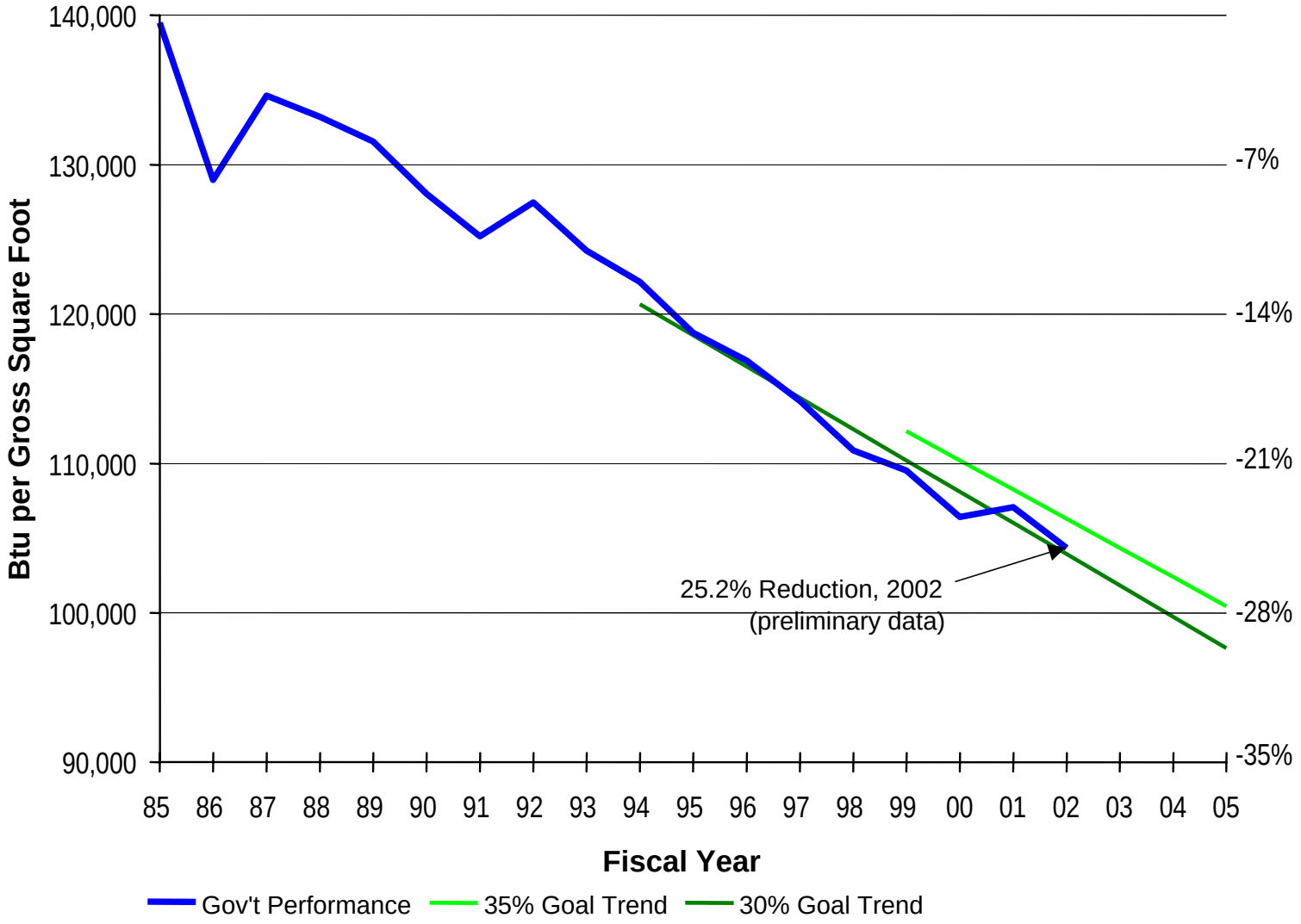
An Energy-Efficiency Workshop and Exposition
Orlando, Florida

Federal Energy Goals: Imagining Success

Chris Tremper

McNeil Technologies

Federal progress to-date

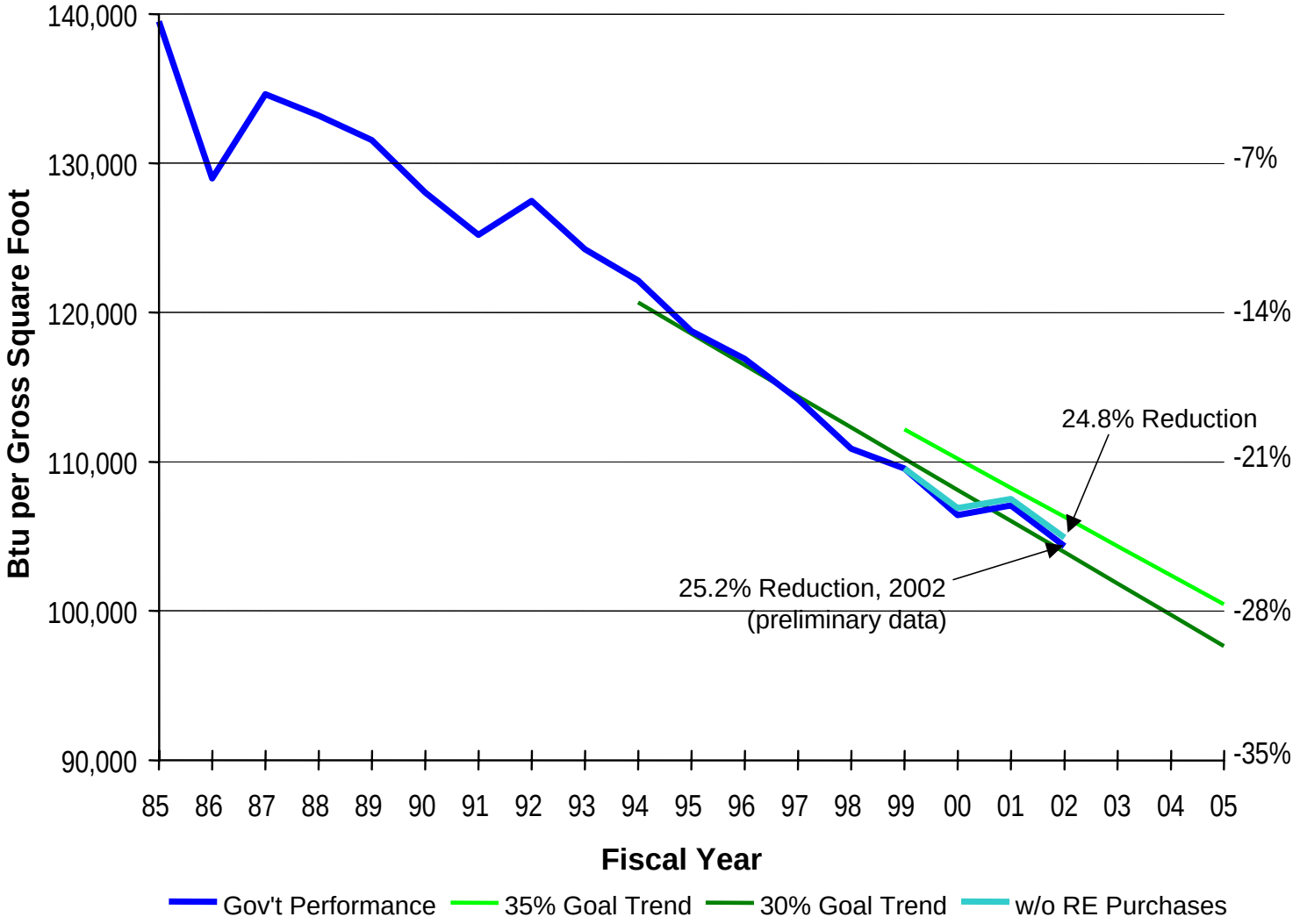


Imagining the contributors to Federal success to-date

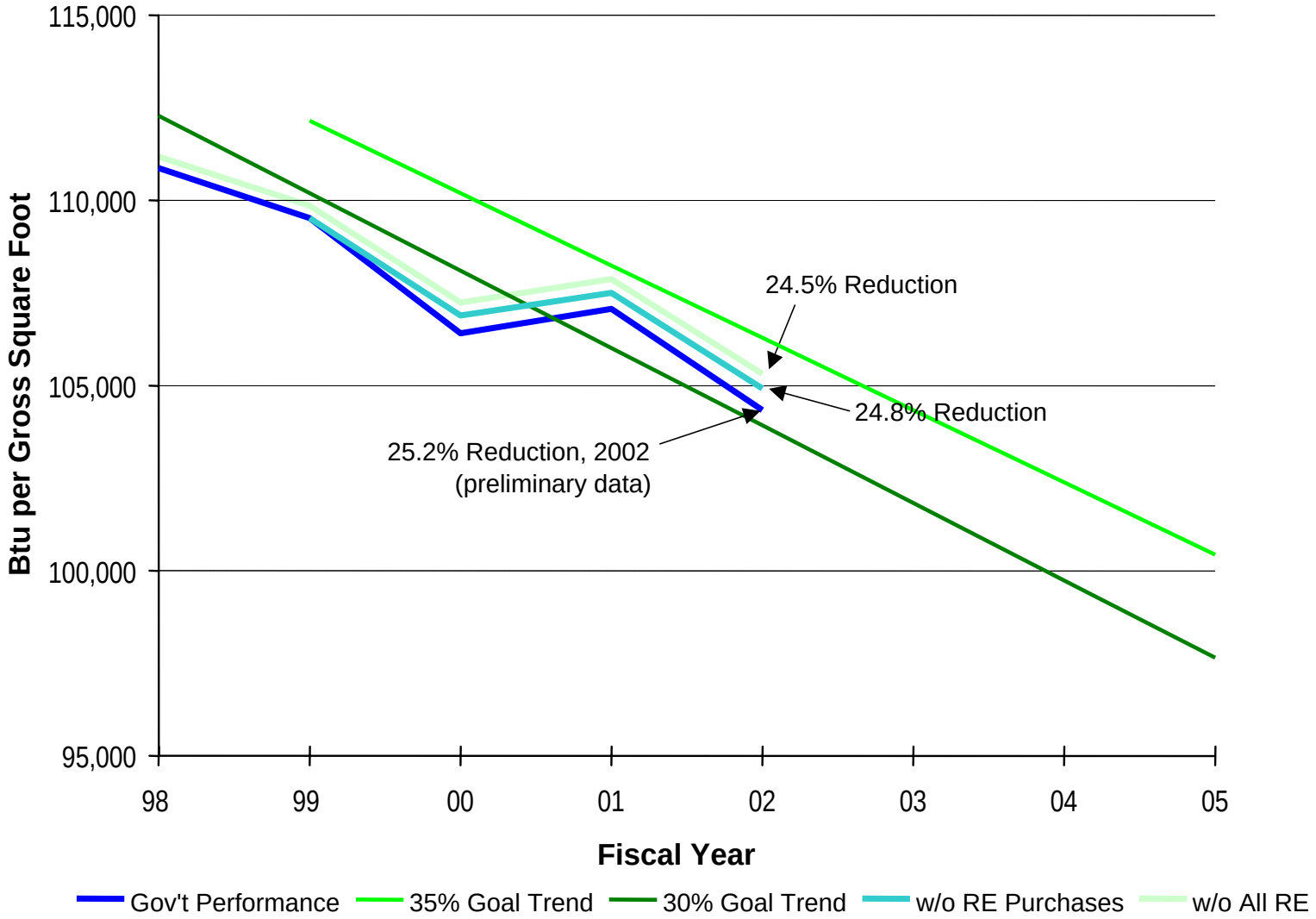
Degree of Direct Control

- Renewable energy purchases/ on-site generation
- Energy efficiency construction/ retrofit projects
  - Direct appropriations
  - Alternative financed
- Energy efficient product/equipment procurement
- Weather
- Other factors
  - Energy awareness/personnel conservation
  - Reduction in Federal workforce
  - Changes is building/fuel mix

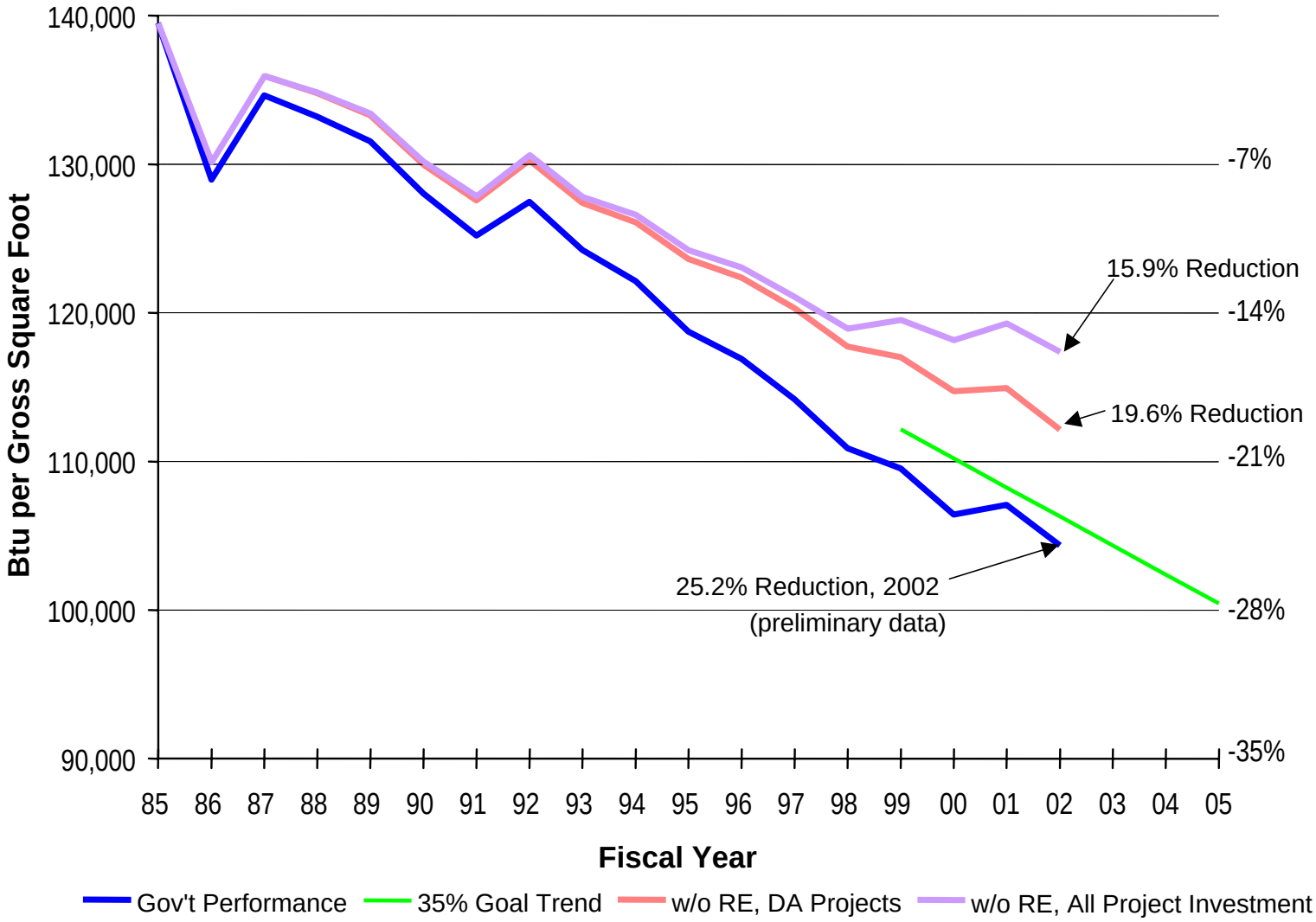
Renewable Energy Purchases



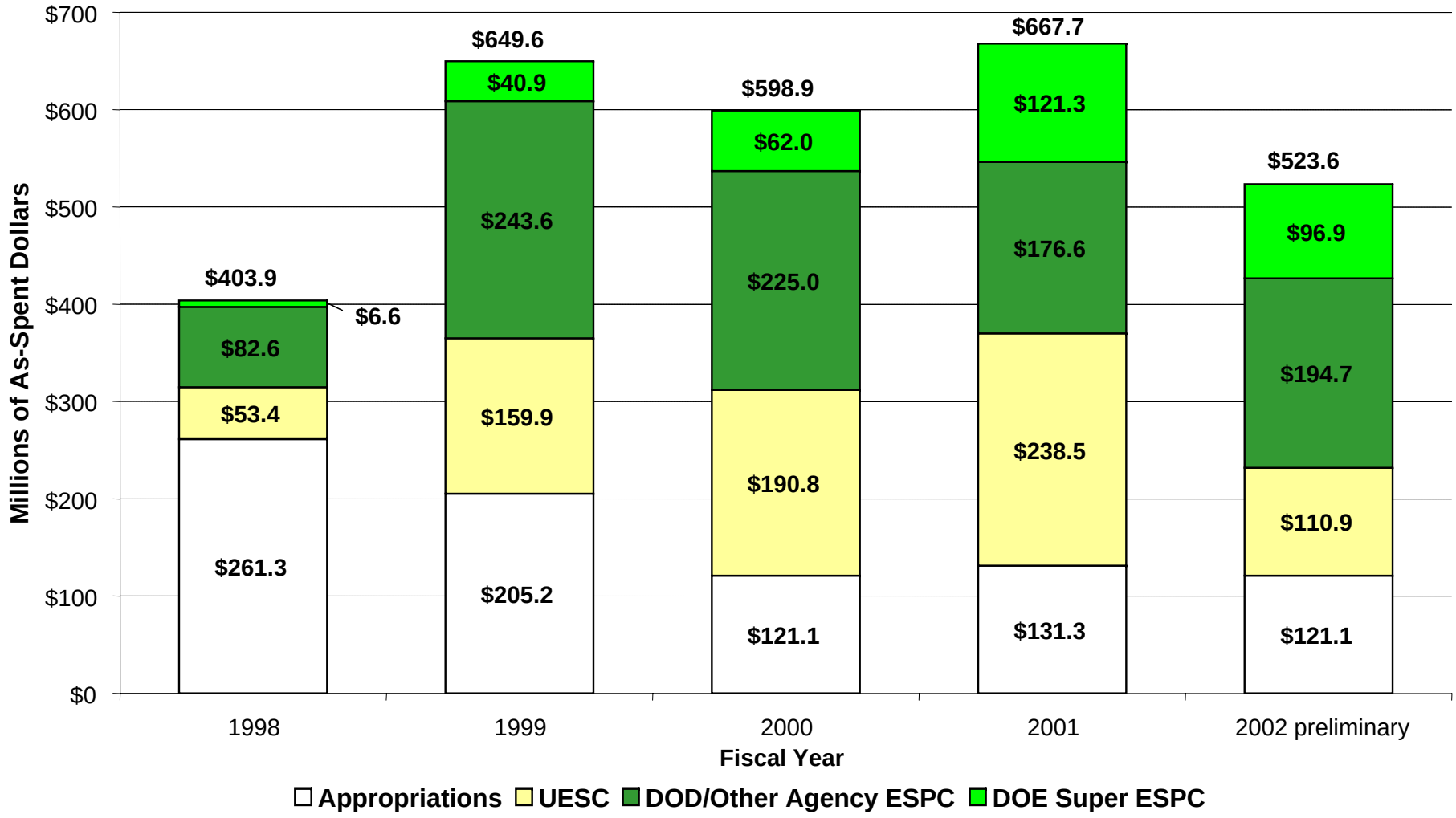
Renewable Energy Impact: A Closer Look



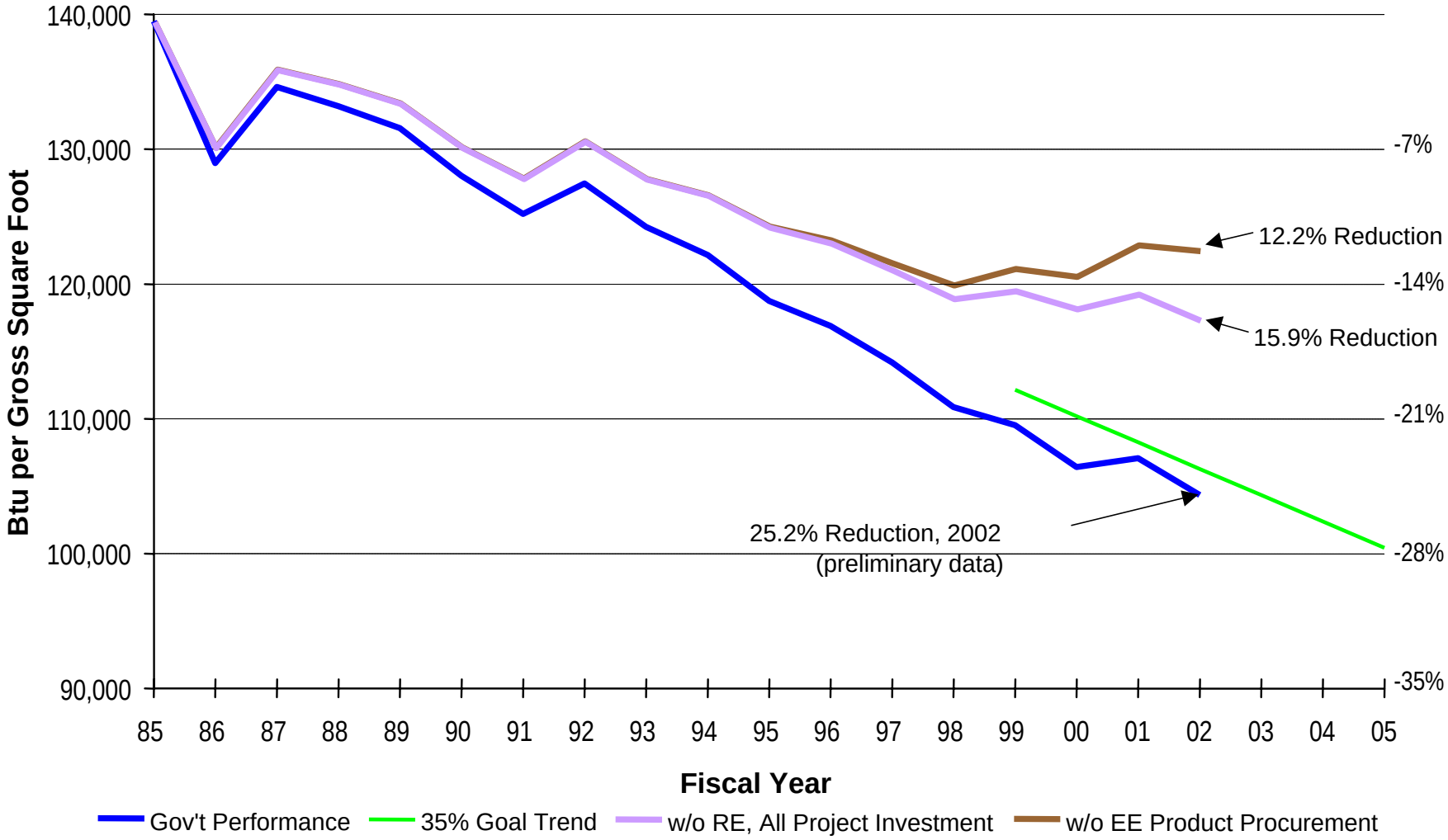
Impact of Project Investment



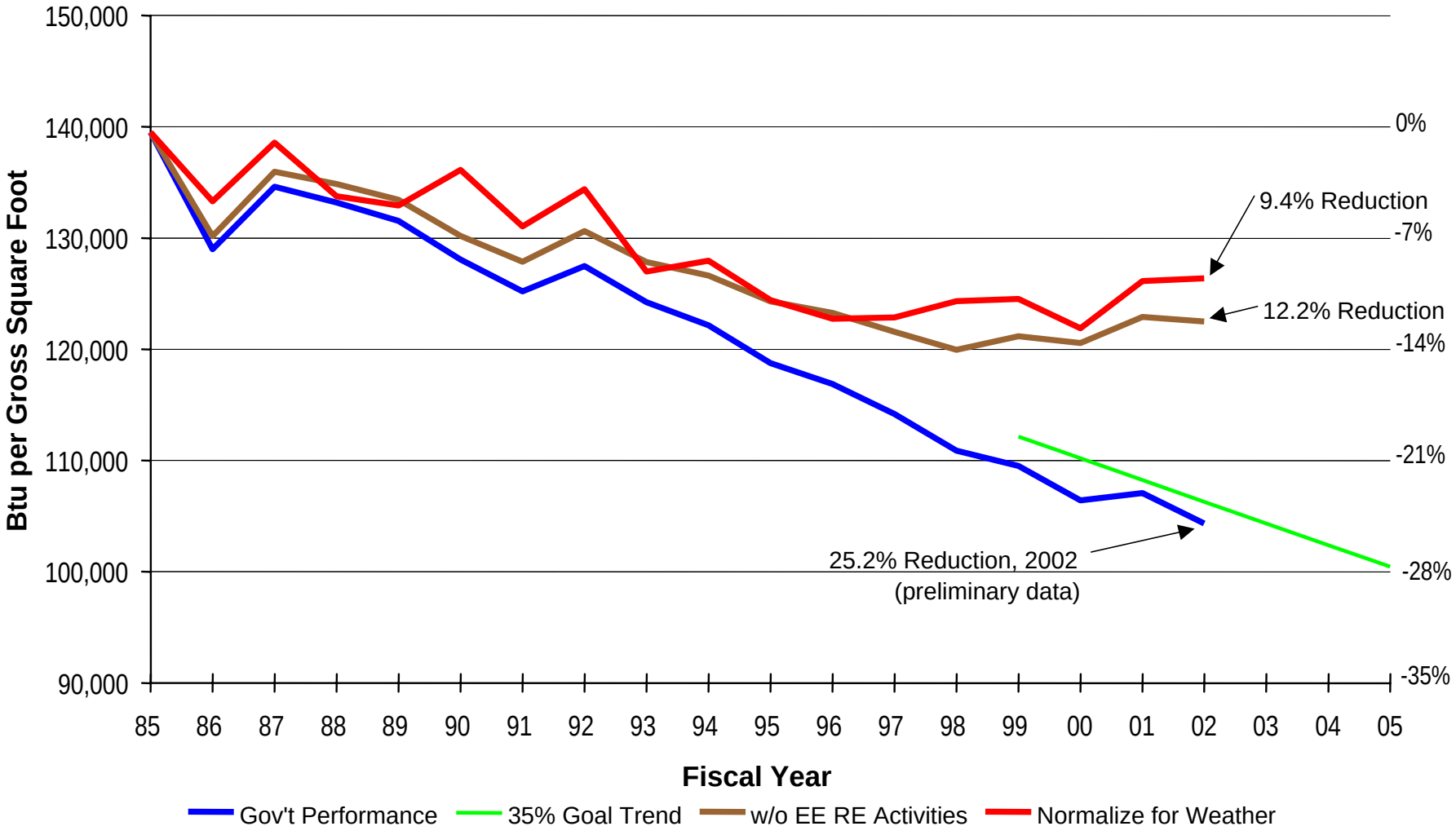
Energy Efficiency Project Investment by Source



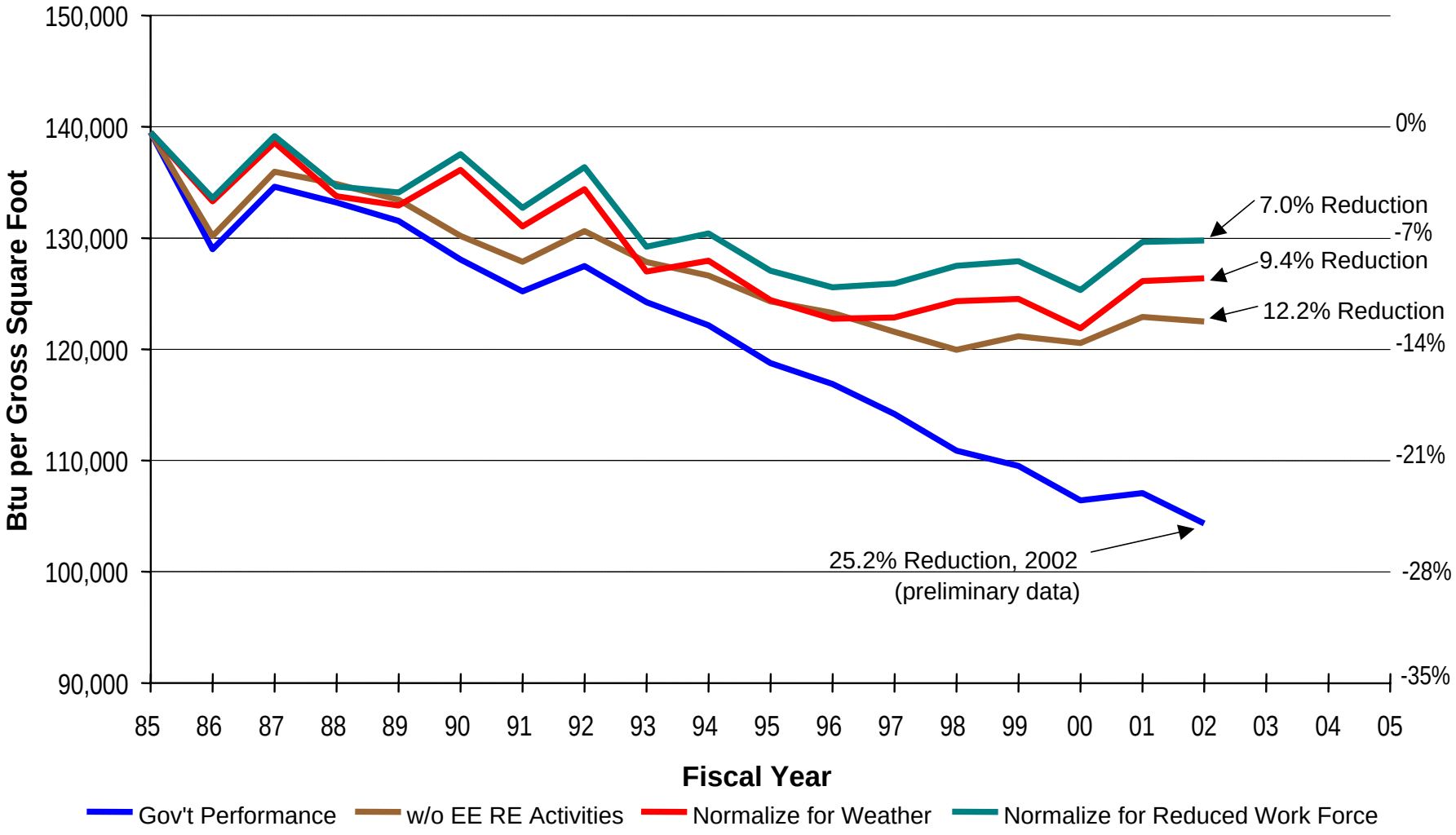
Energy Efficient Product/ Equipment Procurement



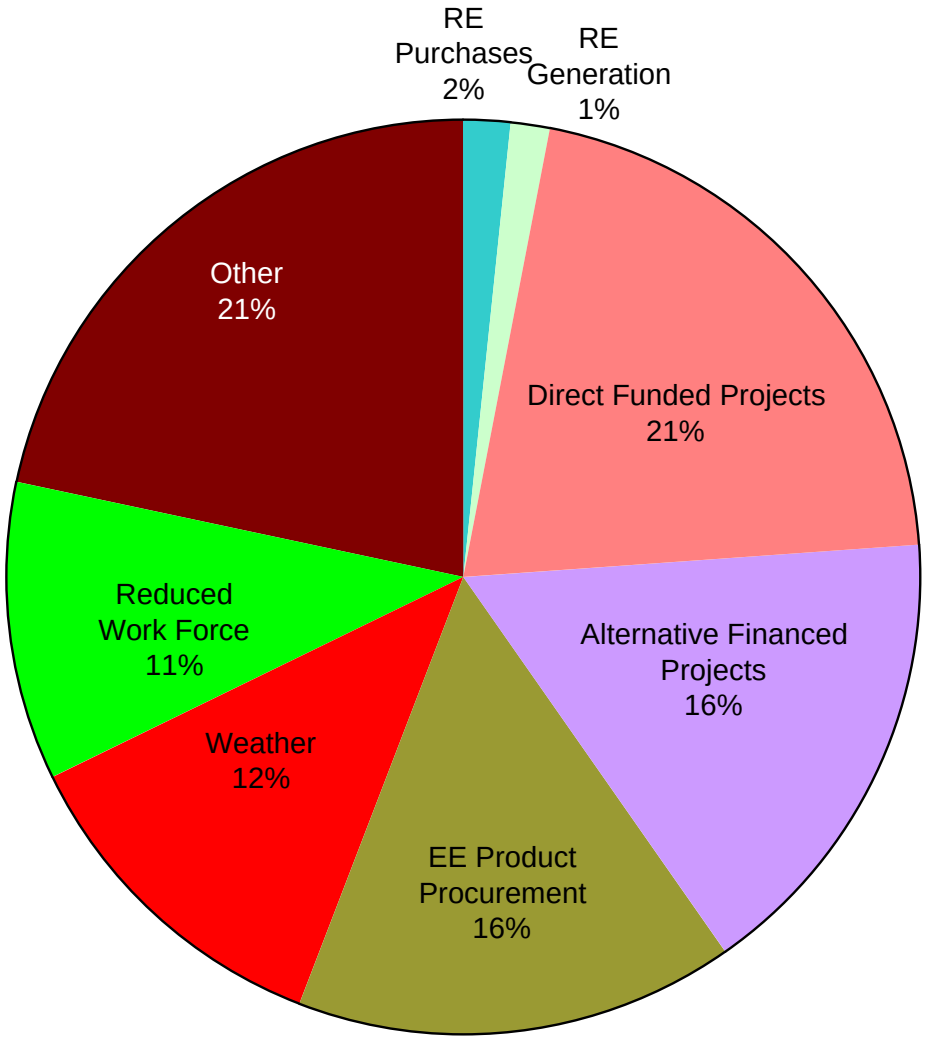
Effect of Weather



Decline in Federal Work Force



How did we get here?



Contribution to Energy Reduction
1985 to 2002
in Federal Standard Buildings

Contributor	Trillion Btu
RE Purchases	1.8
RE Generation	1.2
Direct Funded Projects	20.7
Alternative Financed Projects	15.9
EE Product Procurement	15.5
Weather	11.8
Reduced Work Force	10.4
Other	21.3
Total	98.6

Some rules of thumb

- Each $1 of project investment saves between 8,000 and 10,000 Btu annually
- Every dollar invested in energy efficiency saves $3 over the life of a typical project (15 years)
- Average cost of Federal facility energy is $11.50 per million Btu (site-delivered)
  - Average costs per million Btu, by fuel:
    - Electricity $18.31 ($0.06/kWh)
    - Fuel Oil $6.09 ($0.84/gallon)
    - Natural Gas $5.44 ($5.61/thou. cubic feet)
    - LPG/Propane $8.94 ($0.85/gallon)
    - Coal $2.50 ($61.50/short ton)
    - Steam $12.12 ($12.12/thou. pounds)

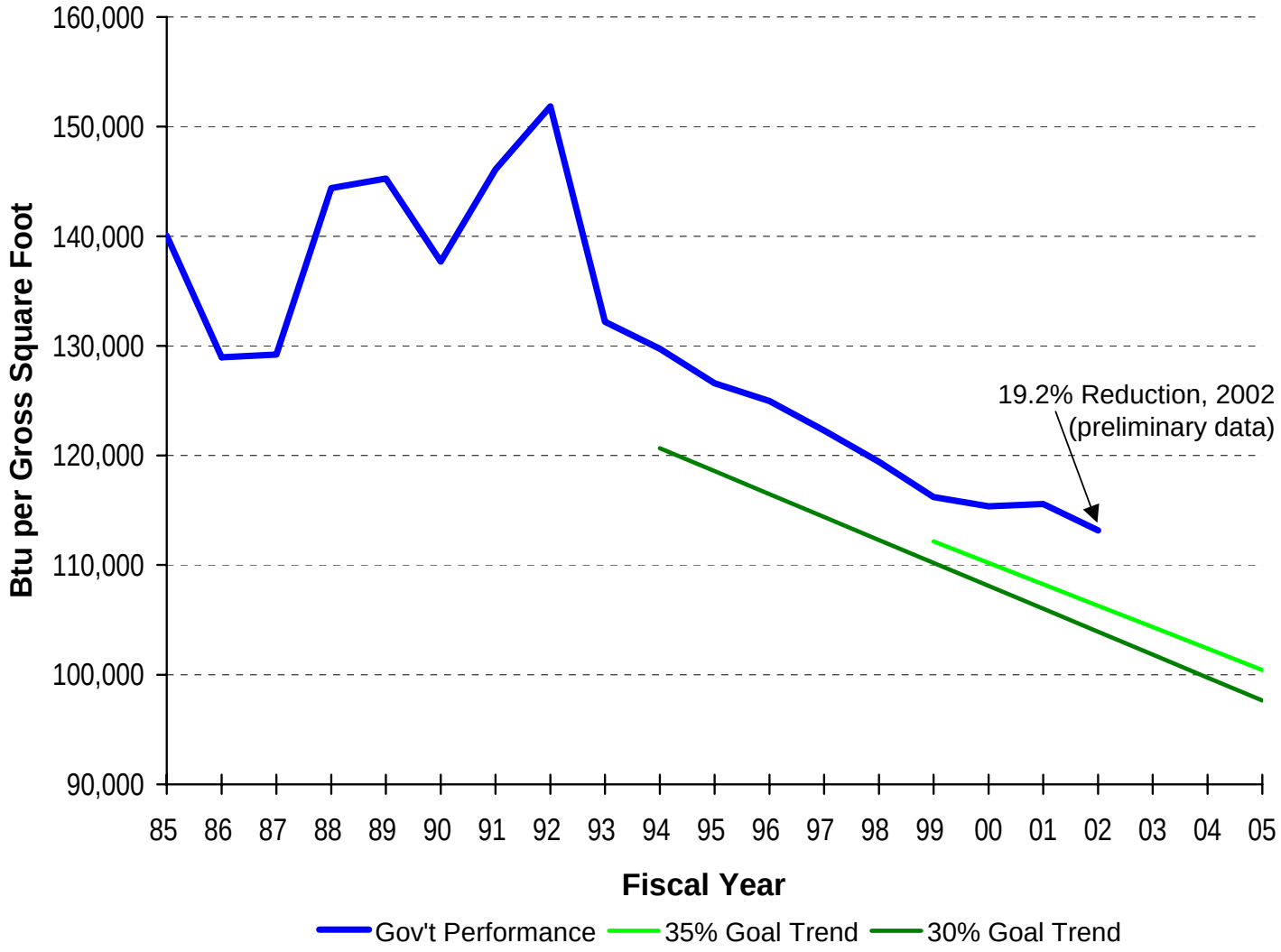
Imagining Cost Savings

- Energy bill for facilities is $1.6 billion less than in 1985 (in constant 2002 dollars); Savings from:
  - EE, RE project investment: $1 billion
    $5.0 billion x 3 = $1.5 trillion / 15 years = $1 billion
  - EE equipment procurement: $284 million
    15.5 trillion Btu x ($18.31/million Btu) = $284 million
  - Mild weather: $136 million
    11.8 trillion Btu x ($11.50/million Btu) = $136 million
  - Reduced workforce: $120 million
    10.4 trillion Btu x ($11.50/million Btu) = $120 million
  - Other: $101 million
    remaining savings at $4.76/million Btu (reductions in fuel oil, coal use since 1985)

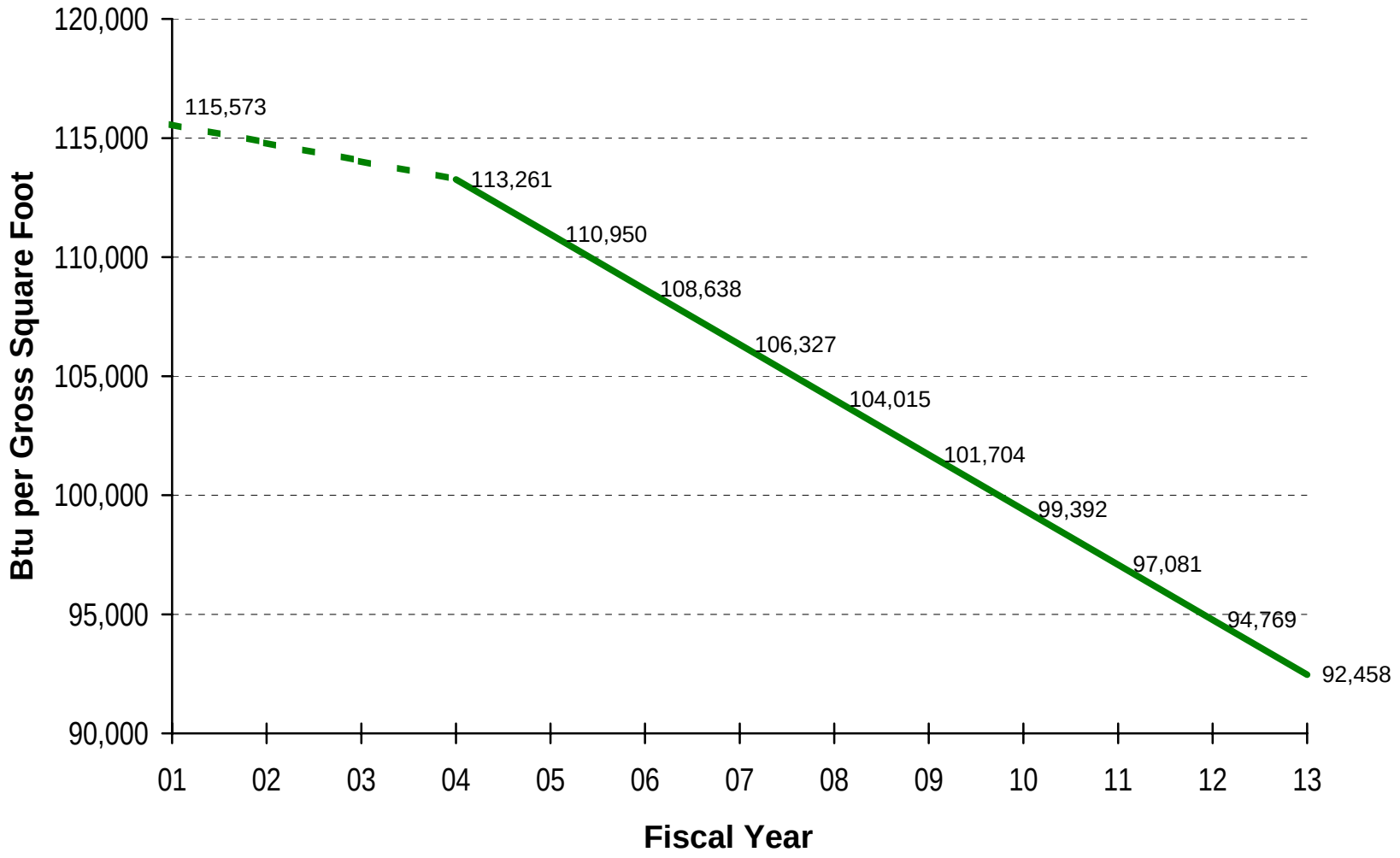
Imagining Forward

- New goals in pending energy legislation
  - Base year: 2001(!)(?)
  - Federal buildings (including each industrial or laboratory facility)
  - FY 2004 through 2013
    - 2004: 2%
    - 2005: 4%
    - 2006: 6%
    - 2007: 8%
    - 2008: 10%
    - 2009: 12%
    - 2010: 14%
    - 2011: 16%
    - 2012: 18%
    - 2013: 20%

But first: Where we would have been (facility sectors combined)



Path to 2013; 20% reduction



Getting there

- Required energy savings: 69 trillion Btu
  - Renewables: 12 trillion Btu (7% of electricity)
  - O&M actions: 19 trillion Btu (5% average savings)
  - EE Procurement: 10 trillion Btu (additional 25% savings on office equipment use)
  - New construction and retrofit projects: 28 trillion Btu
    - Project investment required: $3.8 billion

Thanks for humoring me

Contact: Chris Tremper
Program Manager
McNeil Technologies, Inc.
6564 Loisdale Court, Suite 800
Springfield, VA 22150
703-921-1627
ctremper@mcneiltech.com

Additional Slides

FY03 Reporting Guidance

Goal Facility Consumption

1-1. Standard Buildings/Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. $)	Unit Cost ($)	Site-Delivered Btu (Billion)	Est. Source Btu (Billion)	Est. Carbon Emissions (Metric Tons)
Electricity	MWH	0.0	$0.0	#DIV/0! /kWh	0.0	0.0	0
Fuel Oil	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0.0	0
Natural Gas	Thou. Cubic Ft.	0.0	$0.0	#DIV/0! /Thou Cu Ft	0.0	0.0	0
LPG/Propane	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0.0	0
Coal	S. Ton	0.0	$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	
		Total Costs:	$0.0	Total:	0.0	0.0	0
Standard Buildings/Facilities (Thou. Gross Square Feet)		0.0		Btu/GSF:	#DIV/0!	#DIV/0!	

1-2. Industrial, Laboratory, Research, and Other Energy-Intensive Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. $)	Unit Cost ($)	Site-Delivered Btu (Billion)	Est. Source Btu (Billion)	Est. Carbon Emissions (Metric Tons)
Electricity	MWH	0.0	$0.0	#DIV/0! /kWh	0.0	0.0	0
Fuel Oil	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0.0	0
Natural Gas	Thou. Cubic Ft.	0.0	$0.0	#DIV/0! /Thou Cu Ft	0.0	0.0	0
LPG/Propane	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0.0	0
Coal	S. Ton	0.0	$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	
		Total Costs:	$0.0	Total:	0.0	0.0	0
Energy-Intensive Facilities (Thou. Gross Square Feet)		0.0		Btu/GSF:	#DIV/0!	#DIV/0!	

Non-Goal Energy Consumption

1-3. Exempt Facilities

Energy Type	Consumption Units	Annual Consumption	Annual Cost (Thou. $)	Unit Cost ($)	Site-Delivered Btu (Billion)	Est. Source Btu (Billion)	Est. Carbon Emissions (Metric Tons)
Electricity	MWH	0.0	$0.0	#DIV/0! /kWh	0.0	0.0	0
Fuel Oil	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0.0	0
Natural Gas	Thou. Cubic Ft.	0.0	$0.0	#DIV/0! /Thou Cu Ft	0.0	0.0	0
LPG/Propane	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0.0	0
Coal	S. Ton	0.0	$0.0	#DIV/0! /S. Ton	0.0	0.0	0
Purch. Steam	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	0
Other	BBtu	0.0	$0.0	#DIV/0! /MMBtu	0.0	0.0	
		Total Costs:	$0.0	Total:	0.0	0.0	0
Exempt Facilities (Thou. Gross Square Feet)		0.0		Btu/GSF:	#DIV/0!	#DIV/0!	

1-4. Tactical Vehicles and Other Equipment

	Consumption Units	Annual Consumption	Annual Cost (Thou. $)	Unit Cost ($)	Btu (Billion)	Est. Carbon Emissions (Metric Tons)
Auto Gasoline	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0
Diesel-Distillate	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0
LPG/Propane	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0
Aviation Gasoline	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0
Jet Fuel	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0
Navy Special	Thou. Gal.	0.0	$0.0	#DIV/0! /gallon	0.0	0
Other	Thou. Gal.	0.0	$0.0	#DIV/0! /MMBtu	0.0	
		Total Costs	$0.0		0.0	0

Water Consumption

1-5. WATER CONSUMPTION, COST AND EFFICIENCY MEASURES

	Consumption Units	Annual Consumption	Annual Cost (Thou. $)
Water	Million Gal.	0.0	$0.0
Best Management Practice Implementation Tracking Data			
Number of facilities* in agency inventory			0
Number of facilities with completed water management plans			0
Number of facilities with at least four (4) BMPs fully implemented			0
*number in the agency inventory, can be buildings, bases, or campuses			

Renewable Energy Purchases

1-6. RENEWABLE GREEN ENERGY PURCHASES

(Only include renewable energy purchases developed or contracted after 1990)

	Consumption Units	Annual Consumption	Annual Cost (Thou. $)
Electricity from Renewables	MWH	0.0	$0.0
Natural Gas from Landfill/Biomass	MMBtu	0.0	$0.0
Renewable Thermal Energy	MMBtu	0.0	$0.0
Other Renewable Energy_____*			

*For other renewable energy that does not fit any category, please fill in the type, units used, annual consumption and cost, and include any additional information in your narrative submission. For example, biodiesel used in non-transportation applications. (Renewable fuels used for transportation will be collected through GSA's Fleet Managment reporting process.)

Self-Generated Renewable Energy

1-7. SELF-GENERATED RENEWABLE ENERGY INSTALLED AFTER 1990

	Consumption Units	Total Annual Energy	Energy Used by Agency*
Electricity from Renewables	MWH	0.0	0.0
Natural Gas from Landfill/Biomass	MMBtu	0.0	0.0
Renewable Thermal Energy**	MMBtu	0.0	0.0
Other Renewable Energy_____***		0.0	0.0

*Energy used by agency equals total annual generation unless a project sells a portion of the energy it produces to another agency or the private sector. It can equal zero in the case of non-Federal energy projects developed on Federal land.

**Examples are geothermal, solar thermal, and geothermal heat pumps, and the thermal portion of combined heat and power projects. Thermal energy from geothermal heat pumps should be based on energy savings compared to conventional alternatives.

***For other renewable energy that does not fit any category, fill in the type, units used, annual consumption and cost, and include any additional information in your narrative submission. For example energy displaced by daylighting technology or passive solar design.

Direct Funding for Projects

PART 2: ENERGY EFFICIENCY IMPROVEMENTS

2-1. DIRECT AGENCY OBLIGATIONS

	FY 2003		Projected FY 2004	
	(MMBTU)	(Thou. $)	(MMBTU)	(Thou. $)
Direct obligations for facility energy efficiency improvements, including facility surveys/audits		$0.0		$0.0
Estimated annual savings anticipated from obligations	0.0	$0.0	0.0	$0.0

Energy Savings Performance Contracts

2-2. ENERGY SAVINGS PERFORMANCE CONTRACTS (ESPC)

	Annual savings (MMBTU)	(number/Thou. $)
Number of ESPC Task/Delivery Orders awarded in fiscal year & annual energy (MMBTU) savings.	0.0	0
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.		$0.0
Amount privately financed under ESPC Task/Delivery Orders awarded in fiscal year.		$0.0
Cumulative guaranteed cost savings of ESPCs awarded in fiscal year relative to the baseline spending.		$0.0
Total contract award value of ESPCs awarded in fiscal year (sum of contractor payments for debt repayment, M&V, and other negotiated performance period services).		$0.0
Total payments made to all ESP contractors in fiscal year.		$0.0

Utility Energy Service Contracts

2-3. UTILITY ENERGY SERVICES CONTRACTS (UESC)

	Annual savings (MMBTU)	(number/Thou. $)
Number of UESC Task/Delivery Orders awarded in fiscal year & annual energy (MMBTU) savings.	0.0	0
Investment value of UESC Task/Delivery Orders awarded in fiscal year.		$0.0
Amount privately financed under UESC Task/Delivery Orders awarded in fiscal year.		$0.0
Cumulative cost savings of UESCs awarded in fiscal year relative to the baseline spending.		$0.0
Total contract award value of UESCs awarded in fiscal year (sum of payments for debt repayment and other negotiated performance period services).		$0.0
Total payments made to all UESC contractors in fiscal year.		$0.0

. . .and the rest!

2-4. UTILITY INCENTIVES (REBATES)

	Annual savings (MMBTU)	(Thou. $)
Incentives received and estimated energy savings	0.0	$0.0
Funds spent in order to receive incentives		$0.0

2-5. TRAINING

	(number)	(Thou. $)
Number of personnel trained/Expenditure	0.0	$0.0