LONG TERM ELECTRICAL SUPPLY: AFFORDABILITY IN AN UNCERTAIN FUTURE

Presentation to the
Gainesville City Commission
November 15, 2004

GRU
More than Energy

Here's What We Hear From Our Community Outreach:

Our Community Expects:

- A Clean Environment
- Reliable Electric Supplies
- Resource Conservation And Renewable Energy
- Affordable Electric Rates
- A Financially Strong Utility

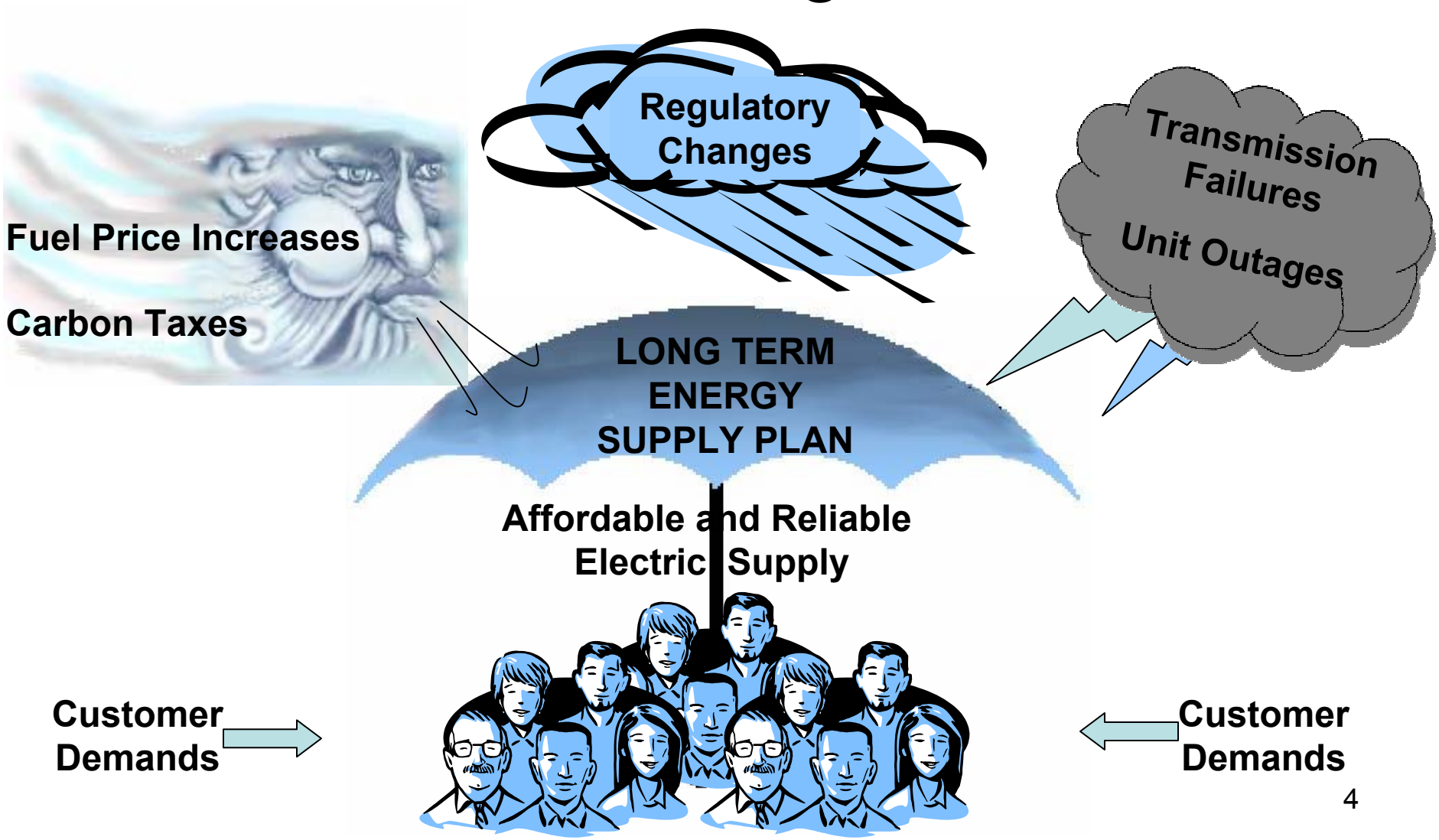
Finding The Balance

Environmental Quality
(September 30)

Affordability and Reliable Supply
(Tonight)

Conservation and Renewable Energy
(November 1)

Affordability And Reliability Require Us To Manage Risk



Our Proposed Long Range Energy Supply Plan

- Energy Conservation
  - 7 New Programs
- Renewable Energy
  - GRUgreen
  - Biomass (Waste Wood)
- Solid Fuel Capacity (220 MW CFB)
  - Waste Wood
  - Coal
  - Petroleum Coke
- Additional Emission Controls
- Use of Reclaimed Water

The Fundamental Questions For Tonight

1. What Risks Must Be Considered As Part Of Long Term Electrical Supply Planning?
2. How Do We Propose To Reduce These Risks?
3. Will The Proposed Plan Keep Us Financially Strong And Our Electric Rates Affordable?

Potential Electric Supply Risks Change Through Time

- Financial Risks Are Relatively Minor Until Equipment Orders Are Placed
- This Is 3 to 4 Years After The Design Process Starts

Question #1: What Are The Potential Electric Supply Risks?

- Until We Place Orders For Major Equipment (3-4 Years)
  - We Can Monitor And Test Our Assumptions
- After We Are Committed The Key Financial Risks Are:
  - Cost Over-Runs And Start-Up Risk
  - Over or Under Forecasting Customer Needs
  - Fuel Supply And Cost
    - Commodity
    - Potential Carbon Taxes

Question #2:
How Do We Propose To Reduce These Risks?

- Apply A Process That Allows Assumptions To Be Checked And Tested Before We Are Committed
- Develop A Plan That Provides The Best Results Under A Wide Range Of Conditions

Each Step Of Our Proposed Process Provides Safeguards

1. Review By A Qualified And Independent Consultant (R.W. Beck)
2. Prepare An Engineering Design
   - Establish 220 MW CFB Costs
   - Establish Performance Criteria
3. Request Bids Against 220 MW CFB Option
   - Open To Alternative Technologies
   - Open To Creative Risk Management And Performance Ideas
4. Based On Outcome Of Bid Process, Finalize Plan

Our Process Has Many Safeguards

(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
7. Obtain Federal And State Environmental Permits
   - Extensive Public Participation
8. Secure Firm Contractual Commitments For Excess Capacity In Early Years
   – Eliminates Market Risks

R.W. Beck's Independent Review

- Internationally recognized management consulting and systems engineering firm with nearly 500 employees nationwide
- R.W. Beck is not a Design/Build Engineering Firm
- Extensive experience with all types of generation projects
  - Financial institutions
  - Municipal clients
  - Over 400 power projects world-wide
- Has provided services to GRU's Bond Trustees in the past

Safeguards After We Are Committed

- Contract Against Cost Over-Runs and Start-Up Risks
  - Liquidated Damages
  - Performance Guarantees
- Plan For Changes In Two Key Financial Factors Through Time
  - Customer Demands For Electricity
  - Fuel Price
    - Commodity Cost
    - Potential Carbon Taxes

The Proposed Plan Is Robust Because It:

1. Improves Our Ability To Use Relatively Inexpensive And Abundant Domestic Fuels
2. Includes Substantial Investments In State-of-the-Art Emission Control Technology
3. Maximizes The Use Of Regionally Available Renewable Energy
   - Reduces Carbon Intensity
   - Promotes Local Industry
4. Has The Lowest Cost Under A Wide Range Of Customer Demands And Fuel Price Forecasts

Question #3:
Will The Proposed Plan Keep Us Financially Strong And Our Electric Rates Affordable ?

Yes. The Proposed Plan Saves Our Customers Money Under A Wide Range Of Future Conditions, While Preserving Our Financial Strength.

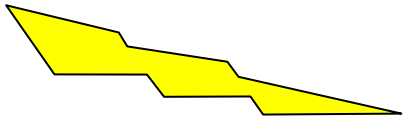
1. Debt Service Coverage Ratios
2. Debt To Equity Ratios
3. Cash Balance/Liquidity
4. Competitive Rates

A BRIEF REVIEW

Before We Start: Key Terms

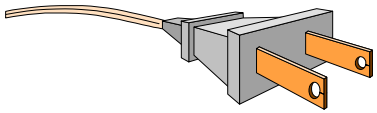
Load: Amount of electric power delivered or required at any specified time (MW).

Energy: Level of power delivered multiplied by the amount of time measured (MWh).



Reserve Margins: Difference between the firm capacity of a utility's system – and the anticipated peak load. GRU's is 15%.

Present Value: Financially Adjusted future costs or revenues to take into account the time value of money. The adjustment factor is called the discount rate.

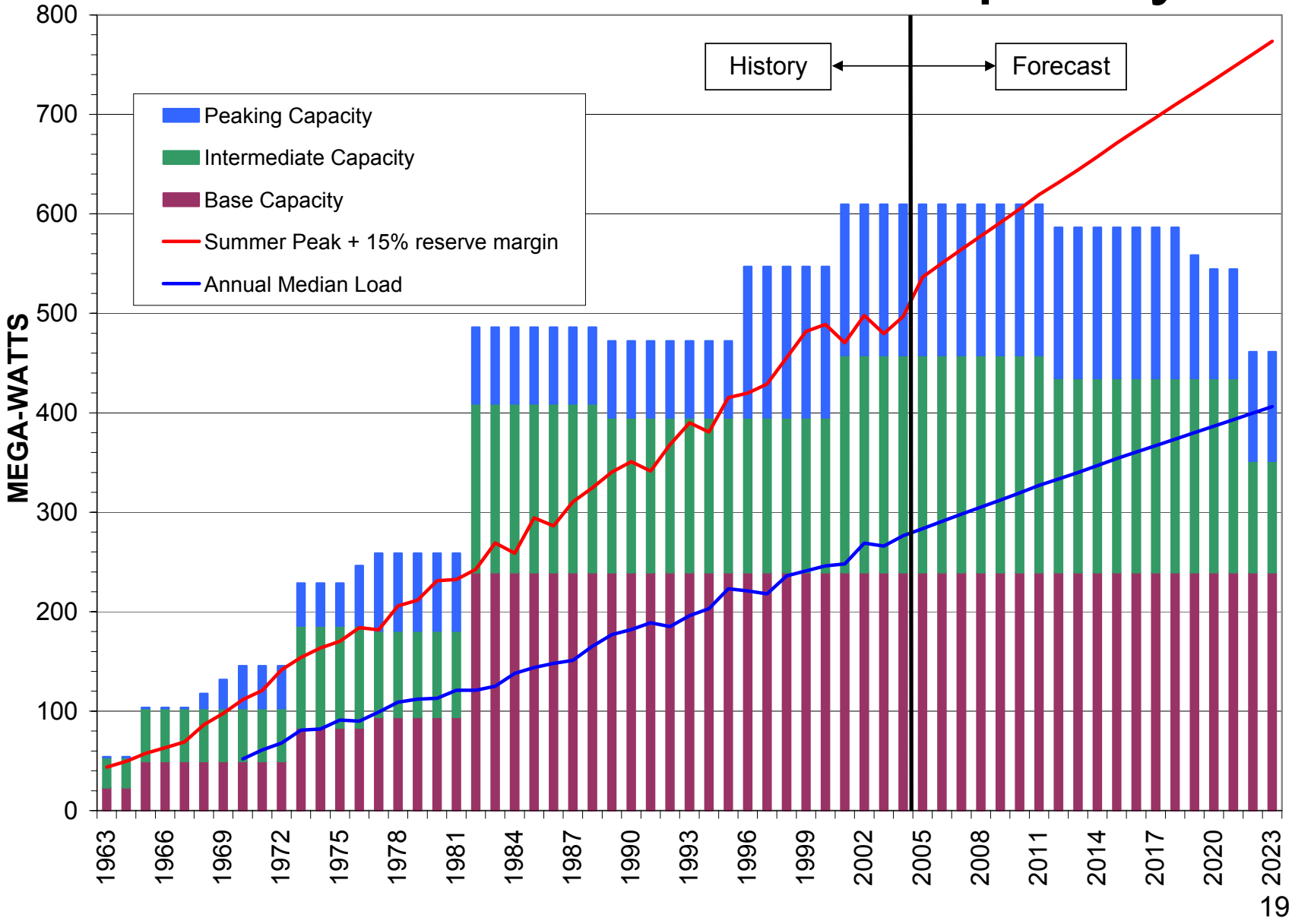


Before We Start: Key Terms

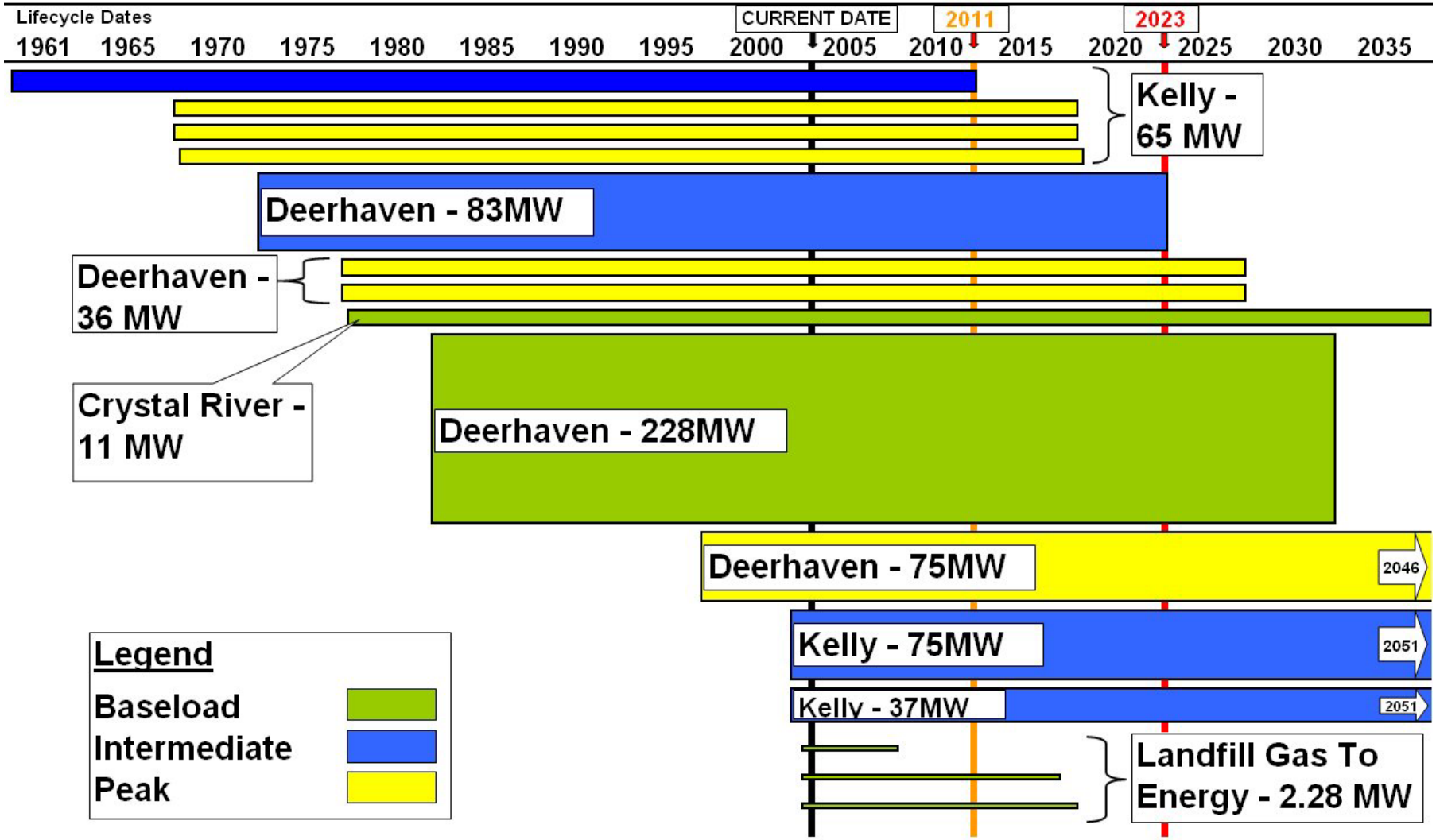
(Continued)

- **Peaking Unit:** Generation unit operated to provide capacity during times of maximum electricity demand. Usually operated for short periods, most expensive to run, not designed for long periods of operation. Usually oil or gas fired. Operates 5 to 10% of the time.
- **Intermediate Unit:** Generating Unit used for load between base and peak load units. Operates less than 50% of the time.
- **Base Load Unit:** Generating Unit operated to meet the minimum load. Normally large, efficient, with a low cost per kilowatt hour. Operates more than 50% of the time.

We Need Base Load Capacity



Generators Will Be Retired



Unit Retirement Schedules

We Must Plan For A Minimum Reserve Margin

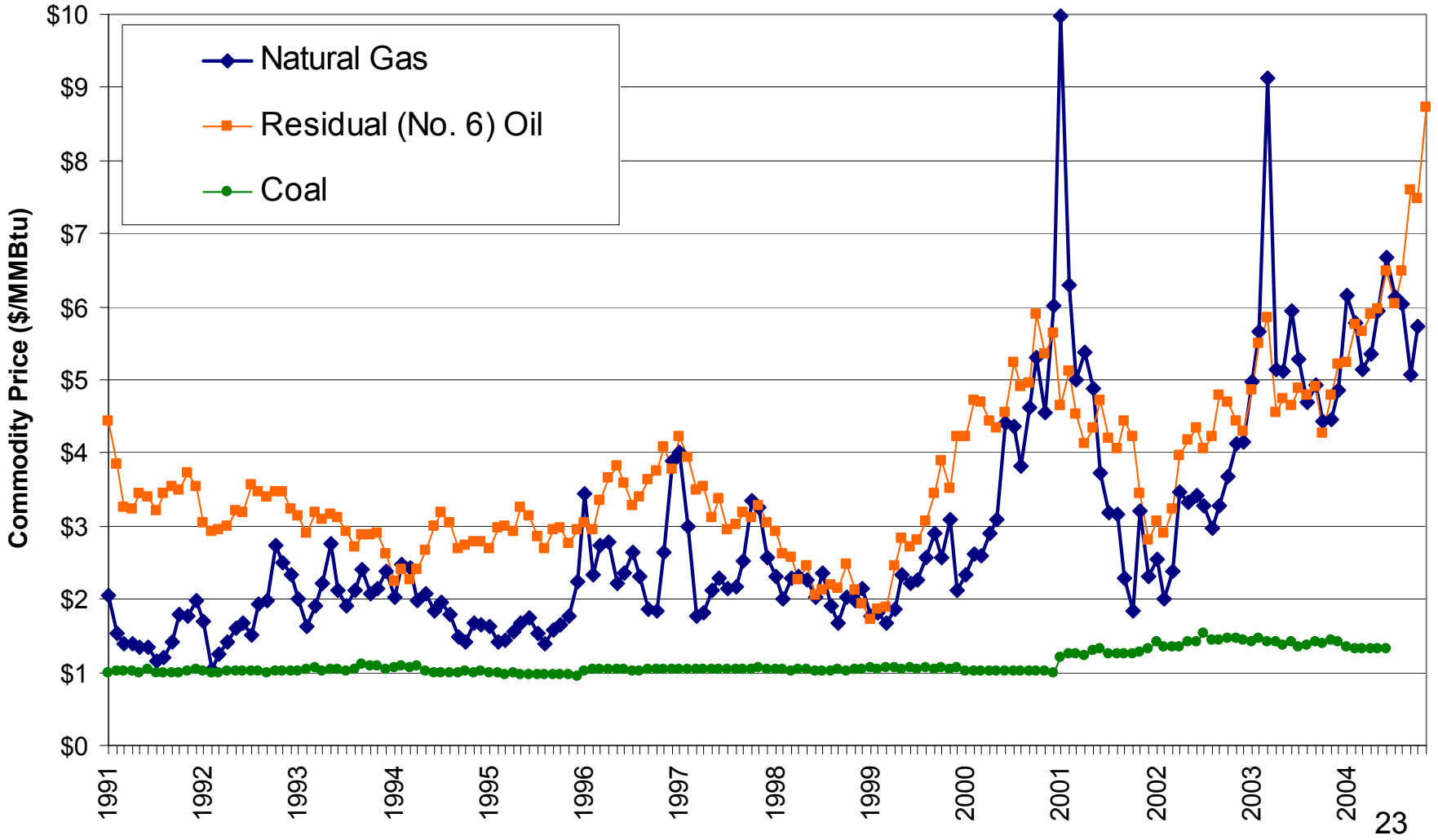
Company	Summer Reserve Margin
Florida Power and Light	20%
Progress Energy Florida	20%
Tampa Electric Company	20%
Lakeland Electric	20%
Florida Municipal Power Agency	18%
City of Tallahassee	17%
Gainesville Regional Utilities	**15%**
JEA	15%
Orlando Utilities Commission	15%
Seminole Electric Cooperative	15%

USA Oil And Gas Production Has Peaked

Fuel	Years of Reserve	% Imported
Oil	16	52%
Gas	52	18%
Coal	480	0

Source: U.S. DOE Energy Information Administration

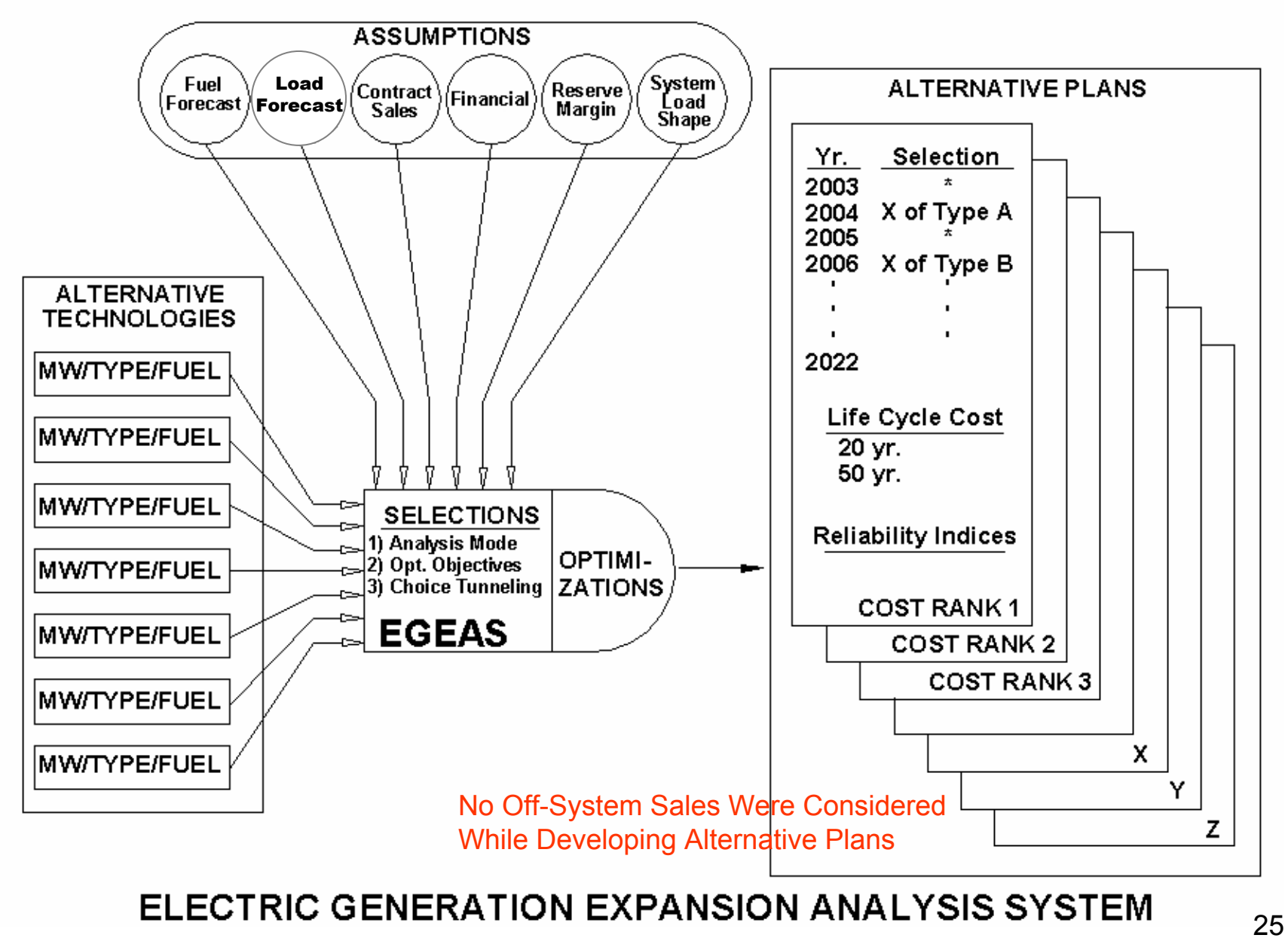
We Are Concerned About The Cost Of Fuels



We Reviewed A Wide Range Of Technologies

Biomass Cofiring
Biomass Gasifiers
Biomass Stand Alone
Bubbling Bed Boilers
Circulating Fluidized Bed
Cogeneration (heat and power)
Combustion Turbines - combined cycle
Combustion Turbines - simple cycle
Direct Load Control
Distributed Generators
Fuel Cells
Geothermal
Hydro-Electric
Integrated Gasification Combined Cycle
Market Purchases
Microturbines
Nuclear
Plasma Arc Reduction
Pulverized Coal
Pulverized Coal - subcritical
Pulverized Coal - supercritical
Refuse Derived Fuel Units
Repowering DH1
Solar Concentrating Collectors
Solar Photovoltaic
Solar Thermal Electric
Solid Fuel Gasifiers
Tidal Generators
Wave Energy Generators
Wind Turbines

Electric Resources Planning Process



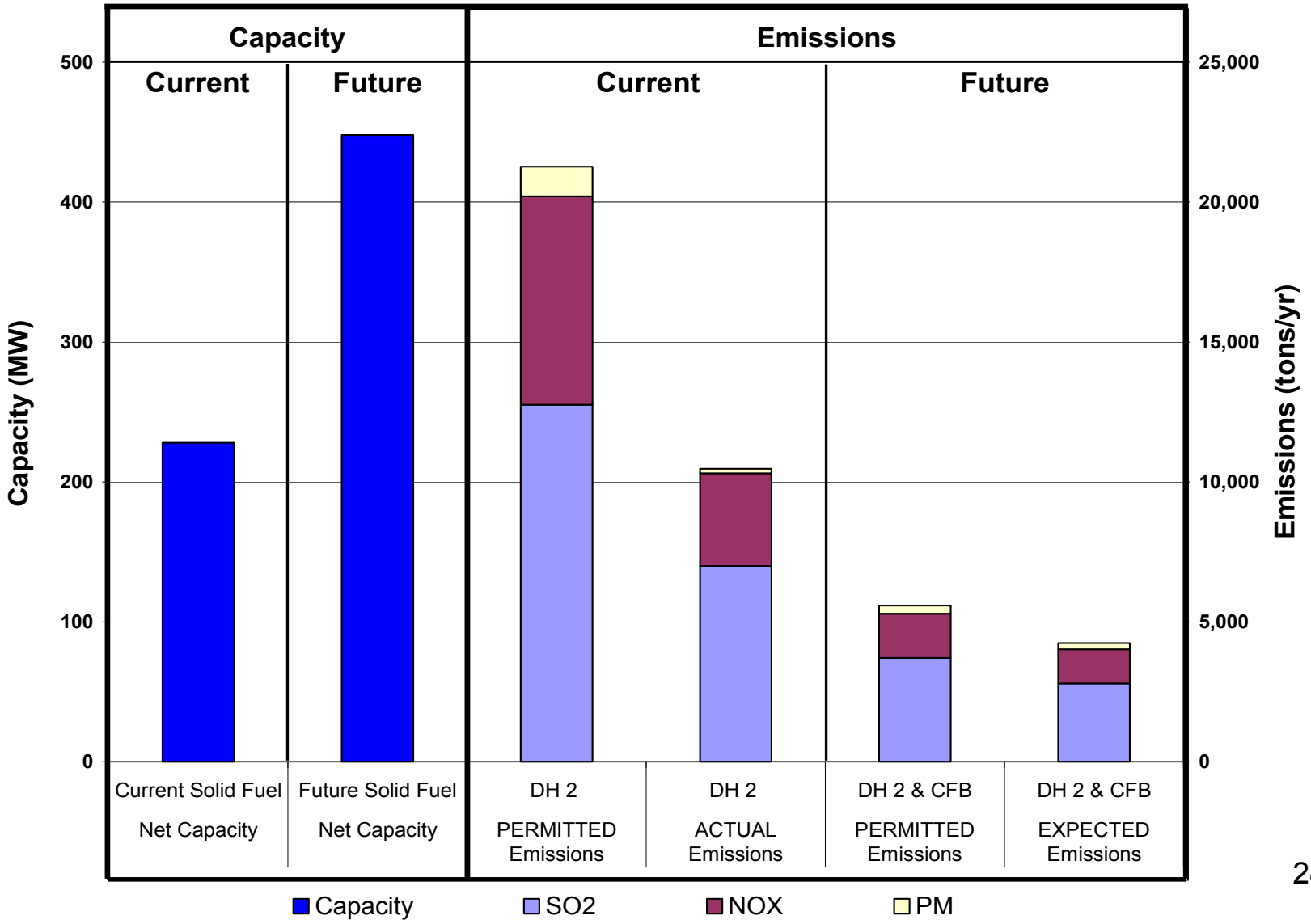
We've Already Made Some Choices

- On December 15, 2003 Staff Was Instructed To Develop Local Generation Options That:
  - Reduce Dependence On The State's Transmission Grid
  - Provide Economics Of Scale For Retrofitting Deerhaven 2 Air Emission Controls
  - Provide Options For The Use Of Renewable Energy (Biomass)
  - Assure Local Control
- Staff Has Developed A Plan That Meets These Objectives

We Have Also Addressed:

- Pending Environmental Regulation Changes
- The Most Cost-Effective Renewable Energy Resources
- The Inability To Avoid Base Load Capacity With Demand Side Management

Twice the Solid Fuel Capacity with Less than Half the Emissions



Overall CO_2 Intensity Would Be Reduced By 14%

Year	Carbon Emissions (Million Tons CO_2)	Carbon Intensity* (lb-CO2/Gross MWh)
2003	1.8	1,998
2012	3.2	1,721

* Adjusted To Reflect No Offsets in 2003. Carbon Offsets Include Treating Biomass As Carbon Neutral, Methane Reductions from Landfill Gas, Demand Side Management, Equipment Effiecency Upgrades and Photovoltiac Electric Installations.

FINANCIAL RISK AND REWARDS

The Focus For Tonight

Comparing Three Alternative Plans With Respect To The Financial Effects Of The Following Key Factors:

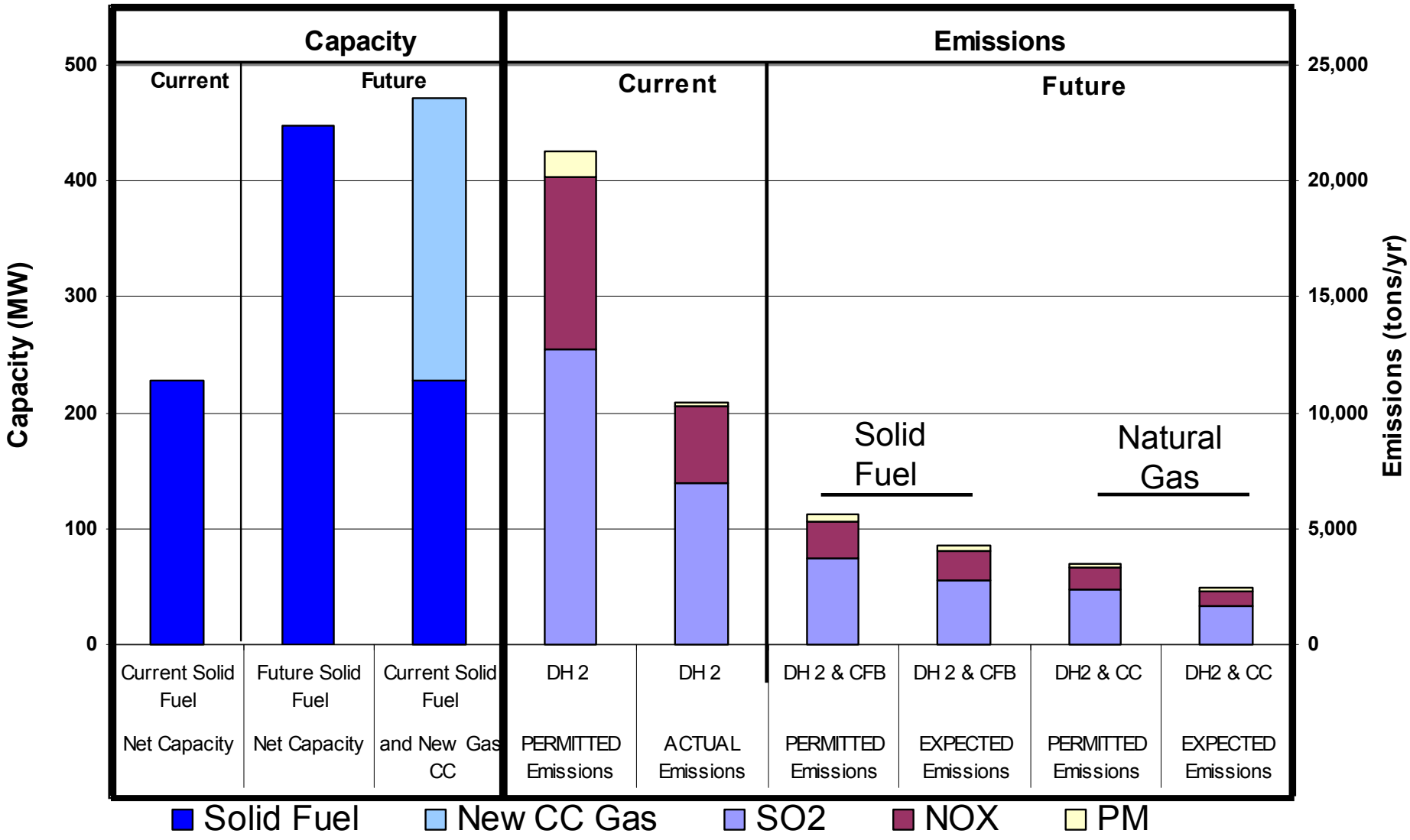
1. Customer Demands For Electricity
2. Fuel Price And Supply
   - Commodity Costs
   - Potential Carbon Taxes

Alternative Plans For Comparison

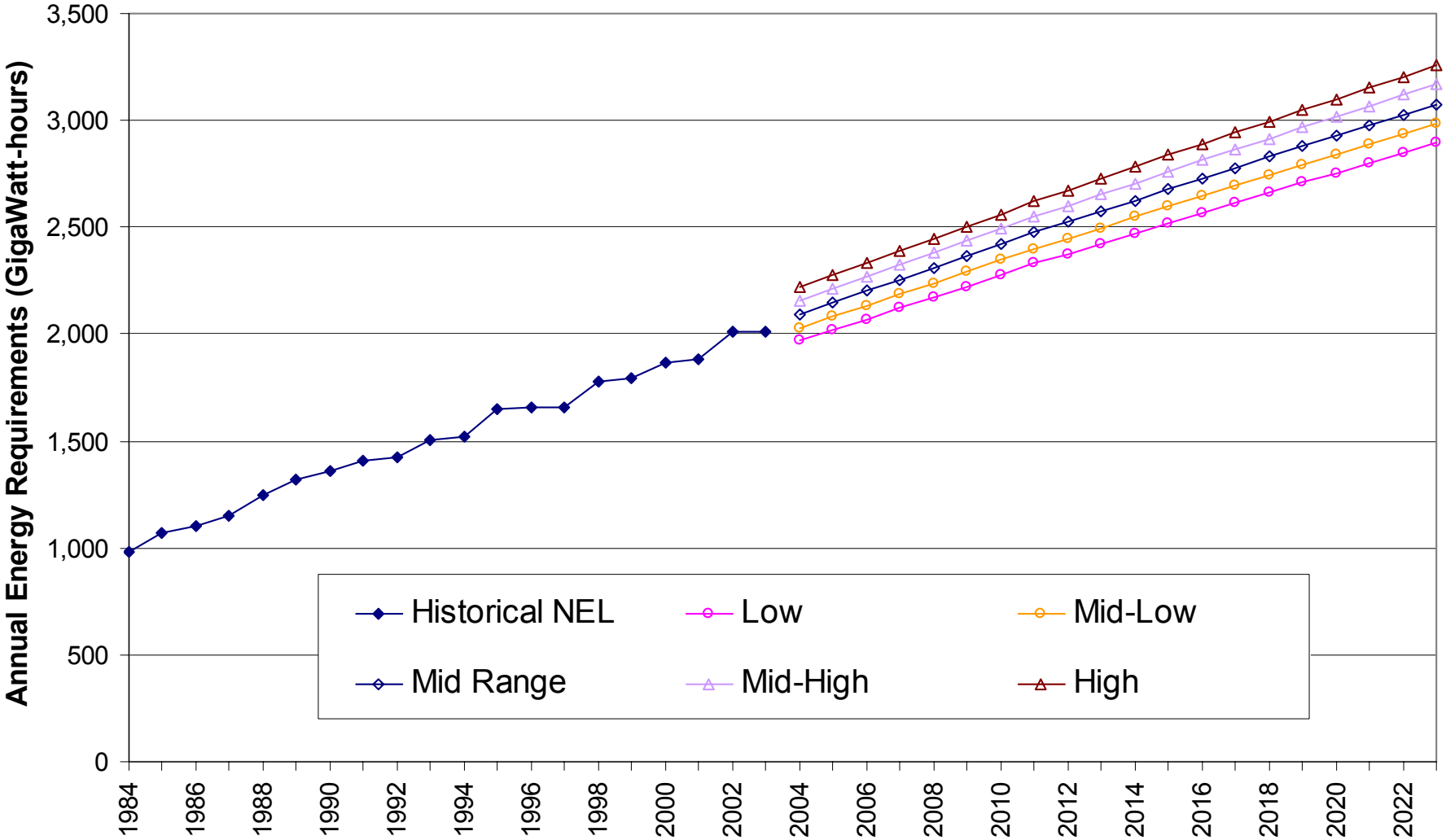
(2005 Construction Costs-$Million)

Plan	Cost
•Solid Fuel –220 MW CFB ▪ Biomass ▪ Coal ▪ Pet Coke –Deerhaven 2 Retrofit	$415
•Natural Gas –240 MW Combined Cycle –Deerhaven 2 Retrofit	$223
•Rent Capacity –Market Purchase –Deerhaven 2 Retrofit	$73

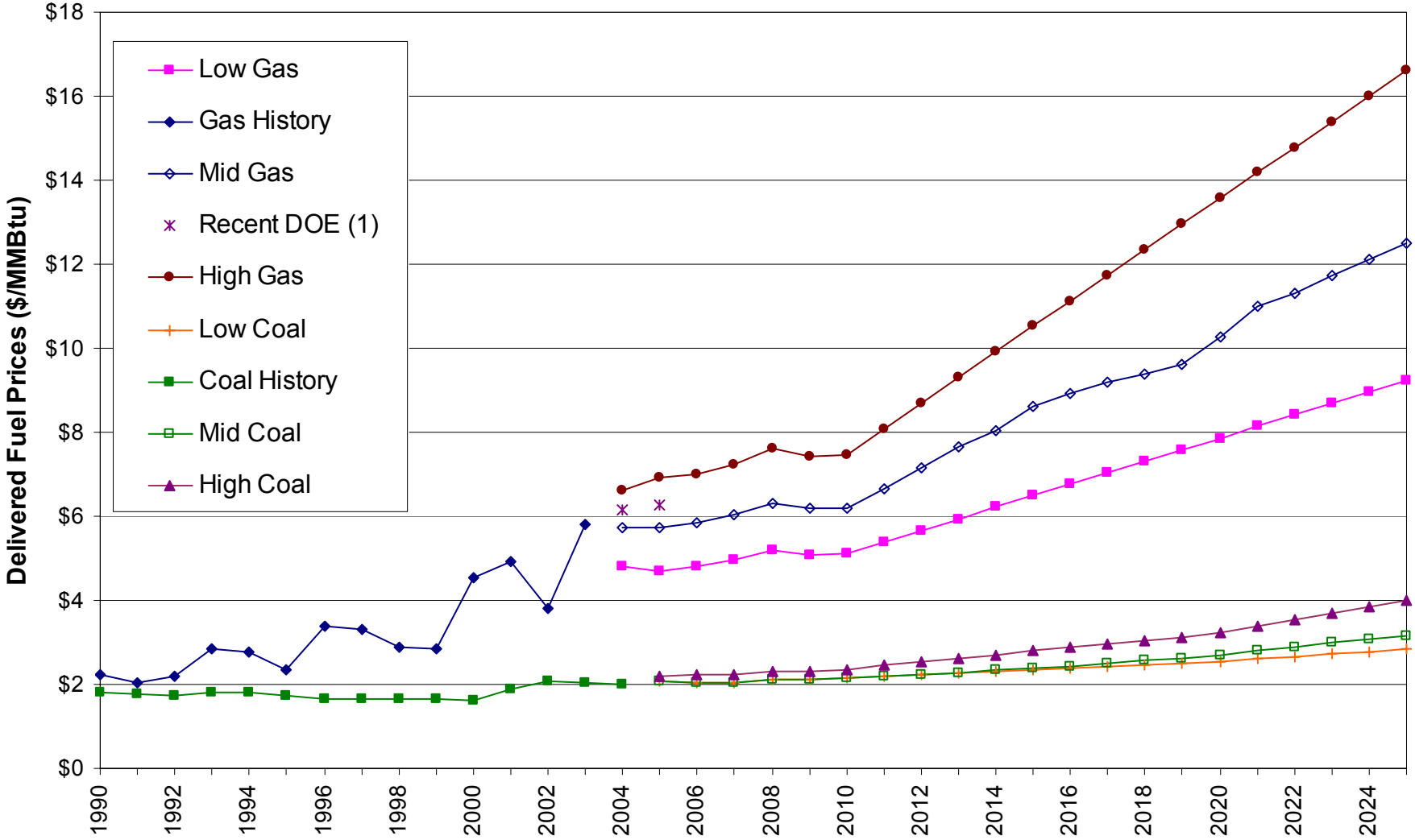
Both Build Options Reduce Emissions



The Range Of Forecasts We've Tested

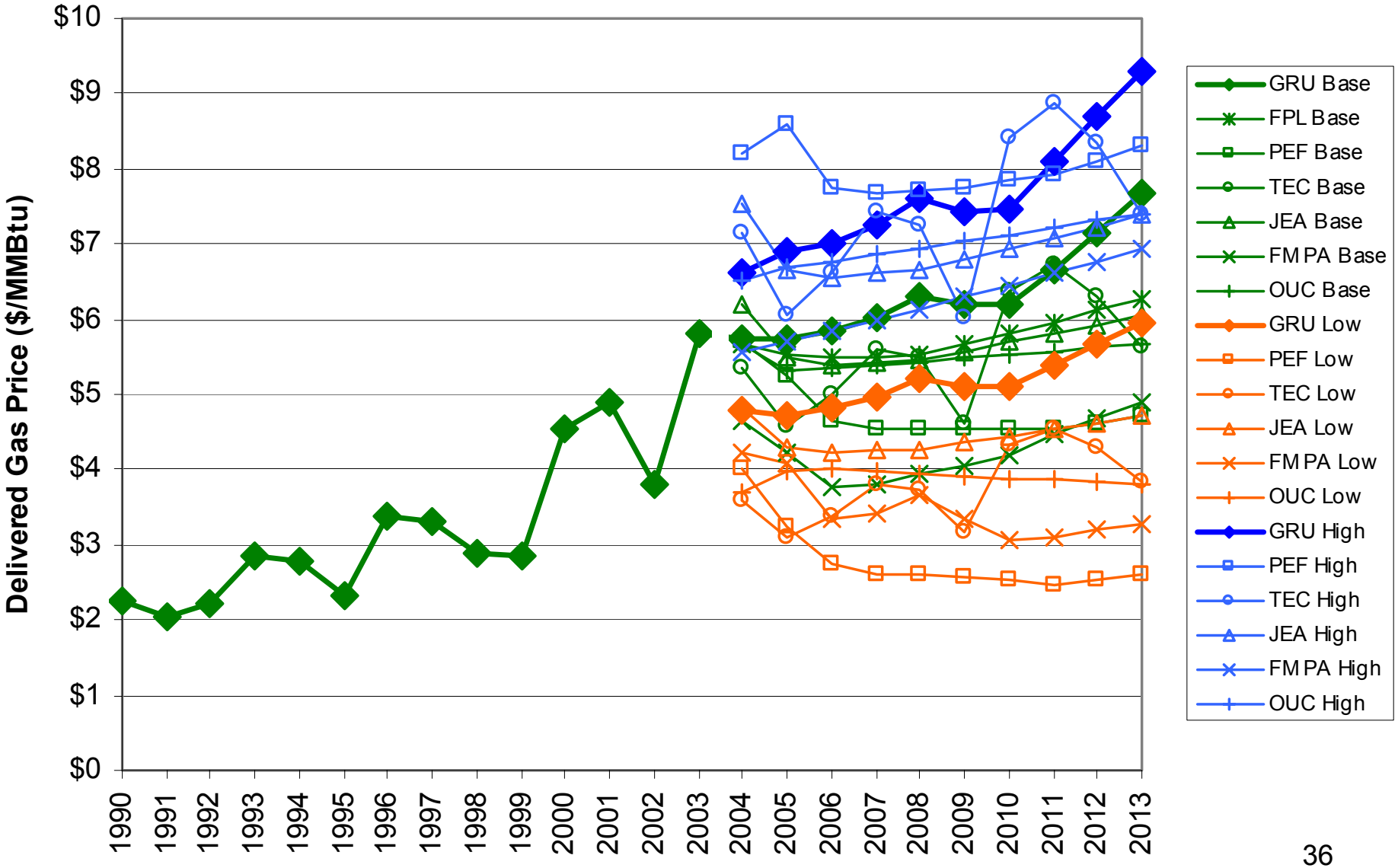


The Range Of Natural Gas And Coal Prices We've Tested



(1) U.S. Department of Energy, Energy Information Administration, Short-Term Energy Outlook, October 2004

Our Forecasts Are In The Range



Range Of Potential Carbon Prices We've Tested

($/Ton Carbon By 2015)

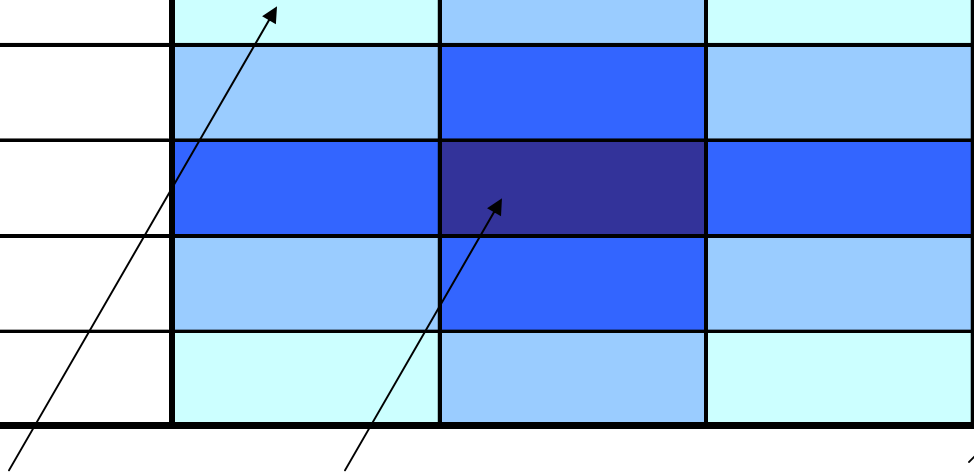
	LOW	HIGH
• Carper Bill[1]	$18	$ 51
• McCain Lieberman[2]	$44	$106
• Range Tested	$50	$100

1. EIA Analysis of S.485 "The Clear Skies Act of 2003" and S.843 "The Clean Air Planning Act of 2003". Unsuccessful Legislation.
2. Charles River Associates analysis of S.139. Unsuccessful Legislation.

Source: An Assessment of AEP's Actions To Mitigate The Economic Impacts of Emissions Policies, American Electric Power, August 2004

Key Scenarios For Detailed Comparison For Tonight

Load and Energy Forecasts	Fuel Prices			
	High Gas High Coal	Mid Gas Mid Coal	Low Gas Low Coal	Low Gas High Coal
High Range				
Mid-High				
Mid Range				
Mid-Low				
Low Range				



Largest Spread Between Gas And Solid Fuel Prices, With Maximum Customer Demands (Best For Solid Fuel)

Most Likely Case

Smallest Spread Between Gas And Solid Fuel Prices, With Minimum Customer Demands (Best For Natural Gas)

Results Of Key Scenarios – No Carbon Tax

Life Cycle Present Value of Total Power Production Costs - $Billions

SCENARIO No Carbon Tax	ALTERNATIVE PLAN		
	Solid Fuel	Natural Gas	Rent Capacity
Mid-Range	2.252	2.706	3.010
Best For Natural Gas[1]	2.224	2.377	2.579
Best For Solid Fuel[2]	2.857	3.604	4.275

1. Smallest gas-coal price spread, lowest customer demand forecast
2. Biggest gas-coal price spread, highest customer demand forecast

Results Of Key Scenarios – $50/Ton Carbon Tax

Life Cycle Present Value of Total Power Production Costs - $Billions

SCENARIO $50/Ton Carbon	ALTERNATIVE PLAN		
	Solid Fuel	Natural Gas	Rent Capacity
Mid-Range	3.119	3.477	3.892
Best For Natural Gas[1]	3.049	3.121	3.332
Best For Solid Fuel[2]	3.763	4.400	5.086

1. Smallest gas-coal price spread, lowest customer demand forecast
2. Biggest gas-coal price spread, highest customer demand forecast

Results Of Key Scenarios – $100/Ton Carbon Tax

Life Cycle Present Value of Total Power Production Costs - $Billions

SCENARIO $100/Ton Carbon	ALTERNATIVE PLAN		
	Solid Fuel	Natural Gas	Rent Capacity
Mid-Range	3.987	4.247	4.674
Best For Natural Gas[1]	3.883	3.767	4.074
Best For Solid Fuel[2]	4.669	5.196	5.896

1. Smallest gas-coal price spread, lowest customer demand forecast
2. Biggest gas-coal price spread, highest customer demand forecast

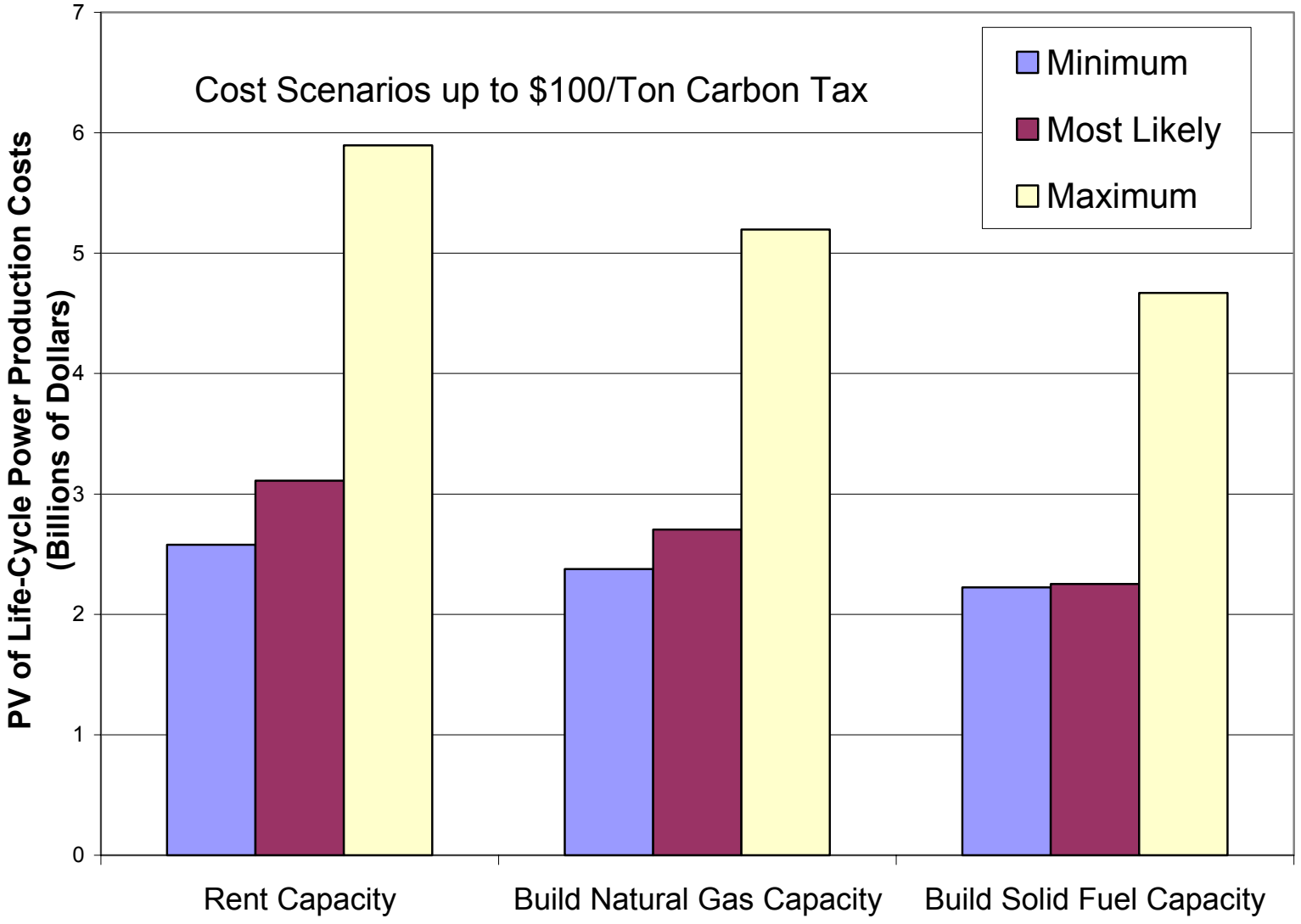
Solid Fuel Is The Least Cost Plan Even With High Carbon Taxes

CARBON TAX ($/Ton Carbon)	CUSTOMER DEMAND FORECAST	FUEL PRICE FORECAST			
		High Gas High Coal	Mid Gas Mid Coal	Low Gas Low Coal	Low Gas High Coal
0	High (+2 Stand. Dev.)				
	Mid-High (+1 Stand. Dev.)				
	Mid-Range				
	Mid-Low (-1 Stand. Dev.)				
	Low (-2 Stand. Dev.)				
50	High (+2 Stand. Dev.)				
	Mid-High (+1 Stand. Dev.)				
	Mid-Range				
	Mid-Low (-1 Stand. Dev.)				
	Low (-2 Stand. Dev.)				
100	High (+2 Stand. Dev.)				
	Mid-High (+1 Stand. Dev.)				
	Mid-Range				
	Mid-Low (-1 Stand. Dev.)				
	Low (-2 Stand. Dev.)				

Legend- Plan With Lowest Life-Cycle Cost

- Solid Fuel Plan
- Natural Gas Plan
- Rent Capacity Plan

Our Solid Fuel Plan Will Pay For Itself And Provide Substantial Price Protection



Savings From Solid Fuel Plan Are Substantial And A Sound Investment

($ Millions)

Scenario	Present Value Savings Compared To Rented Capacity	Benefit[1] To Cost[2] Ratio
Minimum Savings Potential[3]	191	1.6
Mid-Range Forecasts[4]	753	3.2
Maximum Savings Potential[5]	1,418	5.1

1. Benefits = Difference in total net present value costs from "Rent Capacity" plan plus present value of incremental capacity cost of plan
2. Cost = Present value of incremental capital cost compared to "Rent Capacity" plan
3. Smallest gas-coal price spread, low est customer demand forecast, $100/ton carbon tax
4. Mid range fuel price spread and customer demand forecast, $50/ton carbon tax
5. Biggest gas-coal price spread, highest customer demand forecast, $0/ton carbon tax

THE EFFECTS ON RATES AND FINANCIAL INDICATORS

What is the Corporate Model?

- The Corporate Model is a tool used for budgeting and financial planning purposes.
- It assists us in determining the financial impacts of the various alternatives that we are considering.
- The model has been extended to 2023 for IRP purposes.
- The model is an iterative process, and has a number of variables and assumptions embedded.

Corporate Model Inputs

- There are corporate model assumptions that are used for all scenarios
  - Inflation Rate for Non–Generation O&M
  - Interest Rate Forecasts
  - Normal Capital Needs for Construction
  - Existing Debt Service Obligations
  - Established formulas for GFT and UPIF Contribution
- We have assumed firm contract capacity sales for unneeded base load capacity to cover only direct costs including debt service

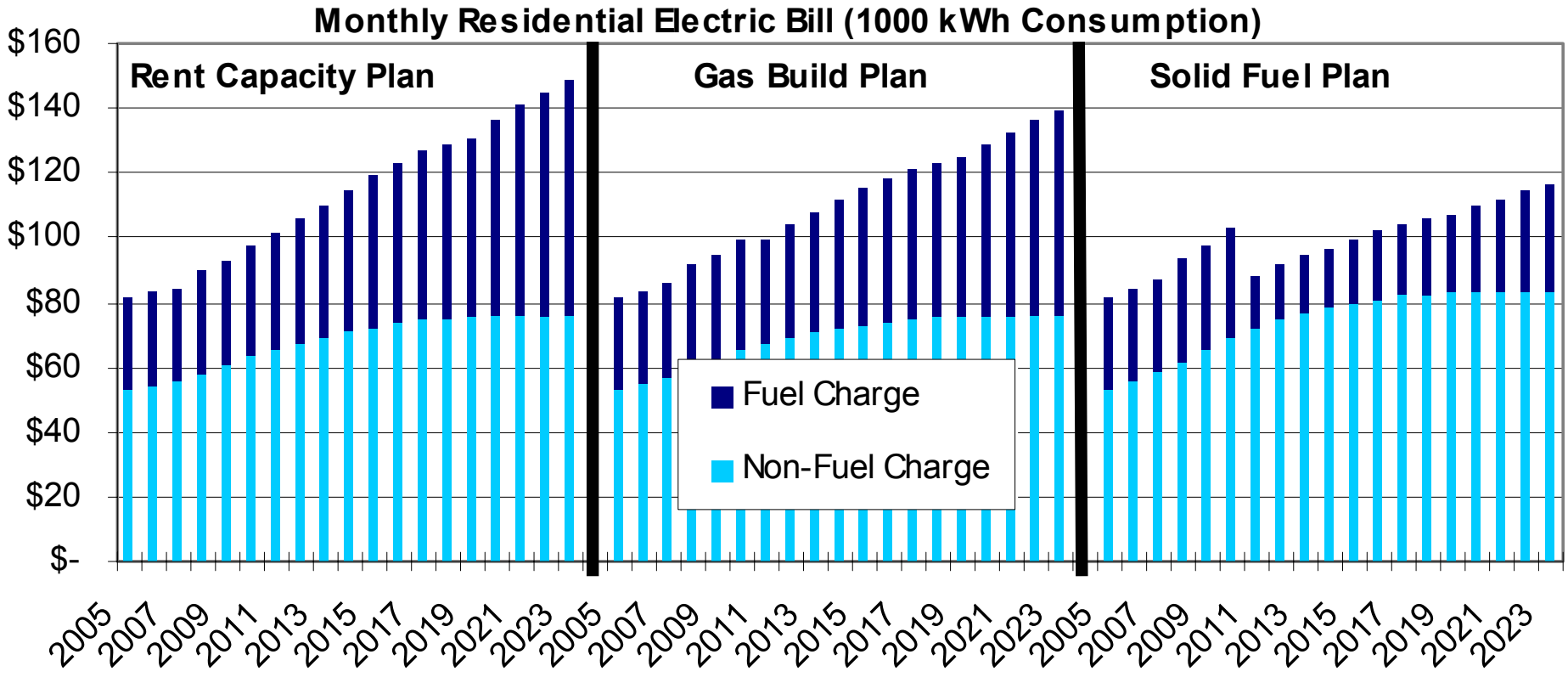
Model Results

- Price per MWh
- Rate Changes
- Rate Stabilization Fund Balances
  - Contingency fund for emergencies and changes in forecast
  - Used to stabilize rates for our customers.
- Total Debt Service Coverage
  - Total Net Revenues/Total Debt Service
  - Do we have enough income to pay our debts? The higher the number the better signal it sends
- Debt/Equity Ratios
  - The higher the number, the more we are financing our capital assets with debt

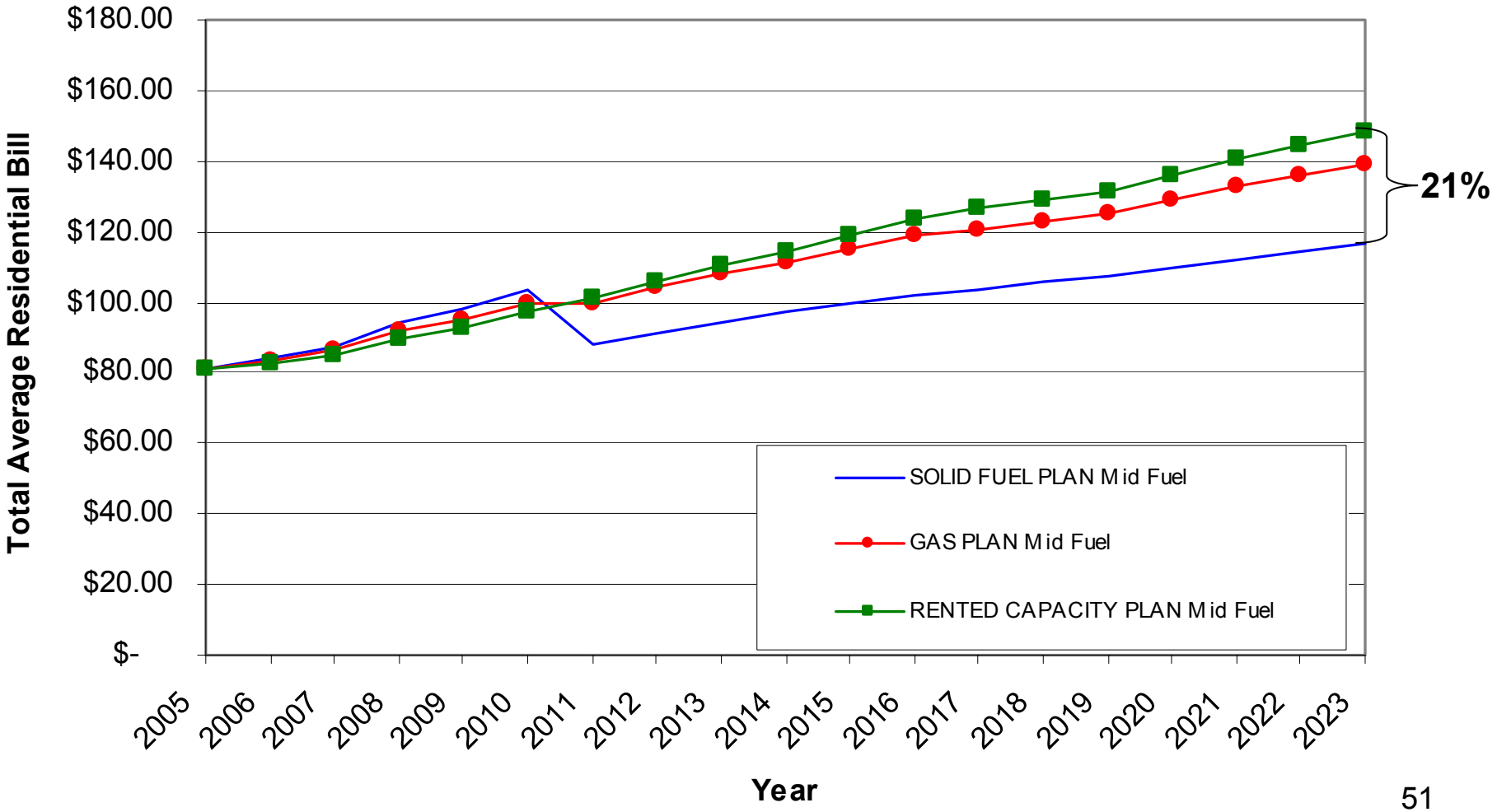
Capital Assumptions

Assumption	Rent Capacity Plan	Natural Gas Plan	Solid Fuel Plan
Capital Cost plus Capitalized Interest	91,673,881	285,885,525	539,426,205
Equity Used	9,500,000	27,000,000	53,500,000
Debt Issued	$82,173,881	$258,885,525	$485,926,205

Base Rate Increases More Than Pay For Themselves



A Typical Residential Customer's Bill Would Be Much Less



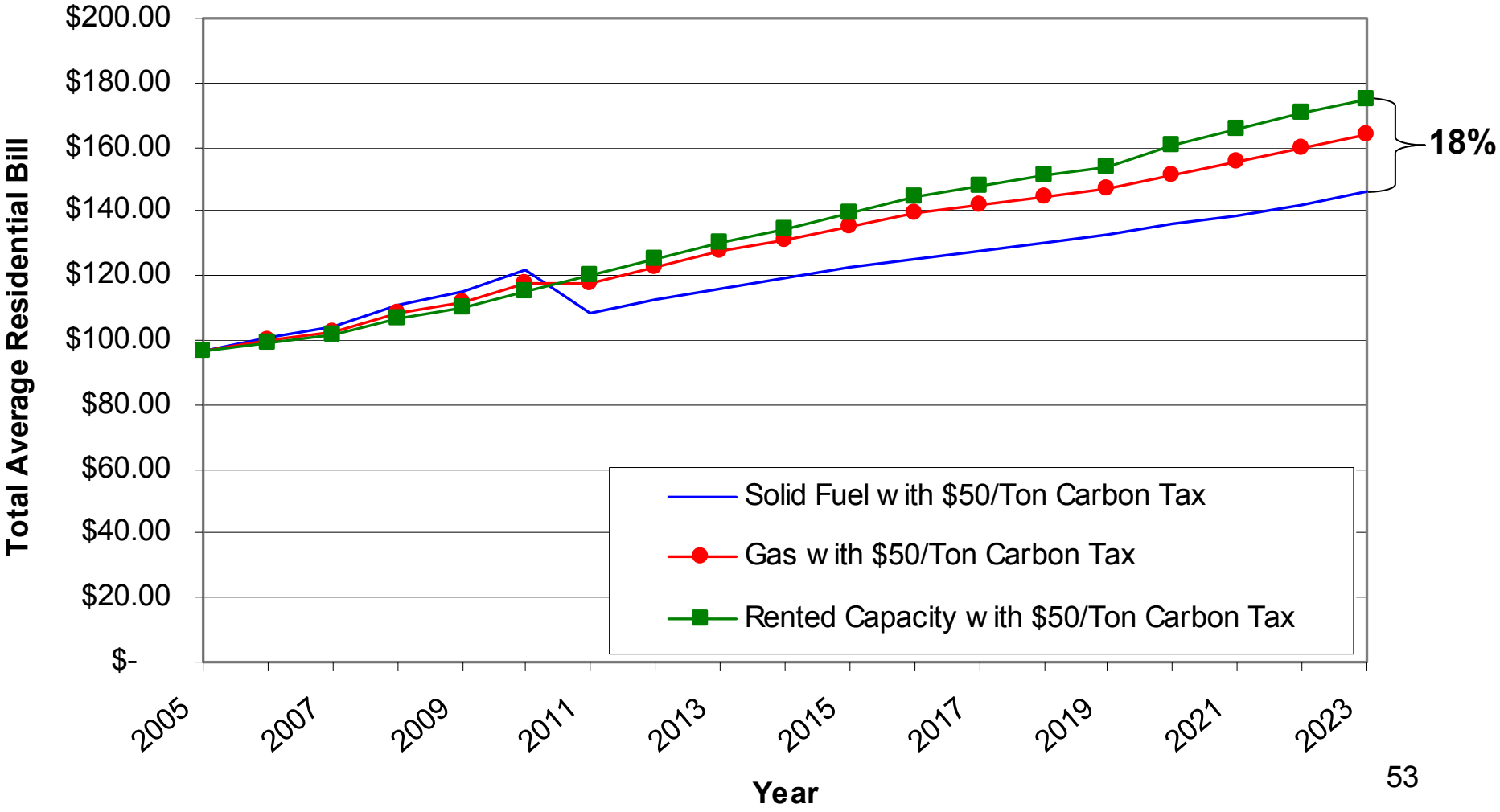
Future Price Increases Will Be Cut In Half

Monthly Residential Bill (1000 kWh)

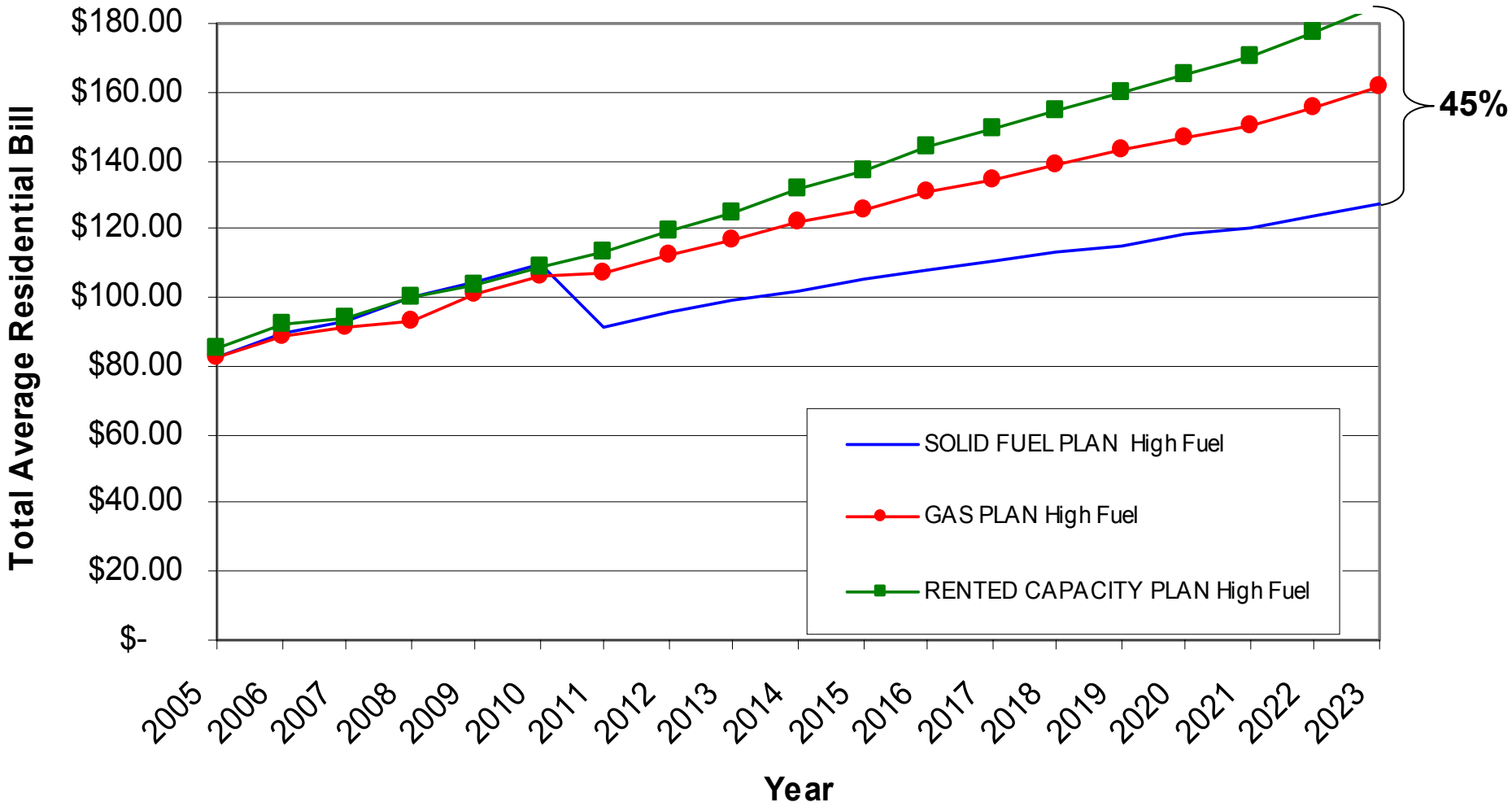
Plan	2023 Price	% Change
Solid Fuel	$ 116.90	44%
Gas	$ 139.38	72%
Rent Capacity	$ 148.49	83%

2005 Price $81.04 (Monthly Residential Bill, 1000 kWh)

A Typical Residential Customer's Bill Is Still Less With Carbon Taxes



Customer Savings May Be Even Greater



Conclusion

- The Process We Intend To Follow Will Provide 3-4 Years To Re-evaluate Our Assumptions
- The Solid Fuel Plan Is Least Cost Under A Wide Range Of Conclusions, Including Carbon Taxes
  - A Sound Investment
  - 18% - 45% Lower Costs by 2023 than the Rent Capacity Plan
- The Solid Fuel Plan Will Substantially Reduce Emissions And Increase The Use Of Renewable Energy

Next Steps

- At the December 13, 2004 Commission meeting staff will:
  - Follow-up on RW Beck recommendations
  - Provide further information as requested tonight
- Next step would be for the City Commission to approve the plan in concept which would allow staff to begin the process of selecting an engineer to develop a conceptual design.

Thank You

R.W. Beck Presentation
to follow