

Community Dialogue Part II: Powering Our Future

**Meeting Gainesville's
Future Electricity Needs**

**Sponsored by the
Gainesville Energy Advisory
Committee**

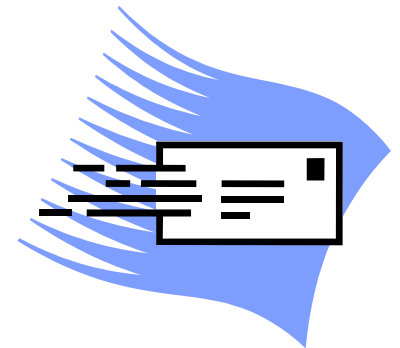


Agenda

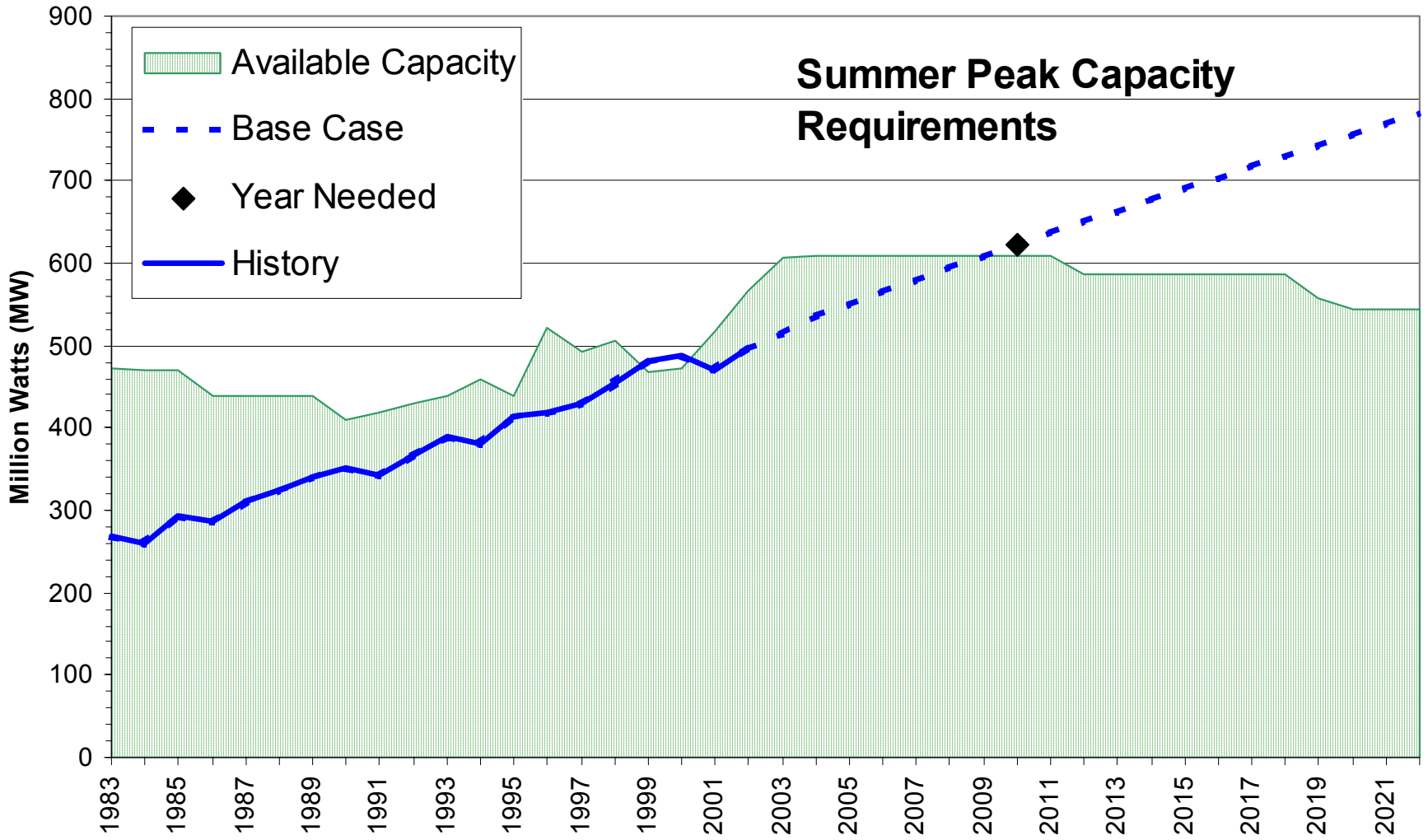
- **Introduction and Review** (10 min.)
- **Reduce Use** (20 min.)
- **Increase Generation** (25 min.)
- **Evaluations** (15 min.)
- **Questions and Answers** (30 min.)
- **Small Group Discussion** (20 min.)
- **Small Group Reports** (20 min.)
- **Next Steps** (5 min.)

Community Outreach Efforts

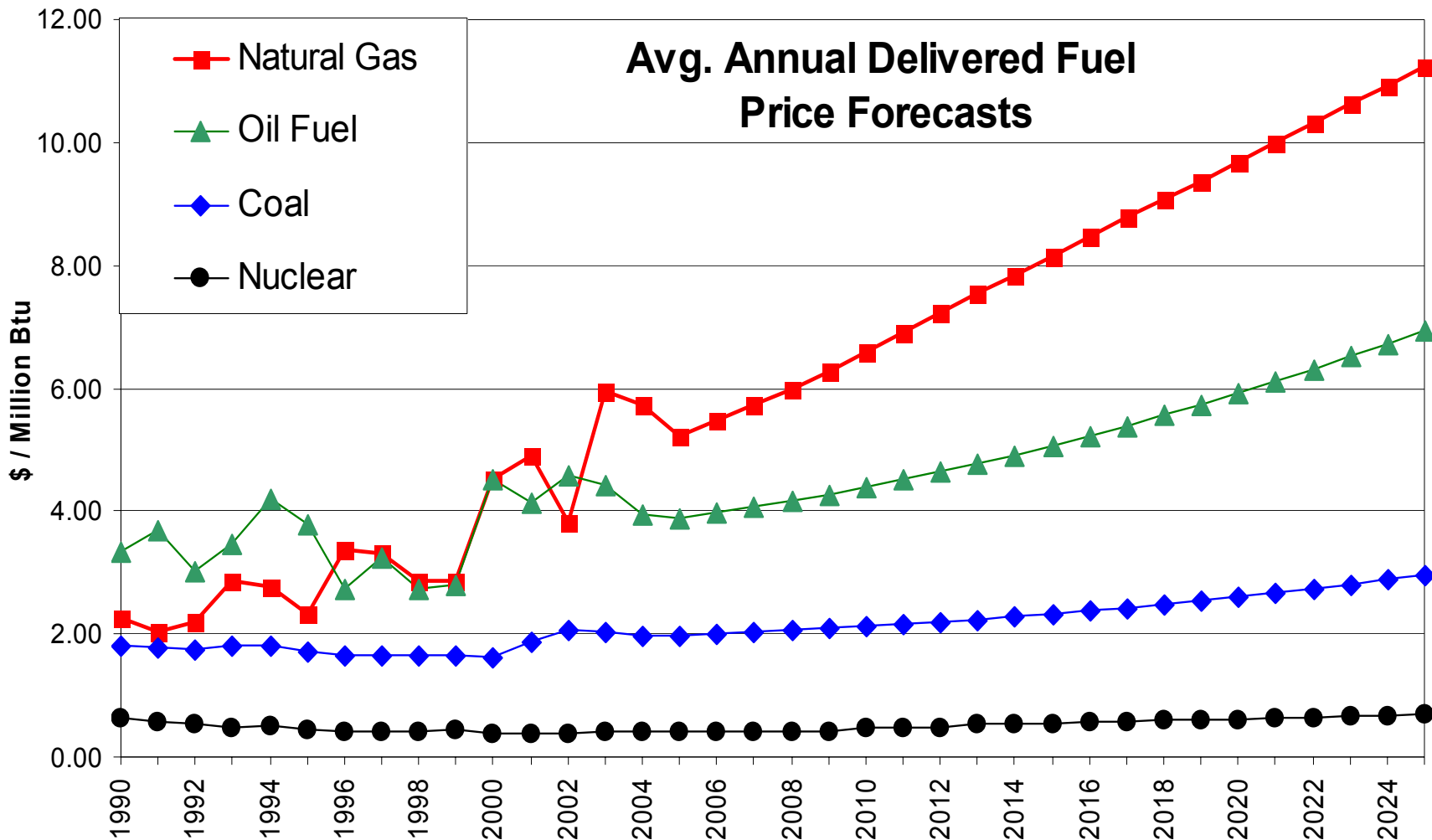
- **Three Community Workshops**
- **E-mail, Phone Calls, and Presentations to Advisory Groups, Homeowners, UF Professors, and Civic Organizations**
- **Information Presented On:**
 - Our need for capacity
 - Price and availability of fuels
 - General options



Our need for electricity continues to grow



Natural gas prices are increasing faster than other fuels



Source: GRU Strategic Planning

Reliability and Availability of Fuels

Fuel	Years of Reserve	Transportation	Storage
Oil	16	Rail, Barge, Ship	20-30 days
Gas	52	Pipelines	None
Coal	480	Rail, Barge	50-75 days
Nuclear^a	39 ^b	Diverse	550 days
Solar^a	Renewable	Local	None
Biomass^a	Renewable	Local	20-30 days

a. Added by request.

b. Breeder reactors could make nuclear power available indefinitely.

Consider all options

- **Reduce Use**

- Increase energy conservation
- Shift from peak hours

- **Increase Supply**

- Lease capacity
- Build new generation



What we learned from you



Important factors to consider

- **Environment**
- **Health and Safety**
- **Cost**
- **Reliability/Self Sufficiency**
- **Resource Conservation**
- **Emerging Technologies**
- **Economic Benefits**



Options to consider

1. Energy Conservation (reduce use)
2. Electric Generation (increase supply)
 - **Renewable resources**
 - **Coal**
 - **Nuclear**
 - **Distributed generation**
 - **Purchasing from another company**
 - **A joint project**
 - **Others**

Energy Conservation (reduce use)

How does energy conservation stack up?

- + Environment – Excellent**
- + Health and Safety – Good**
- Cost Effectiveness – Depends on option**
- Reliability/Self Sufficiency – Limited cap.**
- + Resource Conservation – Good**
- + Emerging Technologies – Good**
- + Economic Benefits – Good**

Not all conservation is equal

- Some conservation measures provide greater value to rate payers
 - Who benefits? Conservation participant, rate-payer, society?
- Considerations include:
 - Time of day (peak)
 - Fuel costs

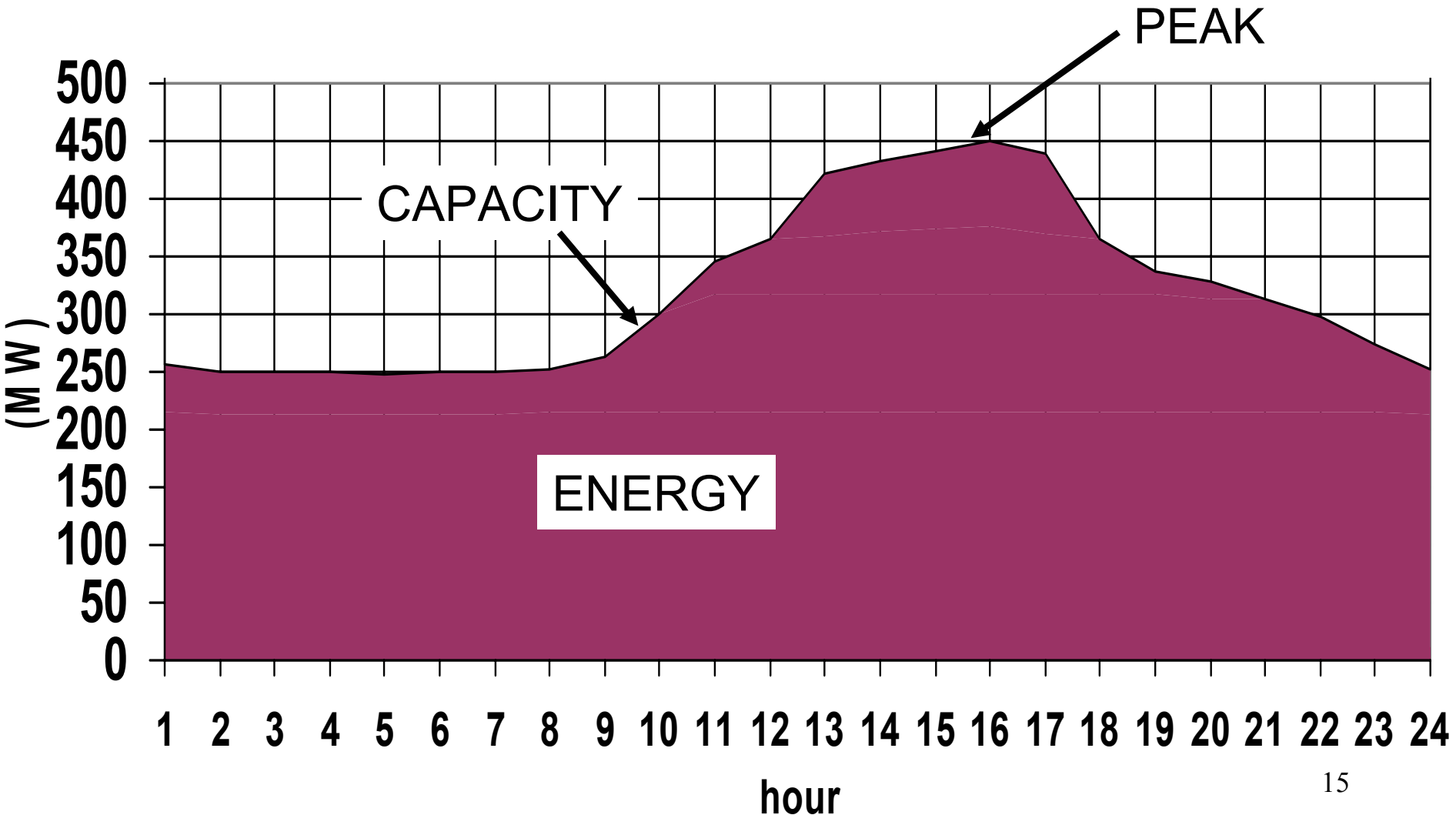


Best conservation methods reduce peak demand

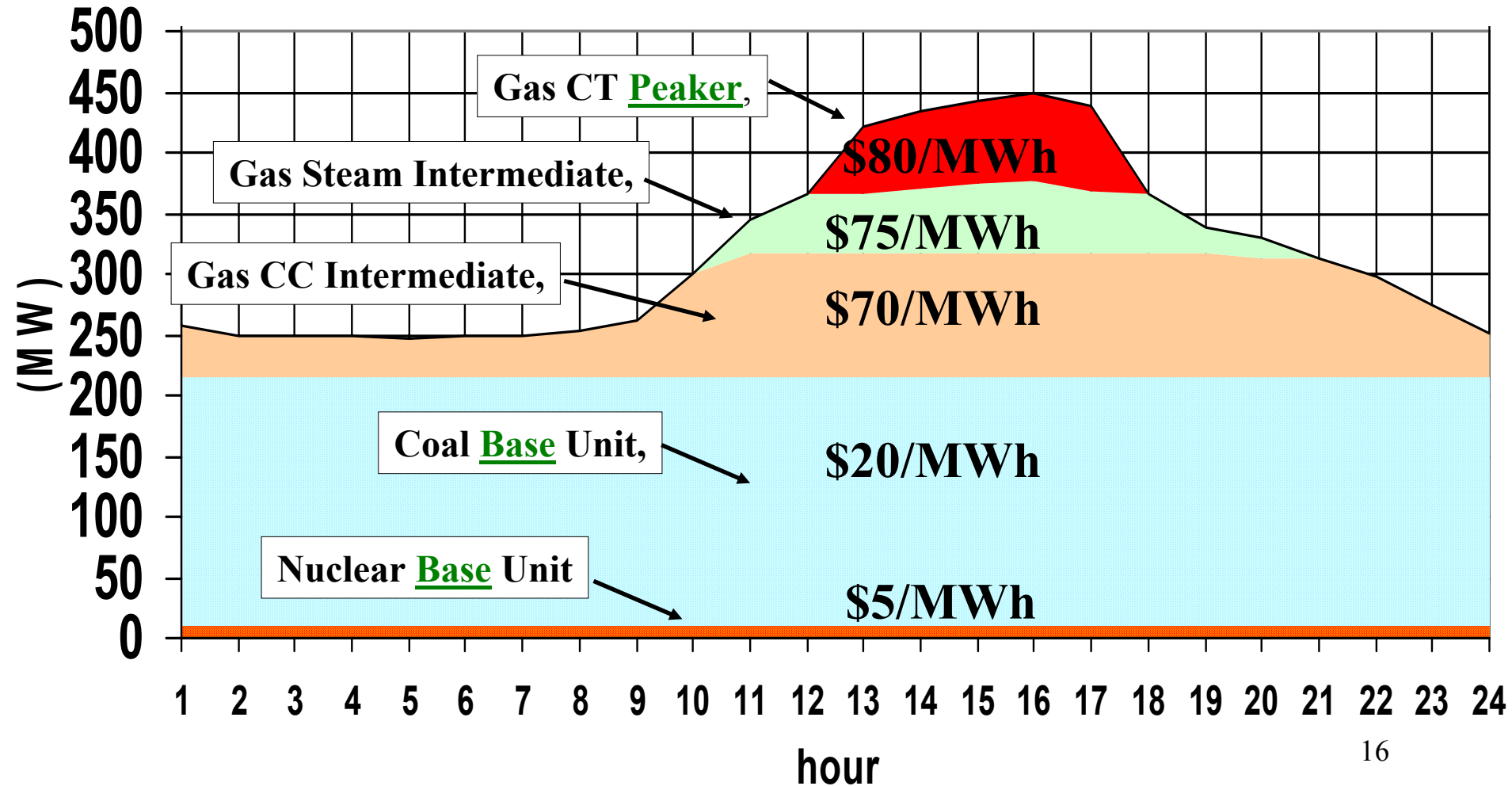


- **Peak demand**
 - Hot summer days
 - Cold winter mornings and evenings
- **Peaking generation units**
 - Expensive fuels and less efficient

Example of Daily Summer Load



Example of Daily Summer Load



Residential Energy Conservation Measures Evaluated Through the Years

HIGH EFF. AIR SOURCE HEAT PUMP
TWO SPEED HEAT PUMP
REDUCED DUCT LEAKAGE HEAT PUMP
SETBACK/PROGRAM. THERMOST HP
DLC FOR ELECTRIC HEAT HEAT PUMP
CEILING INSULATION (R-0 TO R-19)
CEILING INSULATION (R-19 TO R-30)
WALL INSULATION (R-0 TO R-11)
WINDOW FILM/REFLECTIVE GLASS
SHADE SCREENS
ATTIC RADIANT BARRIERS
TWO SPEED CENTRAL AC
WHOLE HOUSE FANS HEAT PUMP
AC/HEAT PUMP MAINTENANCE ELEC. HEAT
DLC of CENTRAL AC ELEC. HEAT
LANDSCAPE SHADING ELEC. HEAT
GAS AIR CONDITIONING
INTEGRAL HEAT PUMP WATER HEATER
SOLAR WATER HEATER
WATER HEATER TANK WRAP
HEAT TRAP
DLC of ELECTRIC WATER HEATER
COMPACT FLOURESCENT
HIGH PRESSURE SODIUM (OUTDOOR)
LOW PRESSURE SODIUM FLOODLIGHT
BEST CURRENT REFRIG. MANUAL
BEST CURRENT FREEZER FROST FREEZER
REMOVE SECOND FREEZER
HIGH EFFICIENCY CLOTHES WASHER
DOWN-SIZED POOL PUMPS W/OVERSIZED PIPING

GROUND SOURCE HEAT PUMP
REDUCED DUCT LEAKAGE ELEC.HEAT
SETBACK/PROGRAM THERM ELEC HT
DLC FOR ELECTRIC HEAT ELEC. HEAT
GAS FURNACE
CEILING INSULATION (R-11 TO R-30)
CEILING INSULATION (R-30 TO R-38)
WEATHERSTRIP/CAULK(BLOW DOOR)
LOW EMISSIVITY GLASS
REFLECTIVE ROOF COATINGS
HIGH EFFICIENCY CENTRAL AC
WHOLE HOUSE FANS ELEC. HEAT
HIGH EFFICIENCY ROOM AC
AC/HEAT PUMP MAINTENANCE
DLC of CENTRAL AC HEAT PUMP
CEILING FANS ELEC. HEAT
HIGH EFF. ELECTRIC WATER HEATER
ADD-ON HEAT PUMP WATER HEATER
HEAT RECOVERY WATER HEATER
WATER HEATER PIPE INSULATION
LOW FLOW SHOWERHEAD
GAS WATER HEATER
EFFICIENT INCANDESCENT
MOTION DETECTORS
BEST CURRENT REFRIG. FROST FREE
REMOVE SECOND REFRIGERATOR
BEST CURRENT FREEZER MANUAL
HIGH EFFICIENCY CLOTHES DRYER
HIGH EFFICIENCY POOL PUMPS
DLC of POOL PUMPS

Commercial Energy Conservation Measures Evaluated Through the Years

INSTALL HE CHILLER
 INSTALL HE CHILLER
 INSTALL HE CHILLER & ASD
 RPL LE DX W/HE DX
 RPL LE RM AC W/HE RM AC
 INSTALL COOL STORAGE
 HEAT PIPE ENHANCED DX
 HOTEL OCCUPANCY SENSORS
 2-SPEED MOTOR - COOLING TOWER
 SPEED CONTROL - COOLING TOWER
 AC MAINTENANCE – CHILLER
 AC MAINTENANCE - DX
 AIR DUCT/WATER PIPE INSUL – CHILLER
 AIR DUCT/WATER PIPE INSUL - DX
 ENRG MGT SYSTEM – CHILLER
 ENRG MGT SYSTEM - DX
 TEMP SETUP/SETBACK – CHILLER
 TEMP SETUP/SETBACK - DX
 REP ER HEAT W/ GAS HEAT
 GAS-FIRED COOLING
 INC ROOF INSULATION
 ADD WIND FILM
 LIGHT ROOF
 DUCT LEAKAGE REPAIR - DX AC
 VAV W/INLET V – CHILLER
 VAV W/INLET V - DX AC
 ASD CON W/VAV – CHILLER
 ASD CON W/VAV - DX AC
 TIME/PROG CON – CHILLER
 TIME/PROG CON - DX AC
 HE VN MOTORS – CHILLER
 HE VN MOTORS - DX AC
 MAKEUP AIR/EX – CHILLER
 MAKEUP AIR/EX - DX AC
 4'-34W FL W/ HYBRID BAL #1
 4'-34W FL W/ HYBRID BAL #2

4'-34W FL W/ ELECTRONIC BAL #1
 4'-34W FL W/ ELECTRONIC BAL #2
 8'-60W FL W/ELEC BALLAST #1
 8'-60W FL W/ELEC BALLAST #2
 T8 LAMPS/ELEC BALLAST #1
 T8 LAMPS/ELEC BALLAST #2
 REF/DE-L FL: 4'-40W, ELEC B
 REF/DE-L FL: 4'-34&40W, ELEC B
 REF/DE-L FL: 8'-75W, ELEC B
 REF/DE-L FL: 8'-60W, ELEC B
 REF/DE-L FL: 4'-34&40W, HYBRID B #1
 REF/DE-L FL: 4'-34&40W, HYBRID B #2
 REF/DE-L FL: 4'-34&40W, ELEC B #1
 REF/DE-L FL: 4'-34&40W, ELEC B #2
 REF/DE-L FL: 8'-60W, ELEC BAL #1
 REF/DE-L FL: 8'-60W, ELEC BAL #2
 4'-34W FL/DIMMING BALLASTS #1
 4'-34W FL/DIMMING BALLASTS #2
 HPS (70/100/150/250W)
 HPS (70/100/150/250W), ELEC BAL
 HPS (35W)
 METAL HALIDE (32W)
 COMPACT FL (15/18/27W)
 INSTALL HE CHILLER
 INSTALL HE CHILLER & ASD
 RPL LE DX W/HE DX
 RPL LE RM AC W/HE RM AC
 INSTALL COOL STORAGE
 HEAT PIPE ENHANCED DX
 HOTEL OCCUPANCY SENSORS
 2-SPEED MOTOR - COOLING TOWER
 SPEED CONTROL - COOLING TOWER
 AC MAINTENANCE – CHILLER
 AC MAINTENANCE - DX
 AIR DUCT/WATER PIPE INSUL – CHILLER
 AIR DUCT/WATER PIPE INSUL - DX
 ENRG MGT SYSTEM – CHILLER
 ENRG MGT SYSTEM - DX
 TEMP SETUP/SETBACK – CHILLER

TEMP SETUP/SETBACK - DX
 REP ER HEAT W/ GAS HEAT
 GAS-FIRED COOLING
 INC ROOF INSULATION
 ADD WIND FILM
 LIGHT ROOF
 DUCT LEAKAGE REPAIR - DX AC
 VAV W/INLET V – CHILLER
 VAV W/INLET V - DX AC
 ASD CON W/VAV – CHILLER
 ASD CON W/VAV - DX AC
 TWO COMPACT FL LAMPS (18W)
 ENERGY MANAGEMENT SYSTEM
 OCCUPANCY SENSORS
 DAYLIGHTING DESIGN
 PHOTOELECTRIC CONTROL
 LPS SECURITY LIGHTS
 MULTIPLEX: AIR COOL
 MULTIPLEX: AIR COOL/ AMB SUBC
 MULTIPLEX: AIR COOL/ MECH SUBC
 MULTIPLEX: AIR COOL/ AMB&MECH SUBC
 MULTIPLEX: AIR COOL/EXT LIQ SUCT HX
 OPEN-DRIVE REFRIG (ASD)
 ANTI-CONDENS HEAT CONTROL
 HI R-VALUE GLASS DOORS
 ENERGY MANAGEMENT SYSTEM
 DUAL PATH SUPERMARKET AC
 HEAT PUMP WATER HEATER
 SOLAR WATER HEATER
 HEAT RECOVERY WATER HEATER
 DHW HEATER INSULATION
 DHW HEAT TRAP
 LO FLO/VARI FLO SHOWERHEAD
 DHW CIRCULATION PUMP
 GAS WATER HEATER
 CONVECTION OVENS
 ENERGY EFFICIENT ELEC FRYERS
 GAS COOKING

Current Residential Energy Conservation Programs

- **Conservation Surveys**
- **Self-Audit Materials**
- **New Construction Consultation**
- **Green Builder Program**
- **Customer Consultation**
- **Low-Income Weatherization**
- **Solar Water Heating Rebates**
- **Solar Electric Interconnection and Buyback**
- **Gas Water Heating Rebate**
- **Gas Heating Rebate**
- **Gas Range Rebate**
- **Gas Dryer Rebate**
- **Gas New Construction Rebate**

Current Commercial Energy Conservation Programs

- **Conservation Surveys**
- **Commercial Lighting Service**
- **Solar Water Heating Rebates**
- **Solar Electric Interconnection and Buyback**
- **Gas Air Conditioning Rebate**
- **Gas Dehumidification Rebate**
- **Gas Water Heating Rebate**



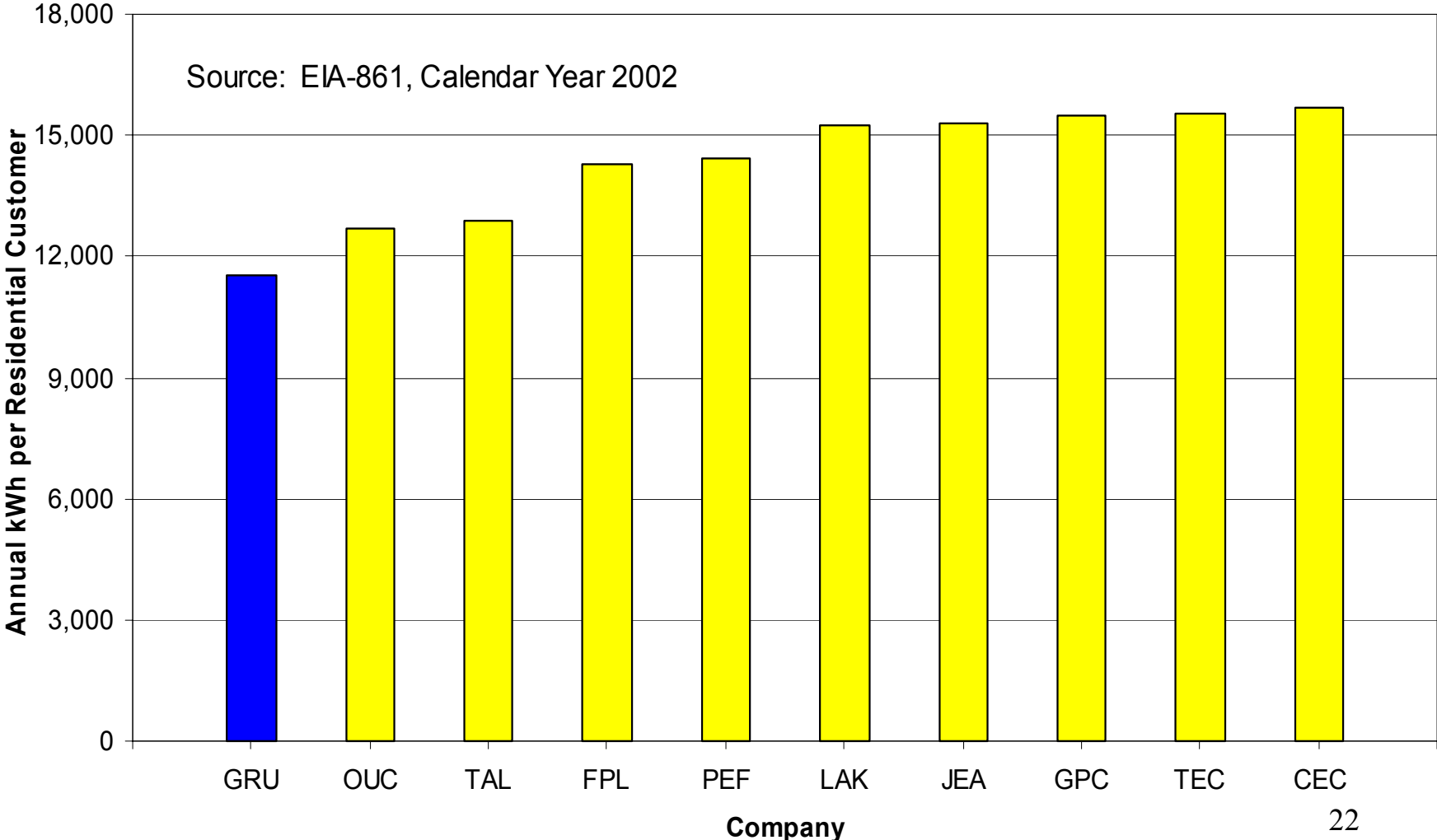
24 Years of GRU Conservation Programs

- **Summer Electric Demand Reduction** **14 MW**
- **Winter Electric Demand Reduction** **34 MW**
- **Annual Energy Savings*** **70,000 MWh/Yr**



* Equivalent to approximately 6,000 residential customers' usage per year

GRU residential customers have lowest electricity usage per customer



Substantial savings from energy conservation initiatives

(MWh/Year)

▪ Kelly CC-1	110,420
▪ Conservation Programs	70,000
▪ Landfill Gas to Energy	18,575
▪ Solar at the Airport	15
▪ Systems Control Center PV	11
▪ Customer Owned PV	6
▪ Solar at the Schools	5

How much more energy conservation can we get by 2010?

- **Summer Demand*** **5.4 MW**
- **Winter Demand** **2.4 MW**
- **Annual Energy** **10,500 MWh/Year**

* 3.6 MW included in current forecast

The current conservation model: utility companies modify customer behavior

- **How do we do this?**
 - **Select energy conservation measures that benefit all rate payers**
 - **“Sell” customers one at a time**
- **How successful is this approach?**
 - **Participants to date: 54% of residential dwelling units and 40% of commercial buildings**

What if we change this model?

- **GRU provides funding to give customers incentives to shift their peak use and conserve energy**
- **Private businesses (not GRU) run programs and aggregate demand and energy reductions**
- **How much will we pay?**
 - Value of avoided capacity
 - Fuel cost savings
 - Market value of green power



Other Conservation Ideas

- **Inverted rates – prices increase as usage increases**
- **Real Time Pricing – price depends on the time of day**
- **Mandatory Energy Conservation**


Electric Generation (increase supply)

- **Renewable Resources**
- **Conventional Fuels**

How do renewable resources stack up?

- + Environment – Excellent**
- + Health and Safety – Good**
- Cost Effectiveness – Option/site specific**
- Reliability/Self Sufficiency – Insufficient Capacity**
- + Resource Conservation – Good**
- + Emerging Technologies – Good**
- + Economic Benefits – Good**

Electricity from Renewable Resources

- Launch  on Nov. 30
- 2 cent per kWh premium
- Blend of renewable resources
 - Biomass/landfill gas produced from decomposing garbage at the Southwest Landfill in Archer
 - Solar produced locally
 - Wind purchased from other energy companies
- Sign up forms available in the back

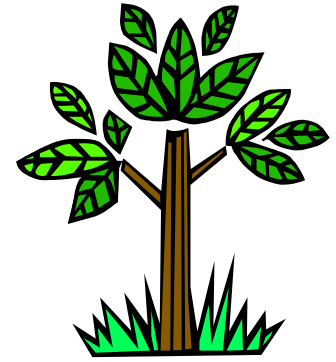
Renewable Resource Factors

- **Costs more to produce**
- **Must determine if customers will pay more**
 - Sign up rate on a nationwide basis is about 1 percent
 - Some communities are higher
- **Many environmental benefits, but also some disadvantages**
- **Continue to implement as feasible**

Renewable resource opportunity?

■ Biomass

- 300 tons per day of waste wood potentially available within a 25 mile radius*
- 109,500 wet-tons/year of biomass
- This amount of biomass production could support approximately 12.5 MW of electrical generation



***Source: Sept. 2, 2003 GRU Workshop participants**

Renewables Evaluation

Source

Screening Outcome

Solar

Flat-Plate Water Heaters

Further analysis

Photovoltaic

Further analysis

Passive Solar Design

Education program

Concentrating Collectors

Not viable

Biomass

Refuse Derived Fuel

Community rejected

Energy Crops

Further analysis

Waste wood

Further analysis

Wind

Not viable in Florida

Tidal and Wave

Not viable in Florida

Geothermal

Not viable in Florida

Generation from Conventional Fuels

- Gas
- Coal
- Petroleum Coke
- Oil
- Nuclear



What we heard about coal

- Liked the low and stable prices, availability, and ability to store coal
- Isn't coal dirty? What about:
 - Air quality?
 - Particulates?
 - Mercury?
 - Global warming (Carbon)?

Air Quality

- **We have good air quality**
- **We want to maintain this good air quality**
 - We are very involved in air quality monitoring and analysis



Alachua County Scorecard

■ Air Quality

- Days with Good Air Quality 92%
- Days with Moderate Air Quality 8%
- Unhealthful Days for Sensitive People 0%

■ Air Quality Index

- Maximum Air Quality Index* 85
- 90th Percentile Air Quality Index* 49
- Median Air Quality Index* 31

***Index Ratings 0-50 Good; 50-100 Moderate; 100+ Unhealthful**

Instructions: Go to the Environmental Defense group's report at www.scorecard.org. Step 1: Use "Find your community" feature (enter Zip Code). Step 2: Click on "How clean is your air?"

We have good air quality

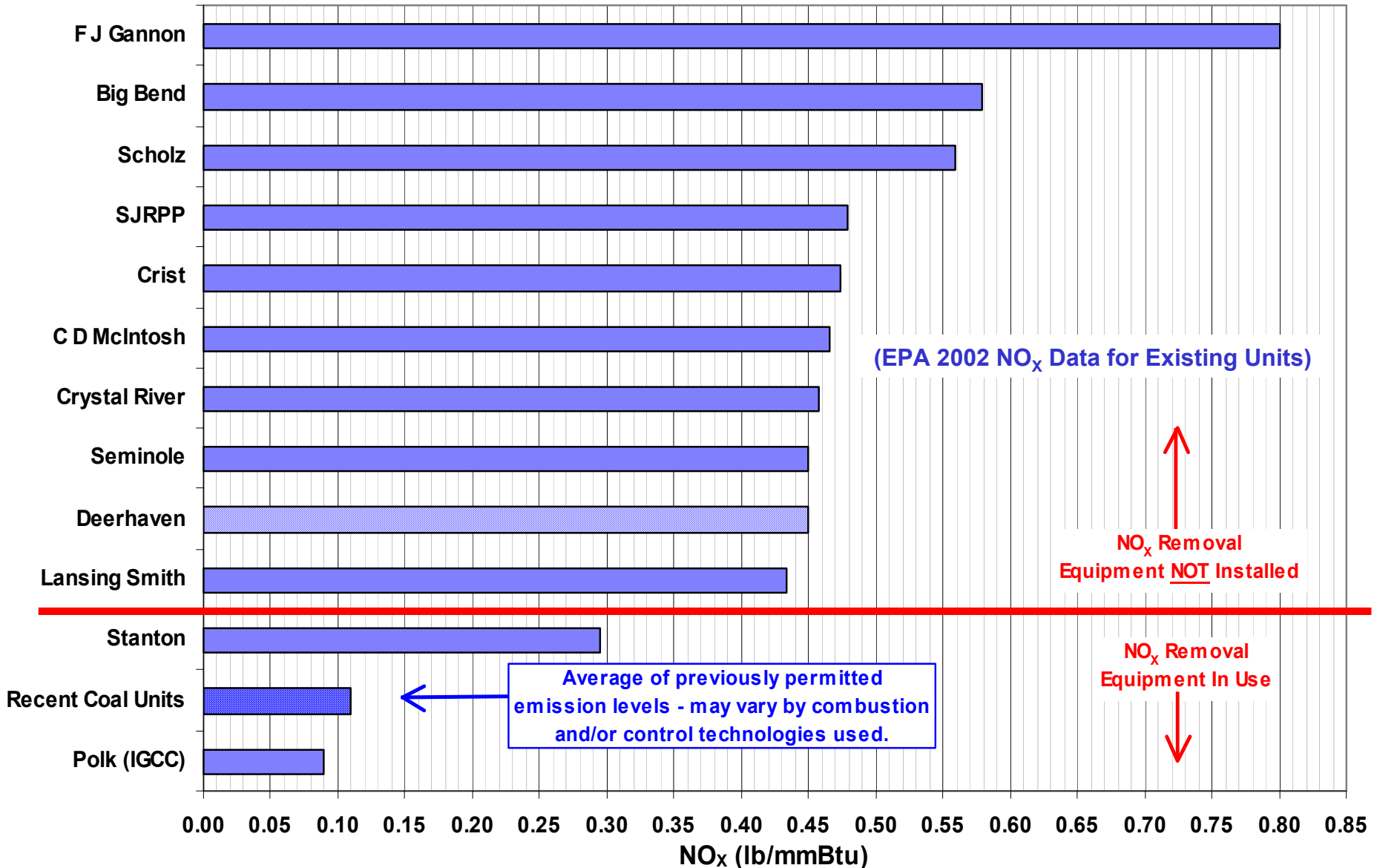
Parameter		Regulatory Std.		Ambient Level		% of Standard
SO₂	(Ann Avg)	0.02	(ppm)	0.001	(ppm)	5%
NO₂	(Ann Avg)	0.053	(ppm)	0.0070	(ppm)	13%
O₃	(8-Hr Avg)	0.08	(ppm)	0.072	(ppm)	90%
O₃	(1-Hr Avg)	0.12	(ppm)	0.089	(ppm)	74%
PM₁₀	(24-Hr Avg)	150	(ug/m3)	35	(ug/m3)	23%
PM₁₀	(Ann Avg)	50	(ug/m3)	18	(ug/m3)	36%
PM_{2.5}	(24-Hr Avg)	65	(ug/m3)	31	(ug/m3)	47%
PM_{2.5}	(Ann Avg)	15	(ug/m3)	9.9	(ug/m3)	66%

Source: Air Quality Trends in Alachua County, Brown & Cullen, Inc., Draft June 2, 2003.

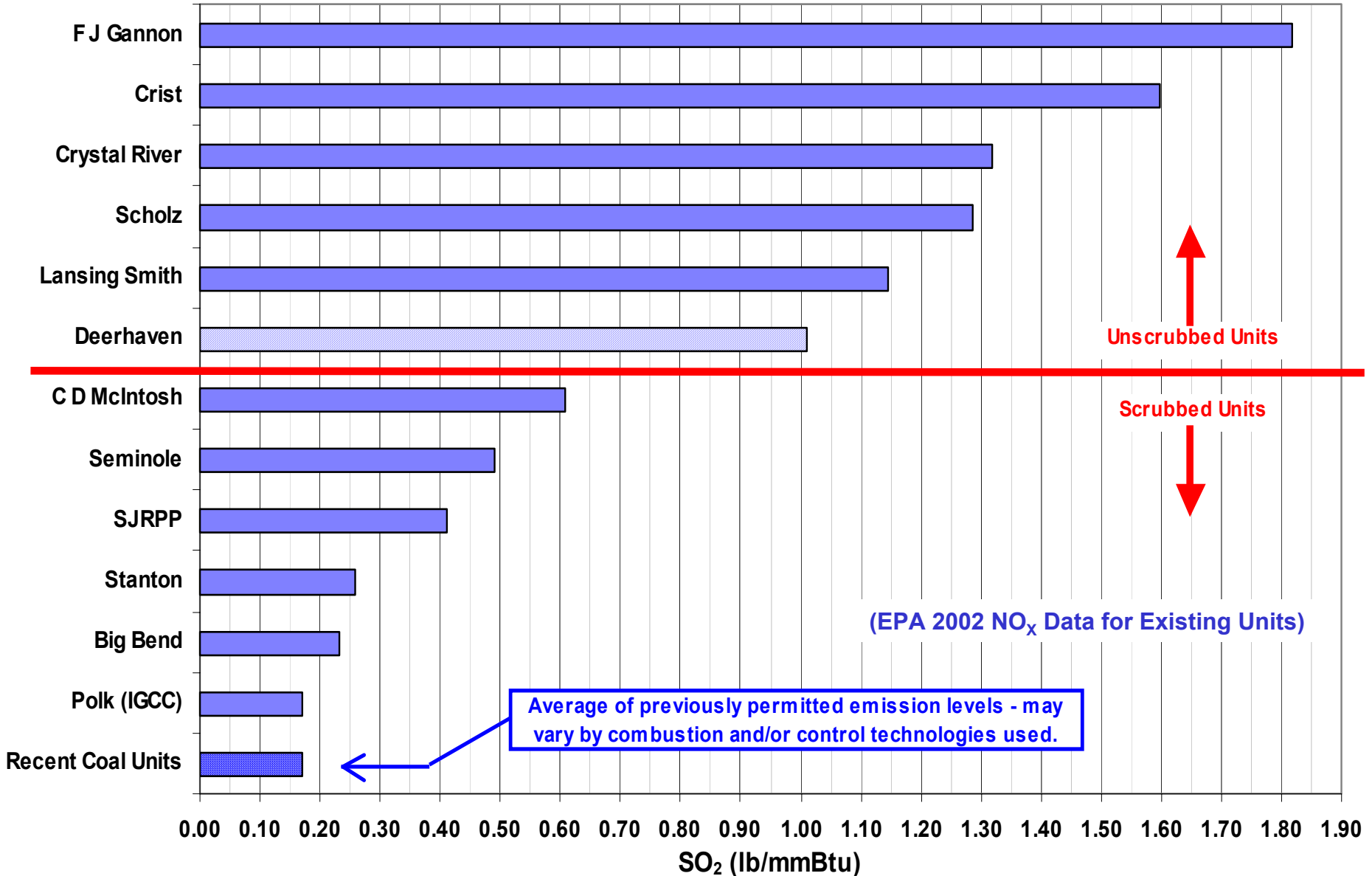
Notes: SO₂ data from 2000, NO₂ data from 2001, Ozone data from 2003, PM₁₀ and PM_{2.5} data from 2002.

Alachua County's worst ozone conditions were in May 1988, coincident with hot, dry, weather.

Deerhaven 2 has good NO_x emission rates compared with coal fired power plants in Florida

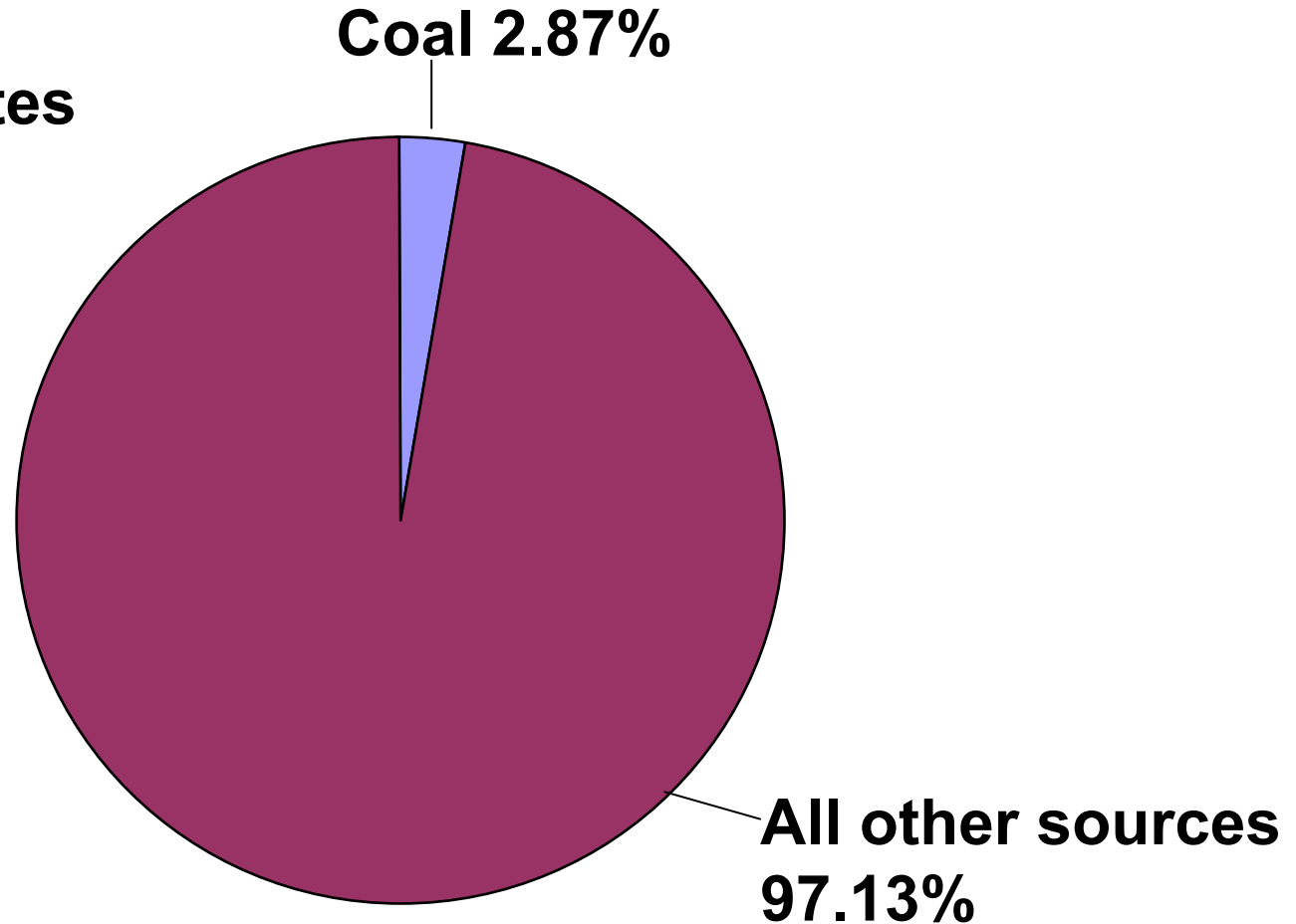


Deerhaven 2 is cleanest unscrubbed coal fired power plant in Florida



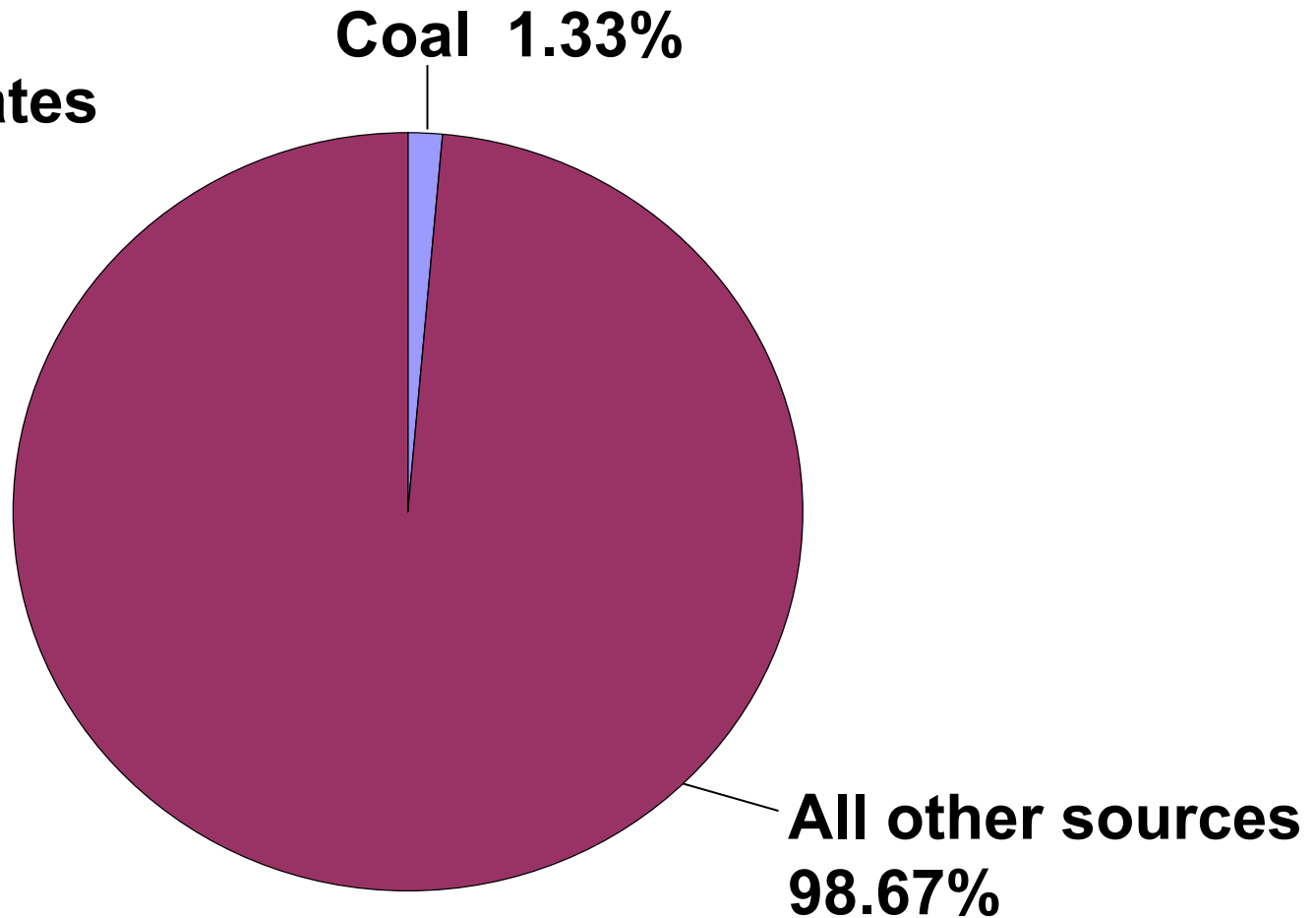
Deerhaven's contribution to particulates is minimal

PM 2.5 Particulates



Deerhaven's contribution to particulates is minimal

PM 10 Particulates

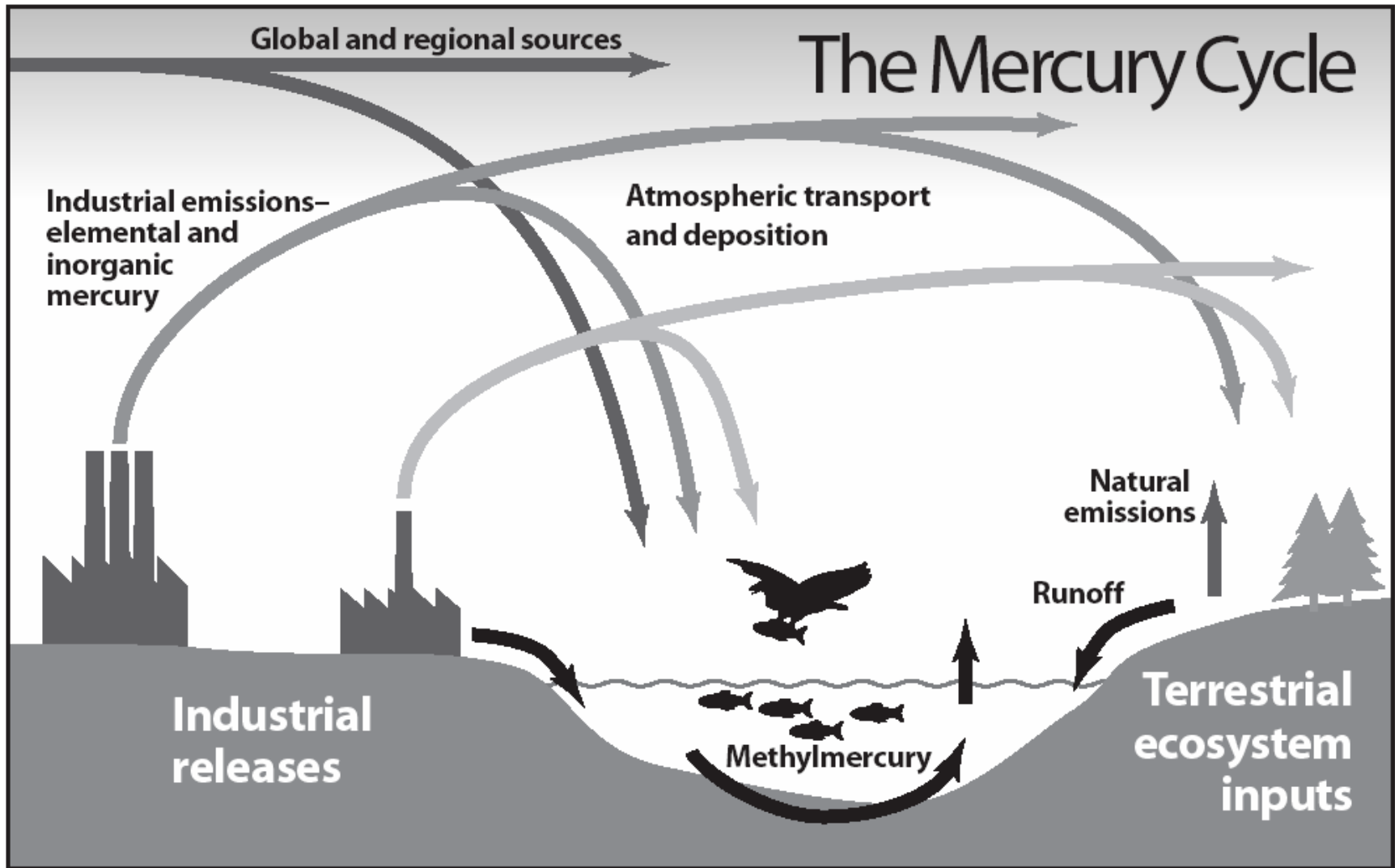


Results of UF Study on Particulates in Alachua County

Source	PM ₁₀	PM _{2.5}
asphalt	11.33%	1.67%
cement	19.33%	0.33%
coal-fired	1.33%	2.87%
distillate oil	0.33%	0.10%
fertilizer	1.67%	0.70%
field burning	8.00%	1.47%
marine	12.33%	20.33%
oil-fired	0.43%	0.10%
residual oil	0.33%	0.20%
soil	10.33%	0.27%
transportation	12.33%	31.67%
unidentified	19.77%	29.43%
unpaved	1.47%	0.53%
wood burning	1.00%	10.33%
Totals	100.00%	100.00%

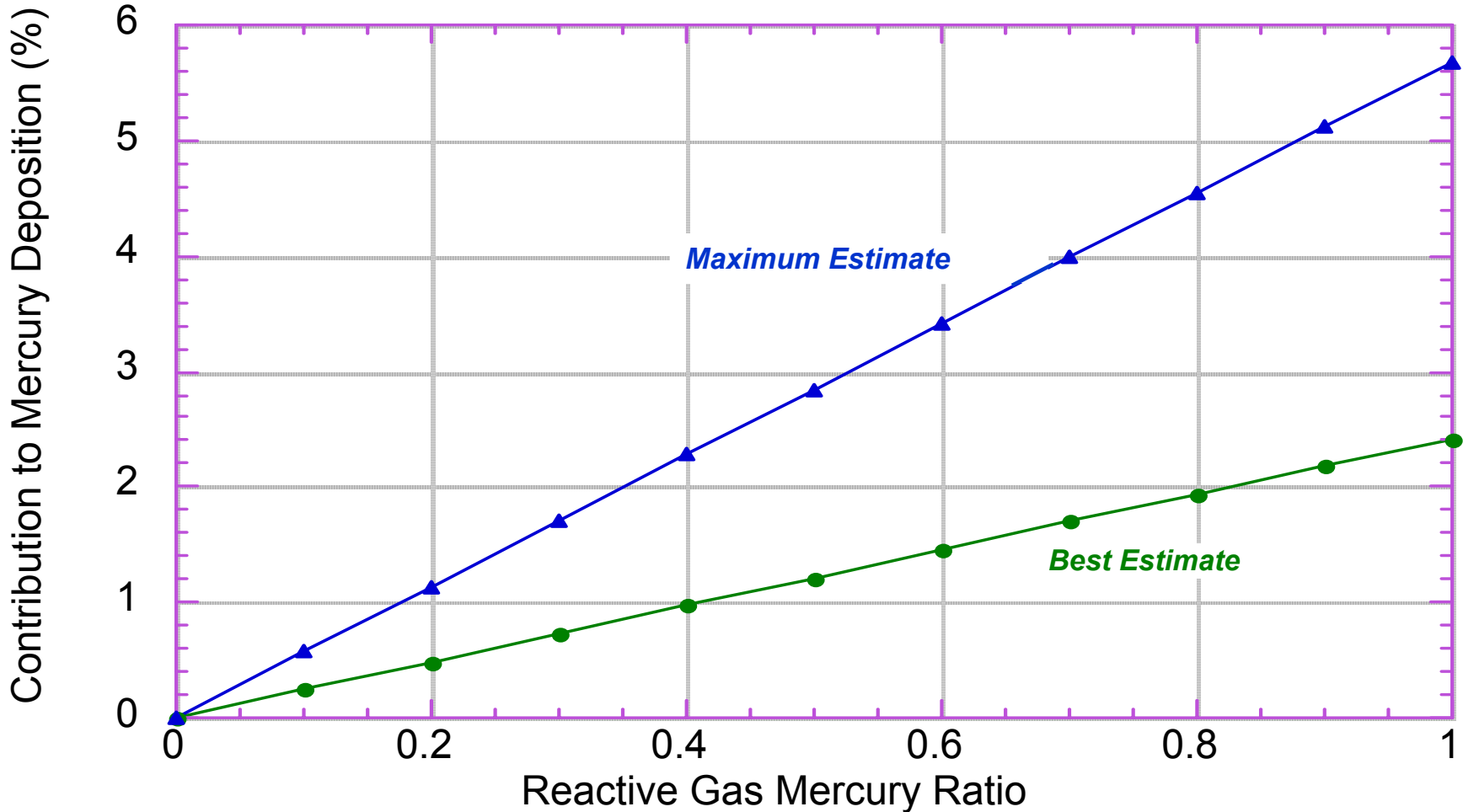
Sources:
A Study to Assess the Impact of Power Plant Particulate Emission on Alachua County's Air Quality (University of Florida, 01/31/03)
Composition, Particle Size, and Source of Ambient Aerosol in Alachua County, Florida, (P. Chuaybamroong, UF thesis dissertation, 2002)
Air Quality Trends in Alachua County, Brown & Cullen, Inc. June 2, 2003
 Draft

Mercury and the Santa Fe River



*Natural Emissions include volcanoes, geysers, wildfires, erosion, and earthquakes.

Results from GEAC Recommended Mercury Santa Fe River Deposition Study



Source: Potential Rates of Deerhaven 2 Mercury Deposition in the Santa Fe River Basin of North Central Florida, C. Pollman, Tetra Tech, Inc., Draft September 30, 2003

World Climate Change

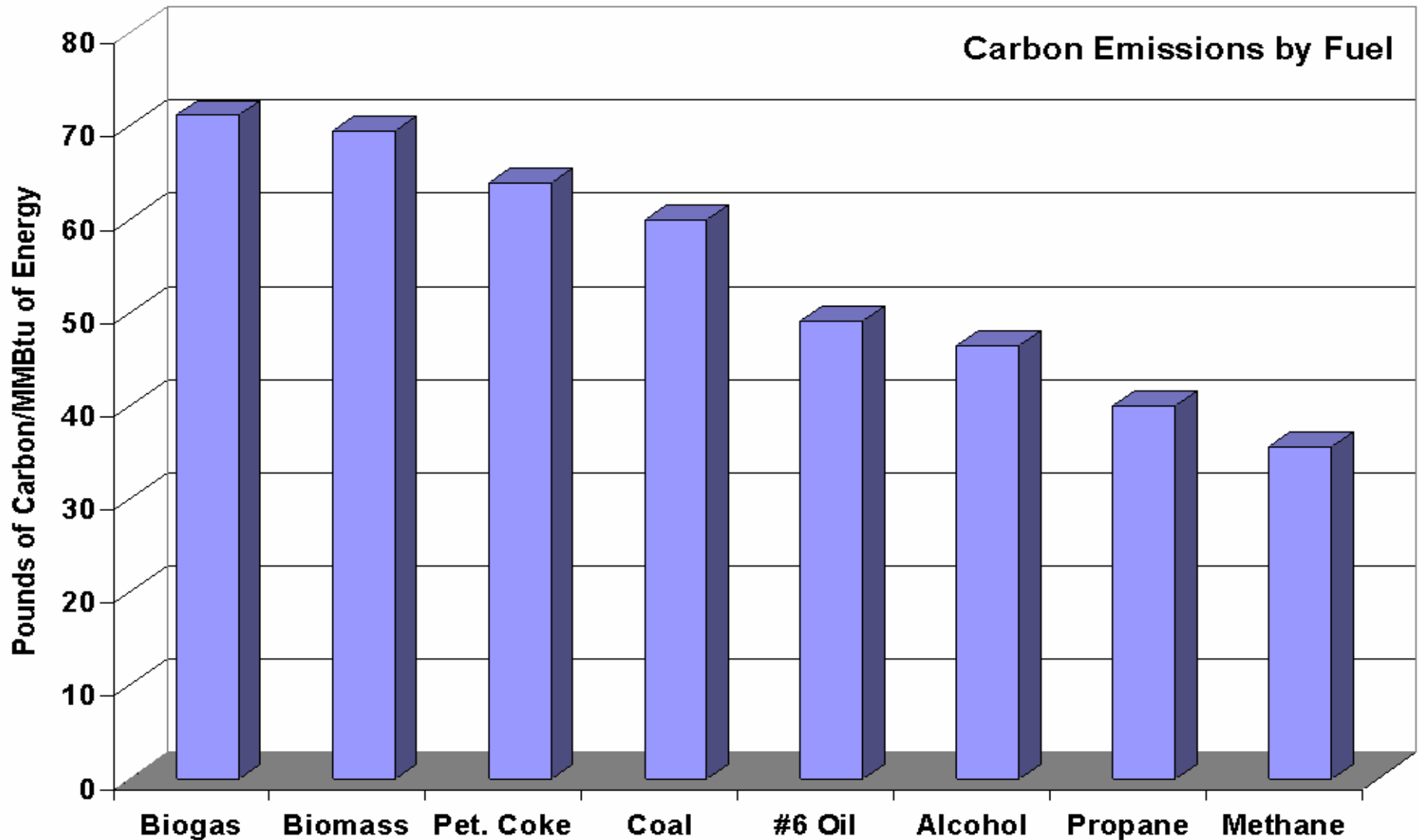
- **Greenhouse gases**
 - Increasing due to industrialization
 - Believed to contribute to global warming
 - Include Water Vapor, CO₂, Methane, Ozone, NO_x, Fluorocarbons, and Particulates, among others
- **Warming trend this century is partly because we are coming out of a “little ice age”**
- **Forecasted effects of greenhouse gases vary widely due to confounding factors**

Suggested Reading: Climate Change Science, National Research Council 2001;
Reconstructing Climatic and Environmental Changes of the Past 1000 Years, Harvard-Smithsonian Center for Astrophysics, *Energy & Environment Journal*, Vol. 14, Nos. 2&3, 2003

Carbon Reduction Strategies

- **Reduce Carbon Intensity per KWh**
 - More fuel efficiency
 - Less dependence on fossil fuel
 - Renewable energy
 - Carbon capture

Carbon Content of Fuels



Source: Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories Workbook

GRU CO₂ Reductions (tons/yr)

Kelly CC1 Repowering	117,000
Demand-Side Management	74,000
Forest Protection (10,000 acres)	32,000
Landfill Gas to Energy Project	20,000
Solar at the Airport (proposed)	16
Systems Control Center PV	12
Solar in Schools (proposed)	5

GRU CO₂ Intensity Reductions

Year	$\frac{\text{lb-CO}_2}{\text{MWh}}$	% Change
1999	1816	
2000	1888	4.0%
2001	1845	-2.3%
2002	1689	-8.5%

How do conventional fuels stack up?

- + Environment – Good**
- + Health and Safety – Good**
- + Cost Effectiveness – Depends on option**
- + Reliability/Self Sufficiency – Local options**
- Resource Conservation – Uses fossil fuels**
- + Emerging Technologies – Better efficiency, fewer emissions**
- + Economic Benefits – Local options**

Conventional Fuels Evaluation

<u>Type</u>	<u>Screening Outcome</u>
Natural Gas & Oil	
Peakers (CT)	Further analysis
Combined Cycle (CC)	Further analysis
Coal & Petroleum Coke	
Gasifiers (IGCC)*	Further analysis
Pulverized Coal (PC)	Further analysis
Fluidized Bed (CFB)*	Further analysis
PC – Supercritical*	Further analysis

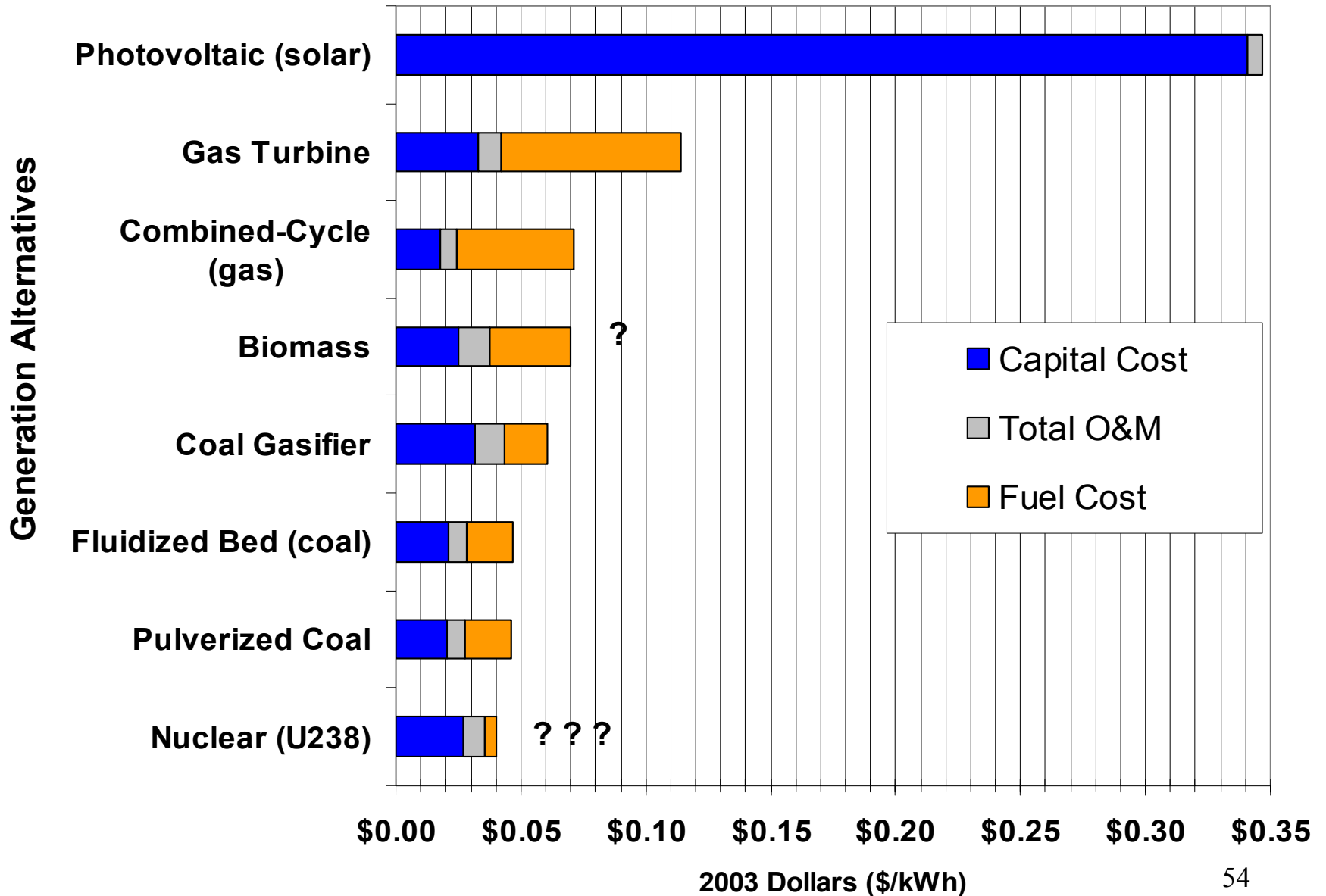
* Emerging Technology

Conventional Fuels Evaluation (Continued)

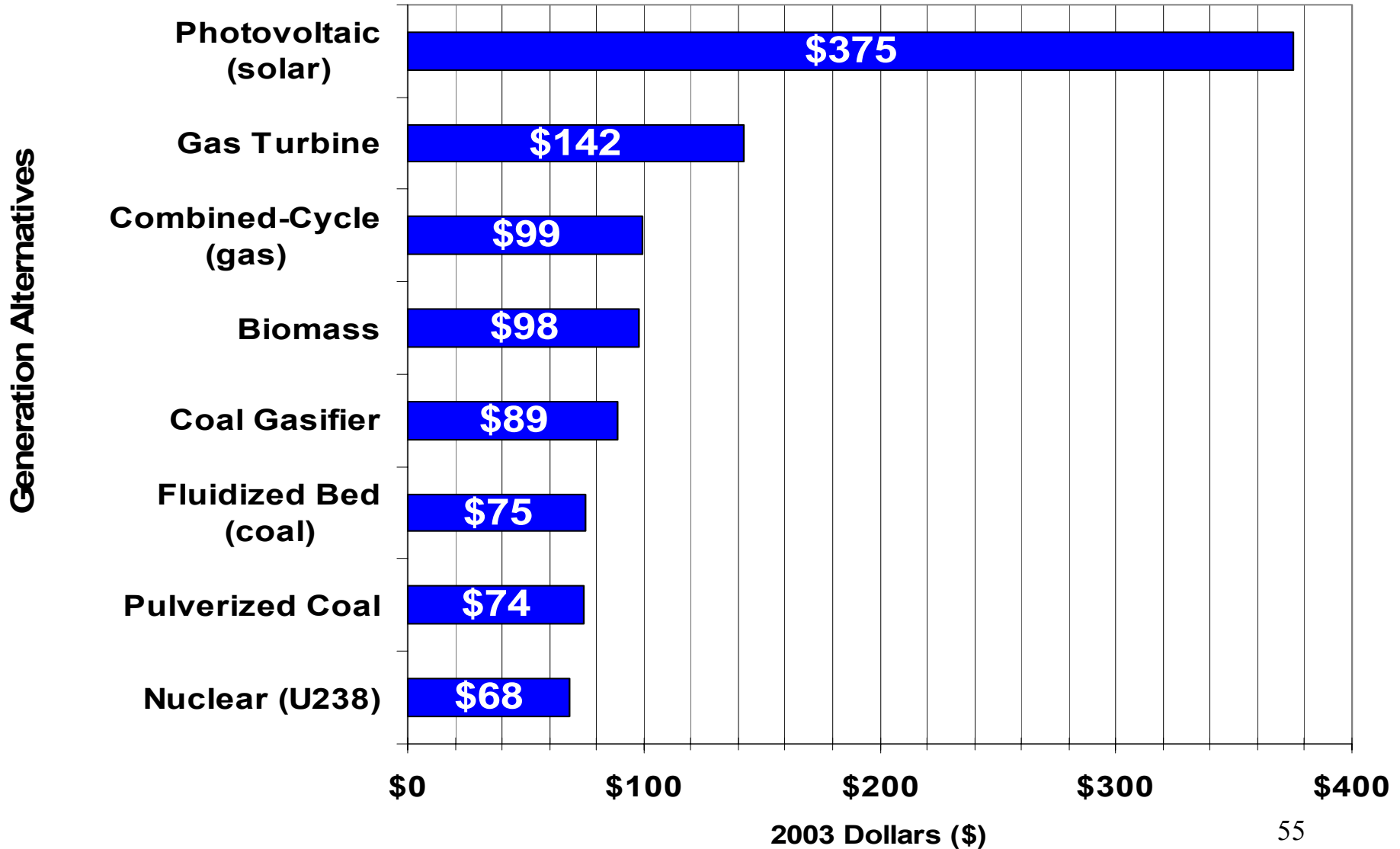
<u>Type</u>	<u>Screening Outcome</u>
Distributed Generation	
Emergency Back-up*	AttenGen!
Dispatchable Back-up*	AttenGen!
Microturbines*	Not viable in Florida
Fuel Cells*	R & D Stage
Plasma Reduction*	R & D Stage
Biomass Co-Firing*	R & D Stage
Hydrogen Production*	R & D Stage

* Emerging Technology

Generation Cost For Selected Options



Monthly Electric Bill for Selected Options (1,000 KiloWatt-hours)



Societal Costs of Environmental Emissions

Direct Cost

- **Health Costs**
- **Lost Wages**
- **Crop Yields**
- **Fish Harvest**
- **Building Maintenance**

Indirect Cost

- **Activity Curtailment**
- **Wage Differentials**
- **Real Estate**
- **Visibility**
- **Endangered Species**

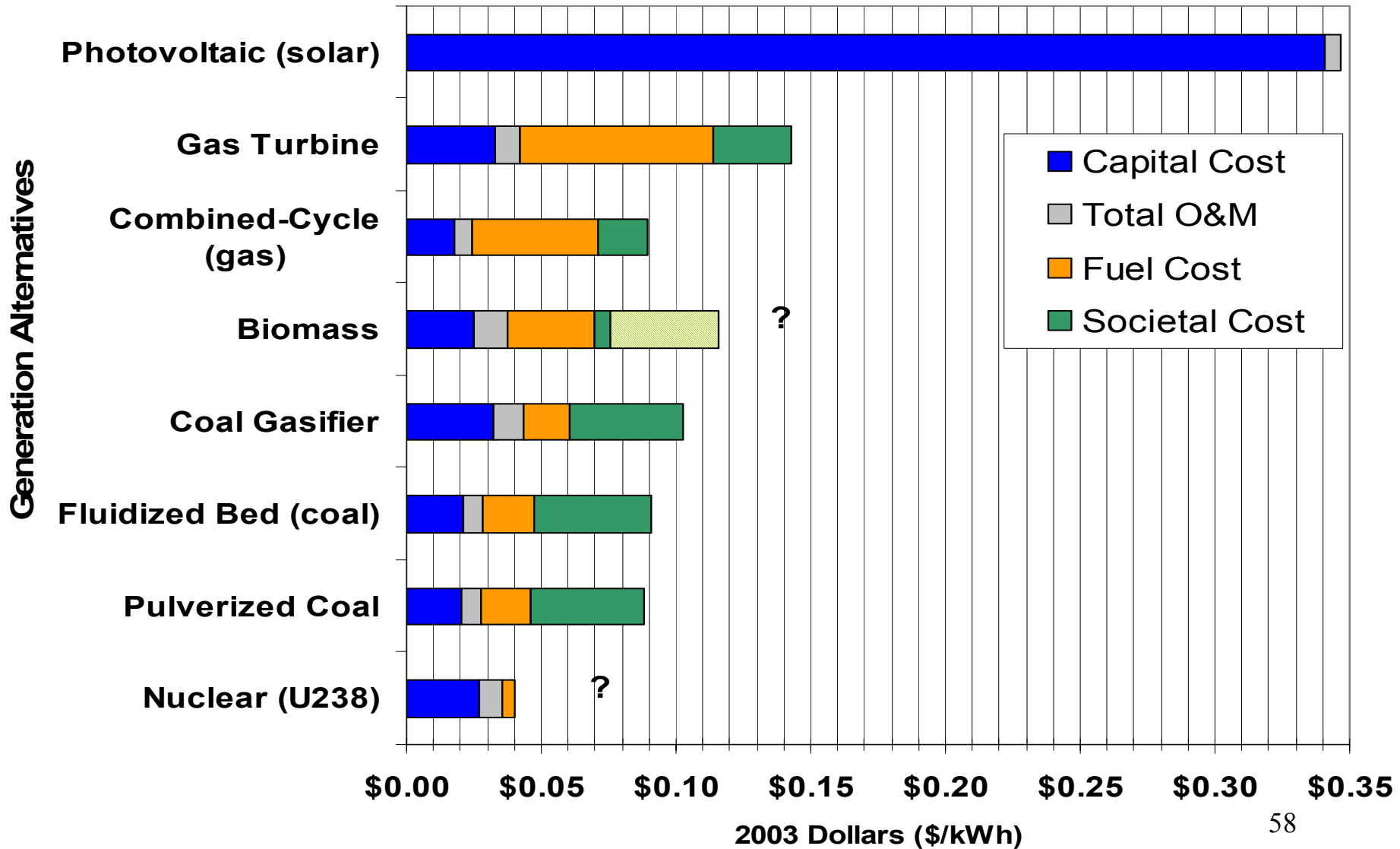
Societal Cost Used By Other States (\$/lb)

STATE	NO _x	SO ₂	PM ₁₀	CO	CO ₂
California PUC	3.76	0.86	2.31		
Massachusetts DPU	3.6	0.85			0.01
Minnesota PUC	0.03 - 0.82	0.00 - 0.15	0.08 - 1.19	0.48	0.00 - 0.01
Nevada PSC	3.40	0.78	2.09		0.01
New York PSC	0.92	0.42		0.46	0.00
Oregon PSC	1.00 - 2.50	0.00			0.01 - 0.02
Wisconsin PSC					0.01
BPA	0.03	0.75			
MAXIMUM	3.76	0.86	2.31	0.51⁽²⁾	0.02

Sources: 1) Issues and Methods in Incorporating Environmental externalities into the Integrated Resource Planning Process, November 1994, National Renewable Energy Laboratory, Golden, CO

2) FY 2001 Sustainability Report, September 2001, National Renewable Energy Laboratory, Golden, CO

Societal and Generation Costs for Selected Options



We have a unique opportunity to increase energy output and reduce emissions (tons/yr)

Scenario	SO ₂	NO _x	PM ₁₀	Total
Deerhaven Unit 2 (235 MW)*	6,993	3,317	163	10,473
Hypothetical New Unit (475 MW-coal)	2,008	1,405	301	3,714
Deerhaven Unit 2 with Controls**	2,604	962	118	3,684
Both units	4,612	2,367	419	7,398
Net Change in Emissions (tpy)	(2,381)	(950)	256	(3,075)
Net Change in Emissions (%)	(34)	(29)	157	(29)

Note: Preliminary estimates

*Avg. 2001/2002, 69% capacity factor

** Assumed control efficiency: SO₂ - 90%, NO_x - 80%, 100% capacity factor

Evaluation Summary for Discussion

Rating Scale

0 = Worst

1 = Good

2 = Best

<u>EVALUATION FACTORS</u>	Leased Capacity	Energy Conservation	Photovoltaic	Gas-CT	Gas-CC	Biomass*	Coal-S. FL	Coal-Deerhaven**	Nuclear
Long-Term Capacity	2	0	0	1	2	0	2	2	2
Economic \$/MWh	1	2	0	0	1	1	2	2	1
Econ.+Societal \$/MWh	1	2	0	1	1	2	1	1	1
Fuel Price Volatility	0	2	2	0	0	1	2	2	2
Fuel Trans. Security	0	2	2	0	0	2	2	2	1
Fuel Storage Ability	0	2	0	0	0	2	2	2	2
Grid Independent	0	2	2	2	2	2	0	2	0
Reduce Local Emissions	2	2	2	0	1	1	1	2	1
Local Econ. Benefits	0	2	2	2	2	2	0	2	0
Number of Ones:	2	0	0	2	3	3	2	1	4
Number of Twos:	2	8	5	2	3	5	5	8	3

*Fuel supply price very uncertain and assumes zero societal cost for CO₂

** Includes Deerhaven 2 retrofit

Questions and Answers

30 minutes

Topics for Discussion Groups

(20 minutes)

- **Have we overlooked anything?**
- **What are your remaining concerns and questions?**

Group Reports

(20 minutes)

Next Steps

- **Community Dialogue Workshops**
 - Tower Road Branch Library
October 9, 5:30-7:30 PM
 - Williams Elementary
 - October 21, 5:30-7:30 PM
- **Sharing information/hearing from customers**
 - www.gru.com
 - Email: futurepower@gru.com
 - Voice mail 393-1036
- **Deerhaven Open House with Facility Tours**
 - Saturday, December 6, 9:00 AM until 3:00 PM
- **Recommendation to City Commission**
 - December timeframe

Good Night!
Thanks for your help.

