040841

GRU
More than Energy

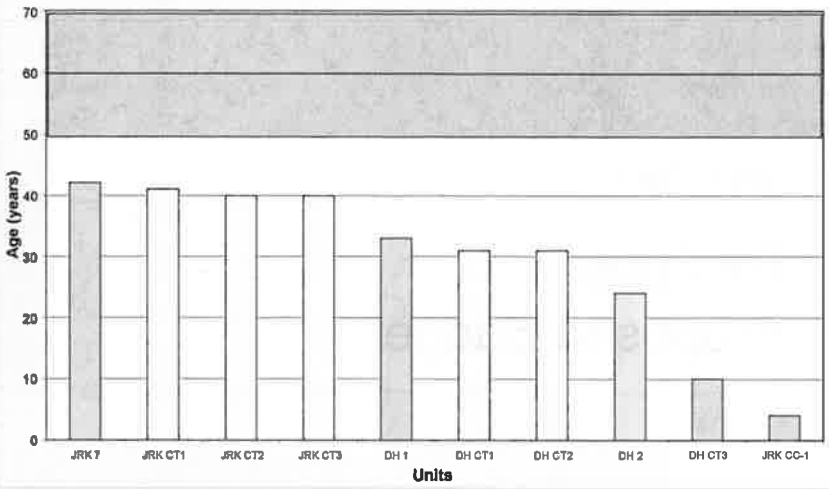
July 18, 2005

FY 2006
Proposed Budget

Drivers & Projects

Energy Supply

Age of GRU Generating Units



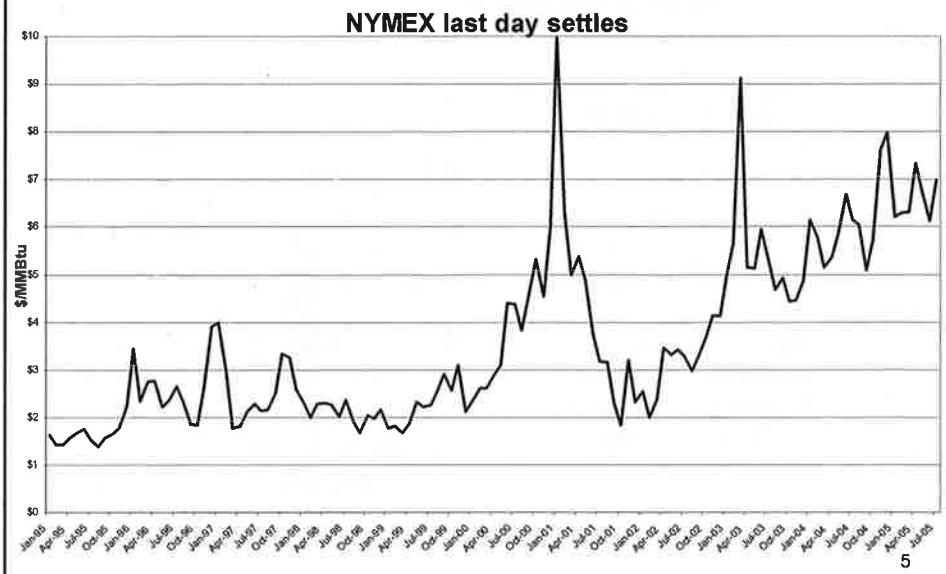
3

FY 2006 Energy Supply
Operation & Maintenance Increase

Overhaul costs	$618,500
Safety/training	97,410
Personal services	36,610
Total	$752,520

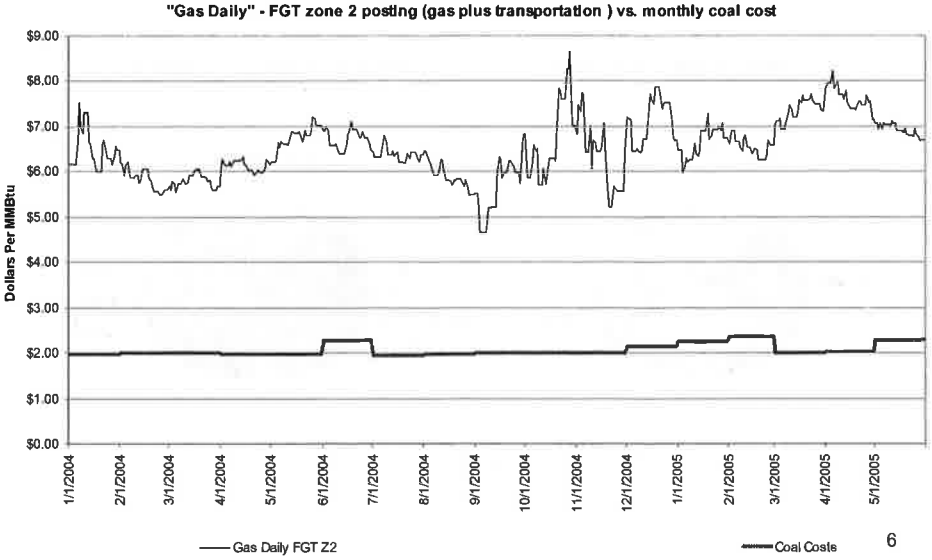
4

Natural Gas Settlement Price 01/95 thru 06/05



5

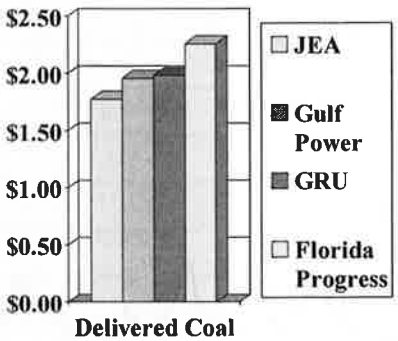
Delivered Gas Price vs. Coal



6

Fuels Management

- Long term coal contracts saved $11,000,000 in CY2004.
- Contracts for baseload natural gas saved $838,000 in CY2004.
- Natural Gas risk management program stabilized prices and saved $1.4 million in CY2004.

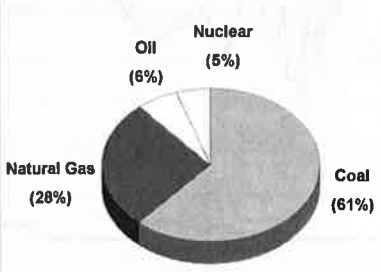


Delivered Coal Price - FY2004 $/MMBtu

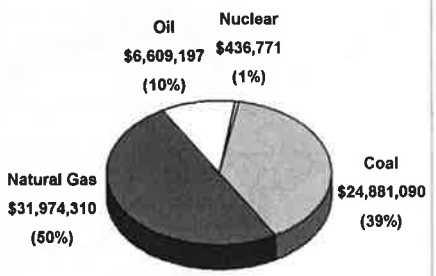
7

We Are Concerned About Fuel Costs

CY2004 energy sources

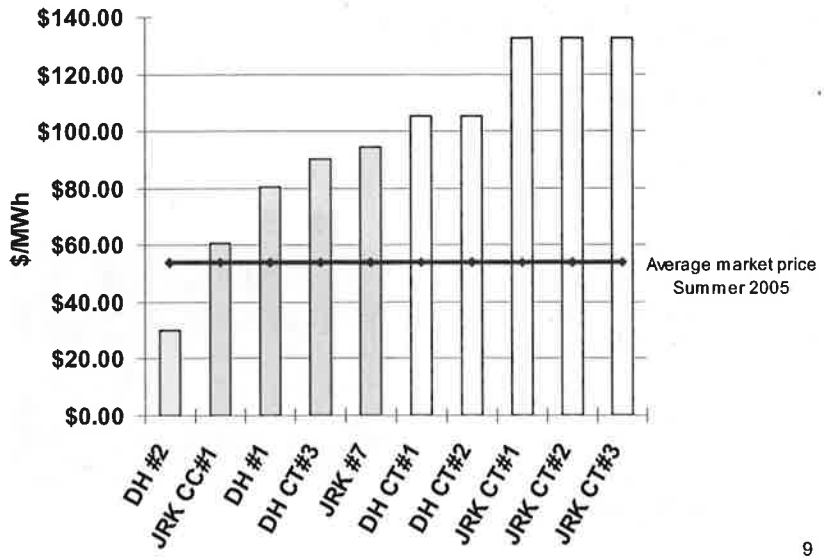


CY2004 fuel expenditures



8

Power Costs By Unit



9

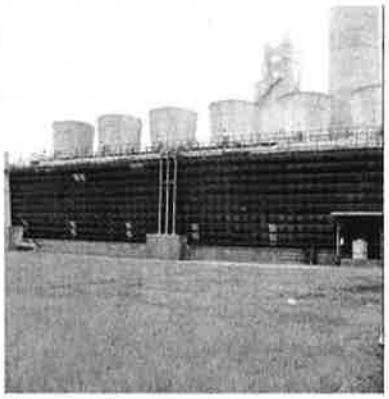
Unplanned Outage

- Deerhaven 2 boiler tube leak (3 day outage)
  - DH 2 power cost $31.20/MWh
  - Replacement power cost $61.65/MWh
- **TOTAL OUTAGE COST** **$482,328 ($6,700 per hour)**

10

Major Capital Projects
Deerhaven Unit #1

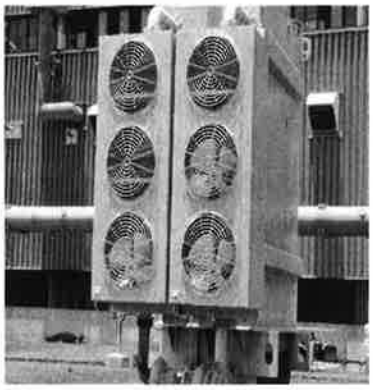
- **Refurbish cooling tower $618,000**
- **Repair circulating water pipe $124,000**
- **Replace hot end air heater baskets $198,000**



11

Major Capital Projects
Deerhaven Unit #2

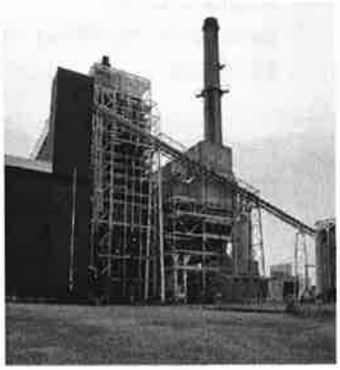
- **Replace main step-up transformer coolers $247,000**



12

Major Capital Projects
Deerhaven Unit #2

- **Replace reheater tube $1,051,000**
- **Replace burner air damper drives $321,000**
- **Refurbish coal handling System $370,800**



13

Major Capital Projects
Deerhaven Unit #2

- **Refurbish cooling tower $309,000**

14

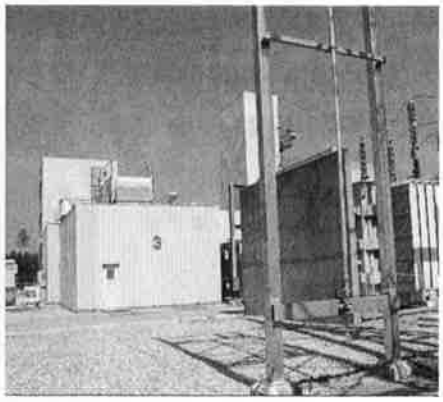
Major Capital Projects
Deerhaven Units CT #1 and CT#2

- **Replace CT#1 generator retaining ring $618,000**
- **Replace CT#1and CT #2 exhaust stacks $309,000**
- **Install fire protection systems $175,000**

15

Major Capital Projects
Deerhaven Unit CT#3

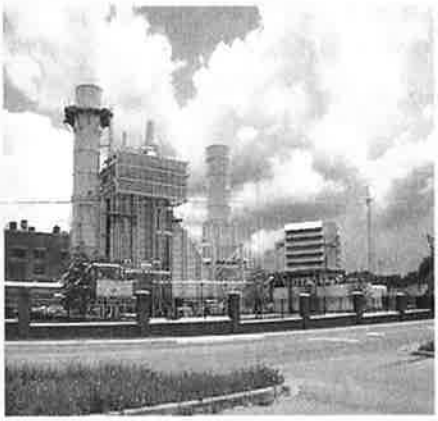
- **Purchase spare combustors $414,000**



16

Major Capital Projects
J.R. Kelly Unit CC#1/CT#4

- **Combustion turbine hot gas path renewal**
  $1,632,000



17

GE Gas Turbine Frame 7EA

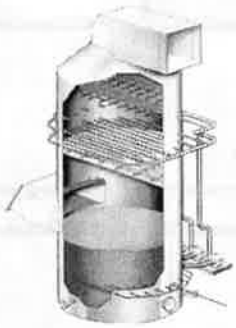
Major Capital Projects
J.R. Kelly Unit CC#1/Unit#8

- **Replace unit #8 cooling tower fan blades**
  $123,600
- **Re-tube unit #8 condenser**
  $618,000
- **Replace circulating water piping**
  $62,000

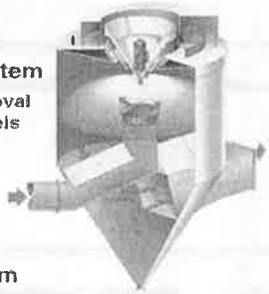
19

Major Capital Projects
Deerhaven Unit #2

- **Install air quality control systems**
  (FY06) $6.9 M
  (FY 07-09) $83.1 M



Dry FGD System
- 95% SO_2 removal
- Low sulfur fuels



Wet FGD System
- 98% SO_2 removal
- High sulfur fuels

20

Electric Rates

Electric Rates Preview

- 4 classes
  - Residential – 2nd tier at 750 kWh
  - General service non-demand - 2nd tier at 1,500 kWh
  - General service demand (between 50kW and 1,000 kW)
  - Large power (demand over 1,000 kW)

22

Electric Rate Strategy

- Fixed costs
  - Increase customer charge for all classes by 5%.
- Promote conservation
  - Increase upper tier energy price for residential and GSN
- Encourage better load factor
  - Raise demand charge for GSD and large power

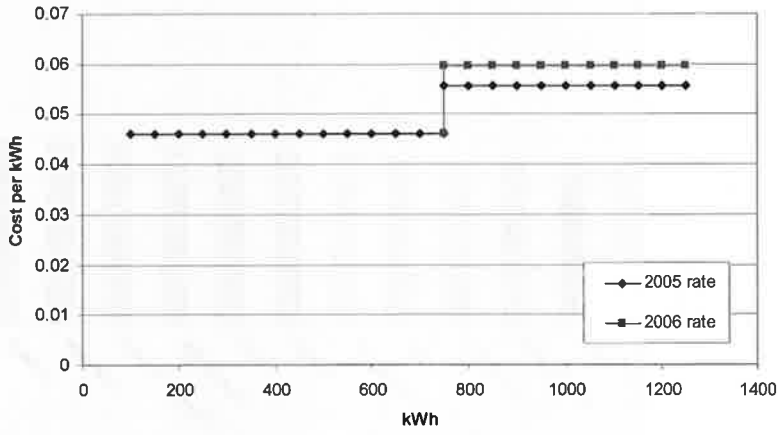
23

Rate Changes by Class

Class	Customer Charge	Energy (Lower tier) 750 kWh & Lower	Energy (Higher tier) 750 kWh & Higher	Demand
Residential (750 kWh tier)	✓	no change	✓	
General Service Non-Demand (1,500 kWh tier)	✓	no change	✓	
General Service Demand	✓	no change		✓
Large Power	✓	no change		✓

24

Residential Electric Cost per kWh
(Non-Fuel Adjustment)



25

Electric Rates - Residential

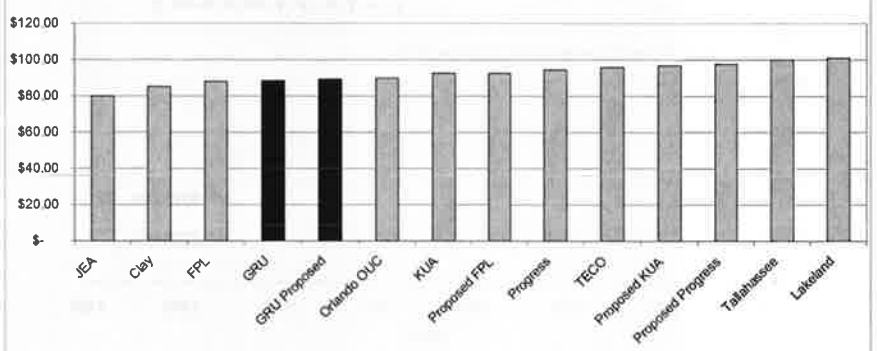
- Customer charge — $4.66 to $4.89 per month
- Energy charge
  - 0 to 750 kWh — No change (4.6¢/kWh)
  - Over 750 kWh — 5.6¢ to 6.0¢/kWh

	2005	2006	$ Increase
750 kWh*	$65.51	$65.74	$0.23
1,000 kWh*	$88.20	$89.40	$1.20

*Assumes 35 mills fuel adjustment

26

Residential Electric Bill Comparison
1000 kWh Consumption



27

Electric Rates – General Service Non-Demand

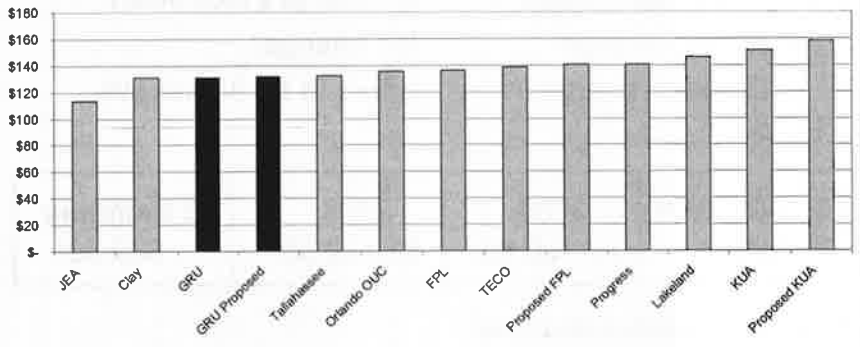
- Customer charge — $8.37 to $8.79 per month
- Energy charge
  - 0 to 1,500 kWh — No change (5.1¢/kWh)
  - Over 1,500 kWh — 5.8¢ to 6.1¢ per kWh

	2005	2006	$ Increase
1500 kWh*	$137.22	$137.64	$0.42
2000 kWh*	$166.07	$168.08	$2.01

*Assumes 35 mills fuel adjustment

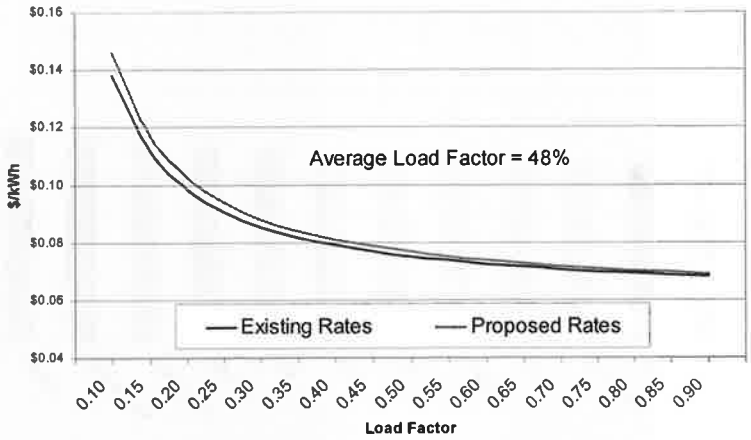
28

General Service Non-Demand Electric Bill Comparison
1,500 kWh Consumption



29

Load Factor Example (GSD)



General service demand price ($/kWh) for customer using 45,000 kWh/month

30

Electric Rates – General Service Demand

- Customer charge — $15.82 to $16.61/mth
- Energy charge — No change
- Demand charge — $5.75 to $6.33 per kW

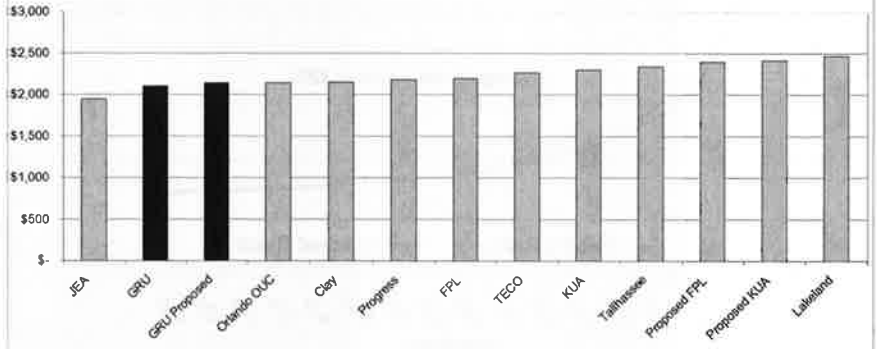
30,000 kWh 75 kW*	2005	2006	$ Increase
	$2,100.36	$2,139.89	$39.53

*Assumes 35 mills fuel adjustment

31

General Service Demand Electric Bill

30,000 kWh Consumption, 75 kW Demand



32

Electric Rates – Large Power

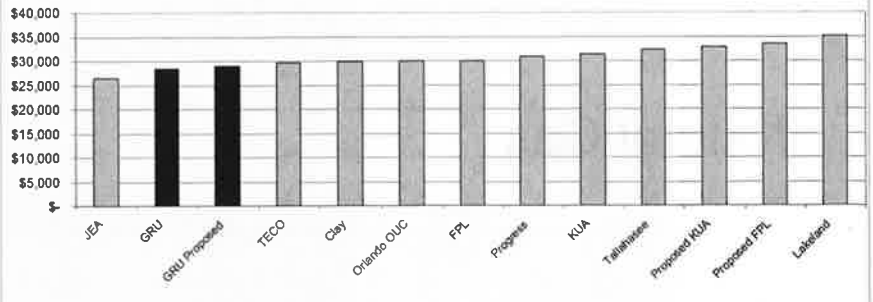
- Customer charge — $60.84 to $63.88/mth
- Energy charge — No change
- Demand charge — $5.25 to $5.85 per kW

430,000 kWh/ 1,000 kW *	2005	2006	$ Increase
	$28,461.78	$28,989.69	$527.91

*Assumes 35 mills fuel adjustment

33

Large Power Service Electric Bill
430,000 kWh Consumption
1,000 kW Demand



34

Monthly Bill for a Residential Customer with Fuel (2006)

	2005	2006	Difference
Electricty (1,000 kWh)*	$88.20	$89.40	$1.20
Water (7,000 gals)	$10.22	$11.31	$1.09
Wastewater (7,000 gals)	$21.64	$24.89	$3.25
Gas (35 therms)	$46.60	$46.60	$0.00
TOTAL	$166.66	$172.20	$5.54

*Assumes 35 mills fuel adjustment

35

Natural Gas

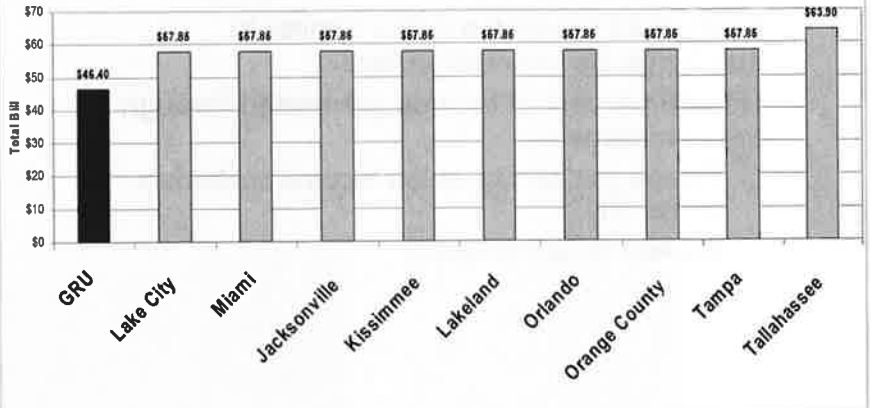
Gas Issues to Consider

- Gas is a more efficient for water heating than electric (about a 25% savings to the customer)
- Gas is a clean, environmentally friendly fuel source
- There are no territorial boundaries for gas (unlike electric)
- Gas is a discretionary service for customers
  - Builders often influence whether a new home will have gas and which appliances will be gas
- There is more aggravation and cost to the customer/builder to get gas (permitting, venting, piping, etc.)
- Additional increase could drive away customers
- Appliance rebates help, but are currently lower than nearby competitor
- Some builders are putting in water heaters only, which makes our revenue requirements harder to achieve

37

Residential Gas Bill Comparison

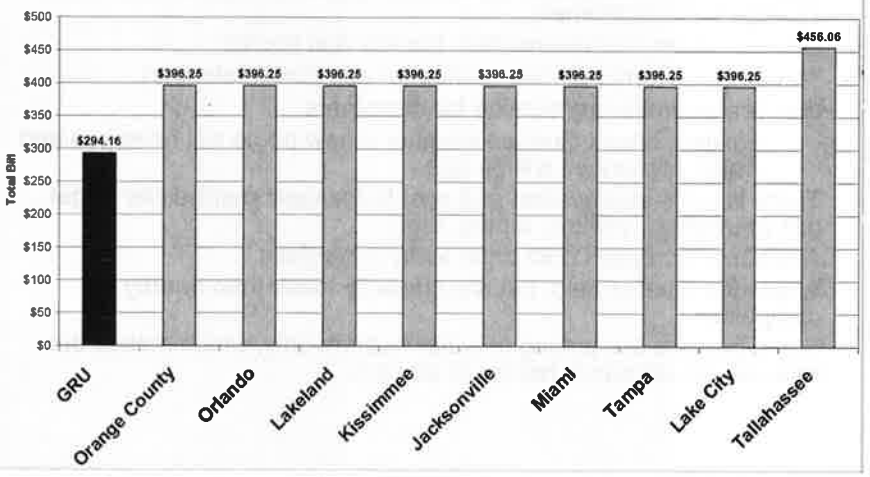
35 therms Consumption
Rates Effective April 2005



38

Commercial Gas Bill Comparison

300 therms Consumption
Rates Effective April 2005



39

Possible Use of Gas Surcharge

- Staff could develop a policy similar to surcharge on connection fees
- Use 50 percent of income generated through the surcharge to
  - Extend gas service to low income customers inside City
  - Expand rebate program

40

Questions?

41

Recommendation

- The City Commission direct the Clerk to advertise and City Attorney to draft ordinances related to water, wastewater and electric rate increases.

with possible change fire hydrants, street lights + natural gas -

CL WS 7-0

42

040841

Lannon, Kurt M.

From: Hirneise, Debra
Sent: Friday, May 13, 2005 2:41 PM
To: Lannon, Kurt M.
Cc: citycomm
Subject: Proposed Dates for GRU Future Energy Needs Workshops

Kurt,

As we discussed, I identified weekly meetings for the GRU Future Energy Needs Workshops beginning after the May 23 City Commission meeting and omitting the week of May 30. Generally, these meetings are scheduled on **Tuesdays at 6pm** and any exceptions are noted. The Auditorium has been reserved for all of these meetings.

Wednesday, June 8 (Charter Review Commission Public Meeting on Tuesday) (FYI - C/Nielsen is out this week)
Tuesday, June 14
Tuesday, June 21 (mk out)
Tuesday, June 28
Tuesday, July 5 (day after Holiday - July 6?)
Tuesday, July 12, 7pm (budget July 12, 3-6pm and July 13, 6pm)
Wednesday, July 20 (budget July 18 & 19 at 6pm)
Tuesday, July 26 (mk out)
Wednesday, August 3, 6:30pm (Black on Black Task Force) and (National Night Out on Tuesday, Aug. 2nd)
Tuesday, August 9
Tuesday, August 16
Tuesday, August 23
Tuesday, August 30

Debra Hirneise
Executive Assistant to the City Commission

RESPONSE TO REMAINING ALACHUA COUNTY ISSUES OF CONCERN RELATED TO GAINESVILLE'S LONG TERM PLAN TO MEET FUTURE ELECTRICAL NEEDS

Gainesville Regional Utilities
January 31, 2005

BACKGROUND

The Alachua County Board of County Commissioners (BoCC) has formally requested that the City Commission address the ten issues listed below. They have also requested that they be addressed before proceeding with the next stage of the planning process for Gainesville's long term plan for future electrical supplies. Further, the BoCC also requests that GRU Continue to keep County staff and EPAC involved in the planning process for any new facilities. Four of the issues (items 1-4 below) were identified by County staff at the January 11, 2005 BoCC meeting. The remaining six issues (items 5-10 below) were identified by the Alachua County Environmental Protection Advisory Committee (EPAC) at the January 25 BoCC meeting.

The issues were conveyed to the City Commission by the Chair of the BoCC and are repeated below in bold face font. Staff's responses immediately follow each issue, in italics. References cited in these responses refer to a document previously provided to the BoCC and City Commission that provides additional technical information and background for the responses provided here.

FUTURE INVOLVEMENT

GRU wishes to express its appreciation to the members of County staff and EPAC who have spent countless hours and meetings discussing the many issues and dimensions of meeting Gainesville's future needs for electrical supplies. GRU is committed to continuing this involvement and dialog.

ISSUES AND RESPONSES

1. Very short term (<24 hour) modeling for fine particulates (PM 2.5) and a more thorough evaluation of potential health impacts of these fine particulates should be performed by GRU.

Alachua County has good air quality, and the City's existing coal, gas, and oil fired generation facilities at Deerhaven are not adversely affecting our community's health or quality of life. Nonetheless, the proposed plan voluntarily includes additional emission controls for existing facilities, taking advantage of fuel and other cost savings to allow additional emission controls to be affordable at this time.

Studies performed to date indicate that additional capacity in the form of a 220 net megawatt (MW) circulating fluidized bed (CFB) unit could be a good fit with Gainesville's needs. CFB is a proven, clean technology that would allow for the cost-effective use of biomass and excellent fuel mix flexibility. If the final plan were to include a unit of this size, studies indicate that substantial net reductions in air emissions would be obtained. These include a 60% net reduction in sulfur dioxide emissions, a 63% net reduction of NOx emissions, a 70% net reduction of mercury emissions, a net reduction of fine particulates ($PM_{2.5}$), and a net reduction of total particulates (PM_{10}) in excess of 700 tons per year when reduced emissions from open burning of waste wood are taken into account.

24-hour ambient air quality studies have been prepared to identify the areas with the maximum effect from GRU's power plant operations. Even under the worst case conditions, modeling results for these areas have shown that GRU contributes less than 3% of the ambient air quality standards (Reference Page B-14). Staff has queried local, state and federal environmental protection agencies as well as members of EPAC and as yet has not been able to find a credible model with which to evaluate any potential health effects at these low levels.

Modeling results are useful only to the extent that they can be compared to standards or background conditions. Given the expected reduction of PM2.5 in the ambient environment, the lack of any ambient background data or standards with which to compare, and the preliminary nature of the proposed plan at this point in time, GRU staff does not believe it would be beneficial to model PM2.5 results for averaging periods less than 24 hours at this time.

2. A higher total carbon offset target should be established by GRU since some of the carbon offset credits previously claimed by GRU (e.g. the Landfill Gas to Energy Plant) are not sustainable and the magnitude of new greenhouse gas emissions is significant.

GRU's intent with respect to managing its existing portfolio of greenhouse gas reductions has apparently not been made clear, and wishes to clarify its intent. GRU has set a carbon reduction target of approximately 714,000 tons of CO2 per year (t-CO2/yr). About 255,000 t-CO2/yr is expected to be met from existing GRU operations and conservation programs with the remaining 459,000 t-CO2/yr to be obtained through the proposed $7,000,000 Greenhouse Gas Fund

(Reference Section E). GRU recognizes that some of the current 255,000 t-CO2/yr carbon offsets (such as from the Landfill Gas to Energy Plant) from its operations may have anticipated life spans less than that of the facility identified through the planning process to date. This is one of the reasons why GRU tracks the useful life of the conservation measures it has caused to be installed and does not claim credits beyond their projected useful lives (this has been discussed as "vintaging" in public meetings).

It is GRU's intent to maintain and increase greenhouse gas reductions from its operations through additional conservation programs, potentially moving its landfill gas facilities to other landfill sites in the region, the use of carbon neutral fuels, and other operational changes through time based on available opportunities as they emerge.

3. Additional data is needed on the estimated metals emissions and fugitive particulate emissions from the new coal plant and the magnitude of reclaimed water usage impacts.

GRU is committed to preparing these types of analysis, however additional detailed analysis would not be beneficial at this point in the planning process (Reference Page B-13 and B-2). The outcome of an analysis of trace metals emissions and fugitive dust depends upon detailed consideration of the boiler design, emission control processes, the layout and types of fuel handling facilities, and better definition of fuel sources. None of these decisions have been made yet.

An estimate of reclaimed water use had not been previously made public for a 220 net MW CFB through GRU's inadvertent omission. The current estimate is 1.8 million gallons per day. The determination of the source of this water (Kanapaha or Main Street Water Reclamation Facilities) is pending further conceptual design and discussions with the water management districts.

4. Plans for a new coal fired power plant need to be linked to a more definitive commitment from GRU to implement best available control technologies to achieve the maximum reduction of mercury emissions.

GRU proposes to meet the regulatory standard known as the Maximum Available Control Technology (MACT) for mercury which is a standard set by the USEPA for the limits of technically feasible reductions.

5. Off-System Sales -The GRU plan requires that both large base generators be used continuously generating far more energy than is needed in the local service area, which requires off system sale of excess energy. EPAC recommends a public discussion of the facts, policy implications, and the health and financial risks of these sales.

GRU agrees that this is an important issue worthy of public discussion. There will be excess base load capacity for a few years following construction of a new unit. No technology selections were made with any financial consideration of any form of sales other than to serve local customers, including the City of Alachua. All of the emission studies performed to date have assumed that the proposed and existing facilities were operated at their maximum capacities, regardless of for whom the electricity was being produced. The ability to obtain revenues from excess capacity has been publicly discussed at several City Commission meetings and in numerous other community meetings. This topic was addressed in explicit detail in presentations before the Gainesville City Commission and publicly discussed on March 22, 2004 and November 15, 2004.

6. Lack of Real Alternatives – GRU's solid fuel proposal was compared with two expensive alternatives as a means of demonstrating the superiority of the GRU plan. EPAC recommends no decision be made until alternative plans responsive to the express desires of the public are developed and compared to GRU's favored proposal. These plans must incorporate extensive use of renewable fuels, extensive conservation measures and avoidance of coal.

Alternatives considered in the development of this plan included renewable energy, especially solar and biomass, and a wide range of alternatives for using conventional fuels, including both re-powering existing units and additional new units. Not only were a wide range of technologies considered, but a wide range of sizes were considered. Three alternative plans to meet future capacity needs through 2023 were developed for detailed financial and environmental comparisons as follows:

1. *No-build ("renting" capacity from the open market);*
2. *Natural gas fired capacity (240 MW combined cycle); and*
3. *Solid fuel fired capacity (220 MW CFB).*

The natural gas fired alternative was the least cost natural gas plan developed upon the recommendation of an independent review performed at GRU's request by a nationally recognized consulting firm with extensive experience in the power industry (R.W. Beck). The solid fuel fired capacity alternative was the one selected for additional evaluation by the City Commission on February 9, 2004.

GRU is committed to continue examining additional energy conservation and renewable energy as the long term plan is further developed. Coal and petroleum coke are an important part of the proposed plan as the cost savings they provide make other features of the plan, such as overall net emission reductions, affordable, as well as other benefits related to fuel supply reliability.

7. Biomass Alternative – EPAC recommends that GRU develop a realistic biomass alternative taking into consideration the many advantages of biomass and its own consultant's technology recommendations.

The biomass element of the proposed plan includes 30 MW from forest waste wood. This proposal was made after careful consideration of the resource and technology studies commissioned by GRU, as well as discussions and a workshop held with representatives of the north central Florida forestry industry. Co-firing with other fuels enables a better heat rate to be obtained, lower capital costs, and avoids the risk of stranded assets should biomass not be available. The uncertainty of the delivered cost of processed biomass, potential seasonality, and existing and future competition for forest waste products as fuel, has resulted in the current estimate of sustainable, reasonably priced biomass. GRU intends to further explore options to position its facilities to take greater advantage of this resource if it is shown to have a higher availability than currently expected.

8. GRU should re-evaluate Conservation and Demand Side Management using a range of evaluation methods and alternative conservation schemes.

GRU intends to periodically re-examine and re-evaluate its conservation plans to accommodate changing technologies, energy prices, and consumer trends. The six new conservation rebate programs and on-going pilot study for a duct leak repair program are an example of GRU's commitment. As a result of GRU's recent request for innovative demand side management programs, studies are underway to develop: a) a better program to deliver low income weatherization program through inter-agency co-ordination and b) an innovative program to improve commercial HVAC efficiency. GRU's planning criteria for conservation program design is the rate impact measure (RIM) test, the proposed Greenhouse Gas Fund is designed to allow consideration of other planning criteria (Reference Section E).

9. As both the City of Gainesville and Alachua County are members of the Cities for Climate Protection Campaign, GRU should focus on minimizing greenhouse gas emissions from all utility operations.

GRU has already committed substantial resources towards minimizing greenhouse gas emissions from its operations as discussed under issue #2 above. GRU's proposed renewable and conservation plan, coupled with existing carbon offsets, will result in a 14% carbon intensity reduction from 2003 levels for electrical production by 2012. The Greenhouse Gas Fund proposal widens the range of potential carbon reduction projects to include transportation, manufacturing, and agricultural sectors of our local economy (Reference Section E). The proposed funds will be an important aspect of the City's participation in

the Cities for Climate Protection program. If the proposed Greenhouse Gas Fund is able to obtain its target of 460,000 t-CO2/yr local carbon reductions, GRU's carbon intensity for electrical production will be reduced by 32% from 2003 levels by 2012.

10. Our community faces an energy future radically different from anything in our past. EPAC recommends that GRU and our community develop a plan for completing the transition to a renewable energy future.

The proposed goal of meeting 10% of electrical demand with renewable energy and conservation by 2012, in addition to the 5% already achieved, is the most aggressive of any utility in Florida. It was formulated only after extensive benchmarking against utilities nationally recognized for their conservation leadership and after careful study of locally available natural resources. The ability to co-fire biomass with solid fuels in a cost-effective manner makes the proposed goal financially feasible.

REFERENCE

Staff Response to Long term Electrical Supply Plan Questions, Issues, and Recommendations Made in November 2004 to the Gainesville City Commission prepared by Gainesville Regional Utilities, December 2004.

RESPONSE TO REMAINING ALACHUA COUNTY ISSUES OF CONCERN RELATED TO GAINESVILLE'S LONG TERM PLAN TO MEET FUTURE ELECTRICAL NEEDS

Gainesville Regional Utilities
January 31, 2005

BACKGROUND

The Alachua County Board of County Commissioners (BoCC) has formally requested that the City Commission address the ten issues listed below. They have also requested that they be addressed before proceeding with the next stage of the planning process for Gainesville's long term plan for future electrical supplies. Further, the BoCC also requests that GRU Continue to keep County staff and EPAC involved in the planning process for any new facilities. Four of the issues (items 1-4 below) were identified by County staff at the January 11, 2005 BoCC meeting. The remaining six issues (items 5-10 below) were identified by the Alachua County Environmental Protection Advisory Committee (EPAC) at the January 25 BoCC meeting.

The issues were conveyed to the City Commission by the Chair of the BoCC and are repeated below in bold face font. Staff's responses immediately follow each issue, in italics. References cited in these responses refer to a document previously provided to the BoCC and City Commission that provides additional technical information and background for the responses provided here.

FUTURE INVOLVEMENT

GRU wishes to express its appreciation to the members of County staff and EPAC who have spent countless hours and meetings discussing the many issues and dimensions of meeting Gainesville's future needs for electrical supplies. GRU is committed to continuing this involvement and dialog.

ISSUES AND RESPONSES

1. Very short term (<24 hour) modeling for fine particulates (PM 2.5) and a more thorough evaluation of potential health impacts of these fine particulates should be performed by GRU.

Alachua County has good air quality, and the City's existing coal, gas, and oil fired generation facilities at Deerhaven are not adversely affecting our community's health or quality of life. Nonetheless, the proposed plan voluntarily includes additional emission controls for existing facilities, taking advantage of fuel and other cost savings to allow additional emission controls to be affordable at this time.

Studies performed to date indicate that additional capacity in the form of a 220 net megawatt (MW) circulating fluidized bed (CFB) unit could be a good fit with Gainesville's needs. CFB is a proven, clean technology that would allow for the cost-effective use of biomass and excellent fuel mix flexibility. If the final plan were to include a unit of this size, studies indicate that substantial net reductions in air emissions would be obtained. These include a 60% net reduction in sulfur dioxide emissions, a 63% net reduction of NOx emissions, a 70% net reduction of mercury emissions, a net reduction of fine particulates ($PM_{2.5}$), and a net reduction of total particulates (PM_{10}) in excess of 700 tons per year when reduced emissions from open burning of waste wood are taken into account.

24-hour ambient air quality studies have been prepared to identify the areas with the maximum effect from GRU's power plant operations. Even under the worst case conditions, modeling results for these areas have shown that GRU contributes less than 3% of the ambient air quality standards (Reference Page B-14). Staff has queried local, state and federal environmental protection agencies as well as members of EPAC and as yet has not been able to find a credible model with which to evaluate any potential health effects at these low levels.

Modeling results are useful only to the extent that they can be compared to standards or background conditions. Given the expected reduction of PM2.5 in the ambient environment, the lack of any ambient background data or standards with which to compare, and the preliminary nature of the proposed plan at this point in time, GRU staff does not believe it would be beneficial to model PM2.5 results for averaging periods less than 24 hours at this time.

2. A higher total carbon offset target should be established by GRU since some of the carbon offset credits previously claimed by GRU (e.g. the Landfill Gas to Energy Plant) are not sustainable and the magnitude of new greenhouse gas emissions is significant.

GRU's intent with respect to managing its existing portfolio of greenhouse gas reductions has apparently not been made clear, and wishes to clarify its intent. GRU has set a carbon reduction target of approximately 714,000 tons of CO2 per year (t-CO2/yr). About 255,000 t-CO2/yr is expected to be met from existing GRU operations and conservation programs with the remaining 459,000 t-CO2/yr to be obtained through the proposed $7,000,000 Greenhouse Gas Fund

(Reference Section E). GRU recognizes that some of the current 255,000 t-CO2/yr carbon offsets (such as from the Landfill Gas to Energy Plant) from its operations may have anticipated life spans less than that of the facility identified through the planning process to date. This is one of the reasons why GRU tracks the useful life of the conservation measures it has caused to be installed and does not claim credits beyond their projected useful lives (this has been discussed as "vintaging" in public meetings).

It is GRU's intent to maintain and increase greenhouse gas reductions from its operations through additional conservation programs, potentially moving its landfill gas facilities to other landfill sites in the region, the use of carbon neutral fuels, and other operational changes through time based on available opportunities as they emerge.

3. Additional data is needed on the estimated metals emissions and fugitive particulate emissions from the new coal plant and the magnitude of reclaimed water usage impacts.

GRU is committed to preparing these types of analysis, however additional detailed analysis would not be beneficial at this point in the planning process (Reference Page B-13 and B-2). The outcome of an analysis of trace metals emissions and fugitive dust depends upon detailed consideration of the boiler design, emission control processes, the layout and types of fuel handling facilities, and better definition of fuel sources. None of these decisions have been made yet.

An estimate of reclaimed water use had not been previously made public for a 220 net MW CFB through GRU's inadvertent omission. The current estimate is 1.8 million gallons per day. The determination of the source of this water (Kanapaha or Main Street Water Reclamation Facilities) is pending further conceptual design and discussions with the water management districts.

4. Plans for a new coal fired power plant need to be linked to a more definitive commitment from GRU to implement best available control technologies to achieve the maximum reduction of mercury emissions.

GRU proposes to meet the regulatory standard known as the Maximum Available Control Technology (MACT) for mercury which is a standard set by the USEPA for the limits of technically feasible reductions.

5. Off-System Sales -The GRU plan requires that both large base generators be used continuously generating far more energy than is needed in the local service area, which requires off system sale of excess energy. EPAC recommends a public discussion of the facts, policy implications, and the health and financial risks of these sales.

GRU agrees that this is an important issue worthy of public discussion. There will be excess base load capacity for a few years following construction of a new unit. No technology selections were made with any financial consideration of any form of sales other than to serve local customers, including the City of Alachua. All of the emission studies performed to date have assumed that the proposed and existing facilities were operated at their maximum capacities, regardless of for whom the electricity was being produced. The ability to obtain revenues from excess capacity has been publicly discussed at several City Commission meetings and in numerous other community meetings. This topic was addressed in explicit detail in presentations before the Gainesville City Commission and publicly discussed on March 22, 2004 and November 15, 2004.

6. Lack of Real Alternatives – GRU's solid fuel proposal was compared with two expensive alternatives as a means of demonstrating the superiority of the GRU plan. EPAC recommends no decision be made until alternative plans responsive to the express desires of the public are developed and compared to GRU's favored proposal. These plans must incorporate extensive use of renewable fuels, extensive conservation measures and avoidance of coal.

Alternatives considered in the development of this plan included renewable energy, especially solar and biomass, and a wide range of alternatives for using conventional fuels, including both re-powering existing units and additional new units. Not only were a wide range of technologies considered, but a wide range of sizes were considered. Three alternative plans to meet future capacity needs through 2023 were developed for detailed financial and environmental comparisons as follows:

1. *No-build ("renting" capacity from the open market);*
2. *Natural gas fired capacity (240 MW combined cycle); and*
3. *Solid fuel fired capacity (220 MW CFB).*

The natural gas fired alternative was the least cost natural gas plan developed upon the recommendation of an independent review performed at GRU's request by a nationally recognized consulting firm with extensive experience in the power industry (R.W. Beck). The solid fuel fired capacity alternative was the one selected for additional evaluation by the City Commission on February 9, 2004.

GRU is committed to continue examining additional energy conservation and renewable energy as the long term plan is further developed. Coal and petroleum coke are an important part of the proposed plan as the cost savings they provide make other features of the plan, such as overall net emission reductions, affordable, as well as other benefits related to fuel supply reliability.

7. Biomass Alternative – EPAC recommends that GRU develop a realistic biomass alternative taking into consideration the many advantages of biomass and its own consultant's technology recommendations.

The biomass element of the proposed plan includes 30 MW from forest waste wood. This proposal was made after careful consideration of the resource and technology studies commissioned by GRU, as well as discussions and a workshop held with representatives of the north central Florida forestry industry. Co-firing with other fuels enables a better heat rate to be obtained, lower capital costs, and avoids the risk of stranded assets should biomass not be available. The uncertainty of the delivered cost of processed biomass, potential seasonality, and existing and future competition for forest waste products as fuel, has resulted in the current estimate of sustainable, reasonably priced biomass. GRU intends to further explore options to position its facilities to take greater advantage of this resource if it is shown to have a higher availability than currently expected.

8. GRU should re-evaluate Conservation and Demand Side Management using a range of evaluation methods and alternative conservation schemes.

GRU intends to periodically re-examine and re-evaluate its conservation plans to accommodate changing technologies, energy prices, and consumer trends. The six new conservation rebate programs and on-going pilot study for a duct leak repair program are an example of GRU's commitment. As a result of GRU's recent request for innovative demand side management programs, studies are underway to develop: a) a better program to deliver low income weatherization program through inter-agency co-ordination and b) an innovative program to improve commercial HVAC efficiency. GRU's planning criteria for conservation program design is the rate impact measure (RIM) test, the proposed Greenhouse Gas Fund is designed to allow consideration of other planning criteria (Reference Section E).

9. As both the City of Gainesville and Alachua County are members of the Cities for Climate Protection Campaign, GRU should focus on minimizing greenhouse gas emissions from all utility operations.

GRU has already committed substantial resources towards minimizing greenhouse gas emissions from its operations as discussed under issue #2 above. GRU's proposed renewable and conservation plan, coupled with existing carbon offsets, will result in a 14% carbon intensity reduction from 2003 levels for electrical production by 2012. The Greenhouse Gas Fund proposal widens the range of potential carbon reduction projects to include transportation, manufacturing, and agricultural sectors of our local economy (Reference Section E). The proposed funds will be an important aspect of the City's participation in

the Cities for Climate Protection program. If the proposed Greenhouse Gas Fund is able to obtain its target of 460,000 t-CO2/yr local carbon reductions, GRU's carbon intensity for electrical production will be reduced by 32% from 2003 levels by 2012.

10. Our community faces an energy future radically different from anything in our past. EPAC recommends that GRU and our community develop a plan for completing the transition to a renewable energy future.

The proposed goal of meeting 10% of electrical demand with renewable energy and conservation by 2012, in addition to the 5% already achieved, is the most aggressive of any utility in Florida. It was formulated only after extensive benchmarking against utilities nationally recognized for their conservation leadership and after careful study of locally available natural resources. The ability to co-fire biomass with solid fuels in a cost-effective manner makes the proposed goal financially feasible.

REFERENCE

Staff Response to Long term Electrical Supply Plan Questions, Issues, and Recommendations Made in November 2004 to the Gainesville City Commission prepared by Gainesville Regional Utilities, December 2004.

1/31/05
Submitted by
WW #040841

RECOMMENDATIONS FOR DEVELOPING A CONCEPTUAL DESIGN

Presentation to the
Gainesville City Commission
January 31, 2005

GRU
More than Energy™

Recommendations

The City Commission approve the following five inter-related elements of a long term plan to meet Gainesville's future electrical supply needs in order to allow staff to develop conceptual designs, as follows:

Recommendations
(Continued)

1. Meet an additional 10% of Gainesville's electrical energy requirements from renewable energy and conservation by 2012 over and above the 5% achieved to date;

Recommendations
(Continued)

2. Institute the proposed Greenhouse Gas Fund to support local projects to reduce carbon dioxide, including a technical advisory committee reporting to the City Commission;

Recommendations
(Continued)

3. Modify existing facilities at the Deerhaven plant site to minimize the emission of SO_2, NO_X, and Particulates, and to meet the Maximum Available Control Technology (MACT) standards for mercury;

Recommendations
(Continued)

4. Add air quality monitoring to better establish baseline ambient air quality conditions related to power generation;

Recommendations

(Continued)

5. Add base load generation capacity designed to:

   i. Meet Best Available Control Technology (BACT) for regulated pollutants and MACT standards for mercury.

   ii. Utilize a mix of relatively abundant solid fuels including coal, petroleum coke, and the equivalent of at least 30 MW of biomass in order to meet the goal in recommendation 1.

Recommendations

(Recommendation 5 Continued)

iii. Produce electricity at a cost expected to be competitive in the retail and wholesale market.

iv. Result in a net improvement of ambient air quality in combination with recommendation 3.

v. Maintain adequate and required capacity reserve margins.

vi. Minimize the effects on surface and ground water supplies.

The Proposed Plan Provides the Following Benefits

- Significantly reduces regulated air emissions and mercury
- Increases energy efficiency and renewable energy commitment to the highest in the state
- Provides a way to implement projects that reduce carbon dioxide
- Ensures a reliable and affordable electric supply
- Adds new jobs to our community

Next Steps

1. Request Proposals for Engineering and Technical Consultants
2. Request Commission Approval of Contracts and Budget
3. Develop Conceptual Designs
4. Bid Conceptual Designs Against Market and Finalize Plan
   - Consider Alternative Technologies
   - Consider Creative Risk Management and Performance Idea

Next Steps
(Continued)

5. Obtain a "Determination of Need" from the Florida Public Service Commission
6. Obtain "Site Certification" from the Governor and Cabinet
   - Extensive Public Participation including Alachua County
7. Obtain Federal and State Environmental Permits
   - Extensive Public Participation

Thank You

RESPONSE TO REMAINING ALACHUA COUNTY ISSUES OF CONCERN RELATED TO GAINESVILLE'S LONG TERM PLAN TO MEET FUTURE ELECTRICAL NEEDS

Gainesville Regional Utilities
January 31, 2005

BACKGROUND

The Alachua County Board of County Commissioners (BoCC) has formally requested that the City Commission address the ten issues listed below. They have also requested that they be addressed before proceeding with the next stage of the planning process for Gainesville's long term plan for future electrical supplies. Further, the BoCC also requests that GRU Continue to keep County staff and EPAC involved in the planning process for any new facilities. Four of the issues (items 1-4 below) were identified by County staff at the January 11, 2005 BoCC meeting. The remaining six issues (items 5-10 below) were identified by the Alachua County Environmental Protection Advisory Committee (EPAC) at the January 25 BoCC meeting.

The issues were conveyed to the City Commission by the Chair of the BoCC and are repeated below in bold face font. Staff's responses immediately follow each issue, in italics. References cited in these responses refer to a document previously provided to the BoCC and City Commission that provides additional technical information and background for the responses provided here.

FUTURE INVOLVEMENT

GRU wishes to express its appreciation to the members of County staff and EPAC who have spent countless hours and meetings discussing the many issues and dimensions of meeting Gainesville's future needs for electrical supplies. GRU is committed to continuing this involvement and dialog.

ISSUES AND RESPONSES

1. Very short term (<24 hour) modeling for fine particulates (PM 2.5) and a more thorough evaluation of potential health impacts of these fine particulates should be performed by GRU.

Alachua County has good air quality, and the City's existing coal, gas, and oil fired generation facilities at Deerhaven are not adversely affecting our community's health or quality of life. Nonetheless, the proposed plan voluntarily includes additional emission controls for existing facilities, taking advantage of fuel and other cost savings to allow additional emission controls to be affordable at this time.

Studies performed to date indicate that additional capacity in the form of a 220 net megawatt (MW) circulating fluidized bed (CFB) unit could be a good fit with Gainesville's needs. CFB is a proven, clean technology that would allow for the cost-effective use of biomass and excellent fuel mix flexibility. If the final plan were to include a unit of this size, studies indicate that substantial net reductions in air emissions would be obtained. These include a 60% net reduction in sulfur dioxide emissions, a 63% net reduction of NOx emissions, a 70% net reduction of mercury emissions, a net reduction of fine particulates ($PM_{2.5}$), and a net reduction of total particulates (PM_{10}) in excess of 700 tons per year when reduced emissions from open burning of waste wood are taken into account.

24-hour ambient air quality studies have been prepared to identify the areas with the maximum effect from GRU's power plant operations. Even under the worst case conditions, modeling results for these areas have shown that GRU contributes less than 3% of the ambient air quality standards (Reference Page B-14). Staff has queried local, state and federal environmental protection agencies as well as members of EPAC and as yet has not been able to find a credible model with which to evaluate any potential health effects at these low levels.

Modeling results are useful only to the extent that they can be compared to standards or background conditions. Given the expected reduction of PM2.5 in the ambient environment, the lack of any ambient background data or standards with which to compare, and the preliminary nature of the proposed plan at this point in time, GRU staff does not believe it would be beneficial to model PM2.5 results for averaging periods less than 24 hours at this time.

2. A higher total carbon offset target should be established by GRU since some of the carbon offset credits previously claimed by GRU (e.g. the Landfill Gas to Energy Plant) are not sustainable and the magnitude of new greenhouse gas emissions is significant.

GRU's intent with respect to managing its existing portfolio of greenhouse gas reductions has apparently not been made clear, and wishes to clarify its intent. GRU has set a carbon reduction target of approximately 714,000 tons of CO2 per year (t-CO2/yr). About 255,000 t-CO2/yr is expected to be met from existing GRU operations and conservation programs with the remaining 459,000 t-CO2/yr to be obtained through the proposed $7,000,000 Greenhouse Gas Fund

(Reference Section E). GRU recognizes that some of the current 255,000 t-CO2/yr carbon offsets (such as from the Landfill Gas to Energy Plant) from its operations may have anticipated life spans less than that of the facility identified through the planning process to date. This is one of the reasons why GRU tracks the useful life of the conservation measures it has caused to be installed and does not claim credits beyond their projected useful lives (this has been discussed as "vintaging" in public meetings).

It is GRU's intent to maintain and increase greenhouse gas reductions from its operations through additional conservation programs, potentially moving its landfill gas facilities to other landfill sites in the region, the use of carbon neutral fuels, and other operational changes through time based on available opportunities as they emerge.

3. Additional data is needed on the estimated metals emissions and fugitive particulate emissions from the new coal plant and the magnitude of reclaimed water usage impacts.

GRU is committed to preparing these types of analysis, however additional detailed analysis would not be beneficial at this point in the planning process (Reference Page B-13 and B-2). The outcome of an analysis of trace metals emissions and fugitive dust depends upon detailed consideration of the boiler design, emission control processes, the layout and types of fuel handling facilities, and better definition of fuel sources. None of these decisions have been made yet.

An estimate of reclaimed water use had not been previously made public for a 220 net MW CFB through GRU's inadvertent omission. The current estimate is 1.8 million gallons per day. The determination of the source of this water (Kanapaha or Main Street Water Reclamation Facilities) is pending further conceptual design and discussions with the water management districts.

4. Plans for a new coal fired power plant need to be linked to a more definitive commitment from GRU to implement best available control technologies to achieve the maximum reduction of mercury emissions.

GRU proposes to meet the regulatory standard known as the Maximum Available Control Technology (MACT) for mercury which is a standard set by the USEPA for the limits of technically feasible reductions.

5. Off-System Sales -The GRU plan requires that both large base generators be used continuously generating far more energy than is needed in the local service area, which requires off system sale of excess energy. EPAC recommends a public discussion of the facts, policy implications, and the health and financial risks of these sales.

GRU agrees that this is an important issue worthy of public discussion. There will be excess base load capacity for a few years following construction of a new unit. No technology selections were made with any financial consideration of any form of sales other than to serve local customers, including the City of Alachua. All of the emission studies performed to date have assumed that the proposed and existing facilities were operated at their maximum capacities, regardless of for whom the electricity was being produced. The ability to obtain revenues from excess capacity has been publicly discussed at several City Commission meetings and in numerous other community meetings. This topic was addressed in explicit detail in presentations before the Gainesville City Commission and publicly discussed on March 22, 2004 and November 15, 2004.

6. Lack of Real Alternatives – GRU's solid fuel proposal was compared with two expensive alternatives as a means of demonstrating the superiority of the GRU plan. EPAC recommends no decision be made until alternative plans responsive to the express desires of the public are developed and compared to GRU's favored proposal. These plans must incorporate extensive use of renewable fuels, extensive conservation measures and avoidance of coal.

Alternatives considered in the development of this plan included renewable energy, especially solar and biomass, and a wide range of alternatives for using conventional fuels, including both re-powering existing units and additional new units. Not only were a wide range of technologies considered, but a wide range of sizes were considered. Three alternative plans to meet future capacity needs through 2023 were developed for detailed financial and environmental comparisons as follows:

1. *No-build ("renting" capacity from the open market);*
2. *Natural gas fired capacity (240 MW combined cycle); and*
3. *Solid fuel fired capacity (220 MW CFB).*

The natural gas fired alternative was the least cost natural gas plan developed upon the recommendation of an independent review performed at GRU's request by a nationally recognized consulting firm with extensive experience in the power industry (R.W. Beck). The solid fuel fired capacity alternative was the one selected for additional evaluation by the City Commission on February 9, 2004.

GRU is committed to continue examining additional energy conservation and renewable energy as the long term plan is further developed. Coal and petroleum coke are an important part of the proposed plan as the cost savings they provide make other features of the plan, such as overall net emission reductions, affordable, as well as other benefits related to fuel supply reliability.

7. Biomass Alternative – EPAC recommends that GRU develop a realistic biomass alternative taking into consideration the many advantages of biomass and its own consultant's technology recommendations.

The biomass element of the proposed plan includes 30 MW from forest waste wood. This proposal was made after careful consideration of the resource and technology studies commissioned by GRU, as well as discussions and a workshop held with representatives of the north central Florida forestry industry. Co-firing with other fuels enables a better heat rate to be obtained, lower capital costs, and avoids the risk of stranded assets should biomass not be available. The uncertainty of the delivered cost of processed biomass, potential seasonality, and existing and future competition for forest waste products as fuel, has resulted in the current estimate of sustainable, reasonably priced biomass. GRU intends to further explore options to position its facilities to take greater advantage of this resource if it is shown to have a higher availability than currently expected.

8. GRU should re-evaluate Conservation and Demand Side Management using a range of evaluation methods and alternative conservation schemes.

GRU intends to periodically re-examine and re-evaluate its conservation plans to accommodate changing technologies, energy prices, and consumer trends. The six new conservation rebate programs and on-going pilot study for a duct leak repair program are an example of GRU's commitment. As a result of GRU's recent request for innovative demand side management programs, studies are underway to develop: a) a better program to deliver low income weatherization program through inter-agency co-ordination and b) an innovative program to improve commercial HVAC efficiency. GRU's planning criteria for conservation program design is the rate impact measure (RIM) test, the proposed Greenhouse Gas Fund is designed to allow consideration of other planning criteria (Reference Section E).

9. As both the City of Gainesville and Alachua County are members of the Cities for Climate Protection Campaign, GRU should focus on minimizing greenhouse gas emissions from all utility operations.

GRU has already committed substantial resources towards minimizing greenhouse gas emissions from its operations as discussed under issue #2 above. GRU's proposed renewable and conservation plan, coupled with existing carbon offsets, will result in a 14% carbon intensity reduction from 2003 levels for electrical production by 2012. The Greenhouse Gas Fund proposal widens the range of potential carbon reduction projects to include transportation, manufacturing, and agricultural sectors of our local economy (Reference Section E). The proposed funds will be an important aspect of the City's participation in

the Cities for Climate Protection program. If the proposed Greenhouse Gas Fund is able to obtain its target of 460,000 t-CO2/yr local carbon reductions, GRU's carbon intensity for electrical production will be reduced by 32% from 2003 levels by 2012.

10. Our community faces an energy future radically different from anything in our past. EPAC recommends that GRU and our community develop a plan for completing the transition to a renewable energy future.

The proposed goal of meeting 10% of electrical demand with renewable energy and conservation by 2012, in addition to the 5% already achieved, is the most aggressive of any utility in Florida. It was formulated only after extensive benchmarking against utilities nationally recognized for their conservation leadership and after careful study of locally available natural resources. The ability to co-fire biomass with solid fuels in a cost-effective manner makes the proposed goal financially feasible.

REFERENCE

Staff Response to Long term Electrical Supply Plan Questions, Issues, and Recommendations Made in November 2004 to the Gainesville City Commission prepared by Gainesville Regional Utilities, December 2004.

CITY COMMISSION SPECIAL MEETING

The following are a summary of phone calls received on the City Commission Hot Line (334-5028) and express the opinion of the caller and/or the group the caller represents. Anonymous calls are not documented. Caller must provide full name for statement to be recorded.

1. (9:55 PM) Dr. Kathy Cantwell (395-7441) As a doctor, she is extremely concerned about the amount of mercury put out by a coal burning plant. According to the EPA, one out of six women of child-bearing age carry mercury that can affect an unborn child. Please think about this.
2. (PM)
3. (PM)
4. (PM)
5. (PM)
6. (PM)

E-MAIL MESSAGES:

See Attached

Meeting Adjourned:
Hot Line Operator: Merlyn R. Crews

RESPONSE TO REMAINING ALACHUA COUNTY ISSUES OF CONCERN RELATED TO GAINESVILLE'S LONG TERM PLAN TO MEET FUTURE ELECTRICAL NEEDS

Gainesville Regional Utilities
January 31, 2005

BACKGROUND

The Alachua County Board of County Commissioners (BoCC) has formally requested that the City Commission address the ten issues listed below. They have also requested that they be addressed before proceeding with the next stage of the planning process for Gainesville's long term plan for future electrical supplies. Further, the BoCC also requests that GRU Continue to keep County staff and EPAC involved in the planning process for any new facilities. Four of the issues (items 1-4 below) were identified by County staff at the January 11, 2005 BoCC meeting. The remaining six issues (items 5-10 below) were identified by the Alachua County Environmental Protection Advisory Committee (EPAC) at the January 25 BoCC meeting.

The issues were conveyed to the City Commission by the Chair of the BoCC and are repeated below in bold face font. Staff's responses immediately follow each issue, in italics. References cited in these responses refer to a document previously provided to the BoCC and City Commission that provides additional technical information and background for the responses provided here.

FUTURE INVOLVEMENT

GRU wishes to express its appreciation to the members of County staff and EPAC who have spent countless hours and meetings discussing the many issues and dimensions of meeting Gainesville's future needs for electrical supplies. GRU is committed to continuing this involvement and dialog.

ISSUES AND RESPONSES

1. Very short term (<24 hour) modeling for fine particulates (PM 2.5) and a more thorough evaluation of potential health impacts of these fine particulates should be performed by GRU.

Alachua County has good air quality, and the City's existing coal, gas, and oil fired generation facilities at Deerhaven are not adversely affecting our community's health or quality of life. Nonetheless, the proposed plan voluntarily includes additional emission controls for existing facilities, taking advantage of fuel and other cost savings to allow additional emission controls to be affordable at this time.

Studies performed to date indicate that additional capacity in the form of a 220 net megawatt (MW) circulating fluidized bed (CFB) unit could be a good fit with Gainesville's needs. CFB is a proven, clean technology that would allow for the cost-effective use of biomass and excellent fuel mix flexibility. If the final plan were to include a unit of this size, studies indicate that substantial net reductions in air emissions would be obtained. These include a 60% net reduction in sulfur dioxide emissions, a 63% net reduction of NOx emissions, a 70% net reduction of mercury emissions, a net reduction of fine particulates ($PM_{2.5}$), and a net reduction of total particulates (PM_{10}) in excess of 700 tons per year when reduced emissions from open burning of waste wood are taken into account.

24-hour ambient air quality studies have been prepared to identify the areas with the maximum effect from GRU's power plant operations. Even under the worst case conditions, modeling results for these areas have shown that GRU contributes less than 3% of the ambient air quality standards (Reference Page B-14). Staff has queried local, state and federal environmental protection agencies as well as members of EPAC and as yet has not been able to find a credible model with which to evaluate any potential health effects at these low levels.

Modeling results are useful only to the extent that they can be compared to standards or background conditions. Given the expected reduction of PM2.5 in the ambient environment, the lack of any ambient background data or standards with which to compare, and the preliminary nature of the proposed plan at this point in time, GRU staff does not believe it would be beneficial to model PM2.5 results for averaging periods less than 24 hours at this time.

2. A higher total carbon offset target should be established by GRU since some of the carbon offset credits previously claimed by GRU (e.g. the Landfill Gas to Energy Plant) are not sustainable and the magnitude of new greenhouse gas emissions is significant.

GRU's intent with respect to managing its existing portfolio of greenhouse gas reductions has apparently not been made clear, and wishes to clarify its intent. GRU has set a carbon reduction target of approximately 714,000 tons of CO2 per year (t-CO2/yr). About 255,000 t-CO2/yr is expected to be met from existing GRU operations and conservation programs with the remaining 459,000 t-CO2/yr to be obtained through the proposed $7,000,000 Greenhouse Gas Fund

(Reference Section E). GRU recognizes that some of the current 255,000 t-CO2/yr carbon offsets (such as from the Landfill Gas to Energy Plant) from its operations may have anticipated life spans less than that of the facility identified through the planning process to date. This is one of the reasons why GRU tracks the useful life of the conservation measures it has caused to be installed and does not claim credits beyond their projected useful lives (this has been discussed as "vintaging" in public meetings).

It is GRU's intent to maintain and increase greenhouse gas reductions from its operations through additional conservation programs, potentially moving its landfill gas facilities to other landfill sites in the region, the use of carbon neutral fuels, and other operational changes through time based on available opportunities as they emerge.

3. Additional data is needed on the estimated metals emissions and fugitive particulate emissions from the new coal plant and the magnitude of reclaimed water usage impacts.

GRU is committed to preparing these types of analysis, however additional detailed analysis would not be beneficial at this point in the planning process (Reference Page B-13 and B-2). The outcome of an analysis of trace metals emissions and fugitive dust depends upon detailed consideration of the boiler design, emission control processes, the layout and types of fuel handling facilities, and better definition of fuel sources. None of these decisions have been made yet.

An estimate of reclaimed water use had not been previously made public for a 220 net MW CFB through GRU's inadvertent omission. The current estimate is 1.8 million gallons per day. The determination of the source of this water (Kanapaha or Main Street Water Reclamation Facilities) is pending further conceptual design and discussions with the water management districts.

4. Plans for a new coal fired power plant need to be linked to a more definitive commitment from GRU to implement best available control technologies to achieve the maximum reduction of mercury emissions.

GRU proposes to meet the regulatory standard known as the Maximum Available Control Technology (MACT) for mercury which is a standard set by the USEPA for the limits of technically feasible reductions.

5. Off-System Sales -The GRU plan requires that both large base generators be used continuously generating far more energy than is needed in the local service area, which requires off system sale of excess energy. EPAC recommends a public discussion of the facts, policy implications, and the health and financial risks of these sales.

GRU agrees that this is an important issue worthy of public discussion. There will be excess base load capacity for a few years following construction of a new unit. No technology selections were made with any financial consideration of any form of sales other than to serve local customers, including the City of Alachua. All of the emission studies performed to date have assumed that the proposed and existing facilities were operated at their maximum capacities, regardless of for whom the electricity was being produced. The ability to obtain revenues from excess capacity has been publicly discussed at several City Commission meetings and in numerous other community meetings. This topic was addressed in explicit detail in presentations before the Gainesville City Commission and publicly discussed on March 22, 2004 and November 15, 2004.

6. Lack of Real Alternatives – GRU's solid fuel proposal was compared with two expensive alternatives as a means of demonstrating the superiority of the GRU plan. EPAC recommends no decision be made until alternative plans responsive to the express desires of the public are developed and compared to GRU's favored proposal. These plans must incorporate extensive use of renewable fuels, extensive conservation measures and avoidance of coal.

Alternatives considered in the development of this plan included renewable energy, especially solar and biomass, and a wide range of alternatives for using conventional fuels, including both re-powering existing units and additional new units. Not only were a wide range of technologies considered, but a wide range of sizes were considered. Three alternative plans to meet future capacity needs through 2023 were developed for detailed financial and environmental comparisons as follows:

1. *No-build ("renting" capacity from the open market);*
2. *Natural gas fired capacity (240 MW combined cycle); and*
3. *Solid fuel fired capacity (220 MW CFB).*

The natural gas fired alternative was the least cost natural gas plan developed upon the recommendation of an independent review performed at GRU's request by a nationally recognized consulting firm with extensive experience in the power industry (R.W. Beck). The solid fuel fired capacity alternative was the one selected for additional evaluation by the City Commission on February 9, 2004.

GRU is committed to continue examining additional energy conservation and renewable energy as the long term plan is further developed. Coal and petroleum coke are an important part of the proposed plan as the cost savings they provide make other features of the plan, such as overall net emission reductions, affordable, as well as other benefits related to fuel supply reliability.

7. Biomass Alternative – EPAC recommends that GRU develop a realistic biomass alternative taking into consideration the many advantages of biomass and its own consultant's technology recommendations.

The biomass element of the proposed plan includes 30 MW from forest waste wood. This proposal was made after careful consideration of the resource and technology studies commissioned by GRU, as well as discussions and a workshop held with representatives of the north central Florida forestry industry. Co-firing with other fuels enables a better heat rate to be obtained, lower capital costs, and avoids the risk of stranded assets should biomass not be available. The uncertainty of the delivered cost of processed biomass, potential seasonality, and existing and future competition for forest waste products as fuel, has resulted in the current estimate of sustainable, reasonably priced biomass. GRU intends to further explore options to position its facilities to take greater advantage of this resource if it is shown to have a higher availability than currently expected.

8. GRU should re-evaluate Conservation and Demand Side Management using a range of evaluation methods and alternative conservation schemes.

GRU intends to periodically re-examine and re-evaluate its conservation plans to accommodate changing technologies, energy prices, and consumer trends. The six new conservation rebate programs and on-going pilot study for a duct leak repair program are an example of GRU's commitment. As a result of GRU's recent request for innovative demand side management programs, studies are underway to develop: a) a better program to deliver low income weatherization program through inter-agency co-ordination and b) an innovative program to improve commercial HVAC efficiency. GRU's planning criteria for conservation program design is the rate impact measure (RIM) test, the proposed Greenhouse Gas Fund is designed to allow consideration of other planning criteria (Reference Section E).

9. As both the City of Gainesville and Alachua County are members of the Cities for Climate Protection Campaign, GRU should focus on minimizing greenhouse gas emissions from all utility operations.

GRU has already committed substantial resources towards minimizing greenhouse gas emissions from its operations as discussed under issue #2 above. GRU's proposed renewable and conservation plan, coupled with existing carbon offsets, will result in a 14% carbon intensity reduction from 2003 levels for electrical production by 2012. The Greenhouse Gas Fund proposal widens the range of potential carbon reduction projects to include transportation, manufacturing, and agricultural sectors of our local economy (Reference Section E). The proposed funds will be an important aspect of the City's participation in

the Cities for Climate Protection program. If the proposed Greenhouse Gas Fund is able to obtain its target of 460,000 t-CO2/yr local carbon reductions, GRU's carbon intensity for electrical production will be reduced by 32% from 2003 levels by 2012.

10. Our community faces an energy future radically different from anything in our past. EPAC recommends that GRU and our community develop a plan for completing the transition to a renewable energy future.

The proposed goal of meeting 10% of electrical demand with renewable energy and conservation by 2012, in addition to the 5% already achieved, is the most aggressive of any utility in Florida. It was formulated only after extensive benchmarking against utilities nationally recognized for their conservation leadership and after careful study of locally available natural resources. The ability to co-fire biomass with solid fuels in a cost-effective manner makes the proposed goal financially feasible.

REFERENCE

Staff Response to Long term Electrical Supply Plan Questions, Issues, and Recommendations Made in November 2004 to the Gainesville City Commission prepared by Gainesville Regional Utilities, December 2004.

GRU
More than Energy

Our Environment

As a local, community-owned utility, we are committed to environmental stewardship

We offer the following commitments to our community:

- We will operate our utility systems in an environmentally responsible manner
- We will adhere to environmental laws, regulations and standards
- We will promote the wise use of energy and water
- We will communicate in a timely and effective manner with our customers and community about environmental issues

To learn more about our environmental efforts, please make a selection from the menu on the left of your screen.

6/14/05
040841

SCOPE OF SERVICES DRAFT
FOR INDEPENDENT CONSULTATION
ON OPTIONS FOR MEETING THE LONG TERM ELECTRICAL SUPPLY
FOR THE GAINESVILLE COMMUNITY

MY PREFERENCES FOR THE RFP

1. Change the title/heading to wording as given above.

2. Under "Background," delete the description of the history of the current proposal. Replace it with a description of our community's socio-economic demographics, uses of electric power, and fundamental goals relevant to energy demand and supply goals.

3. Under "Objectives," note that a proposed plan has been developed (put the above deleted summary of the plan in an appendix) and then present the following two questions as the guiding questions of our query:

a) Are there better goals toward which we should plan than our current goals?
b) Is there a better plan than the one proposed to reach our goals or better goals?

4. Under "Objectives," do not make it a requirement that analysis be done "against commonly recognized prudent utility practices," but rather encourage regular reference to such standard practices and indicate where analysis and recommendations are consistent with or contrary to recognized standards.

5. Under "Qualified Reviewers," delete qualification #1 and replace it with "Will have professional qualifications relevant to the analysis of issues regarding power production, utility planning, utility regulation, future pricing of energy producing technologies and fuels, changes in the pollution control regulations, practices for reducing demand through conservation and efficiency, pollution control and health concerns."

6. Under "Project Schedule and Deliverables," delete the current requirements and replace them as follows:

a) The city commission will hire up to four independent consultants
b) Each consultant will draft an individual report in response to our two primary questions and submit them for review the City Commission and GRU.
c) The City Commissioners and GRU will review the drafts and return written comments and questions to the writer for further analysis if necessary.
d) Each consultant will finalize his/her report and resubmit it to the City Commission and GRU, as well as to the other consultants.
e) Each consultant will make a presentation based on his/her report to the City Commission and GRU, whereafter the City Commission, in consultation with GRU and the public, will move to a decision.

Jack Donovan

#040841 submitted 5/12/05

LONG TERM ELECTRICAL SUPPLY PLAN MARCH 7, 2005 RECOMMENDATIONS

1. CONSERVATION AND RENEWABLE ENERGY

Meet an additional 10% of Gainesville's electrical energy requirements from renewable energy and conservation by 2012 over and above the 5% achieved to date;

2. GREEN HOUSE GASES

Institute the proposed Greenhouse Gas Fund to support local projects to reduce carbon dioxide, including a technical advisory committee reporting to the City Commission;

3. ADDITIONAL EMISSION CONTROLS

Modify existing facilities at the Deerhaven plant site to minimize the emission of SO2, NOX, and Particulates, and to meet the Maximum Available Control Technology (MACT) standards for mercury;

4. AIR QUALITY MONITORING

Add air quality monitoring to better establish baseline ambient air quality conditions related to power generation;

5. ADDITIONAL BASE LOAD GENERATION

Add base load generation capacity designed to:

i. Meet Best Available Control Technology (BACT) for regulated pollutants and MACT standards for mercury.

ii. Utilize a mix of relatively abundant solid fuels including coal, petroleum coke, and the equivalent of at least 30 MW of biomass in order to meet the goal in recommendation 1.

iii. Produce electricity at a cost expected to be competitive in the retail and wholesale market.

iv. Result in a net improvement of ambient air quality in combination with recommendation 3.

v. Maintain adequate and required capacity reserve margins.

vi. Minimize the effects on surface and ground water supplies.

COMMON THEMES

- Independent Review
- More Conservation
- More Renewable Energy
- Affordability

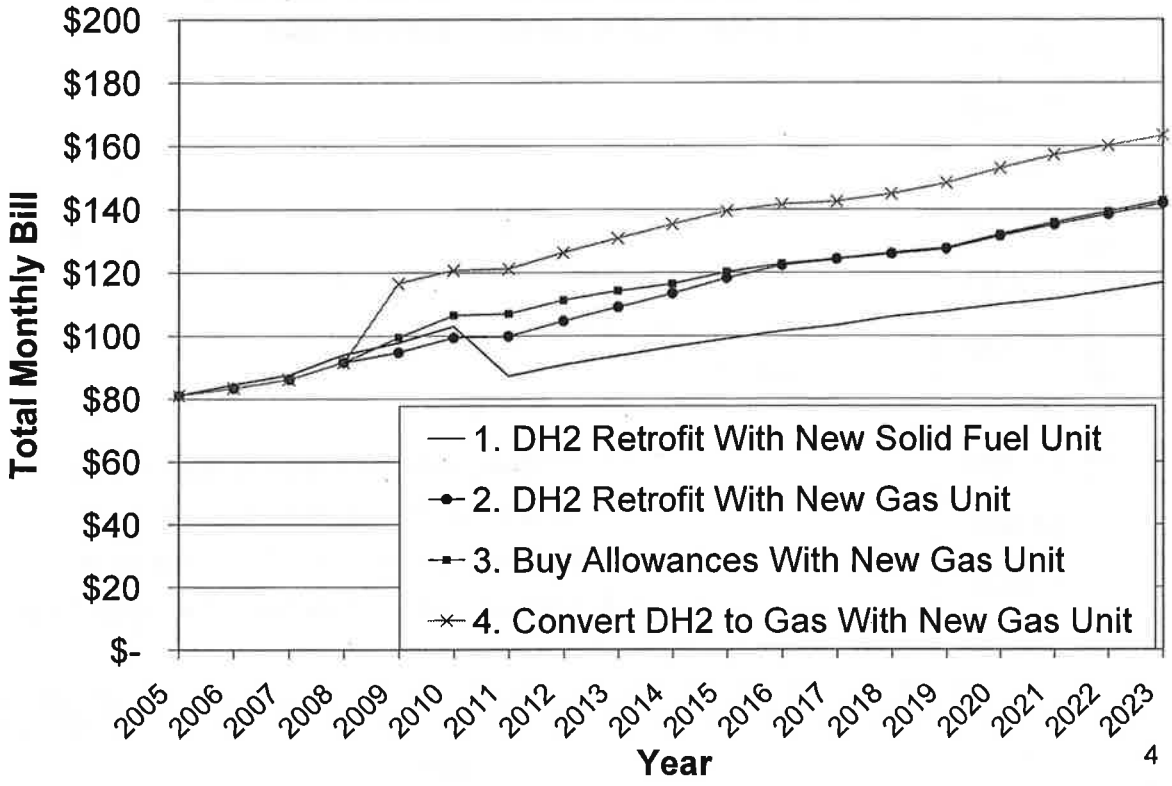
The Cost To Comply Depends On The Long Term Energy Plan

($ X 1,000,000 in 2011)

OPTION	CAPITAL COST
Retrofit By Itself	$90
Retrofit As Part Of Solid Fuel Option	$76
Difference	$14

Typical Monthly Residential Bill (1000 kWh)

2005 to 2023



Future Price Increases

Typical Monthly Residential Bill (1000 kWh)

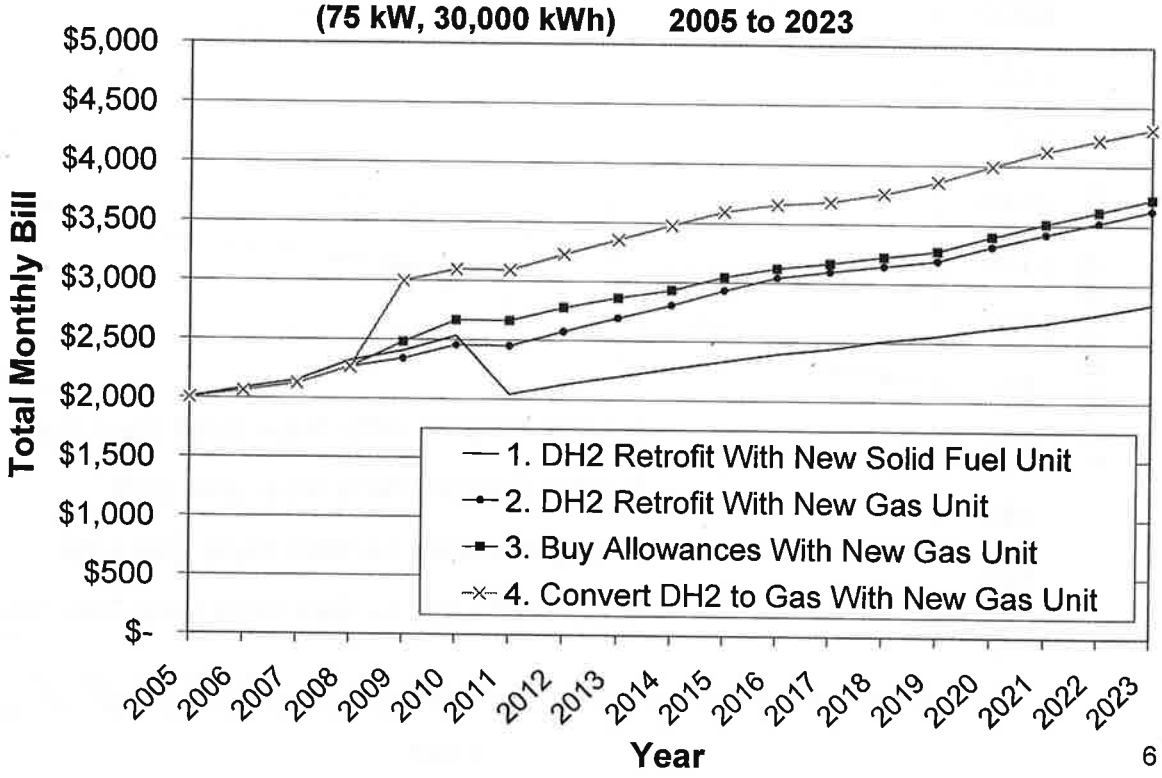
Compliance/Additional Capacity Plan	2023 Price
1. DH2 Retrofit With New Solid Fuel Unit	$ 113.47
2. DH2 Retrofit With New Gas Unit	$ 139.20
3. Buy Allowances With New Gas Unit	$ 140.10
4. Convert DH2 to Gas With New Gas Unit	$ 160.51

Current Price $81.04

Typical Monthly Commercial Bill

Small Grocery Store, Church, School

(75 kW, 30,000 kWh) 2005 to 2023



Future Price Increases

Typical Monthly Bill for Small Grocery Store, Church or School

(30,000 kWh, 75kW)

Compliance/Additional Capacity Plan	2023 Price
1. DH2 Retrofit With New Solid Fuel Unit	$ 2,731.10
2. DH2 Retrofit With New Gas Unit	$ 3,545.22
3. Buy Allowances With New Gas Unit	$ 3,641.09
4. Convert DH2 to Gas With New Gas Unit	$ 4,225.23

Current Price $2,002.30

#040841
3/7/05

PROJECT TIMELINE

	Duration
Select Consultants	3 - 4 Months
Develop Conceptual Designs	12 - 16 Months
Bid Against "Self Build" And Finalize Design	12 - 18 Months
Obtain Need And Site Certification	16 - 25 Months
TOTAL DURATION BEFORE START OF CONSTRUCTION	43 - 63 Months (3.6 - 5.3 Years)