050879

STAFF RESPONSE TO
MAYOR HANRAHAN'S COMMENTS AND
QUESTIONS REGARDING THE DRAFT ICF REPORT
E-MAILED MARCH 3, 2006

Staff responses are provided in italics.

Regarding Demand Projections

1a. What wholesale contracts currently exist, for how much power, and for how long, and how would ending these contracts affect GRU's need for new power generation? What percentage of our overall load demand is attributable to these contracts?

The following table summarizes the status of GRU's long term firm wholesale contracts. Combined, these loads represent 4.7% of our peak demand.

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

1b. Are there technical, legal, economic or environmental constraints that would prohibit or discourage GRU from ending these contracts? For example, are some of our wholesale customers directly integrated with our distribution system? What are the other most likely service providers for these wholesale customers, and is their power source "cleaner" than our current generators and/or our proposed new generators? In other words, if we were to end our wholesale contracts and these customers were to instead receive their power from Progress or Clay or someone else, is this end result better or worse from an environmental perspective?

These are firm contracts that have been beneficial to our ratepayers. It would be expensive to terminate these contracts early because of contractual obligations, but not because of physical connectivity. Staff has received notice that the Starke contract will not be extended. It would be beneficial to our ratepayers to extend the Alachua and Seminole contracts if energy supply pricing competitive to other options available to these systems can be maintained. Progress Energy and FMPA are currently interested in serving these loads, and have similar amounts of coal fired generation capacity in their fleet as we do. Progress Energy has 29% and FMPA has 38% coal fired generation capacity, compared to our 36%.

c. ICF has used past growth as a predictor for future demand, but we are aware of numerous large projects underway that may represent an increase in demand in excess of that projected (the new Shands Cancer Hospital; the proposed expansion of Butler Plaza; the 12 story Gainesville Greens development downtown; the 8 story University Corners project; the Springhills DRI; numerous large new subdivisions in High Springs, Alachua, Hawthorne, LaCrosse, and West Gainesville). Have these projects been taken into consideration in the demand projections? Is the opportunity for distributed generation, especially for cooling, been taken into consideration as one option for reducing the capacity needed at a central power station?

Recently announced projects, as well as growing national interest in plug-in hybrids, suggest that current forecasts may be conservative (low), as was suggested by ICF in their analysis. Participation in chilled water systems is a cost-effective way to promote energy conservation in these larger projects and providing chilled water services is being pursued by staff. Large projects in High Springs, Lacrosse and Hawthorne are located outside the GRU retail electric service territory. These communities do not own and operate their own electric distribution systems therefore, unlike Alachua and Starke; they are not likely to seek wholesale service from third party suppliers like GRU.

Regarding Buying and Selling Power on the Grid

2a. If the Commission were to delay building a power plant to the point that our demand did exceed our ability to fully meet our native load, and/or we were in violation of our required reserve margins, what would be the consequence? Can the Public Service Commission reduce our service territory or levy fines, or is the primary downside simply that we are foregoing revenue to our system?

From an operational standpoint, failure to maintain adequate reserves would fall under regulations under development by the North American Electric Reliability Council (NERC). Future policies could result in the imposition of grid interconnection constraints and/or limiting GRU's access to emergency energy supply backup resources if and when needed. Under the Energy Policy Act of 2005 (EPAct 2005) FERC is to establish an Electrical Reliability Organization. Fines to be assessed against an interconnected electric utility's failure to maintain adequate reliability operating standards are clearly being contemplated but have not yet been codified.

2b. During the presentation, Mr. Rose referred to a technical limitation for importing power to our system in excess of 30 MW, I believe. Is this a constraint associated with the transmission system, or is it a constraint of some other type?

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.

2c. As I recall, prior to my election and before GRU entered into the current integrated resource planning process, the City Commission rejected the idea of participating in a larger project with JEA, the City of Tallahassee and other partners. I understand that the referenced project is going forward in Taylor County. Although in general I prefer that we take local responsibility for our own environmental impacts (and keep those jobs local as well), I am wondering if we have considered all the pros and cons of adding an increment of power generation to that plant, rather than building a new plant here at Deerhaven. Is this still a viable option?

Formal action by the City Commission eliminated consideration of that option in February of 2004. The current Commission may wish to revisit that option in the future.

Regarding the Maximum Demand Side Management Option, Plus Solar Energy Issues

3a. The assumptions made to analyze the maximum DSM scenario assumed high natural gas prices and a high CO2 allowance price. While this certainly would give a sense of the best conditions that would support increased conservation measures, it would also be useful to have an understanding of how much DSM would be clearly beneficial both environmentally and economically under current operating conditions, or those projected as likely for in the short term future. Is it possible to get a sense of which of the conservation measures analyzed would be justifiable now, as well as within five to ten years?

Staff agrees that a DSM scenario under base case assumptions and with TRC Benefit/Cost ratios greater than 1.0 would be more reasonable for goal setting than the maximum DSM case presented by ICF (ICF applied worst case fuel and carbon costs and Benefit/Cost ratios down to 0.5).

3b. Why are FPL, Progress, and TECO currently spending so much more money per capita on demand side management (DSM) in comparison to GRU? Are we able to estimate their energy savings per capita or other measure of success relative to GRU? Where do Tallahassee and Lakeland fall in this continuum? As I read the table titled "Comparison of Maximum DSM Scenario Spending with Other Utilities," ICF is estimating that GRU's current spending could essentially quadruple, from $21.75/capita/year currently to $81.23/capita/year. This would be far in excess of the $64.50/cap/yr currently being spent by Austin Energy. How much additional

spending on DSM is economically justifiable under our current circumstances? Does the amount of spending on DSM that would be recommended vary depending on the generation technology we choose?

Each utility system is different and GRU's retail load characteristics are unique, which affects DSM potential. For example, electrical energy consumption per residential customer on the Gainesville system is lower than all other generating utilities in Florida. IOU's in Florida are allowed by the FPSC to recover DSM program costs separately from the rates under which they have a regulated rate of return on investment. Using the Total Resource Cost (TRC) test for assessing the cost effectiveness of DSM projects would increase the per capita investment over the amount now spent based upon the use of the Rate Impact Measure (RIM) test criteria. The amount of investment in DSM programs that can be justified will vary greatly based on the cost of generating resources used to provide energy to retail customers. The amount of additional spending that is economically justified under current circumstances depends upon the selection of energy supply alternatives selected by the commission and the standards adopted for how the community deems what will "cost effective" (e.g., TRC, RIM, etc.).

3c. Several citizens have expressed concerns that solar energy technologies were not given full consideration, or that there was a gap of information regarding price and availability of various distributed options (solar hot water heaters, roof photovoltaics connected to the grid, etc.). Is it possible to receive an analysis of the range of solar programs being used throughout the U.S., their costs, penetration in the marketplace, and similar information? How much of the total electricity demand could conceivably be avoided with a robust solar program?

Staff believes ICF's final report provides a full explanation of the cost-effectiveness of solar thermal and photovoltaic technologies. Even the most robust solar program would not avoid a substantial proportion of demand in a cost-effective manner.

3d. Are there examples of communities that have implemented reasonably regulatory efforts to reduce energy demands (such as requiring energy efficient construction or interruptible service under appropriate circumstances) that would be feasibly applied in Gainesville and Alachua County? Is there anything in state law that would discourage or prohibit such efforts?

Local governments in Florida are currently not able to institute more stringent building codes pursuant to state law. There are other powers the City Commission could invoke to promote energy conservation, such as through housing, licensing, and development codes.

3e. Are there billing, metering or pricing structures that might have a significant impact toward encouraging conservation?

Yes, but they would have to be mandatory to be effective, would need to impose price sanctions on normal daytime activities, and are likely to adversely affect lower income households disproportionately.

Regarding the GRU Proposal (CFB with Biomass, Coal and Petroleum Coke)

4a. Does ICF's analysis of the environmental, economic and employment impacts from the CFB proposal take into account the greenhouse gas offset fund that was proposed as part of the CFB option? If not, can its impact be analyzed as well?

No, the greenhouse gas fund was not taken into account.

4b. What is the maximum amount of waste biomass that could be used as part of this (or the IGCC) proposal, in terms of a percentage of the generating capacity? What types of waste biomass are feasible for use?

The best local estimate of benignly harvested forest waste wood from a twenty-five mile radius was about 1400 tons per day (Post and Cunilio-2003). Given that there is competition for this resource staff has based its plans on about half of this (equivalent to 30 MW). If the resources are in fact available at a cost equal to or below that of coal, a 220 MW CFB could handle up to about 50 MW of biomass without substantial capacity or efficiency penalty. We are unclear as to what the ability of IGCC is to handle various amounts of biomass and/or the accompanying capacity and efficiency penalties.

4c. How can we ensure that we are not encouraging damage to natural ecosystems (clearing for crop production, or deforestation for fuel generation) as part of a biomass plant?

Potential harm to the environment was one of the criteria staff required to be applied in the Post and Cunilio study described in b. above.

4d. In the analysis of this option (and the next two), was the reduction in air emissions attributable to no longer burning waste wood at construction and forest products sites taken into account? Are air impacts from transportation of biomass, coal and/or petroleum coke taken into account? If not, can they be?

The reduced open-air burning of biomass was not taken into account by ICF. Air impacts associated with the transportation of fuels was not taken into account, either.

Regarding the IGCC Option (with Biomass, Coal and Petroleum Coke)

5a. GRU officials have expressed a concern that our utility is too small to efficiently operate an IGCC plant. What is the ICF assessment of this concern?

Answer deferred to ICF.

5b. Are the operational difficulties that have been experienced at the TECO IGCC plant likely to be reduced or eliminated in the technology that may be commercially available by the 2011 operational date under consideration?

Many parties say these problems will be resolved, but second generation plants using this technology have yet to be constructed.

5c. Are the rating agencies likely to downgrade our bond rating if they perceive IGCC to be less reliable than CFB or some other more tested technology?

Rating Agencies will take all financial, management and operating issues and practices into consideration when issuing financial ratings in the future. Certainly one factor that will be assessed will be the utility's capacity to absorb performance risk and how such risk will be mitigated in the financial plan proposed for any project. If consumers are required to absorb greater financial risk, this additional risk will result in higher end user costs to consumers.

5d. What assumptions led to the ICF initial conclusion that IGCC might actually be less expensive to build as compared to CFB?

Answer deferred to ICF.

5e. Is there any real likelihood of being able to capture and sequester carbon from an IGCC plant over the expected lifetime of this project?

The geology in Florida is not favorable for carbon sequestration, so it is unlikely that carbon will be captured during the lifetime of this project.

5f. Is GRU likely to qualify for loan guarantees or other assistance that would keep the cost of borrowing money for an IGCC plant similar to the cost for a more conventional technology?

While it is possible that GRU could qualify for loan guarantees, it is not sufficiently certain to considering including the potential for loan guarantees in financial projections at this time.

Regarding the Maximum DSM Plus Biomass Option

6a. Under aggressive conservation scenarios and realistic demand projections, if we were to implement a smaller biomass plant, when would GRU be facing the need for additional generating capacity if we were to build the smaller biomass plant as analyzed?

Additional capacity will be needed 7 to 8 years into the study period which ICF assumed would be peaking only. The amounts and timing depend on the scenario and option being studied.

6b. Is it feasible to develop a biomass delivery system that uses existing rail infrastructure rather than adding truck traffic to 441? If not, is it feasible to enter the GRU site from another route, to avoid additional large truck traffic near residential areas?

CSX currently ships substantial amounts of biomass as fuel and as OSB feed stock. Rail transport could possibly meet some portion of the biomass need but the amount is uncertain at this time.

6c. Why are CO2 generation figures for the biomass option not substantially lower than shown, given that biomass is often referred to as a "carbon neutral" option?

Answer deferred to ICF.

Regarding Natural Gas Option

7a. How does the retirement of existing natural gas generators impact our ability to power up and power down units to address peak demands?

Additional peaking capacity is needed at the end of the planning period under every scenario tested.

7b. **Given that the capital cost of a natural gas unit is so much lower than a coal unit, and given that capital costs are much less speculative than fuel costs, is it possible that a natural gas unit might conceivably end up being a lower cost solution in the long run?**

Virtually all utilities and consultants in the industry do not see natural gas generation as a lower cost solution for supplying base load generation in the long term.

7c. Given that natural gas units can be built quickly and in smaller economical increments as compared to coal units, would it be feasible to build a smaller (50 to 100 MW) natural gas generator in the short term, in an effort to allow some of the emerging technologies to become better tested?

Delay of a solid fuel option is estimated to cost 11-21 million dollars per year (2003 Dollars).

Regarding Carbon Emissions and Pollution Credits for SOx, NOx and mercury reductions

8a. Is it possible for the city to implement other programs (for example, using biodiesel as appropriate in our fleet; capturing methane from wastewater plants by enclosing some tanks; increasing tree planting; increasing energy efficiency in our own buildings and in the private sector through codes changes and incentives) that would enable an overall reduction in greenhouse gas emissions from municipal operations, including the power plants? I believe the city completed a greenhouse gas inventory a few years ago, to establish a baseline.

The proposed greenhouse gas fund would not reduce greenhouse gas emissions to prior levels due to the increases resulting from the addition of electrical production facilities under conditions of increasing electrical demand.

8b. When the pollution control retrofit of the Deerhaven II plant is complete, it is my understanding that we may be able to sell pollution credits in the commodities markets. What are we expecting the market value of these credits to be, and what are the pros and cons of selling the credits and applying the proceeds to emission reduction or conservation efforts that might not otherwise be considered financially feasible?

The estimates of the future value of excess environmental allowances are likely to fluctuate widely and it would not be prudent to count on the value of these allowances as a firm revenue stream. The City Commission may wish to consider the economic value of these allowances in the future, when related values become more predictable, for application toward future DSM program costs.