions regarding unit performance and operation are reasonable, with one exception. As previously stated, it appears that ICF assumes 90% availability for the IGCC and CFB options from day one of operation. Because of the short and less-than-perfect operating histories for these technologies, we believe that reduced availability should be considered, particularly in the early years of operation.

D. Emissions related costs

We generally find that ICF's assumptions regarding emissions related costs to be reasonable. Allowance prices (page 99) appear to fall within generally accepted ranges. While the CO_2 allocation assumptions made by ICF may be reasonable, there is no firm basis for assuming that varying levels of CO_2 allocations will be made to different technologies, or that any allocations at all will be made, as no legislation has been passed. Alternate scenarios assuming a straight carbon tax might therefore be desirable. Emissions rates (page 132) are consistent with other assessments that we have seen of these technologies.

E. Market Price Projections

Market price projections for wholesale electricity are significant in ICF's analysis, as they are used to price energy purchases from off-system when purchasing from the market is more economical than running GRU capacity. Market price projections are likewise used to price off-system sales when GRU has excess capacity. ICF essentially models GRU as an island, but for these energy purchases and sales with the outside world.

We cannot determine from the information provided the reasonableness of ICF's projection of future market prices for wholesale electricity. The projections of the prices themselves were not provided in the draft report, and there is no supporting data. In addition very little is described with regard to how these projections were developed.

These projections, however, as ICF states, could potentially sway the feasibility of the options evaluated (pages 5, 11, and 17). The first two options, involving large 220 MW projects installed by 2012, produce large quantities of surplus energy for a number of years until GRU's load grows into the capacity and the system is able to absorb the energy. ICF's results price these surplus energy sales according to the projected market price. If ICF's projections are low then actual revenues for surplus energy sales will be higher and those larger options will be more feasible than indicated by ICF. Likewise if market prices are overestimated, then actual revenues will be lower, meaning those options will be less feasible than estimated by ICF.

In the DSM and Biomass cases, according to ICF there are what we term "economy energy" purchases, purchases made when it is cheaper to buy off the market than run your own generation, made to supplement the output of the evaluated alternatives. In these cases, if actual market prices are higher than those projected by ICF, these cases will be less feasible than ICF indicates, all other things being equal. Likewise if actual market prices are lower, then these cases become less expensive and more feasible. In sum, lower market prices favor the lower capital cost options such as the DSM (with peakers) and biomass approaches, whereas higher market prices favor the larger, more expensive approaches.

There has been some debate in the comments provided thus far as to whether coal will be on the margin, meaning that the cost of producing energy with coal-fired generators will be the incremental cost of energy production and will establish spot market prices, generally driving them down in a significant number of hours during the year. While we have not researched this issue in detail, we are generally persuaded by those that argue that natural gas-fired resources will continue to be on the margin and drive wholesale electricity prices for the foreseeable future. It appears to us that the amount of new coal-fired generation proposed for the state will be outflanked by the tremendous load growth that the state continues to see. Likewise any coal-fired generation, assuming the current relationship of coal versus natural gas prices, will likely be earmarked for certain customers such as the plant participants' retail load. In Florida we would not expect to see large amounts of excess coal-fired capacity since state law generally limits the amount of merchant-based capacity.

F. Financing costs

We disagree somewhat with ICF's financing cost assumptions. ICF assumed the same low interest rates would apply for all the supply-side options analyzed. In general we would expect that financing costs would be higher for larger technologies considered riskier by the financial community. The risk may be the result of the size of the undertaking, or it may be the result of the technology being undertaken as well if it is sizeable.

The 220 MW options are generally expected to cost on the order of $450 million, obviously a major expenditure for GRU. In a November 2005 review of GRU, S&P reports total outstanding long term debt currently of $358 million. S&P also stated "GRU is contemplating a 220 MW solid fuel generating plant … [that] would likely add risk to the utility's overall financial profile."

S&P revised GRU's outlook to negative because they are concerned that "greater rate increases will be required to maintain the current rating, given the current debt amortization schedule." The revised outlook does not reflect the proposed plant, however they do state that "the plant construction will require additional borrowing and would likely add risk to the utility's overall financial profile." S&P also makes reference to the risk associated with large unit sizes and the outage risk that results.

Placing the debt may also cost more if the type of technology is less conventional, as large IGCC and biomass options likely would be considered. GRU would likely pursue revenue or general obligation bonds in favor of non-recourse financing commonly used by investor-owned entities. This would likely get the unit(s) financed, where under non-recourse financing it may not be possible right now to get financing for IGCC for example, however there could be a cost.

There is some possibility that grants may be available through the Clean Air Coal Program, but they may be tough to get and may also require a vendor co-sponsor. Also, the Energy Policy Act of 2005 provides for Clean Renewable Energy Bonds that allow borrowers to avoid interest costs for eligible renewable facilities. These are options we have not researched in detail.

In short, we believe that there is a good chance that bond rating agencies may downgrade GRU's bond rating if they perceive that GRU is pursuing more risky supply side resources. We believe that it would be appropriate to consider these costs in the comparison of supply-side resources.

4. Transmission Issues

We have a couple of concerns associated with assumptions made by ICF with respect to the interconnected transmission system in Florida.

First, we found no mention in the ICF report of transmission upgrade costs for the various scenarios to make the capacity deliverable. In particular, we wonder about the transmission improvements necessary to accommodate the larger 220 MW options given that they would be connected, as we understand it, to GRU's existing 138 kV transmission infrastructure. In our experience, transmission upgrade costs are proportional to the size of the generation plant, and they often are a deciding factor in power plant comparison and siting decisions.

Second, we note that ICF considered local supply side options only, meaning options that would be connected to the GRU system, due to expected limitations associated with trying to import capacity over the transmission system.

We were unable to fully evaluate the transmission system limitations as the limitations were simply asserted with little in the way of supporting details provided. The contingencies evaluated and the limiting elements were not identified. As a result we are left to speculate as to the nature of the limitations and what would be required to alleviate them.

However, we wonder if these limitations could not be corrected with some reasonable amount of investment in the transmission system, which would open up further generation alternatives from off-system. Of course in this day and age, the wholesale markets are open and open access transmission tariffs provide generally fair and comparable service across others' lines at cost. We believe that at some point GRU will need to consider off-system resources in its deliberations before it can be sure that its chosen direction is the most prudent.

We note in Staff comments that a transformer at the Parker substation appears to be the limiting element, which if replaced or backstopped could remove the 30 MW import limit assumed by ICF. This indicates that off-system resources are a viable alternative for GRU.

With respect to the 800 MW pulverized coal option, ICF refers to "extra transmission costs" that "could be significant if the purchase is greater than 100-150 MW. Furthermore, siting new lines could be a challenge." We agree that this could be a significant issue for this alternative. There could be significant upgrade costs, and those costs could easily influence GRU's decision to participate in such a plant.

Given the time frame it would have been very difficult if not impossible for ICF to evaluate transmission improvements and associated off-system resources. However the City may want to consider this in future studies. We note for example Jacksonville and Tallahassee who both are developing off-system resources for import across the Florida transmission grid.

5. Single Shaft Risk

In terms of reliability, one of the concerns we would have would be with regard to the size of a proposed supply side resource as compared to the size of GRU's system, particularly since transmission import capability may be limited. The concern stems from the risk of an outage of the resource and the ability to replace the lost power. In the industry this is generally known as "Single Shaft Risk," referring to the generator shaft and the utility's dependence on the turning of that shaft to receive electrical output.

A 500 megawatt utility would not rely on a single 500 megawatt power plant because of the outage risk, nor would it make economic sense for a 500 megawatt utility to have one hundred 5 megawatt units to minimize outage risk, so it comes down to where the balance should be between outage risk and economics. Larger plants offer greater economies of scale but increase the risk associated with outages and the cost of, and ability to find, replacement power. The current loss of GRU's combined cycle plant at Kelly is an example. Substitution of less efficient gas-fired units for the Kelly unit has contributed to the increase in fuel costs being experienced by the utility.

To avoid load shedding (temporary blackouts), a utility operating as an island would maintain a installed generation reserve margin at least as large as its largest unit, recognizing that the temporary loss of that unit would otherwise result in insufficient capacity to serve load in peak conditions. GRU, like most utilities, does not operate as an island and is instead interconnected with neighboring utilities that can provide generation support during times of unit outages. GRU participates in a reserve sharing pool with other utilities. A reserve sharing pool is an agreement among utilities to provide support services to one another during outages.

Even with a reserve sharing pool in place, the physical limitations of the transmission system and the uncertainties associated with the cost of replacement power generally limit the size of individual resources in utility planning. In GRU's case, ICF reports that simultaneous transmission import capability is limited to 30 megawatts in peak conditions, meaning that GRU would not be able to import more than that if an outage occurred during peak conditions.

In addition, replacement power is often expensive, priced at incremental cost from the market or from a neighboring utility. An extended outage involving large quantities of power could have significant impacts on the utility's operating costs during the outage.

For these reasons, smaller to medium sized utilities generally limit the amount of power supplied by any one resource. This can be particularly challenging for utilities less than 1,000 megawatts in size such as GRU.

In GRU's case, these issues would lead us to favor some of the smaller generation technologies being considered over the larger 220 MW options, all other things being equal. In addition, additional resources located at the Deerhaven site could create additional risk in the event of a contingency situation affected the plant site as a whole. This could include storms or other act of God type events affecting the transmission facilities in the area or affecting the plant facilities themselves. Again, this assumes all other things are equal, which they are not. There are advantages in terms of cost savings and planning associated with developing a brownfield site. These advantages need to be carefully weighed against the risk.

In its November 2005 review of GRU, S&P noted the risk that GRU faces in the event of an outage of the Deerhaven station today, remarking that the backup arrangements are priced at incremental market energy costs.

In summary, we would recommend that this consideration be added to the list of criteria used by the City in making this resource decision.

APPENDIX A

Ranking of DSM Performance

Appendix Table 1-1: Ranking of US Utilities on kWh savings from energy efficiency programs as a percent of total kWh sales					
Rank	**Utility Code**	**Name of Electric Utility**	**Type of Utility**	**State**	**DSM Program kWh Savings as % of Total kWh Sales**
1	2548	Burlington City of	Municipal	VT	17.41%
2	6022	Eugene City of	Municipal	OR	16.55%
3	15783	City of Redding	Municipal	CA	16.21%
4	19497	United Illuminating Co	Private	CT	11.95%
5	20455	Western Massachusetts Elec Co	Private	MA	10.86%
6	13781	Northern States Power Co	Private	SD	10.47%
7	20856	Wisconsin Power & Light Co	Private	WI	10.24%
8	16534	Sacramento Municipal Util Dist	Political Subdivision	CA	10.13%
9	17839	City of Springfield	Municipal	OR	10.11%
10	12647	Minnesota Power Inc	Private	MN	10.09%
11	15500	Puget Sound Energy Inc	Private	WA	10.08%
12	20169	Avista Corp	Private	WA	9.93%
13	16868	Seattle City of	Municipal	WA	9.86%
14	17609	Southern California Edison Co	Private	CA	9.76%
15	13780	Northern States Power Co	Private	WI	9.09%
16	11804	Massachusetts Electric Co	Private	MA	8.30%
17	2008	Boulder City City of	Municipal	NV	8.29%
18	18445	City of Tallahassee	Municipal	FL	8.06%
19	4176	Connecticut Light & Power Co	Private	CT	8.03%
20	26510	Granite State Electric Co	Private	NH	7.84%
21	14401	City of Palo Alto	Municipal	CA	7.19%
22	20997	Yellowstone Valley Elec Co-op	Cooperative	MT	6.71%
23	15270	Potomac Electric Power Co	Private	MD	6.65%
24	9417	Interstate Power and Light Co	Private	MN	6.60%
25	6374	Fitchburg Gas & Elec Light Co	Private	MA	6.35%
26	2886	Cambridge Electric Light Co	Private	MA	6.33%
27	13214	Narragansett Electric Co	Private	RI	6.29%
28	1015	Austin Energy	Municipal	TX	6.05%
29	14328	Pacific Gas & Electric Co	Private	CA	5.77%
30	7801	Gulf Power Co	Private	FL	5.41%
31	18429	Tacoma City of	Municipal	WA	5.39%
32	11843	Maui Electric Co Ltd	Private	HI	5.38%
33	6582	City of Forest Grove	Municipal	OR	5.29%
34	4089	Commonwealth Electric Co	Private	MA	4.94%
35	590	City of Anaheim	Municipal	CA	4.84%
36	12312	Merced Irrigation District	Political Subdivision	CA	4.83%
37	14624	PUD No 2 of Grant County	Political Subdivision	WA	4.61%
38	12825	NorthWestern Energy LLC	Private	MT	4.41%
39	3292	Central Vermont Pub Serv Corp	Private	VT	4.35%
40	15296	New York Power Authority	State	NY	4.24%
41	13783	Northeast Louisiana Power Coop Inc.	Cooperative	LA	4.05%
42	15938	Rice Lake Utilities	Municipal	WI	4.02%
43	12894	City of Moorhead	Municipal	MN	3.97%
44	6909	Gainesville Regional Utilities	Municipal	FL	3.79%
45	12301	Nodak Electric Coop Inc	Cooperative	ND	3.72%
46	14354	PacifiCorp	Private	WY	3.58%
47	40438	Columbia River Peoples Ut Dist	Political Subdivision	OR	3.48%
48	6452	Florida Power & Light Company	Private	FL	3.45%
49	18454	Tampa Electric Co	Private	FL	3.15%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-1: Ranking of US Utilities on kWh savings from energy efficiency programs as a percent of total kWh sales					
Rank	**Utility Code**	**Name of Electric Utility**	**Type of Utility**	**State**	**DSM Program kWh Savings as % of Total kWh Sales**
50	20847	Wisconsin Electric Power Co	Private	WI	3.14%
51	16181	Rochester Public Utilities	Municipal	MN	3.12%
52	2442	City of Bryan	Municipal	TX	2.99%
53	16555	Salem City of	Cooperative	OR	2.88%
54	13839	City of Norwood	Municipal	MA	2.81%
55	17783	Spencer City of	Municipal	IA	2.80%
56	15472	Public Service Co of NH	Private	NH	2.80%
57	13441	New Hampshire Elec Coop Inc	Cooperative	NH	2.78%
58	17535	South Beloit Wtr Gas & Elec Co	Private	IL	2.75%
59	11740	City of Marshfield	Municipal	WI	2.58%
60	15466	Public Service Co of Colorado	Private	CO	2.56%
61	12341	MidAmerican Energy Co	Private	OH	2.53%
62	9726	Jersey Central Power & Lt Co	Private	NJ	2.51%
63	6455	Florida Power Corp	Private	FL	2.41%
64	24590	Unitil Energy Systems	Private	NH	2.39%
65	15470	PSI Energy Inc	Private	IN	2.27%
66	207	City of Alameda	Municipal	CA	2.23%
67	14232	Otter Tail Power Co	Private	SD	2.21%
68	16295	City of Roseville	Municipal	CA	2.17%
69	9216	Imperial Irrigation District	Political Subdivision	CA	2.16%
70	18488	City of Taunton	Municipal	MA	2.15%
71	13815	Northwestern Wisconsin Elec Co	Private	WI	2.08%
72	1167	Baltimore Gas & Electric Co	Private	MD	1.97%
73	12450	Midland Power Coop	Cooperative	IA	1.97%
74	15477	Public Service Elec & Gas Co	Private	NJ	1.93%
75	7548	PUD No 1 of Grays Harbor Cnty	Political Subdivision	WA	1.91%
76	18304	Sumter Electric Coop, Inc	Cooperative	FL	1.80%
77	16060	Riverland Energy Cooperative	Cooperative	WI	1.79%
78	9191	Idaho Power Co	Private	OR	1.79%
79	10857	Lee County Electric Coop, Inc	Cooperative	FL	1.75%
80	17127	Town of Shrewsbury	Municipal	MA	1.67%
81	11018	Lincoln Electric System	Municipal	NE	1.66%
82	3477	Chicopee City of	Municipal	MA	1.57%
83	2890	City of Camden	Municipal	SC	1.55%
84	5585	Eastern Illinois Elec Coop	Cooperative	IL	1.50%
85	1009	Austin City of	Municipal	MN	1.50%
86	17633	Southern Indiana Gas & Elec Co	Private	IN	1.45%
87	10768	Laurens Electric Coop, Inc	Cooperative	SC	1.39%
88	18085	South Central Power Company	Cooperative	OH	1.39%
89	3203	Cedar Falls Utilities	Municipal	IA	1.39%
90	3248	Central Georgia El Member Corp	Cooperative	GA	1.37%
91	18642	Tennessee Valley Authority	Federal	VA	1.36%
92	16971	Shakopee Public Utilities Comm	Municipal	MN	1.36%
93	17637	Southern Maryland Elec Coop Inc	Cooperative	MD	1.34%
94	17828	City of Springfield	Municipal	IL	1.32%
95	3542	Cincinnati Gas & Electric Company	Private	OH	1.21%
96	17252	Singing River Elec Pwr Assn	Cooperative	MS	1.21%
97	6395	Flathead Electric Coop Inc	Cooperative	MT	1.20%
98	19157	Tri-County Electric Coop	Cooperative	MN	1.19%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-1: Ranking of US Utilities on kWh savings from energy efficiency programs as a percent of total kWh sales					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program kWh Savings as % of Total kWh Sales
99	21013	City of Worthington	Municipal	MN	1.18%
100	15671	Randolph Electric Member Corp	Cooperative	NC	1.18%
101	24211	Tucson Electric Power Co	Private	AZ	1.16%
102	4045	City of Columbia	Municipal	MO	1.14%
103	691	City of Anoka	Municipal	MN	1.12%
104	14653	PUD No 1 of Pend Oreille Cnty	Political Subdivision	WA	1.11%
105	12745	Modesto Irrigation District	Political Subdivision	CA	1.11%
106	40051	Texas-New Mexico Power Co	Private	NM	1.11%
107	14246	City of Owatonna	Municipal	MN	1.07%
108	16609	San Diego Gas & Electric Co	Private	CA	1.06%
109	9273	Indianapolis Power & Light Co	Private	IN	1.01%
110	19281	Turlock Irrigation District	Municipal	CA	0.98%
111	1613	Berkeley Electric Coop Inc	Cooperative	SC	0.93%
112	17868	St Croix Electric Coop	Cooperative	WI	0.91%
113	17577	City of South Sioux City	Municipal	NE	0.91%
114	11479	Madison Gas & Electric Co	Private	WI	0.86%
115	16572	Salt River Project	Political Subdivision	AZ	0.84%
116	9231	Independence City of	Municipal	MO	0.80%
117	17718	Southwestern Public Service Co	Private	TX	0.80%
118	16655	City of Santa Clara	Municipal	CA	0.77%
119	11171	Long Island Power Authority	State	NY	0.76%
120	22053	Kentucky Power Co	Private	KY	0.74%
121	17543	South Carolina Pub Serv Auth	State	SC	0.62%
122	11124	City of Lodi	Municipal	CA	0.61%
123	8566	High Plains Power, Inc	Cooperative	WY	0.61%
124	9617	Jacksonville Electric Authority	Municipal	FL	0.58%
125	84	A & N Electric Coop	Cooperative	VA	0.54%
126	965	Atlantic Municipal Utilities	Municipal	IA	0.54%
127	19446	Union Light Heat & Power Co	Private	KY	0.53%
128	13664	Norris Public Power District	Political Subdivision	NE	0.51%
129	14534	City of Pasadena	Municipal	CA	0.51%
130	6604	Fort Collins City of	Municipal	CO	0.51%
131	3989	Colorado Springs City of	Municipal	CO	0.50%
132	17698	Southwestern Electric Power Co	Private	TX	0.48%
133	19798	City of Vernon	Municipal	CA	0.48%
134	3226	Central Rural Electric Cooperative, Inc	Cooperative	OK	0.45%
135	1763	Black River Electric Coop, Inc	Cooperative	SC	0.42%
136	19547	Hawaiian Electric Co Inc	Private	HI	0.41%
137	10331	Kingsport Power Co	Private	TN	0.41%
138	15497	Puerto Rico Electric Pwr Authority	State	PR	0.40%
139	14398	Palmetto Electric Coop Inc	Cooperative	SC	0.40%
140	3940	City of College Station	Municipal	TX	0.39%
141	14468	People's Cooperative Services	Cooperative	MN	0.38%
142	6342	First Electric Coop Corp	Cooperative	AR	0.38%
143	14063	Oklahoma Gas & Electric Co	Private	OK	0.38%
144	11249	Louisville Gas & Electric Co	Private	KY	0.37%
145	11355	Lynches River Elec Coop, Inc	Cooperative	SC	0.37%
146	7140	Georgia Power Co	Private	GA	0.33%
147	16687	Savannah Electric & Power Co	Private	GA	0.33%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-1: Ranking of US Utilities on kWh savings from energy efficiency programs as a percent of total kWh sales					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program kWh Savings as % of Total kWh Sales
148	8287	Hawaii Electric Light Co Inc	Private	HI	0.32%
149	4062	Columbus Southern Power Co	Private	OH	0.31%
150	7264	Glades Electric Coop, Inc	Cooperative	FL	0.31%
151	17540	South Central Ark El Coop, Inc	Cooperative	AR	0.29%
152	4442	PUD No 1 of Cowlitz County	Political Subdivision	WA	0.27%
153	13762	Northern Neck Elec Coop, Inc	Cooperative	VA	0.26%
154	7353	Golden Valley Electric Assn Inc	Cooperative	AK	0.26%
155	10944	PUD No 1 of Lewis County	Political Subdivision	WA	0.26%
156	17166	Sierra Pacific Power Co	Private	NV	0.26%
157	20885	Withlacoochee River Elec Coop	Cooperative	FL	0.23%
158	19876	Virginia Electric & Power Co	Private	VA	0.22%
159	18917	Tillamook Peoples Utility Dist	Political Subdivision	OR	0.22%
160	5701	El Paso Electric Company	Private	TX	0.22%
161	1251	Barron Electric Coop	Cooperative	WI	0.21%
162	6235	Public Works Comm-City of Fayetteville	Municipal	NC	0.21%
163	13407	Nevada Power Company	Private	NV	0.21%
164	11731	City of Marshall	Municipal	MN	0.20%
165	5111	City of Detroit Lakes	Municipal	MN	0.20%
166	14006	Ohio Power Co	Private	OH	0.20%
167	12686	Mississippi Power Co	Private	MS	0.19%
168	5070	Delaware Electric Coop Inc	Cooperative	DE	0.19%
169	1050	City of Azusa	Municipal	CA	0.19%
170	7450	Grady Electric Membership Corp	Cooperative	GA	0.18%
171	8570	Highline Electric Assn	Cooperative	NE	0.18%
172	108	Adams-Columbia Electric Coop	Cooperative	WI	0.18%
173	1062	BARC Electric Coop Inc	Cooperative	VA	0.18%
174	16865	Sawnee Electric Membership Corporation	Cooperative	GA	0.16%
175	5929	Fairfield Electric Coop, Inc	Cooperative	SC	0.16%
176	19160	Tri-County Electric Coop, Inc	Cooperative	TX	0.15%
177	16496	Rutherford Elec Member Corp	Cooperative	NC	0.15%
178	3390	Caddo Electric Coop, Inc	Cooperative	OK	0.14%
179	16740	Scenic Rivers Energy Coop	Cooperative	WI	0.14%
180	15776	Reedy Creek Improvement Dist	Municipal	FL	0.14%
181	9324	Indiana Michigan Power Co	Private	MI	0.13%
182	14864	Petit Jean Electric Coop Corp	Cooperative	AR	0.13%
183	20521	Wheeling Power Co	Private	WV	0.12%
184	17066	Shenandoah Valley Elec Coop	Cooperative	WV	0.12%
185	20574	White River Valley El Coop Inc	Cooperative	MO	0.12%
186	19390	UGI Utilities, Inc	Private	PA	0.11%
187	16604	San Antonio City of	Municipal	TX	0.11%
188	3291	Central Virginia Electric Coop	Cooperative	VA	0.11%
189	14251	Owen Electric Coop Inc	Cooperative	KY	0.11%
190	18125	Stillwater Utilities Authority	Municipal	OK	0.10%
191	10171	Kentucky Utilities Co	Private	VA	0.10%
192	18280	Sulphur Springs Valley E C Inc	Cooperative	AZ	0.09%
193	3266	Central Maine Power Co	Private	ME	0.09%
194	13318	Navopache Electric Coop, Inc	Cooperative	NM	0.08%
195	15257	Poudre Valley R E A, Inc	Cooperative	CO	0.08%
196	11187	City of Longmont	Municipal	CO	0.07%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-1: Ranking of US Utilities on kWh savings from energy efficiency programs as a percent of total kWh sales					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program kWh Savings as % of Total kWh Sales
197	40212	Colquitt Electric Membership Corp	Cooperative	GA	0.07%
198	14127	Omaha Public Power District	Political Subdivision	NE	0.07%
199	17585	Southeastern IL Elec Coop, Inc	Cooperative	IL	0.07%
200	14557	Pee Dee Electric Coop, Inc	Cooperative	SC	0.07%
201	14216	City of Osceola	Municipal	AR	0.07%
202	20259	City of Webster City	Municipal	IA	0.06%
203	14711	Pennsylvania Electric Co	Private	PA	0.06%
204	11501	Magic Valley Electric Coop Inc	Cooperative	TX	0.06%
205	3701	Clark Electric Coop	Cooperative	WI	0.06%
206	3400	City of Chaska	Municipal	MN	0.06%
207	11085	Town of Littleton	Municipal	MA	0.06%
208	11560	City of Manassas	Municipal	VA	0.05%
209	12268	Medina Electric Coop, Inc	Cooperative	TX	0.05%
210	12390	Metropolitan Edison Co	Private	PA	0.05%
211	10704	Lansing City of	Municipal	MI	0.05%
212	19791	Vermont Electric Coop, Inc	Cooperative	VT	0.05%
213	16088	City of Riverside	Municipal	CA	0.05%
214	10623	City of Lakeland	Municipal	FL	0.04%
215	4147	Town of Concord	Municipal	MA	0.04%
216	7806	Entergy Gulf States Inc	Private	TX	0.04%
217	24949	Cass County Electric Coop Inc	Cooperative	ND	0.03%
218	6198	Farmers' Electric Coop, Inc	Cooperative	NM	0.03%
219	4509	Craighead Electric Coop Corp	Cooperative	AR	0.03%
220	21075	Y-W Electric Assn Inc	Cooperative	NE	0.03%
221	20142	City of Washington	Municipal	NC	0.03%
222	6411	Flint Electric Membership Corp	Cooperative	GA	0.03%
223	6782	Freeborn-Mower Coop Services	Cooperative	MN	0.03%
224	9601	Jackson Electric Member Corp	Cooperative	GA	0.02%
225	8198	Harrisonburg City of	Municipal	VA	0.02%
226	9613	City of Lebanon	Municipal	IN	0.02%
227	5905	Excelsior Electric Member Corp	Cooperative	GA	0.02%
228	8774	Holyoke City of	Municipal	MA	0.02%
229	13640	Northern Virginia Elec Coop	Cooperative	VA	0.01%
230	3081	Carroll Electric Member Corp	Cooperative	GA	0.01%
231	12698	Aquila Inc	Private	MO	0.01%
232	14715	PPL Electric Utilities Corp	Private	PA	0.01%
233	2144	Braintree Town of	Municipal	MA	0.01%
234	3093	Carroll Electric Coop Corp	Cooperative	MO	0.01%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-2: Ranking of US Utilities on kW savings from energy efficiency programs as a percent of total system peak demand					
Rank	**Utility Code**	**Name of Electric Utility**	**Type of Utility**	**State**	**DSM Program kW Savings as % of Total System Peak Demand**
1	16971	Shakopee Public Utilities Comm	Municipal	MN	52.05%
2	12301	Nodak Electric Coop Inc	Cooperative	ND	46.30%
3	2890	City of Camden	Municipal	SC	45.83%
4	16740	Scenic Rivers Energy Coop	Cooperative	WI	41.30%
5	17868	St Croix Electric Coop	Cooperative	WI	34.38%
6	5780	Elkhorn Rural Public Pwr Dist	Political Subdivision	NE	34.33%
7	5585	Eastern Illinois Elec Coop	Cooperative	IL	32.56%
8	13050	Mountain Parks Electric, Inc	Cooperative	CO	31.58%
9	20963	Woodruff Electric Coop Corp	Cooperative	AR	30.00%
10	108	Adams-Columbia Electric Coop	Cooperative	WI	28.42%
11	4911	Dawson County Public Pwr Dist	Political Subdivision	NE	26.42%
12	12894	City of Moorhead	Municipal	MN	25.35%
13	13780	Northern States Power Co	Private	WI	25.23%
14	20574	White River Valley El Coop Inc	Cooperative	MO	25.00%
15	19790	Verendrye Electric Coop Inc	Cooperative	ND	23.81%
16	5552	East River Elec Pwr Coop, Inc	Cooperative	WI	22.36%
17	2548	Burlington City of	Municipal	VT	21.88%
18	20847	Wisconsin Electric Power Co	Private	WI	21.66%
19	9417	Interstate Power and Light Co	Private	MN	21.48%
20	3701	Clark Electric Coop	Cooperative	WI	21.21%
21	13337	Nebraska Public Power District	Political Subdivision	SD	21.03%
22	15344	Polk-Burnett Electric Coop	Cooperative	WI	20.75%
23	16060	Riverland Energy Cooperative	Cooperative	WI	20.41%
24	17535	South Beloit Wtr Gas & Elec Co	Private	IL	20.41%
25	13781	Northern States Power Co	Private	SD	20.18%
26	18085	South Central Power Company	Cooperative	OH	19.72%
27	17040	Shelby Electric Coop, Inc	Cooperative	IL	19.57%
28	13798	Northwest Iowa Power Coop	Cooperative	VT	18.82%
29	21111	Perennial Public Power Dist	Political Subdivision	NE	18.75%
30	14216	City of Osceola	Municipal	AR	17.65%
31	3291	Central Virginia Electric Coop	Cooperative	VA	17.61%
32	13687	North Carolina Eastern M P A	Municipal Mktg Authority	WY	17.07%
33	13664	Norris Public Power District	Political Subdivision	NE	16.96%
34	19157	Tri-County Electric Coop	Cooperative	MN	16.95%
35	1251	Barron Electric Coop	Cooperative	WI	16.33%
36	20472	Wharton County Elec Coop, Inc	Cooperative	TX	16.22%
37	1427	Beatrice City of	Municipal	NE	16.22%
38	4147	Town of Concord	Municipal	MA	16.22%
39	6022	Eugene City of	Municipal	OR	15.13%
40	6452	Florida Power & Light Company	Private	FL	15.09%
41	16534	Sacramento Municipal Util Dist	Political Subdivision	CA	15.08%
42	1015	Austin Energy	Municipal	TX	14.82%
43	13318	Navopache Electric Coop, Inc	Cooperative	NM	14.10%
44	40228	Rappahannock Electric Coop	Cooperative	VA	14.02%
45	14468	People's Cooperative Services	Cooperative	MN	14.00%
46	17609	Southern California Edison Co	Private	CA	13.50%
47	5070	Delaware Electric Coop Inc	Cooperative	DE	13.31%
48	14246	City of Owatonna	Municipal	MN	13.24%

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Appendix Table 1-2: Ranking of US Utilities on kW savings from energy efficiency programs as a percent of total system peak demand					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program kW Savings as % of Total System Peak Demand
49	18454	Tampa Electric Co	Private	FL	12.95%
50	17577	City of South Sioux City	Municipal	NE	12.90%
51	14088	Oliver-Mercer Elec Coop Inc	Cooperative	ND	12.82%
52	3248	Central Georgia El Member Corp	Cooperative	GA	12.81%
53	5111	City of Detroit Lakes	Municipal	MN	12.50%
54	12268	Medina Electric Coop, Inc	Cooperative	TX	12.26%
55	18280	Sulphur Springs Valley E C Inc	Cooperative	AZ	12.23%
56	9961	Kansas Electric Power Coop Inc	Cooperative	TX	12.05%
57	20856	Wisconsin Power & Light Co	Private	WI	11.88%
58	15671	Randolph Electric Member Corp	Cooperative	NC	11.67%
59	3503	Choptank Electric Coop, Inc	Cooperative	MD	11.58%
60	19497	United Illuminating Co	Private	CT	11.53%
61	10574	L & O Power Co-operative	Cooperative	NE	11.43%
62	13783	Northeast Louisiana Power Coop Inc.	Cooperative	LA	11.29%
63	20413	Mountrail-Williams Elec Coop	Cooperative	ND	10.81%
64	20455	Western Massachusetts Elec Co	Private	MA	10.64%
65	40212	Colquitt Electric Membership Corp	Cooperative	GA	10.61%
66	12341	MidAmerican Energy Co	Private	OH	10.32%
67	7004	Buckeye Power, Inc	Cooperative	IN	10.32%
68	40224	Central Electric Coop, Inc	Cooperative	PA	10.20%
69	17839	City of Springfield	Municipal	OR	10.06%
70	7801	Gulf Power Co	Private	FL	9.95%
71	1009	Austin City of	Municipal	MN	9.84%
72	3292	Central Vermont Pub Serv Corp	Private	VT	9.76%
73	12658	Minnkota Power Coop, Inc	Cooperative	ND	9.60%
74	17540	South Central Ark El Coop, Inc	Cooperative	AR	9.43%
75	15938	Rice Lake Utilities	Municipal	WI	9.38%
76	14398	Palmetto Electric Coop Inc	Cooperative	SC	9.35%
77	590	City of Anaheim	Municipal	CA	8.48%
78	3400	City of Chaska	Municipal	MN	8.47%
79	20169	Avista Corp	Private	WA	8.44%
80	4362	Corn Belt Energy Corporation	Cooperative	IL	8.33%
81	13640	Northern Virginia Elec Coop	Cooperative	VA	8.28%
82	3279	Central Power Elec Coop, Inc	Cooperative	TX	8.17%
83	15023	Piedmont Electric Member Corp	Cooperative	NC	8.06%
84	3931	Coles-Moultrie Electric Coop	Cooperative	IL	7.89%
85	15466	Public Service Co of Colorado	Private	CO	7.69%
86	16181	Rochester Public Utilities	Municipal	MN	7.66%
87	4176	Connecticut Light & Power Co	Private	CT	7.66%
88	7450	Grady Electric Membership Corp	Cooperative	GA	7.59%
89	10857	Lee County Electric Coop, Inc	Cooperative	FL	7.57%
90	17252	Singing River Elec Pwr Assn	Cooperative	MS	7.50%
91	40165	Dixie Escalante R E A, Inc	Cooperative	UT	7.46%
92	11811	Town of Massena	Municipal	NY	7.14%
93	17066	Shenandoah Valley Elec Coop	Cooperative	WV	7.10%
94	4045	City of Columbia	Municipal	MO	7.08%
95	18445	City of Tallahassee	Municipal	FL	7.08%
96	5202	Dixie Electric Membership Corp	Cooperative	LA	6.98%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-2: Ranking of US Utilities on kW savings from energy efficiency programs as a percent of total system peak demand					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program kW Savings as % of Total System Peak Demand
97	2442	City of Bryan	Municipal	TX	6.96%
98	4180	Connecticut Mun Elec Engy Coop	Municipal Mktg Authority	CT	6.96%
99	2886	Cambridge Electric Light Co	Private	MA	6.92%
100	18304	Sumter Electric Coop, Inc	Cooperative	FL	6.82%
101	15700	Rayle Electric Membership Corp	Cooperative	GA	6.78%
102	8198	Harrisonburg City of	Municipal	VA	6.67%
103	13762	Northern Neck Elec Coop, Inc	Cooperative	VA	6.67%
104	17585	Southeastern IL Elec Coop, Inc	Cooperative	IL	6.67%
105	26218	Little Ocmulgee El Member Corp	Cooperative	GA	6.67%
106	16496	Rutherford Elec Member Corp	Cooperative	NC	6.57%
107	14328	Pacific Gas & Electric Co	Private	CA	6.43%
108	6374	Fitchburg Gas & Elec Light Co	Private	MA	6.38%
109	21244	Southside Electric Coop, Inc	Cooperative	VA	6.25%
110	19499	United Power, Inc	Cooperative	CO	6.25%
111	213	Alaska Electric Light & Pwr Co	Private	AK	6.25%
112	4117	Community Electric Coop	Cooperative	VA	6.12%
113	2985	Capital Electric Coop, Inc	Cooperative	ND	6.12%
114	2144	Braintree Town of	Municipal	MA	6.10%
115	13690	North Central MO Elec Coop Inc	Cooperative	MO	6.06%
116	17783	Spencer City of	Municipal	IA	6.06%
117	1579	PUD No 1 of Benton County	Political Subdivision	WA	6.02%
118	12395	Menard Electric Coop	Cooperative	IL	6.00%
119	1613	Berkeley Electric Coop Inc	Cooperative	SC	5.98%
120	12647	Minnesota Power Inc	Private	MN	5.94%
121	6782	Freeborn-Mower Coop Services	Cooperative	MN	5.88%
122	207	City of Alameda	Municipal	CA	5.88%
123	11843	Maui Electric Co Ltd	Private	HI	5.77%
124	15270	Potomac Electric Power Co	Private	MD	5.75%
125	16868	Seattle City of	Municipal	WA	5.74%
126	15470	PSI Energy Inc	Private	IN	5.67%
127	19785	Verdigris Valley Elec Coop Inc	Cooperative	OK	5.59%
128	17637	Southern Maryland Elec Coop Inc	Cooperative	MD	5.53%
129	8566	High Plains Power, Inc	Cooperative	WY	5.50%
130	6455	Florida Power Corp	Private	FL	5.41%
131	15296	New York Power Authority	State	NY	5.38%
132	15783	City of Redding	Municipal	CA	5.26%
133	6342	First Electric Coop Corp	Cooperative	AR	5.23%
134	13676	North Arkansas Elec Coop, Inc	Cooperative	AR	5.22%
135	6181	Farmers' Electric Coop, Inc	Cooperative	MO	5.08%
136	4509	Craighead Electric Coop Corp	Cooperative	AR	5.08%
137	6411	Flint Electric Membership Corp	Cooperative	GA	4.90%
138	1062	BARC Electric Coop Inc	Cooperative	VA	4.76%
139	16295	City of Roseville	Municipal	CA	4.61%
140	4089	Commonwealth Electric Co	Private	MA	4.58%
141	11355	Lynches River Elec Coop, Inc	Cooperative	SC	4.49%
142	11251	Loup River Public Power Dist	Political Subdivision	NE	4.49%
143	12825	NorthWestern Energy LLC	Private	MT	4.46%
144	8773	Holy Cross Electric Assn, Inc	Cooperative	CO	4.41%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-2: Ranking of US Utilities on kW savings from energy efficiency programs as a percent of total system peak demand					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program kW Savings as % of Total System Peak Demand
145	12312	Merced Irrigation District	Political Subdivision	CA	4.35%
146	14268	City of Owensboro	Municipal	KY	4.32%
147	11018	Lincoln Electric System	Municipal	NE	4.32%
148	7264	Glades Electric Coop, Inc	Cooperative	FL	4.29%
149	84	A & N Electric Coop	Cooperative	VA	4.26%
150	13839	City of Norwood	Municipal	MA	4.17%
151	2008	Boulder City City of	Municipal	NV	4.00%
152	3278	AEP Texas Central Company	Private	TX	4.00%
153	21075	Y-W Electric Assn Inc	Cooperative	NE	3.97%
154	14401	City of Palo Alto	Municipal	CA	3.93%
155	295	City of Alexandria	Municipal	MN	3.92%
156	40211	Wabash Valley Power Assn, Inc	Cooperative	KS	3.89%
157	3916	Cobb Electric Membership Corp	Cooperative	GA	3.87%
158	20997	Yellowstone Valley Elec Co-op	Cooperative	MT	3.85%
159	9216	Imperial Irrigation District	Political Subdivision	CA	3.81%
160	12745	Modesto Irrigation District	Political Subdivision	CA	3.80%
161	2001	Boone Electric Coop	Cooperative	MO	3.77%
162	13441	New Hampshire Elec Coop Inc	Cooperative	NH	3.76%
163	3226	Central Rural Electric Cooperative, Inc	Cooperative	OK	3.74%
164	11731	City of Marshall	Municipal	MN	3.57%
165	554	Ames City of	Municipal	IA	3.51%
166	9231	Independence City of	Municipal	MO	3.45%
167	3477	Chicopee City of	Municipal	MA	3.30%
168	691	City of Anoka	Municipal	MN	3.28%
169	16865	Sawnee Electric Membership Corporation	Cooperative	GA	3.20%
170	7140	Georgia Power Co	Private	GA	3.19%
171	8210	Hart Electric Member Corp	Cooperative	GA	3.10%
172	11740	City of Marshfield	Municipal	WI	3.08%
173	13524	Newberry Electric Coop, Inc	Cooperative	SC	3.08%
174	4675	Cuivre River Electric Coop Inc	Cooperative	MO	2.93%
175	3390	Caddo Electric Coop, Inc	Cooperative	OK	2.90%
176	407	Altamaha Electric Member Corp	Cooperative	GA	2.87%
177	14864	Petit Jean Electric Coop Corp	Cooperative	AR	2.86%
178	10768	Laurens Electric Coop, Inc	Cooperative	SC	2.79%
179	6909	Gainesville Regional Utilities	Municipal	FL	2.78%
180	14006	Ohio Power Co	Private	OH	2.75%
181	15477	Public Service Elec & Gas Co	Private	NJ	2.64%
182	1167	Baltimore Gas & Electric Co	Private	MD	2.58%
183	5929	Fairfield Electric Coop, Inc	Cooperative	SC	2.56%
184	17828	City of Springfield	Municipal	IL	2.56%
185	11171	Long Island Power Authority	State	NY	2.51%
186	14232	Otter Tail Power Co	Private	SD	2.48%
187	3203	Cedar Falls Utilities	Municipal	IA	2.47%
188	24590	Unitil Energy Systems	Private	NH	2.43%
189	14624	PUD No 2 of Grant County	Political Subdivision	WA	2.42%
190	13058	Mountain View Elec Assn, Inc	Cooperative	CO	2.38%
191	9726	Jersey Central Power & Lt Co	Private	NJ	2.36%
192	14940	PECO Energy Co	Private	PA	2.31%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-2: Ranking of US Utilities on kW savings from energy efficiency programs as a percent of total system peak demand					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program kW Savings as % of Total System Peak Demand
193	1763	Black River Electric Coop, Inc	Cooperative	SC	2.25%
194	9613	City of Lebanon	Municipal	IN	2.22%
195	24431	Utah Municipal Power Agency	Municipal Mktg Authority	AZ	2.22%
196	807	Arkansas Electric Coop Corp	Cooperative	AZ	2.22%
197	9689	Jefferson Electric Member Corp	Cooperative	GA	2.21%
198	6443	Florida Keys El Coop Assn, Inc	Cooperative	FL	2.17%
199	14127	Omaha Public Power District	Political Subdivision	NE	2.15%
200	18488	City of Taunton	Municipal	MA	2.08%
201	20885	Withlacoochee River Elec Coop	Cooperative	FL	2.07%
202	20910	Wolverine Pwr Supply Coop, Inc	Cooperative	FL	2.07%
203	24211	Tucson Electric Power Co	Private	AZ	2.06%
204	11249	Louisville Gas & Electric Co	Private	KY	2.05%
205	5580	East Kentucky Power Coop, Inc	Cooperative	MS	2.03%
206	16674	Satilla Rural Elec Member Corporation	Cooperative	GA	2.01%
207	16609	San Diego Gas & Electric Co	Private	CA	1.99%
208	11560	City of Manassas	Municipal	VA	1.92%
209	3252	Central Illinois Light Co	Private	IL	1.92%
210	189	Alabama Electric Coop Inc	Cooperative	NY	1.91%
211	5905	Excelsior Electric Member Corp	Cooperative	GA	1.89%
212	17127	Town of Shrewsbury	Municipal	MA	1.79%
213	12681	Mississippi County Electric Coop	Cooperative	AR	1.74%
214	16572	Salt River Project	Political Subdivision	AZ	1.71%
215	3093	Carroll Electric Coop Corp	Cooperative	MO	1.69%
216	14170	Orcas Power & Light Coop	Cooperative	WA	1.67%
217	17568	South Mississippi El Pwr Assn	Cooperative	LA	1.65%
218	9273	Indianapolis Power & Light Co	Private	IN	1.58%
219	7353	Golden Valley Electric Assn Inc	Cooperative	AK	1.55%
220	6198	Farmers' Electric Coop, Inc	Cooperative	NM	1.54%
221	17543	South Carolina Pub Serv Auth	State	SC	1.53%
222	14557	Pee Dee Electric Coop, Inc	Cooperative	SC	1.52%
223	17633	Southern Indiana Gas & Elec Co	Private	IN	1.47%
224	3542	Cincinnati Gas & Electric Company	Private	OH	1.44%
225	13520	New-Mac Electric Coop, Inc	Cooperative	MO	1.39%
226	16655	City of Santa Clara	Municipal	CA	1.39%
227	18642	Tennessee Valley Authority	Federal	VA	1.36%
228	22053	Kentucky Power Co	Private	KY	1.36%
229	40614	Alabama Municipal Elec Authority	Municipal Mktg Authority	NE	1.34%
230	14063	Oklahoma Gas & Electric Co	Private	OK	1.34%
231	9324	Indiana Michigan Power Co	Private	MI	1.33%
232	14653	PUD No 1 of Pend Oreille Cnty	Political Subdivision	WA	1.27%
233	7548	PUD No 1 of Grays Harbor Cnty	Political Subdivision	WA	1.23%
234	20404	AEP Texas North Company	Private	SD	1.21%
235	3989	Colorado Springs City of	Municipal	CO	1.21%
236	11187	City of Longmont	Municipal	CO	1.20%
237	733	Appalachian Power Co	Private	WV	1.20%
238	2678	C & L Electric Coop Corp	Cooperative	AR	1.16%
239	21538	Mohave Electric Coop, Inc	Cooperative	AZ	1.14%
240	9617	Jacksonville Electric Authority	Municipal	FL	1.13%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-2: Ranking of US Utilities on kW savings from energy efficiency programs as a percent of total system peak demand					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program kW Savings as % of Total System Peak Demand
241	6235	Public Works Comm-City of Fayetteville	Municipal	NC	1.12%
242	12199	MDU Resources Group Inc	Private	WY	1.09%
243	6395	Flathead Electric Coop Inc	Cooperative	MT	1.05%
244	19281	Turlock Irrigation District	Municipal	CA	1.03%
245	10704	Lansing City of	Municipal	MI	1.00%
246	5860	Empire District Electric Co	Private	OK	0.99%
247	19446	Union Light Heat & Power Co	Private	KY	0.98%
248	3081	Carroll Electric Member Corp	Cooperative	GA	0.95%
249	10331	Kingsport Power Co	Private	TN	0.92%
250	195	Alabama Power Co	Private	AL	0.88%
251	18125	Stillwater Utilities Authority	Municipal	OK	0.85%
252	10171	Kentucky Utilities Co	Private	VA	0.82%
253	11124	City of Lodi	Municipal	CA	0.78%
254	15497	Puerto Rico Electric Pwr Authority	State	PR	0.70%
255	19876	Virginia Electric & Power Co	Private	VA	0.69%
256	14715	PPL Electric Utilities Corp	Private	PA	0.68%
257	562	Amicalola Electric Member Corp	Cooperative	GA	0.66%
258	3940	City of College Station	Municipal	TX	0.61%
259	14251	Owen Electric Coop Inc	Cooperative	KY	0.58%
260	4062	Columbus Southern Power Co	Private	OH	0.55%
261	3258	Central Iowa Power Cooperative	Cooperative	IL	0.54%
262	19798	City of Vernon	Municipal	CA	0.52%
263	8287	Hawaii Electric Light Co Inc	Private	HI	0.51%
264	17698	Southwestern Electric Power Co	Private	TX	0.47%
265	13407	Nevada Power Company	Private	NV	0.46%
266	19436	Union Electric Co	Private	MO	0.38%
267	17718	Southwestern Public Service Co	Private	TX	0.38%
268	14534	City of Pasadena	Municipal	CA	0.36%
269	19547	Hawaiian Electric Co Inc	Private	HI	0.32%
270	40051	Texas-New Mexico Power Co	Private	NM	0.30%
271	17166	Sierra Pacific Power Co	Private	NV	0.25%
272	5701	El Paso Electric Company	Private	TX	0.23%
273	9191	Idaho Power Co	Private	OR	0.21%
274	16687	Savannah Electric & Power Co	Private	GA	0.21%
275	10623	City of Lakeland	Municipal	FL	0.17%
276	11479	Madison Gas & Electric Co	Private	WI	0.16%
277	10000	Kansas City Power & Light Co	Private	MO	0.15%
278	16604	San Antonio City of	Municipal	TX	0.12%
279	12698	Aquila Inc	Private	MO	0.11%
280	7806	Entergy Gulf States Inc	Private	TX	0.09%
281	3266	Central Maine Power Co	Private	ME	0.06%
282	12390	Metropolitan Edison Co	Private	PA	0.04%
283	14711	Pennsylvania Electric Co	Private	PA	0.04%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-3: Ranking of US Utilities on percent of total revenues spent on energy efficiency programs					
Rank	**Utility Code**	**Name of Electric Utility**	**Type of Utility**	**State**	**DSM Program Spending as a percent of toal annual revenues from sales of electricity**
1	287	Alder Mutual Light Co, Inc	Cooperative	WA	54.95%
2	7712	City of Groton	Municipal	SD	11.93%
3	9922	Jump River Electric Coop Inc	Cooperative	WI	7.38%
4	13816	City of Northwood	Municipal	ND	6.99%
5	16679	City of Sauk Centre	Municipal	MN	5.61%
6	19687	City of Valley City	Municipal	ND	5.56%
7	15296	New York Power Authority	State	NY	4.67%
8	9417	Interstate Power and Light Co	Private	MN	4.56%
9	14216	City of Osceola	Municipal	AR	4.33%
10	2008	Boulder City City of	Municipal	NV	4.22%
11	16555	Salem City of	Cooperative	OR	3.92%
12	1080	City of Badger	Municipal	SD	3.85%
13	13781	Northern States Power Co	Private	SD	3.78%
14	5575	East Grand Forks City of	Municipal	MN	3.66%
15	13690	North Central MO Elec Coop Inc	Cooperative	MO	3.65%
16	26939	Red River Valley Coop Pwr Assn	Cooperative	MN	3.51%
17	15180	City of Pocahontas	Municipal	IA	3.50%
18	15477	Public Service Elec & Gas Co	Private	NJ	3.47%
19	10625	Lamb County Electric Coop, Inc	Cooperative	TX	3.41%
20	16868	Seattle City of	Municipal	WA	3.26%
21	12894	City of Moorhead	Municipal	MN	3.18%
22	18820	City of Thief River Falls	Municipal	MN	3.09%
23	6022	Eugene City of	Municipal	OR	3.05%
24	16088	City of Riverside	Municipal	CA	3.01%
25	13936	Oakdale Electric Coop	Cooperative	WI	3.01%
26	14246	City of Owatonna	Municipal	MN	2.94%
27	11804	Massachusetts Electric Co	Private	MA	2.93%
28	2886	Cambridge Electric Light Co	Private	MA	2.87%
29	20136	City of Waseca	Municipal	MN	2.81%
30	27269	City of Stanhope	Municipal	IA	2.78%
31	14401	City of Palo Alto	Municipal	CA	2.76%
32	8298	Hawkeye Tri-County El Coop Inc	Cooperative	IA	2.70%
33	20455	Western Massachusetts Elec Co	Private	MA	2.68%
34	329	Allamakee-Clayton El Coop, Inc	Cooperative	IA	2.55%
35	6374	Fitchburg Gas & Elec Light Co	Private	MA	2.54%
36	17609	Southern California Edison Co	Private	CA	2.47%
37	14107	City of Olivia	Municipal	MN	2.43%
38	17839	City of Springfield	Municipal	OR	2.42%
39	1050	City of Azusa	Municipal	CA	2.38%
40	20618	Town of Wickenburg	Municipal	AZ	2.36%
41	15308	Plumas-Sierra Rural Elec Coop	Cooperative	NV	2.34%
42	1233	City of Barnesville	Municipal	MN	2.34%
43	1573	City of Benson	Municipal	MN	2.33%
44	2548	Burlington City of	Municipal	VT	2.32%
45	16529	Sac County Rural Electric Coop	Cooperative	IA	2.28%
46	20396	West Point Utility System	Municipal	IA	2.26%
47	19497	United Illuminating Co	Private	CT	2.24%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-3: Ranking of US Utilities on percent of total revenues spent on energy efficiency programs					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program Spending as a percent of toal annual revenues from sales of electricity
48	20142	City of Washington	Municipal	NC	2.20%
49	12268	Medina Electric Coop, Inc	Cooperative	TX	2.18%
50	4305	City of Coon Rapids	Municipal	IA	2.13%
51	20214	Waverly Municipal Elec Utility	Municipal	IA	2.12%
52	691	City of Anoka	Municipal	MN	2.09%
53	17868	St Croix Electric Coop	Cooperative	WI	2.09%
54	4176	Connecticut Light & Power Co	Private	CT	2.08%
55	16655	City of Santa Clara	Municipal	CA	2.08%
56	6782	Freeborn-Mower Coop Services	Cooperative	MN	2.06%
57	19174	Tuolumne County Pub Power Agny	Political Subdivision	CA	2.06%
58	10768	Laurens Electric Coop, Inc	Cooperative	SC	2.05%
59	6151	Fairmont Public Utilities Comm	Municipal	MN	2.02%
60	16060	Riverland Energy Cooperative	Cooperative	WI	2.01%
61	16534	Sacramento Municipal Util Dist	Political Subdivision	CA	1.97%
62	16295	City of Roseville	Municipal	CA	1.96%
63	15783	City of Redding	Municipal	CA	1.96%
64	12341	MidAmerican Energy Co	Private	OH	1.95%
65	13214	Narragansett Electric Co	Private	RI	1.93%
66	17643	Southern Iowa Elec Coop, Inc	Cooperative	IA	1.93%
67	6455	Florida Power Corp	Private	FL	1.91%
68	11479	Madison Gas & Electric Co	Private	WI	1.91%
69	3931	Coles-Moultrie Electric Coop	Cooperative	IL	1.90%
70	12745	Modesto Irrigation District	Political Subdivision	CA	1.88%
71	9026	Humboldt County R E C	Cooperative	IA	1.88%
72	19947	City of Wadena	Municipal	MN	1.85%
73	2183	City of Breda	Municipal	IA	1.82%
74	26510	Granite State Electric Co	Private	NH	1.80%
75	19865	Vinton City of	Municipal	IA	1.79%
76	18642	Tennessee Valley Authority	Federal	VA	1.75%
77	6452	Florida Power & Light Company	Private	FL	1.75%
78	5417	Dunn County Electric Coop	Cooperative	WI	1.72%
79	7303	Glidden Rural Electric Coop	Cooperative	IA	1.70%
80	4089	Commonwealth Electric Co	Private	MA	1.70%
81	3137	Cascade Municipal Utilities	Municipal	IA	1.69%
82	40438	Columbia River Peoples Ut Dist	Political Subdivision	OR	1.69%
83	1009	Austin City of	Municipal	MN	1.66%
84	24590	Unitil Energy Systems	Private	NH	1.64%
85	12615	City of Milton-Freewater	Municipal	OR	1.63%
86	17876	City of St James	Municipal	MN	1.63%
87	4045	City of Columbia	Municipal	MO	1.63%
88	16549	City of Salamanca	Municipal	NY	1.61%
89	1251	Barron Electric Coop	Cooperative	WI	1.60%
90	13337	Nebraska Public Power District	Political Subdivision	SD	1.60%
91	15500	Puget Sound Energy Inc	Private	WA	1.58%
92	12312	Merced Irrigation District	Political Subdivision	CA	1.58%
93	16971	Shakopee Public Utilities Comm	Municipal	MN	1.57%
94	3266	Central Maine Power Co	Private	ME	1.57%

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Appendix Table 1-3: Ranking of US Utilities on percent of total revenues spent on energy efficiency programs					
Rank	**Utility Code**	**Name of Electric Utility**	**Type of Utility**	**State**	**DSM Program Spending as a percent of toal annual revenues from sales of electricity**
95	3400	City of Chaska	Municipal	MN	1.54%
96	20856	Wisconsin Power & Light Co	Private	WI	1.54%
97	309	City of Algona	Municipal	IA	1.51%
98	4375	City of Corning	Municipal	IA	1.51%
99	20949	City of Woodbine	Municipal	IA	1.50%
100	1427	Beatrice City of	Municipal	NE	1.50%
101	1015	Austin Energy	Municipal	TX	1.49%
102	2182	City of Breckenridge	Municipal	MN	1.48%
103	20806	City of Windom	Municipal	MN	1.47%
104	13233	City of Neligh	Municipal	NE	1.47%
105	17637	Southern Maryland Elec Coop Inc	Cooperative	MD	1.45%
106	14534	City of Pasadena	Municipal	CA	1.44%
107	20574	White River Valley El Coop Inc	Cooperative	MO	1.41%
108	6181	Farmers' Electric Coop, Inc	Cooperative	MO	1.41%
109	8288	City of Hawarden	Municipal	IA	1.41%
110	15034	Pierce-Pepin Coop Services	Cooperative	WI	1.39%
111	13780	Northern States Power Co	Private	WI	1.39%
112	16181	Rochester Public Utilities	Municipal	MN	1.39%
113	14232	Otter Tail Power Co	Private	SD	1.39%
114	963	Atlantic City Electric Co	Private	NJ	1.38%
115	9726	Jersey Central Power & Lt Co	Private	NJ	1.35%
116	15472	Public Service Co of NH	Private	NH	1.35%
117	6793	City of Friend	Municipal	NE	1.35%
118	11731	City of Marshall	Municipal	MN	1.33%
119	11124	City of Lodi	Municipal	CA	1.33%
120	20945	City of Wood River	Municipal	NE	1.32%
121	7801	Gulf Power Co	Private	FL	1.32%
122	10857	Lee County Electric Coop, Inc	Cooperative	FL	1.31%
123	14328	Pacific Gas & Electric Co	Private	CA	1.30%
124	16206	Rock Rapids Municipal Utility	Municipal	IA	1.29%
125	11064	Litchfield Public Utilities	Municipal	MN	1.28%
126	13441	New Hampshire Elec Coop Inc	Cooperative	NH	1.28%
127	1367	Bayfield Electric Coop, Inc	Cooperative	WI	1.24%
128	5056	City of Denison	Municipal	IA	1.20%
129	8319	Heartland Power Coop	Cooperative	MN	1.19%
130	7626	City of Greenfield	Municipal	IA	1.19%
131	6582	City of Forest Grove	Municipal	OR	1.18%
132	3701	Clark Electric Coop	Cooperative	WI	1.15%
133	13681	North Branch Water & Light Comm	Municipal	MN	1.14%
134	14398	Palmetto Electric Coop Inc	Cooperative	SC	1.12%
135	19790	Verendrye Electric Coop Inc	Cooperative	ND	1.11%
136	3203	Cedar Falls Utilities	Municipal	IA	1.11%
137	11475	City of Madison	Municipal	SD	1.09%
138	590	City of Anaheim	Municipal	CA	1.09%
139	15983	Richland Electric Coop	Cooperative	WI	1.08%
140	18429	Tacoma City of	Municipal	WA	1.08%
141	3235	City of Central City	Municipal	NE	1.05%

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Appendix Table 1-3: Ranking of US Utilities on percent of total revenues spent on energy efficiency programs					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program Spending as a percent of toal annual revenues from sales of electricity
142	3226	Central Rural Electric Cooperative, Inc	Cooperative	OK	1.05%
143	5529	City of Durant	Municipal	IA	1.04%
144	17543	South Carolina Pub Serv Auth	State	SC	1.04%
145	21013	City of Worthington	Municipal	MN	1.04%
146	3253	Central Illinois Pub Serv Co	Private	IL	1.04%
147	40165	Dixie Escalante R E A, Inc	Cooperative	UT	1.03%
148	18102	Steuben Rural Elec Coop, Inc	Cooperative	NY	1.03%
149	15466	Public Service Co of Colorado	Private	CO	1.01%
150	19281	Turlock Irrigation District	Municipal	CA	1.01%
151	17783	Spencer City of	Municipal	IA	1.01%
152	18454	Tampa Electric Co	Private	FL	1.00%
153	14127	Omaha Public Power District	Political Subdivision	NE	0.98%
154	16420	Rural Electric Conven Coop	Cooperative	IL	0.97%
155	40051	Texas-New Mexico Power Co	Private	NM	0.97%
156	15344	Polk-Burnett Electric Coop	Cooperative	WI	0.97%
157	19157	Tri-County Electric Coop	Cooperative	MN	0.95%
158	3498	Chippewa Valley Electric Coop	Cooperative	WI	0.95%
159	12839	City of Montezuma	Municipal	IA	0.95%
160	14354	PacifiCorp	Private	WY	0.95%
161	19788	City of Vermillion	Municipal	SD	0.92%
162	9216	Imperial Irrigation District	Political Subdivision	CA	0.92%
163	198	City of Alton	Municipal	IA	0.92%
164	17264	City of Sioux Center	Municipal	IA	0.91%
165	14468	People's Cooperative Services	Cooperative	MN	0.91%
166	4117	Community Electric Coop	Cooperative	VA	0.91%
167	12450	Midland Power Coop	Cooperative	IA	0.90%
168	8570	Highline Electric Assn	Cooperative	NE	0.90%
169	12825	NorthWestern Energy LLC	Private	MT	0.90%
170	5780	Elkhorn Rural Public Pwr Dist	Political Subdivision	NE	0.89%
171	108	Adams-Columbia Electric Coop	Cooperative	WI	0.89%
172	7548	PUD No 1 of Grays Harbor Cnty	Political Subdivision	WA	0.87%
173	14624	PUD No 2 of Grant County	Political Subdivision	WA	0.87%
174	5111	City of Detroit Lakes	Municipal	MN	0.86%
175	24949	Cass County Electric Coop Inc	Cooperative	ND	0.85%
176	11171	Long Island Power Authority	State	NY	0.84%
177	182	City of Akron	Municipal	IA	0.84%
178	3916	Cobb Electric Membership Corp	Cooperative	GA	0.82%
179	16740	Scenic Rivers Energy Coop	Cooperative	WI	0.80%
180	6604	Fort Collins City of	Municipal	CO	0.79%
181	207	City of Alameda	Municipal	CA	0.79%
182	20169	Avista Corp	Private	WA	0.76%
183	8214	City of Hartley	Municipal	IA	0.76%
184	10769	City of Laurens	Municipal	IA	0.75%
185	10265	City of Kimballton	Municipal	IA	0.74%
186	12647	Minnesota Power Inc	Private	MN	0.74%
187	3029	Crlisle City of	Municipal	IA	0.74%
188	195	Alabama Power Co	Private	AL	0.73%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-3: Ranking of US Utilities on percent of total revenues spent on energy efficiency programs					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program Spending as a percent of toal annual revenues from sales of electricity
189	13480	New Prague Utilities Comm	Municipal	MN	0.72%
190	15387	Princeton Public Utils Comm	Municipal	MN	0.72%
191	6127	City of Fairbank	Municipal	IA	0.71%
192	19446	Union Light Heat & Power Co	Private	KY	0.70%
193	1613	Berkeley Electric Coop Inc	Cooperative	SC	0.70%
194	5021	Delaware County Elec Coop Inc	Cooperative	NY	0.70%
195	11740	City of Marshfield	Municipal	WI	0.69%
196	9275	Indianola Municipal Utilities	Municipal	IA	0.68%
197	15938	Rice Lake Utilities	Municipal	WI	0.68%
198	11609	City of Mapleton	Municipal	IA	0.67%
199	15751	City of Readlyn	Municipal	IA	0.67%
200	965	Atlantic Municipal Utilities	Municipal	IA	0.67%
201	18917	Tillamook Peoples Utility Dist	Political Subdivision	OR	0.66%
202	9191	Idaho Power Co	Private	OR	0.66%
203	11018	Lincoln Electric System	Municipal	NE	0.66%
204	11249	Louisville Gas & Electric Co	Private	KY	0.65%
205	14653	PUD No 1 of Pend Oreille Cnty	Political Subdivision	WA	0.64%
206	20997	Yellowstone Valley Elec Co-op	Cooperative	MT	0.64%
207	2600	City of Burt	Municipal	IA	0.64%
208	16528	City of Sabula	Municipal	IA	0.64%
209	19547	Hawaiian Electric Co Inc	Private	HI	0.64%
210	18895	Thumb Electric Coop of Mich	Cooperative	MI	0.63%
211	5518	City of Dysart	Municipal	IA	0.63%
212	405	City of Alta	Municipal	IA	0.62%
213	12395	Menard Electric Coop	Cooperative	IL	0.62%
214	13664	Norris Public Power District	Political Subdivision	NE	0.62%
215	10908	City of Lenox	Municipal	IA	0.61%
216	11571	Manitowoc Public Utilities	Municipal	WI	0.61%
217	14473	City of Paton	Municipal	IA	0.61%
218	6335	Firelands Electric Coop, Inc	Cooperative	OH	0.60%
219	554	Ames City of	Municipal	IA	0.60%
220	13990	City of Ogden	Municipal	IA	0.58%
221	20413	Mountrail-Williams Elec Coop	Cooperative	ND	0.58%
222	20151	Washington Electric Coop Inc	Cooperative	VT	0.58%
223	6395	Flathead Electric Coop Inc	Cooperative	MT	0.57%
224	10617	City of Lake View	Municipal	IA	0.56%
225	12090	McLean Electric Coop, Inc	Cooperative	ND	0.56%
226	19820	Victory Electric Coop Assn Inc	Cooperative	KS	0.56%
227	16496	Rutherford Elec Member Corp	Cooperative	NC	0.56%
228	19160	Tri-County Electric Coop, Inc	Cooperative	TX	0.55%
229	11843	Maui Electric Co Ltd	Private	HI	0.55%
230	2985	Capital Electric Coop, Inc	Cooperative	ND	0.54%
231	118	Adams Rural Electric Coop, Inc	Cooperative	OH	0.54%
232	12114	City of McGregor	Municipal	IA	0.54%
233	17718	Southwestern Public Service Co	Private	TX	0.54%
234	20963	Woodruff Electric Coop Corp	Cooperative	AR	0.53%
235	13676	North Arkansas Elec Coop, Inc	Cooperative	AR	0.53%

Note: Data are only provided for US electric utilities that have reported DSM savings or spending numbers to EIA that are greater than zero.

Appendix Table 1-3: Ranking of US Utilities on percent of total revenues spent on energy efficiency programs					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program Spending as a percent of toal annual revenues from sales of electricity
236	13640	Northern Virginia Elec Coop	Cooperative	VA	0.53%
237	6443	Florida Keys El Coop Assn, Inc	Cooperative	FL	0.52%
238	6909	Gainesville Regional Utilities	Municipal	FL	0.52%
239	5416	Duke Energy Corporation	Private	SC	0.51%
240	13407	Nevada Power Company	Private	NV	0.50%
241	8287	Hawaii Electric Light Co Inc	Private	HI	0.50%
242	17011	Shawano Municipal Utilities	Municipal	WI	0.49%
243	4527	City of Crete	Municipal	NE	0.48%
244	19791	Vermont Electric Coop, Inc	Cooperative	VT	0.48%
245	10944	PUD No 1 of Lewis County	Political Subdivision	WA	0.48%
246	4911	Dawson County Public Pwr Dist	Political Subdivision	NE	0.47%
247	5841	Ely City of	Municipal	MN	0.47%
248	7720	Grundy Electric Coop, Inc	Cooperative	MO	0.46%
249	9230	City of Independence	Municipal	IA	0.46%
250	10171	Kentucky Utilities Co	Private	VA	0.46%
251	3735	City of Colman	Municipal	SD	0.46%
252	295	City of Alexandria	Municipal	MN	0.45%
253	4509	Craighead Electric Coop Corp	Cooperative	AR	0.45%
254	15348	Preston Public Utilities Comm	Municipal	MN	0.45%
255	40224	Central Electric Coop, Inc	Cooperative	PA	0.44%
256	17141	City of Sibley	Municipal	IA	0.44%
257	10181	Keosauqua Municipal Light & Pwr	Municipal	IA	0.44%
258	40228	Rappahannock Electric Coop	Cooperative	VA	0.43%
259	2998	Carbon Power & Light, Inc	Cooperative	WY	0.43%
260	6722	Franklin Rural Electric Cooperative	Cooperative	IA	0.42%
261	14088	Oliver-Mercer Elec Coop Inc	Cooperative	ND	0.42%
262	13698	North Central Public Pwr Dist	Political Subdivision	NE	0.42%
263	4304	City of Corwith	Municipal	IA	0.41%
264	40212	Colquitt Electric Membership Corp	Cooperative	GA	0.41%
265	20835	Winterset City of	Municipal	IA	0.41%
266	18085	South Central Power Company	Cooperative	OH	0.40%
267	3186	City of Cavalier	Municipal	ND	0.40%
268	17539	South Carolina Electric & Gas Co	Private	SC	0.39%
269	15159	City of Plymouth	Municipal	WI	0.39%
270	11611	Maquoketa City of	Municipal	IA	0.39%
271	3940	City of College Station	Municipal	TX	0.39%
272	7787	Gunnison County Elec Assn.	Cooperative	CO	0.39%
273	15470	PSI Energy Inc	Private	IN	0.39%
274	15023	Piedmont Electric Member Corp	Cooperative	NC	0.38%
275	19798	City of Vernon	Municipal	CA	0.38%
276	15671	Randolph Electric Member Corp	Cooperative	NC	0.38%
277	14489	City of Parker	Municipal	SD	0.38%
278	3989	Colorado Springs City of	Municipal	CO	0.38%
279	10539	La Plata Electric Assn, Inc	Cooperative	NM	0.38%
280	3477	Chicopee City of	Municipal	MA	0.37%
281	14577	City of Paullina	Municipal	IA	0.37%
282	5585	Eastern Illinois Elec Coop	Cooperative	IL	0.37%

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Appendix Table 1-3: Ranking of US Utilities on percent of total revenues spent on energy efficiency programs					
Rank	**Utility Code**	**Name of Electric Utility**	**Type of Utility**	**State**	**DSM Program Spending as a percent of toal annual revenues from sales of electricity**
283	15845	Renville-Sibley Coop Pwr Assn	Cooperative	MN	0.37%
284	15700	Rayle Electric Membership Corp	Cooperative	GA	0.36%
285	11305	Village of Ludlow	Municipal	VT	0.35%
286	11624	City of Marblehead	Municipal	MA	0.35%
287	7140	Georgia Power Co	Private	GA	0.35%
288	3503	Choptank Electric Coop, Inc	Cooperative	MD	0.34%
289	21239	Electrical Dist No7 Maricopa	Political Subdivision	AZ	0.34%
290	11093	City of Livermore	Municipal	IA	0.33%
291	18445	City of Tallahassee	Municipal	FL	0.33%
292	17046	City of Shelby	Municipal	IA	0.33%
293	1062	BARC Electric Coop Inc	Cooperative	VA	0.33%
294	21075	Y-W Electric Assn Inc	Cooperative	NE	0.32%
295	6210	City of Farnhamville	Municipal	IA	0.32%
296	17633	Southern Indiana Gas & Elec Co	Private	IN	0.32%
297	19499	United Power, Inc	Cooperative	CO	0.32%
298	18014	City of State Center	Municipal	IA	0.32%
299	24211	Tucson Electric Power Co	Private	AZ	0.32%
300	12541	City of Milford	Municipal	IA	0.31%
301	16680	Village of Sauk City	Municipal	WI	0.31%
302	2287	City of Brooklyn	Municipal	IA	0.31%
303	17828	City of Springfield	Municipal	IL	0.31%
304	11568	Town of Manilla	Municipal	IA	0.30%
305	17692	Southwest Public Power Dist	Political Subdivision	NE	0.30%
306	7424	Gowrie Municipal Utilities	Municipal	IA	0.30%
307	18304	Sumter Electric Coop, Inc	Cooperative	FL	0.30%
308	9273	Indianapolis Power & Light Co	Private	IN	0.29%
309	367	City of Alliance	Municipal	NE	0.29%
310	3900	City of Coggon	Municipal	IA	0.29%
311	17824	Spring Valley Pub Utils Comm	Municipal	MN	0.28%
312	8210	Hart Electric Member Corp	Cooperative	GA	0.28%
313	15846	City of Remsen	Municipal	IA	0.27%
314	13318	Navopache Electric Coop, Inc	Cooperative	NM	0.27%
315	14109	Oregon Trail El Cons Coop, Inc	Cooperative	OR	0.27%
316	11581	City of Manning	Municipal	IA	0.26%
317	2652	Butler County Rural Elec Coop	Cooperative	IA	0.26%
318	3248	Central Georgia El Member Corp	Cooperative	GA	0.25%
319	5929	Fairfield Electric Coop, Inc	Cooperative	SC	0.25%
320	16865	Sawnee Electric Membership Corporation	Cooperative	GA	0.25%
321	19062	City of Traer	Municipal	IA	0.25%
322	1172	Bancroft Municipal Utilities	Municipal	IA	0.24%
323	4110	Commonwealth Edison Co	Private	IL	0.24%
324	9231	Independence City of	Municipal	MO	0.24%
325	10704	Lansing City of	Municipal	MI	0.24%
326	4661	City of Curtis	Municipal	NE	0.23%
327	4147	Town of Concord	Municipal	MA	0.23%
328	17166	Sierra Pacific Power Co	Private	NV	0.23%
329	8122	Harlan City of	Municipal	IA	0.22%

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Appendix Table 1-3: Ranking of US Utilities on percent of total revenues spent on energy efficiency programs					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program Spending as a percent of toal annual revenues from sales of electricity
330	6579	City of Forest City	Municipal	IA	0.22%
331	7624	Village of Greene	Municipal	NY	0.21%
332	4362	Corn Belt Energy Corporation	Cooperative	IL	0.21%
333	17066	Shenandoah Valley Elec Coop	Cooperative	WV	0.21%
334	13815	Northwestern Wisconsin Elec Co	Private	WI	0.21%
335	15776	Reedy Creek Improvement Dist	Municipal	FL	0.21%
336	22500	Westar Energy Inc	Private	KS	0.20%
337	3804	Clinton Combined Utility Sys	Municipal	SC	0.20%
338	19785	Verdigris Valley Elec Coop Inc	Cooperative	OK	0.20%
339	17789	Village of Spencerport	Municipal	NY	0.20%
340	8966	City of Hudson	Municipal	IA	0.20%
341	20847	Wisconsin Electric Power Co	Private	WI	0.19%
342	9750	Jo-Carroll Energy Coop Inc	Cooperative	IL	0.19%
343	7489	Grand Rapids Public Util Comm	Municipal	MN	0.19%
344	15497	Puerto Rico Electric Pwr Authority	State	PR	0.18%
345	213	Alaska Electric Light & Pwr Co	Private	AK	0.18%
346	7353	Golden Valley Electric Assn Inc	Cooperative	AK	0.18%
347	2955	Canby Utility Board	Municipal	OR	0.18%
348	12301	Nodak Electric Coop Inc	Cooperative	ND	0.17%
349	22053	Kentucky Power Co	Private	KY	0.17%
350	14711	Pennsylvania Electric Co	Private	PA	0.17%
351	12390	Metropolitan Edison Co	Private	PA	0.17%
352	2144	Braintree Town of	Municipal	MA	0.17%
353	18231	Stuart City of	Municipal	IA	0.17%
354	2599	Burt County Public Power Dist	Political Subdivision	NE	0.17%
355	14426	Panhandle Rural El Member Assn	Cooperative	NE	0.17%
356	21538	Mohave Electric Coop, Inc	Cooperative	AZ	0.17%
357	17127	Town of Shrewsbury	Municipal	MA	0.16%
358	18280	Sulphur Springs Valley E C Inc	Cooperative	AZ	0.16%
359	19443	United Rural Elec Member Corp	Cooperative	IN	0.15%
360	17698	Southwestern Electric Power Co	Private	TX	0.15%
361	16604	San Antonio City of	Municipal	TX	0.15%
362	13839	City of Norwood	Municipal	MA	0.15%
363	5729	Electrical Dist No8 Maricopa	Political Subdivision	AZ	0.15%
364	11187	City of Longmont	Municipal	CO	0.14%
365	5998	City of Estherville	Municipal	IA	0.14%
366	14170	Orcas Power & Light Coop	Cooperative	WA	0.14%
367	14557	Pee Dee Electric Coop, Inc	Cooperative	SC	0.14%
368	9209	Illinois Rural Electric Coop	Cooperative	IL	0.14%
369	84	A & N Electric Coop	Cooperative	VA	0.13%
370	19813	Vernon Electric Coop	Cooperative	WI	0.13%
371	11522	Maine Public Service Co	Private	ME	0.13%
372	7806	Entergy Gulf States Inc	Private	TX	0.13%
373	19876	Virginia Electric & Power Co	Private	VA	0.12%
374	562	Amicalola Electric Member Corp	Cooperative	GA	0.12%
375	19390	UGI Utilities, Inc	Private	PA	0.12%
376	3081	Carroll Electric Member Corp	Cooperative	GA	0.12%

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Appendix Table 1-3: Ranking of US Utilities on percent of total revenues spent on energy efficiency programs					
Rank	Utility Code	Name of Electric Utility	Type of Utility	State	DSM Program Spending as a percent of toal annual revenues from sales of electricity
377	2001	Boone Electric Coop	Cooperative	MO	0.12%
378	20259	City of Webster City	Municipal	IA	0.12%
379	16687	Savannah Electric & Power Co	Private	GA	0.12%
380	18488	City of Taunton	Municipal	MA	0.11%
381	3542	Cincinnati Gas & Electric Company	Private	OH	0.11%
382	19728	UNS Electric Inc	Power Marketer	AZ	0.11%
383	12265	City of Medford	Municipal	WI	0.11%
384	13050	Mountain Parks Electric, Inc	Cooperative	CO	0.11%
385	6411	Flint Electric Membership Corp	Cooperative	GA	0.11%
386	14201	City of Osage	Municipal	IA	0.11%
387	8774	Holyoke City of	Municipal	MA	0.11%
388	21244	Southside Electric Coop, Inc	Cooperative	VA	0.10%
389	16932	Sergeant Bluff City of	Municipal	IA	0.10%
390	737	Aguila Irrigation District	Political Subdivision	AZ	0.10%
391	14645	Pella City of	Municipal	IA	0.10%
392	13058	Mountain View Elec Assn, Inc	Cooperative	CO	0.10%
393	17577	City of South Sioux City	Municipal	NE	0.10%
394	13783	Northeast Louisiana Power Coop Inc.	Cooperative	LA	0.10%
395	5701	El Paso Electric Company	Private	TX	0.10%
396	13038	City of Mt Pleasant	Municipal	IA	0.10%
397	6715	City of Franklin	Municipal	VA	0.09%
398	14864	Petit Jean Electric Coop Corp	Cooperative	AR	0.09%
399	8566	High Plains Power, Inc	Cooperative	WY	0.09%
400	13762	Northern Neck Elec Coop, Inc	Cooperative	VA	0.09%
401	2890	City of Camden	Municipal	SC	0.09%
402	9601	Jackson Electric Member Corp	Cooperative	GA	0.08%
403	5202	Dixie Electric Membership Corp	Cooperative	LA	0.08%
404	12260	Mecklenburg Electric Coop, Inc	Cooperative	VA	0.08%
405	2442	City of Bryan	Municipal	TX	0.08%
406	3093	Carroll Electric Coop Corp	Cooperative	MO	0.08%
407	20472	Wharton County Elec Coop, Inc	Cooperative	TX	0.08%
408	6198	Farmers' Electric Coop, Inc	Cooperative	NM	0.08%
409	4226	Consolidated Edison Co-NY Inc	Private	NY	0.08%
410	12681	Mississippi County Electric Coop	Cooperative	AR	0.07%
411	13482	New River Light & Power Co	State	NC	0.07%
412	8198	Harrisonburg City of	Municipal	VA	0.07%
413	23826	Bluestem Electric Coop Inc	Cooperative	KS	0.07%
414	11251	Loup River Public Power Dist	Political Subdivision	NE	0.07%
415	8139	Harquahala Valley Pwr District	Political Subdivision	AZ	0.07%
416	17983	City of Staples	Municipal	MN	0.07%
417	17252	Singing River Elec Pwr Assn	Cooperative	MS	0.07%
418	1763	Black River Electric Coop, Inc	Cooperative	SC	0.06%
419	18301	City of Sumner	Municipal	IA	0.06%
420	20219	City of Wayne	Municipal	NE	0.06%
421	4675	Cuivre River Electric Coop Inc	Cooperative	MO	0.06%
422	21526	City of Laurens	Municipal	SC	0.06%
423	3390	Caddo Electric Coop, Inc	Cooperative	OK	0.06%

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Rank	**Utility Code**	**Name of Electric Utility**	**Type of Utility**	**State**	**DSM Program Spending as a percent of toal annual revenues from sales of electricity**
424	7450	Grady Electric Membership Corp	Cooperative	GA	0.05%
425	97	Adams Electric Coop	Cooperative	IL	0.05%
426	6235	Public Works Comm-City of Fayetteville	Municipal	NC	0.05%
427	13206	Nantucket Electric Co	Private	MA	0.04%
428	17040	Shelby Electric Coop, Inc	Cooperative	IL	0.04%
429	1970	Village of Boonville	Municipal	NY	0.04%
430	10000	Kansas City Power & Light Co	Private	MO	0.04%
431	122	Village of Arcade	Municipal	NY	0.04%
432	17540	South Central Ark El Coop, Inc	Cooperative	AR	0.04%
433	26218	Little Ocmulgee El Member Corp	Cooperative	GA	0.03%
434	6342	First Electric Coop Corp	Cooperative	AR	0.03%
435	16267	Rolling Hills Electric Coop	Cooperative	KS	0.03%
436	2277	City of Broken Bow	Municipal	NE	0.03%
437	13697	North Central Power Co, Inc	Private	WI	0.03%
438	5905	Excelsior Electric Member Corp	Cooperative	GA	0.03%
439	13520	New-Mac Electric Coop, Inc	Cooperative	MO	0.03%
440	15270	Potomac Electric Power Co	Private	MD	0.03%
441	9689	Jefferson Electric Member Corp	Cooperative	GA	0.03%
442	9246	Indian Electric Coop, Inc	Cooperative	OK	0.02%
443	16920	Sedgwick Cnty El Coop Assn Inc	Cooperative	KS	0.02%
444	11085	Town of Littleton	Municipal	MA	0.02%
445	4508	Crawfordsville Elec, Lgt & Pwr	Municipal	IN	0.02%
446	10153	KEM Electric Coop Inc	Cooperative	ND	0.02%
447	20477	City of Westerville	Municipal	OH	0.02%
448	1167	Baltimore Gas & Electric Co	Private	MD	0.02%
449	16572	Salt River Project	Political Subdivision	AZ	0.02%
450	19189	Trico Electric Coop Inc	Cooperative	AZ	0.02%
451	12698	Aquila Inc	Private	MO	0.02%
452	15138	Platte-Clay Electric Coop, Inc	Cooperative	MO	0.02%
453	11501	Magic Valley Electric Coop Inc	Cooperative	TX	0.02%
454	14405	PEPCO Energy Services	Power Marketer	VA	0.02%
455	5487	Duquesne Light Co	Private	PA	0.01%
456	16511	Sac-Osage Electric Coop Inc	Cooperative	MO	0.01%
457	17585	Southeastern IL Elec Coop, Inc	Cooperative	IL	0.01%
458	12686	Mississippi Power Co	Private	MS	0.01%
459	30518	Electrical Dist No3 Pinal Cnty	Political Subdivision	AZ	0.01%
460	2678	C & L Electric Coop Corp	Cooperative	AR	0.01%
461	15748	Reading Town of	Municipal	MA	0.01%
462	14268	City of Owensboro	Municipal	KY	0.01%
463	20885	Withlacoochee River Elec Coop	Cooperative	FL	0.01%

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