050879

STAFF RESPONSE TO QUESTIONS AND COMMENTS
POSED BY
ADRIENNE BURGESS AND PAUL SOTKIEWICZ

On February 22, 2006 Mayor Hanrahan requested staff to respond to the questions posed by Adrienne Burgess and Dr. Paul Sotkiewicz. The following paraphrased questions with staff's responses were developed from questions submitted by Ms. Burgess via e-mail on February 1, 2006 and February 21, and verbally on March 6, 2006, and by Dr. Sotkiewicz February 22, 2006. Staff chose to paraphrase the questions from these individuals. Staff responses are in italics and page numbers refer to ICF's March 13, 2006 final report.

BURGESS, FEBRUARY 1, 2006

1. Why did the review of forecasts by two consultants, Numark (for the Alachua County Environmental Protection Advisory Committee) and ICF (for the Gainesville City Commission) come to different conclusions, one that demand forecasts were too high (Numark) and the other (ICF) that they were conservative?

Peak demands are highly dependent on weather, and staff bases their forecast on average weather. For a few years prior to 2005, staff forecasted peak demands that were higher than what actually occurred. In 2005, Staff's forecast of peak demand was higher than the forecast. Numark apparently did not review the more current data when it prepared its comments and did not employ as rigorous a statistical approach as staff uses in its forecasts. ICF did look at current data and also used a benchmarking approach compared to surrounding utilities.

2. Based on Community Workshops, data on which DSM programs were being considered and how DSM programs were being evaluated was limited. Could more complete information be provided?

ICF made a judgment call as to what level of detail could reasonably be provided in a community workshop. In ICF's February 13 draft and March 1 final draft, the types of details suggested by Ms. Burgess were provided by ICF (see Chapter 3 and Attachment 3).

3. DSM baseline data may be higher than reality, since other utilities appear to have more aggressive programs, and rate and metering programs were not addressed.

Staff agrees that DSM planning is very data intensive and is conducting an appliance saturation study this spring to update local assumptions. ICF employed data from a number of different sources for its studies. Rates and metering where not treated explicitly by ICF as DSM programs, although these issues were discussed as relating to applicability in the Gainesville market (distributed generation and interruptible or curtailable load having low applicability). ICF's report focused on the technologies and practices that rate structure strategies might encourage.

4. Why not employ a strategy of building capacity in smaller increments, as shown in an attached diagram?

Staff's energy plan optimization studies included evaluating re-powering existing units as well as employing smaller incremental units (see the December 2003 report entitled Alternatives for meeting Gainesville's Electrical Requirements Through the Year 2022, especially with regard to the use of "Bender's Decomposition" techniques that assume units can be constructed in arbitrary sizes, Chapters L and M). The data provided in detail by ICF in Chapter 4 on generating options highlights the efficiency and cost penalties of such an approach which is why staff did not recommend it.

BURGESS, FEBRUARY 21, 2006

1. Why not use detailed end-use models for forecasting?

End-use models require literally thousand of assumptions and parameters which are difficult to specify. These assumptions and parameters include the existing penetration, age, and condition of all consumer appliances (residential and commercial), the structure and condition of all building envelopes, and the on and off peak load shapes for each end-use technology, based on an hourly "typical meteorological year". The same features that make end-use models attractive (very detailed energy consumption characteristics) tend to make them unwieldy, time-consuming to construct and inaccurate. These models require calibration against aggregate sales and energy, either using historical data or some form of econometric forecast model. Staff does not know of any utility which uses such a model for long term forecasting of sales and peak demands.

2. Why not assume that the existing wholesale contracts go away, freeing up capacity for retail customers?

Staff is not sure why ICF chose not to make this assumption other than its comment that the forecast seemed low and the amount of capacity

involved over the period of study is relatively small. Staff, on the other hand, has examined low forecast cases assuming the loss of these loads (presented to the Commission in February, 2004) and found staff's January 2005 recommended plan (a 220 MW solid fuel unit capable of using biomass, coal, and petroleum coke, conservation programs designed using the Rate Impact Measure test for cost-effectiveness, and a Greenhouse Gas Fund) was still the most cost-effective option.

Our existing wholesale power contracts are listed in the following table. The Seminole contract is for service to the Farnsworth substation through which Clay Electric serves the western edge of the Gainesville Urban Area. The Alachua contract serves the City of Alachua immediately to the north and contiguous with Gainesville. These wholesale customers pay the same fuel costs as other retail customers, as these contracts all include provisions to pass along fuel costs to end users. Non-fuel revenues from these contracts are beneficial to all our retail customers by helping to keep our retail rates low. If we did not serve these customers, it is likely that someone else with power plants in the north Florida area would, with no measurable change to local air quality.

EXISTING WHOLESALE POWER CONTRACTS

Counter Party	*Current Load*	*Expiration Date*
Starke	*3 MW (fixed)*	*12/31/06*
Alachua	*22 (growing)*	*12/31/07*
Seminole	*15 (growing)*	*12/31/12*

3. Why is GRU's load factor so low, using only an average of 237 MW when we have 610 MW capacity installed?

Power systems, such as ours are designed to meet changing load in the most economic manner possible, including minimum, average and peak loads. Our historical peak, including reserves, is actually 541 MW (see ICF final report, table ES-3). Reserves are required if we expect to enjoy the benefits of being connected to Florida's grid, without which our reliability would be unacceptable. Load growth, plus planned retirements (see table below) necessitates additional capacity, which could be either rented (e.g., a Power Purchase Agreement) or owned by GRU. The benefits of owning generation are much akin to owning one's home, and will make a big difference in electric rates. It just so happens that our power system would benefit more from base load capacity than from other options studied to date.

UNIT RETIREMENTS OVER STUDY PERIOD 2006-2025

Unit Name	*Planned Retirement Year*	*Summer Net MW*	*Age Upon Retirement (Years)*
Kelly Unit 7	*2011*	*23*	*50*
Kelly CT1	*2018*	*14*	*50*
Kelly CT2	*2018*	*14*	*50*
Kelly CT3	*2019*	*14*	*50*
Deerhaven Unit 1	*2023*	*83*	*51*
Total Retired MW	*na*	*148*	*na*

Note: by 2025, Deerhaven Unit 2 will have been in service 44 years.

4. Could we have a complete breakdown on what other utilities are spending on DSM, and why do GRU's programs include natural gas and seem to have such high overheads?

ICF's scope was to evaluate the goals that the City Commission might adopt as being in the best interest of the Community. ICF, based on stakeholder input, chose to estimate the maximum achievable DSM for the Gainesville market when the Total Resource Cost (TRC) test for conservation cost-effectiveness was applied, instead of the Commission's current policy of employing the Rate Impact Measure (RIM) test. ICF approached this task with a rigorous approach starting with a list of technologies and an analysis of the potential for deployment of these technologies in the Gainesville market. Gainesville has some unique characteristics, including the lowest average use per residential customer of any generating utility in Florida and a very high penetration of natural gas. The benchmarking information was presented as a courtesy to put ICF's results into context and to appraise the Commission with the level of expenditures required when compared to the current program. Additional detail on other utilities would be outside of ICF's scope of work.

Natural gas has a very high net efficiency compared to electricity for many end uses involving heat, such as space heating, water heating, cooking and clothes drying. This is due to the losses incurred by converting fuels into electricity (usually greater than 50%). For these reasons we include natural gas programs in our program designs, which no other investor-owned utility in Florida does.

The apparently high overheads for GRU's conservation programs are an artifact of the accounting methods used for these programs. Staff's comments to ICF prepared in response to the first draft report on February 22, and ICF's comments explain this further and are repeated below.

Staff Comment February 22, 2006:
ICF assumed that marketing, admin and other costs are typically about 50% of the incentive paid. Our marketing, admin and other costs are reported to be about 3 times the incentives paid. In an "aggressive" implementation state, is it likely that the costs would be considerably higher than 50% of the rebate amount? It should be noted that in our accounting we include free residential surveys, free HVAC load sizing, free commercial lighting surveys, free commercial energy surveys, and numerous internal and external energy consultations by staff in the cost multiplier over the rebate amount.

ICF Answer:
ICF believes that its assumptions are reasonable, and expects that the primary difference between ICF and GRU assumptions about average cost levels is based in the classification of costs for accounting purposes and the fact that GRU chooses to "self-implement" many programs, not on a fundamental disagreement about the costs to provide the services.

BURGESS, MARCH 6, 2006

1. The chart presented by ICF indicated a 7% difference between the highest cost bill (under the maximum DSM case) and the lowest cost bill (under the IGCC case). If any particular customer happened to have conserved more than 7%, say they saved 9%, under these scenarios; wouldn't they be net ahead in overall cost?

Yes, if the specific customer's savings on the electric bill also paid for whatever incremental investment the customer made to achieve that 9% savings. However, customers that either did not have the opportunity to participate (such as renters), or do not have the financial ability to make the investments needed (such as low income), would not benefit. Any decision to employ the TRC test as conservation cost-effective criteria, as opposed to the RIM test, would embrace a philosophy supporting the use of utility rates to re-distribute wealth between various customer groups.

2. Couldn't load control be used as a resource to meet peak reserve margin requirements?

Yes it could. Direct load control programs that have been allowed by regulators to be treated as reserves are those programs that put the control of appliances into the hands of the utility. Some of Florida's utilities have been leaders in deploying this as a resource. Those that have exercised this control to manage costs (such as rural co-ops, who have operated under power supply contracts with demand ratchets and do not have guaranteed cost recovery like that available to IOUs) found the

customers would disable the controllers and/or leave the program. Some of these utilities, including Clay, have abandoned their direct load control programs. IOUs have kept these programs but are very reluctant to exercise control over these loads (even during the emergency alerts that arose from Hurricane Katrina) due to fear of adverse customer reaction.

Utility staff has evaluated direct load control under assumptions that would allow the utility to use it to meet reserve margin criteria, but load control has not been shown to be cost-effective compared to additional base load capacity (see the December 2003 report entitled Alternatives for meeting Gainesville's Electrical Requirements Through the Year 2022, Chapters L and M).

3. Couldn't we drop the existing criteria for interruptible or curtailable load down to 200 kilowatts compared to the 1000 kilowatts in our current tariff?

The threshold for interruptible and curtailable rates among Florida generating utilities ranges from 500 to 1000 kilowatts. Two IOU utilities have interruptible rates at a lower threshold provided the customer has stand-by service or agrees to pay a minimum 500 kilowatt demand charge. Should the City Commission choose to direct staff to do so, staff could provide the Commission with an evaluation of the costs and benefits of reducing the qualifying threshold currently in our tariff. ICF has made the observation that Gainesville lacks an industrial base that would generally be able to switch fuels to accommodate interruptible or curtailable rates (see page 79).

4. ICF changed their draft report which stated that DSM created the most jobs to the conclusion in the final that DSM created the least jobs. Why?

We are not exactly sure as to why ICF chose to revise Exhibit 7-5, but we know that they went through an extensive internal review of the first draft, and we assume would not likely make so substantial a change without good cause.

The IMPLAN model utilized by ICF is an external (independent) economic impact modeling software that utilizes data primarily from federal government sources including the US Bureau of Economic Analysis, the US Bureau of Labor Statistics, and the US Census Bureau for evaluating economic development projects. The analyses performed by ICF were conducted at the county (Alachua County) level, and ICF appropriately recognized that some of the multiplier impacts associated with a project in Gainesville would fall outside of Alachua County.

ICF specified that the job creation potential associated with the DSM scenario should be interpreted differently from the other three scenarios where most of the new jobs were associated with the construction of a new plant while the remaining new jobs were associated with the operation and maintenance of the plant over 30 years. The DSM scenario creates fewer jobs because it is not meant to be a stand-alone option to fully meet the increased demand. It only replaces part of the increased demand. Jobs created in the DSM scenario are counted in the years that DSM programs are implemented, compared with the continuous level of jobs associated with the operation and maintenance of a new plant over 30 years.

SOTKIEWICZ, FEBRUARY 22, 2006

1. Maximum DSM (Max DSM) creates an "apples to oranges" comparison of that option with other options.

Staff agrees that the additional options evaluated by ICF do not constitute an optimized plan, nor are they mutually exclusive. For example, combining Maximum Conservation with Options 1 or 2 might be beneficial by reducing expensive off-system power purchases inherent in Options 3 and 4. Staff is prepared to optimize a plan if directed to do so by the City Commission.

2. More detailed information should be presented on the modeling of the wholesale market out to 2025. More specifically, that is, (1) are all units in Florida dispatched as a single entity according to least-cost; or (2) are all control areas dispatched at least-cost for the control area, and then remaining generation will be offered to the wholesale market. The more realistic assumption is that (2) is true and this will drive up the price wholesale power available to GRU compared to the first outcome (1).

ICF has assumed that new coal capacity would be available on the wholesale market to meet our system's needs for economic power, which is particularly critical for the scenarios in the Maximum DSM (option 3) and Maximum DSM with a 75 MW (option 4). This assumption matches Dr. Sotkiewicz's item (1). We concur that Dr. Sotkiewicz's item (2) not only matches current practice but also an underlying premise under which investor owned utilities have been granted territorial monopolies and regulated rates of return. This single assumption could explain the observation that we have seen twice as much difference in our scenarios as ICF has presented.

3. The results in the wholesale market are driving the cost results for the "Max DSM" option and the "Max DSM with Biomass Option"

See the response to question 2 above.

4. I would like to know the costs of GRU expanding transmission capacity through participant funding rules to secure enough firm capacity to contract in advance for the needed mid-merit and peaking power and capacity requirements dictated by reliability rules.

The 30 MW constraint noted by ICF related to the hypothetical failure of a transformer at our Parker Road substation under future conditions. Staff believes this potential constraint would be resolved well before actually becoming an operating constraint under existing state planning protocols. Staff has conducted and will continue to conduct these studies. Transmission costs tend to be small compared to those of power production, for example transmission costs for GRU are less than 3.5% of total revenue requirements. Participant funding is a cost recovery mechanism that would become available under and ISO or RTO structure under FERC rules, but is currently moot in Florida.

5. The role of CO_2 policies, trading, and different allowance allocation strategies are important. What would be the effect of there not being an initial allocation of allowances, or an auction driven market?

The value of carbon allowances used by ICF may be found in Exhibit 6-4. ICF assumed that the policies used to establish allowances would manifest its effects on the market value of the allowances. The adjusted allowance values applied to the various scenarios by ICF are provided in Exhibit 6-6 and summarized below compared to the values utility staff used in GRU's risk assessment presented to the City Commission in December of 2004.

COMPARISON OF ALLOWANCE PRICES EMPLOYED BY GRU AND ICF

Source	Effective Allowance Price ($/ton carbon)		
	Low	Medium	High
GRU	0.0	12.4	27.3
ICF – 2010 through 2020	0.0	1.7-2.7	5.8-9.1

6. What are the financial impacts on City of Gainesville finances, especially GRU transfers to the City general fund and potential revenue neutral changes in taxes?

Financial impacts that were addressed by ICF were focused on revenue requirements and power production costs. We performed analyses of the ICF options as well as a natural gas combined cycle option, with the results summarized into the table below.

ELECTRIC RATES UNDER VARIOUS SCENARIOS

SCENARIO	RESIDENTIAL BILL 2012	RESIDENTIAL BILL 2025
CFB	$105.81	$167.88
IGCC	$97.99	$157.54
Maximum DSM	$111.19	$181.77
Small CFB + Max DSM	$113.57	$180.59
NGCC	$116.28	$179.51

Revenue transfer to the City Budget was addressed by ICF in terms of the revenue requirements for each of the options evaluated (see Chapter 8, footnote 2 of Exhibit 8-8). The current form of the General Fund Transfer (GFT) formula is not sensitive to retail sales or retail prices. As described in Chapter 8, ICF did model power imports and sales as related to total revenue requirements, but did not assume that these could affect the GFT.

7. Could the final report devote a stand-alone section to the difficult to model or un-modeled risks of each option as well as the "option value" of each option so these trade-offs are clear to the Commissioners and Citizens alike?

As a matter of practicality, computing option values would be very difficult to discuss with the public in a meaningful manner. We think one way to address Dr. Sotkiewicz's concern is to develop a matrix to allow the Commission to examine the effects of applying different weights to different criteria to help assess the relative rankings of the various options.