U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy

GPRA Data Call
2003

September 14, 2001

Form available on GPRAWeb at http://analysis.nrel.gov/eekb

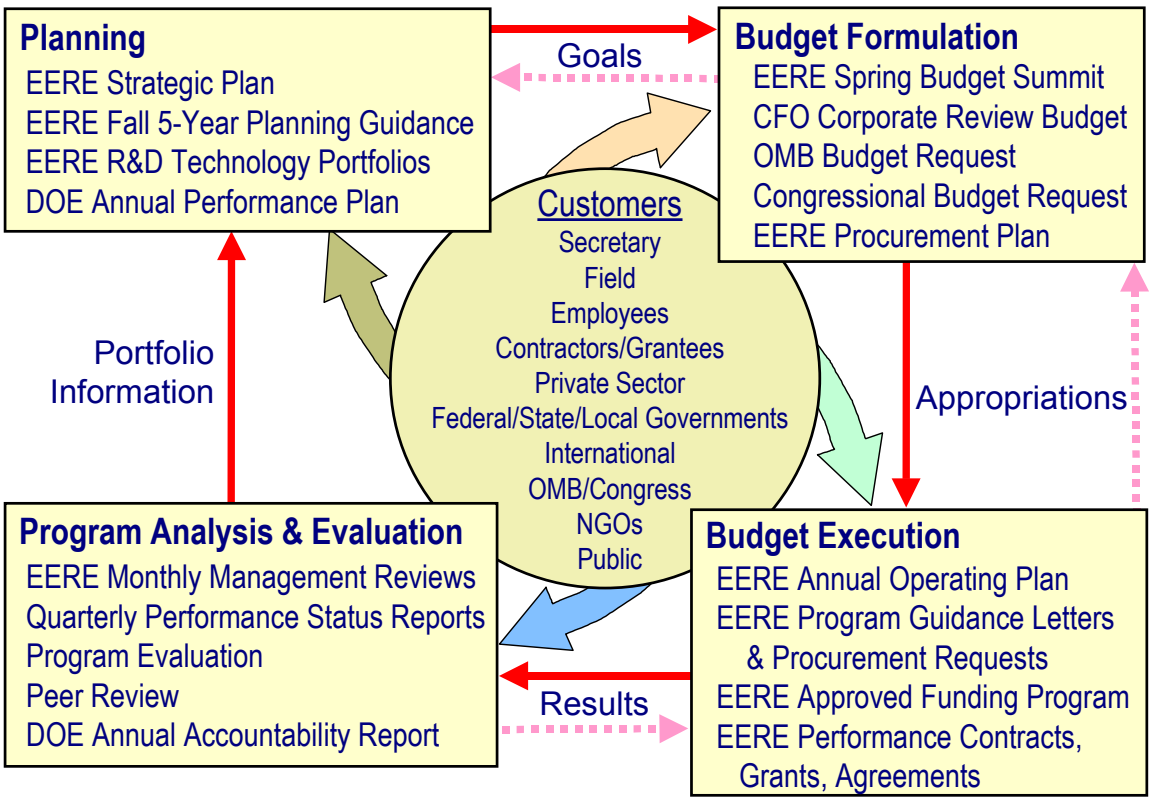
Contents

Introduction

The objective of the GPRA Data Call is to project the energy, financial and environmental outcomes of programs within the Office of Energy Efficiency and Renewable Energy (EERE). Outcome projections help EERE meet the requirements of the Government Performance and Results Act of 1993 (GPRA) as well as EERE's broader strategic management needs. GPRA, which took effect in Fiscal Year 1999, requires each federal agency to develop a strategic plan, an annual performance plan that links to the strategic plan, and a annual performance report that identifies accomplishments relative to the performance plan. Outcome data collected in the GPRA Data Call are used to establish longer-term EERE goals for the DOE Strategic Plan and the DOE Annual Performance Plan.

Outcome projections are an essential component of EERE's strategic management system (SMS), which integrates planning, budget formulation, budget execution, program analysis and evaluation (see diagram below). The **program analysis** conducted for the GPRA Data Call provides portfolio information for EERE **planning**, including the Fall Multi-Year Planning Guidance, the EERE Strategic Plan and DOE Performance Plan. Outcome information is then used during **budget formulation**, with outcome estimates included in background material for the EERE Spring Budget Summit, and the Congressional Budget Request. Finally, outcome information is included in **budget execution** through the longer term goals identified in the DOE Performance Agreement, which is the revised DOE Performance Plan based on actual appropriations.

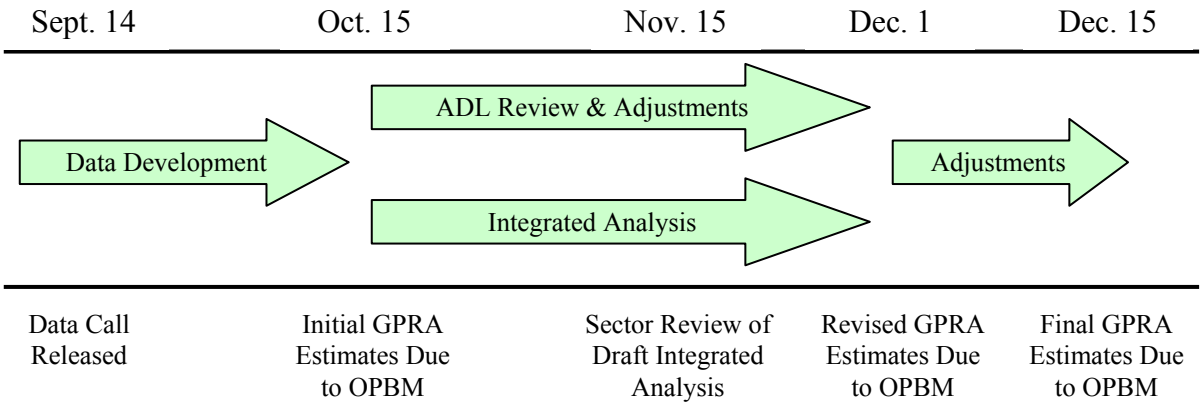
EERE's Strategic Management System



Data Call Changes

Data Call Section	GPRA2002	GPRA2003
Resource Metrics	Timeframe 2002-2006. Assume flat-funding unless there is sufficient evidence to assume otherwise.	Resource section deleted, including the following metrics: - RD&D % - # of Partners "DOE Funding" metric changed to "EERE Funding"; "Partner Investment" changed to "Private Sector Expenditures"; both folded into Financial metrics.
Technology & Market Penetration Assumptions	Technology characteristics & market penetration estimates. Format determined by sector.	Technology characteristics & market penetration estimates. Major milestones leading to commercialization added. Sectors should provide along with other metric information.
Energy, Financial and Environmental Metrics	Reporting years: 2002-2006, 2010, 2015, 2020, 2025, 2030. Required: Calculations on annual basis for budget request level.	Reporting years: 2003-2007, 2010, 2015, 2020, 2025, 2030. Financial metrics added: - Other Gov't Expenditures - Consumer Investment Required: Calculations on annual basis for budget request level. Pilot information: cumulative, and lifecycle calculations performed.
Calculation Methodologies	Marginal fuel generation mix, heat rates, and emission factors provided. Fuel mix and heat rates based on side case in NEMS/AEO2000.	Updated marginal fuel generation mix, heat rates and emission factors. Fuel mix & heat rates based on side case in NEMS/AEO2001. Explanation of additional metrics provided.
AEO Baseline Assumptions	From AEO2000. . Extrapolation of 2021-2030 based on 1999 - 2020 growth.	From AEO2001. Extrapolation of 2021-2030 based on 2010 - 2020 growth.

GPRA2003 Timeline



Additional material that is under development will be covered in a benefits workshop to be held in the near future.

Technology and Market Penetration Assumptions

This section collects information about the technology characteristics and market penetration assumptions used in calculating energy, financial, and environmental outcomes. Key information that should be submitted for each technology includes:

- Major milestones leading to commercialization
- Year of commercial introduction
- Market penetration rate or level by year
- Capital cost
- O&M costs
- Technology product lifetime
- Technology performance and/or energy displaced/unit by fuel type

An illustrative list of assumptions has been developed for each sector (see next page) as a result of the Arthur D. Little reviews performed over the last few years. Sectors should submit these or similar assumptions for each program along with a list of major milestones leading to commercialization. Similar information should also be provided for the next best alternative technology against which the technology is competing.

Each sector is free to develop its own format for reporting assumptions and major milestones. However, this information is required to be submitted.

List of Illustrative Technology & Market Penetration Assumptions

OPT

- Installed System Price ($/kW)
- O&M Costs ($/kWh)
- Performance Characteristics (efficiency, unit size, etc.)
- Capacity Factor
- Energy produced/unit
- Year of Introduction
- Average Lifetime (yrs)
- Installed Capacity
    - Cumulative installations to date (MW)
    - Annual installations (MW/yr)

OTT

- Vehicle Cost (e.g. ratio to next best alternative car)
- Annual Maintenance Cost (e.g. ratio to conventional car)
- Performance Characteristics (e.g. fuel economy, driving range, trunk space, acceleration, top speed)
- Lifetime
- Energy displaced/unit
- Year of Introduction
- Annual Sales of Vehicles (Fleet stock in same market)

BTS

- Installed System Price of Advanced Technology relative to Next Best Alternative Technology
- Performance Characteristics (efficiency, life/reliability)
- Energy displaced/unit
- Non-energy Related Benefits
- Annual Sales
- A Clear List of the Technologies Assumed for the Program

OIT

- Installed Price/Unit
- Operating Costs/Unit
- Performance Characteristics (e.g. throughput/unit; lifetime, emissions/unit)
- Energy displaced/unit
- Non-energy Costs/Unit
- Market Introduction Date
- Industry Growth Rates
- Market Penetration

Metrics

This section requests information on the energy, financial, and environmental outcomes of the program. A few financial metrics have been added this year. These include consumer investment, EERE expenditures, and other government expenditures. The EERE expenditures metric was moved from the resource metric section of last year's data call. The reporting years for energy, financial, and environmental metrics is similar to last year's data call. The only change is that the initial five years have been moved back one year to 2003-2007. The remaining years are the same (2010, 2015, 2020, 2025, and 2030).

In previous GPRA data calls, metrics represented an annual outcome for selected years. This year's data call is being expanded to include, on a pilot basis, cumulative and life cycle outcomes. This information will provide a more complete picture of the benefits of EERE's programs. Thus, estimates should be provided for:

Annual Outcomes – The outcome in a particular year. For example, 5000 technologies installed through 2020 will displace 100 Tbtu in 2020. (Required Data)

Cumulative Outcomes – The outcome through a particular year. For example, 5000 technologies installed through 2020 will displace 500 Tbtu from 2003 to 2020. (Pilot Data)

Life Cycle Outcomes – The outcome over the lifetime of the technology for technologies installed through a particular year. For example, 5000 technologies installed through 2020 will displaced 800 Tbtu over their lifetime. (Pilot Data)

Annual outcome information is required to be submitted. Cumulative and life cycle outcome information will be collected on a pilot basis. This means that complete information should be provided for annual outcomes, and as much information as possible should be provided for cumulative and life cycle calculations.

When providing information in this section, it is important that you clearly understand what data are being requested. To assist in this effort, a definition of all key terms appears in Appendix A. Sectors are encouraged to review these definitions if there is uncertainty regarding the meaning of a term.

Please refer to Appendix B (*Calculations Methodology*) if you have questions about how to calculate certain metrics or Appendix C (*AEO2001 Baseline Assumptions*) if you have questions about the assumptions that are common to the costs and benefits calculations of all the sectors.

Energy, Financial and Environmental metrics should be entered into the GPRA database located on the world-wide web at http://analysis.nrel.gov/eekb (a secure site).

GPRA2003 Annual Benefits

Metric	2003	2004	2005	2006	2007	2010	2015	2020	2025	2030

Energy Metrics

Total Primary Energy Displaced (Trillion Btu)										
Direct Electricity Displaced (Billion Kilowatthours)										
Direct Natural Gas Displaced (Billion Cubic Feet)										
Direct Petroleum Displaced (Million Barrels)										
Direct Coal Displaced (Million Short Tons)										
Direct Biomass Displaced (Trillion Btu)										
Direct Energy Displaced from Feedstocks (Trillion Btu)										
Direct Energy Displaced from Wastes (Trillion Btu)										
Other Direct Energy Displaced (Trillion Btu)										

Financial Metrics

Energy Cost Savings (Millions of 1999 $'s)										
Non-Energy Cost Savings (Millions of 1999 $'s)										
Consumer Investment (Millions of 1999 $'s)										
EERE Expenditures (Millions of 1999 $'s)										
Other Government Expenditures (Millions of 1999 $'s)										
Private Sector Expenditures (Millions of 1999 $'s)										

Environmental Metrics

Carbon Emissions Displaced (MMTC)										
Other Greenhouse Emissions Displaced (MMTCe)										
CO Displaced (Metric Tons)										
SO2 Displaced (Metric Tons)										
NOx Displaced (Metric Tons)										
VOCs Displaced (Metric Tons)										
PM10 Displaced (Metric Tons)										
Other Environmental Benefits (Metric Tons)										

GPRA2003 Cumulative Benefits

Metric	2003	2004	2005	2006	2007	2010	2015	2020	2025	2030

Energy Metrics

Total Primary Energy Displaced (Trillion Btu)										
Direct Electricity Displaced (Billion Kilowatthours)										
Direct Natural Gas Displaced (Billion Cubic Feet)										
Direct Petroleum Displaced (Million Barrels)										
Direct Coal Displaced (Million Short Tons)										
Direct Biomass Displaced (Trillion Btu)										
Direct Energy Displaced from Feedstocks (Trillion Btu)										
Direct Energy Displaced from Wastes (Trillion Btu)										
Other Direct Energy Displaced (Trillion Btu)										

Financial Metrics

Energy Cost Savings (Millions of 1999 $'s)										
Non-Energy Cost Savings (Millions of 1999 $'s)										
Consumer Investment (Millions of 1999 $'s)										
EERE Expenditures (Millions of 1999 $'s)										
Other Government Expenditures (Millions of 1999 $'s)										
Private Sector Expenditures (Millions of 1999 $'s)										

Environmental Metrics

Carbon Emissions Displaced (MMTC)										
Other Greenhouse Emissions Displaced (MMTCe)										
CO Displaced (Metric Tons)										
SO2 Displaced (Metric Tons)										
NOx Displaced (Metric Tons)										
VOCs Displaced (Metric Tons)										
PM10 Displaced (Metric Tons)										
Other Environmental Benefits (Metric Tons)										

GPRA2003 Life Cycle Benefits

Metric	2003	2004	2005	2006	2007	2010	2015	2020	2025	2030

Energy Metrics

Total Primary Energy Displaced (Trillion Btu)										
Direct Electricity Displaced (Billion Kilowatthours)										
Direct Natural Gas Displaced (Billion Cubic Feet)										
Direct Petroleum Displaced (Million Barrels)										
Direct Coal Displaced (Million Short Tons)										
Direct Biomass Displaced (Trillion Btu)										
Direct Energy Displaced from Feedstocks (Trillion Btu)										
Direct Energy Displaced from Wastes (Trillion Btu)										
Other Direct Energy Displaced (Trillion Btu)										

Financial Metrics

Energy Cost Savings (Millions of 1999 $'s)										
Non-Energy Cost Savings (Millions of 1999 $'s)										
Consumer Investment (Millions of 1999 $'s)										
EERE Expenditures (Millions of 1999 $'s)										
Other Government Expenditures (Millions of 1999 $'s)										
Private Sector Expenditures (Millions of 1999 $'s)										

Environmental Metrics

Carbon Emissions Displaced (MMTC)										
Other Greenhouse Emissions Displaced (MMTCe)										
CO Displaced (Metric Tons)										
SO2 Displaced (Metric Tons)										
NOx Displaced (Metric Tons)										
VOCs Displaced (Metric Tons)										
PM10 Displaced (Metric Tons)										
Other Environmental Benefits (Metric Tons)										