

**DEPARTMENT OF ENERGY  
FY 2002 CONGRESSIONAL BUDGET REQUEST  
ENERGY CONSERVATION**

**Proposed Appropriation Language**

For necessary expenses in carrying out energy conservation activities, [\$816,940,000] \$794,981,000, to remain available until expended [, of which \$2,000,000 shall be derived by transfer from unobligated balances in the Biomass Energy Development account]: *Provided*, That [\$191,000,000] \$311,000,000 shall be for use in energy conservation *grant* programs [as defined in section 3008(3) of Public Law 99-509 (15 U.S.C. 4507): *Provided further*, That notwithstanding section 3003(d)(2) of Public Law 99-509, such sums shall], *to* be allocated to the eligible programs as follows: [\$153,000,000] \$273,000,000 for weatherization assistance grants and \$38,000,000 for State energy [conservation] *program* grants [: *Provided further*, That notwithstanding any other provision of law, the Secretary of Energy may waive up to fifty percent of the cost-sharing requirement for weatherization assistance provided for by Public Law 106-113 for a State which he finds to be experiencing fiscal hardship or major changes in energy markets or suppliers or other temporary limitations on its ability to provide matching funds, provided that the State is demonstrably engaged in continuing activities to secure non-federal resources and that such waiver is limited to one fiscal year and that no state may be granted such waiver more than twice: *Provided further*, That, hereafter, Indian tribal direct grantees of weatherization assistance shall not be required to provide matching funds]. (*Department of Interior and Related Agencies Appropriations Act, 2001.*)

[For an additional amount for “Energy Conservation”, \$300,000, to remain available until expended, for a grant to the Oak Ridge National Laboratory/Nevada Test Site Development Corporation for the development of (1) cooling, refrigeration, and thermal energy management equipment capable of using natural gas or hydrogen fuels; and (2) improvement of the reliability of heat-activated cooling, refrigeration, and thermal energy management equipment used in combined heating, cooling, and power applications.] (*Division A, Miscellaneous Appropriations Act, 2001, as enacted by section 1(a)(4) of P.L. 106-554.*)

**EXPLANATION OF CHANGE**

Deletes funding amounts which had specific application to FY 2001 and includes the appropriate funding amounts for FY 2002. The definition of the energy conservation grant programs in section 3008(3) of Public Law 99-509 (U.S.C. 4507) is proposed for deletion because this provision is no longer needed to implement the allocations of the Petroleum Overcharge Distribution and Restitution (PODRA) to these grant programs since no PODRA funding is available. The provision for cost-sharing requirements is proposed for deletion since cost-sharing requirements for Weatherization Assistance grants were removed by P.L. 106-469 (sec. 601). Also, voluntary cost-sharing has been incorporated into the management and implementation of the grant awards as well as all Energy Conservation programs. The provision in P.L. 106-554 concerning a grant to the Oak Ridge National Laboratory/Nevada Test Site Development Corporation is proposed for deletion since the FY 2001 appropriation fully funded this project.

**DEPARTMENT OF ENERGY  
FY 2002 CONGRESSIONAL BUDGET REQUEST  
ENERGY EFFICIENCY AND RENEWABLE ENERGY  
ENERGY CONSERVATION**

**EXECUTIVE BUDGET SUMMARY**

**Mission**

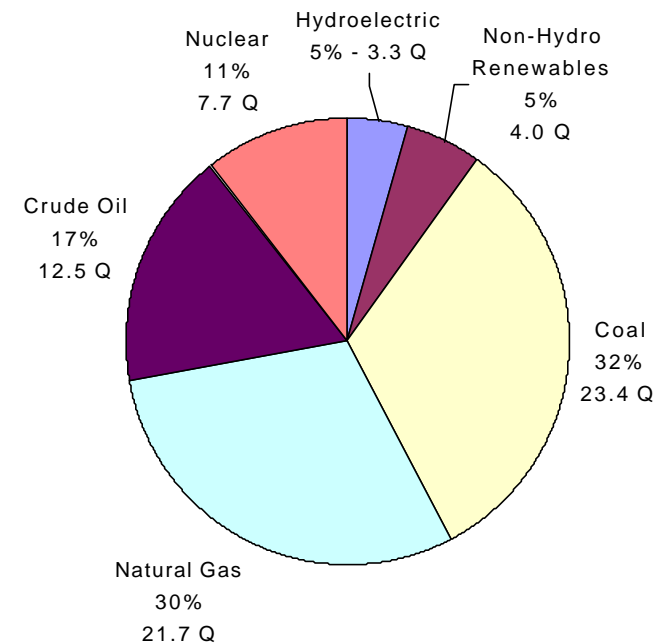
The Office of Energy Efficiency and Renewable Energy (EERE) leads the Nation in the research, development, and deployment (RD&D) of advanced energy efficiency and clean power technologies and practices, providing Americans with a stronger economy, healthier environment, and more secure future. The overall goal of EERE's energy conservation program is to improve efficiency in the use of fossil fuels and electricity, as we develop new and cleaner energy sources.

EERE's energy conservation programs are a key part of the DOE Energy Resources Business Line, accounting for about one-third of the Energy Resources R&D budget in FY 2002. EERE's energy conservation programs increase energy productivity in buildings, in the industrial sector, by vehicles, in power generation, and in federal facilities, by lowering the amount of energy used to accomplish a stated task.

**Strategic Context**

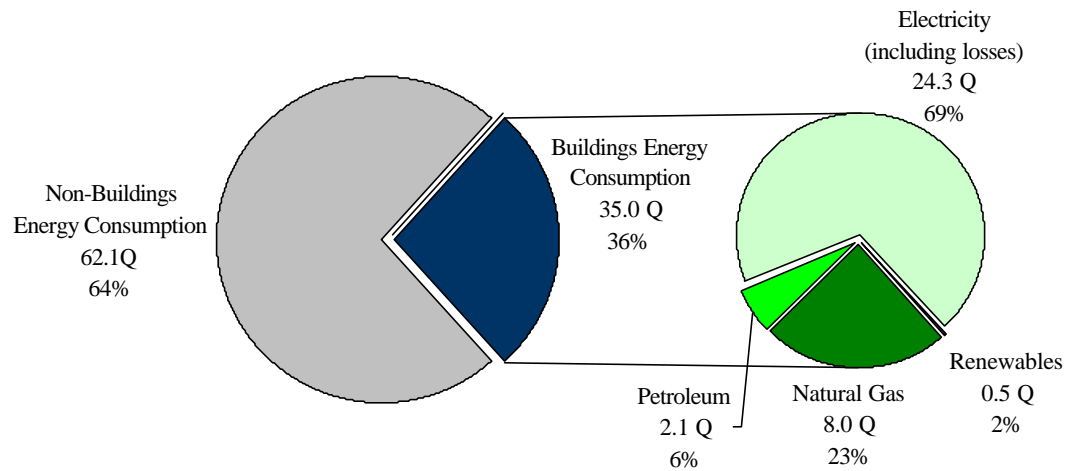
The United States is the world's largest energy consumer, using 25 percent of the world's primary energy. In 1999, the United States consumed over 97 quadrillion British thermal units (quads) of energy, of which 84 percent involved the consumption of traditional fuels—coal, petroleum, and natural gas. The majority of the coal is used to generate electricity for use in the buildings and industrial sectors, while the majority of the petroleum is consumed in the transportation sector. In addition, since the United States only produces 19 percent of the worldwide primary energy, there is a significant imbalance between consumption and production. This imbalance places continual stress on the Nation's energy system, giving rise to both energy and economic security concerns. Without a reduction in the consumption of traditional fuels, the imbalance will only worsen since EIA estimates that only two percent of the world's proven reserves are located in American territory.

**Total U.S. Energy Production by Source - 1999**



Homes and commercial buildings consumed 36 percent of the nation's energy in 1999 and utilize almost two-thirds of all the electricity generated. The growth in the economy, as well as the nation's rising population is leading to more, larger, and better equipped homes and commercial buildings, resulting in increasing energy demand in this sector. Introduction of new energy efficiency technology can have significant economic and environmental benefits. The production of energy consumed in buildings, primarily electricity, represents a major source of acid rain, smog, and greenhouse gas emissions, and includes 47 percent of U.S. sulfur dioxide emissions, 22 percent of nitrogen oxide emissions, and 35 percent of carbon dioxide emissions.

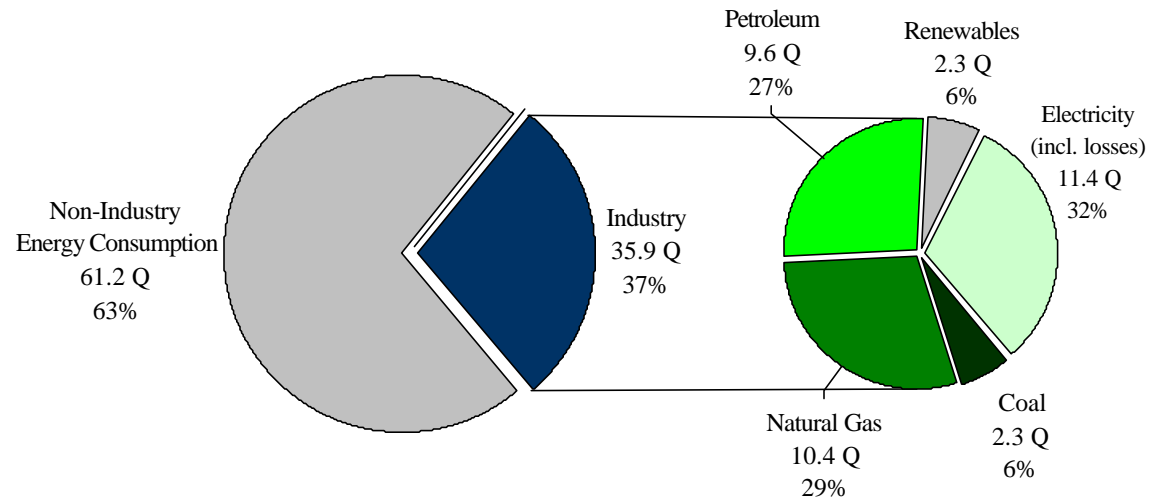
## Buildings Sector Energy Consumption



Source: EIA. Monthly Energy Review. Feb. 2001

The U.S. industrial sector accounted for 37 percent of the nation's energy consumption in 1999, spending \$110 billion for a mix of fuels, with natural gas accounting for the largest portion. This energy use is concentrated in a relatively small number of industries, in particular the major materials processing and extraction industries. The bulk of EERE's industrial energy conservation portfolio is focused on eight energy intensive industries that account for over half of industrial energy consumption, and for them, energy use and waste disposal represent important fractions of operating costs and cost of the end product. Industry also generated 14 billion tons of waste, including 200 million tons of hazardous and toxic waste in 1999 to manufacture the goods we all consume. This waste often imposes expensive clean up and disposal costs. However, advanced technologies, offer the potential to recover the "embedded" energy and materials value from this waste.

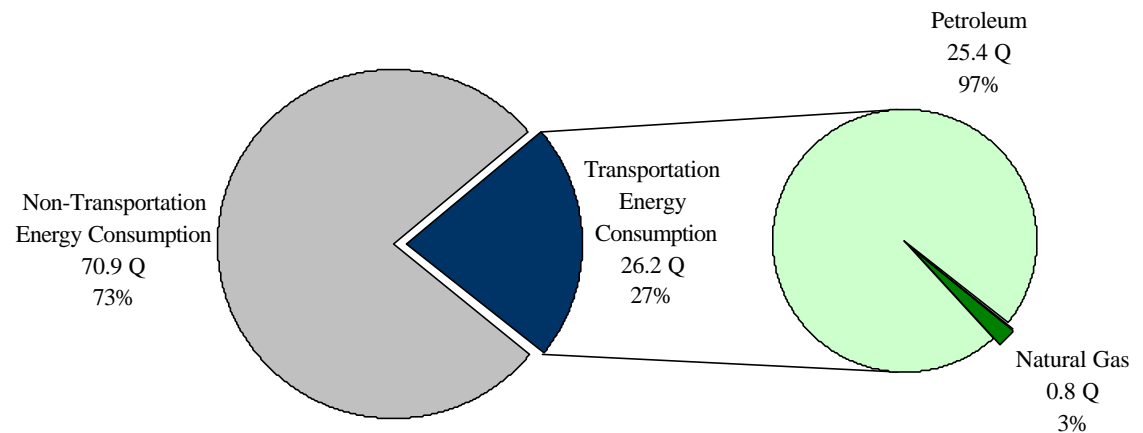
## Industrial Sector Energy Consumption



Source: EIA. Monthly Energy Review. Feb. 2001

The transportation sector consumed 27 percent of the nation's energy in 1999. Petroleum is the primary fuel source in this sector, accounting for 97 percent of the fuel consumed. While there have been many improvements in vehicle/engine fuel efficiency, transportation fuel consumption continues to increase due to the growing economy and rise in the number of drivers and miles traveled, as well as the demand for larger vehicles and lower fuel-economy vans, pickup trucks, and sport utility vehicles. Unless new technologies significantly increase vehicle efficiency, these trends are likely to continue and will exacerbate our petroleum import concerns, including the impact on the U.S. balance of trade. Improving vehicle efficiency is a major goal of EERE's transportation program.

## Transportation Sector Energy Consumption



Source: EIA. Monthly Energy Review. Feb. 2001

### Strategy

EERE's RD&D portfolio is aligned with the energy sectors of the economy --Buildings, Industry,

Transportation, Power Generation and Delivery, and Federal Facilities-- to better link advanced energy technologies to their target markets. In addition to the energy sector-based programs, EERE recognizes, that opportunities exist to link fundamental and applied research advances that support objectives in more than one sector. Thus, the FY2002 budget request includes a number of initiatives such as the Bioenergy/Bioproducts and Distributed Energy Resources that cut across multiple markets and energy end-use sectors.

EERE advances its mission by addressing three areas that ultimately determine whether clean energy technologies are deployed in the Nation's energy system—technology, policy, and markets. The bulk of EERE's energy conservation program activities are in the area of technology RD&D. EERE recognizes, however, that government policies and market factors significantly affect which technologies are purchased by consumers; and therefore, EERE's energy conservation RD&D portfolio includes the development of key policies and standards and assistance to consumers in making energy choices.

## **Goals and Benefits**

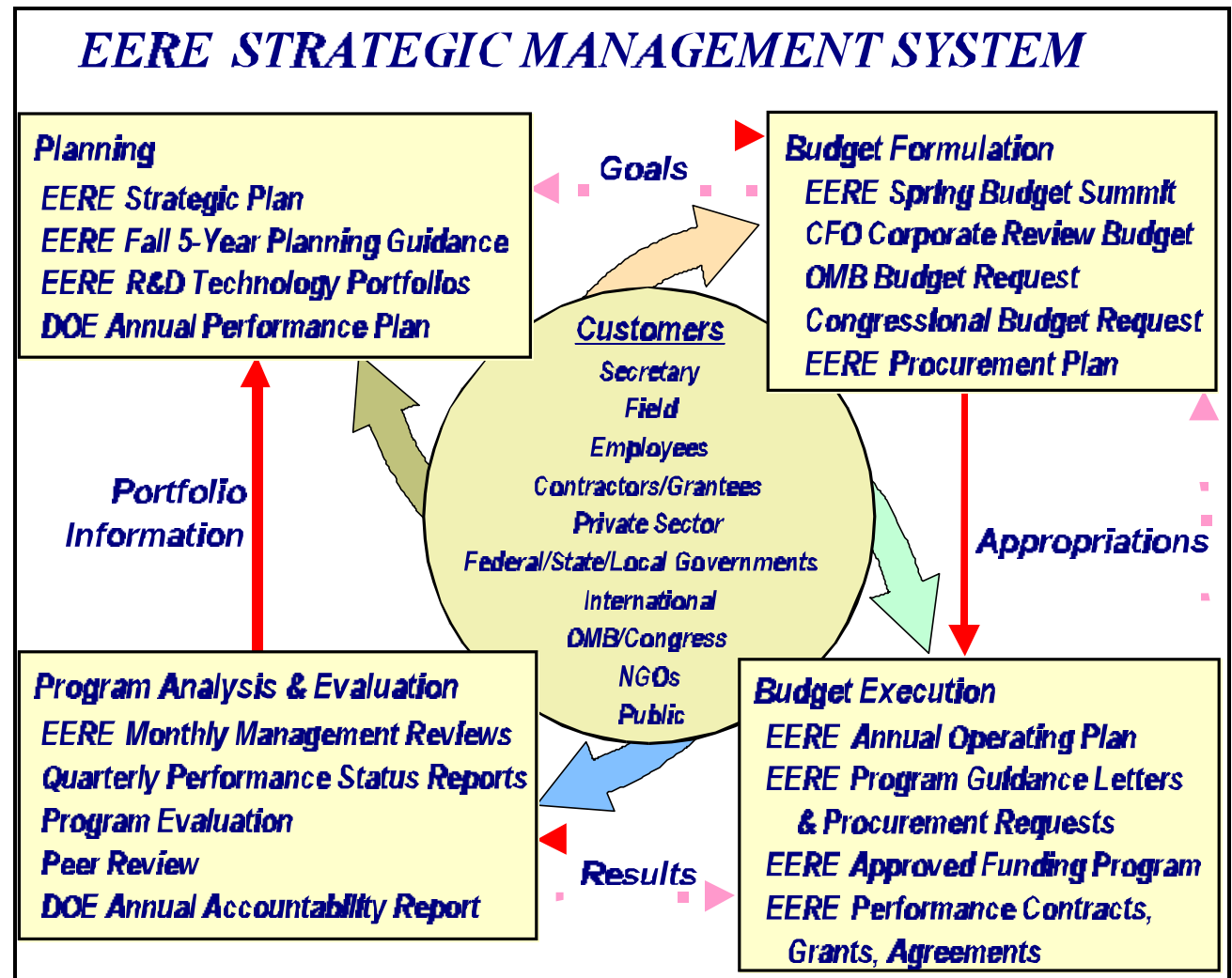
One of EERE's three major goals is to increase the efficiency of the nation's energy system. In order to achieve this goal, EERE is pursuing the following objectives with energy conservation RD&D funding:

- By 2010, increase the average fuel efficiency of new cars and light trucks by 16 percent relative to the Energy Information Administration's reference fuel efficiency level for that year.
- By 2010, increase the average fuel efficiency of large trucks by 7 percent relative to the 1998 efficiency level.
- By 2010, contribute to a 25 percent improvement in energy efficiency and a 30 percent reduction in emissions for industry partner industries (from 1990 levels), and a 35 percent improvement in efficiency and 50 percent reduction in emissions by 2020.
- Develop market-ready building design strategies for new buildings which use 50 percent less energy compared to current new buildings, and develop market-ready building retrofit strategies for existing buildings which use 20 percent less energy compared to current levels.
- Reduce the Federal government's energy use in its buildings, including industrial and laboratory facilities, and increase use of renewable energy in Federal facilities.

## Managing for Results

Excellence in business management is essential to accomplishing the EERE mission and goals. In the spring of 2000, EERE published its Strategic Plan and cited “excellence in business management” as one of the Office’s three major goals. The Federal government’s fiscal cycles often involve the management of up to four budget years at any one time. To do this in the most effective manner, an orderly, systematic approach is needed that is transparent, integrated, and seamless.

As part of the business management improvement during the past two years, EERE institutionalized its processes for planning, budget formulation, budget execution and program analysis and evaluation with the creation of the Strategic Management System (see figure for more details). This system takes the complex processes of Federal management (including human resources, procurement, and information processing) and links them into a cohesive whole based on common terms and definitions, and applies them with a consistent set of principles, procedures, and information management systems. This integrated, systematic approach to management envisions a deliberate and proactive approach to the business of EERE. Implementing this system is the key to ensuring overall management excellence on par with the technological excellence of the EERE programs.



## Site Funding and Federal and Contractor Staffing Profiles

In support of its priorities, EERE submits the following FY 2002 Request. The table below covers both the Energy Conservation and Energy Supply Appropriations.

### Energy Efficiency and Renewable Energy Programs FY 2002 Congressional Budget Request (in thousands of dollars)

<b>Program</b>	<b>FY 2000 Comparable</b>	<b>FY 2001 Comparable</b>	<b>FY 2002 Request</b>	<b>Program Change</b>
Building Technology, State and Community Sector	\$ 267,690	\$ 295,142	\$ 367,141	\$ 71,999
Federal Energy Management Program	\$ 23,918	\$ 25,661	\$ 13,300	\$ -12,361
Industry Sector	\$ 137,416	\$ 148,622	\$ 87,724	\$ -60,898
Transportation Sector	\$ 228,756	\$ 255,398	\$ 239,370	\$ -16,028
Power Technologies (Distributed Energy Resources)	\$ 49,555	\$ 47,346	\$ 47,346	\$ 0
Policy and Management	\$ 42,866	\$ 43,274	\$ 40,100	\$ -3,174
Renewable Energy Resources	\$ 306,054	\$ 373,179	\$ 237,477	\$ -135,702
Total Program Funding	\$ 1,056,255	\$ 1,188,622	\$ 1,032,458	\$ -156,164
Geothermal Resources Development Fund - Transfer of balances to Energy Supply	\$ -821	\$ 0	\$ 0	\$ 0
Transfer from Biomass Energy Development (Non-Add)	\$ (-25,000)	\$ (-2,000)	\$ 0	\$ 2,000
Total Budget Authority	\$ 1,055,434	\$ 1,188,622	\$ 1,032,458	\$ -156,164

**Federal Staffing at Field and Headquarters (FTEs)**

<b>Energy Efficiency Programs</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>
Building Technology, State, and Community Sector			
Headquarters	71	81	76
Federal Energy Management Program			
Headquarters	20	32	27
Industry Sector			
Headquarters	52	59	54
Chicago Operations Office	4	0	0
Idaho Operations Office	4	7	6
<b>Subtotal</b>	<b>60</b>	<b>66</b>	<b>60</b>
Transportation Sector			
Headquarters	56	62	62
Oak Ridge Operations Office	1	1	1
<b>Subtotal</b>	<b>57</b>	<b>63</b>	<b>63</b>
Power Technologies (Distributed Energy Resources)			
Headquarters	5	5	5
Chicago Regional Office	3	3	3
<b>Subtotal</b>	<b>8</b>	<b>8</b>	<b>8</b>



**Federal Staffing at Field and Headquarters (FTEs)**

<b>Energy Efficiency Programs</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>
Policy and Management			
Headquarters	64	59	58
Golden Field Office	31	30	34
Atlanta Regional Office	22	25	25
Boston Regional Office	15	18	18
Chicago Regional Office	16	20	17
Denver Regional Office	24	27	25
Philadelphia Regional Office	18	19	18
Seattle Regional Office	21	22	21
<b>Subtotal</b>	<b>211</b>	<b>220</b>	<b>216</b>
 <b>Subtotal FTEs, Energy Efficiency Programs</b>	 <b>427</b>	 <b>470</b>	 <b>450</b>
 <b>Renewable Energy Resources</b>			
Golden Field Office	17	22	20
Idaho Operations Office	1	1	1
Headquarters	92	98	95
 <b>Subtotal, Renewable Energy Resources</b>	 <b>110</b>	 <b>121</b>	 <b>116</b>

**Federal Staffing at Field and Headquarters (FTEs)**

<b>Energy Efficiency Programs</b>	<b>FY 2000</b>	<b>FY 2001</b>	<b>FY 2002</b>
<b>Total Energy Efficiency and Renewable Energy</b>	<b>537</b>	<b>591</b>	<b>566</b>

**U.S. Department of Energy**

**Summary by Appropriation Account**

(Dollars in Thousands)

	<b>FY 2000 Comparable</b>	<b>FY 2001 Comparable</b>	<b>FY 2002 Request</b>	<b>FY 2002 Request vs. FY 2001</b>
<b>Energy Conservation</b>				
Building Technology, State and Community Sector	\$ 267,690	\$ 295,142	\$ 367,141	\$ +71,999
Federal Energy Management Program	\$ 23,918	\$ 25,661	\$ 13,300	\$ -12,361
Industry Sector	\$ 137,416	\$ 148,622	\$ 87,724	\$ -60,898
Transportation Sector	\$ 228,756	\$ 255,398	\$ 239,370	\$ -16,028
Power Technologies (DER)	\$ 49,555	\$ 47,346	\$ 47,346	\$ 0
Policy and Management	\$ 42,866	\$ 43,274	\$ 40,100	\$ -3,174
<b>Subtotal, Energy Conservation</b>	<b>\$ 750,201</b>	<b>\$ 815,443</b>	<b>\$ 794,981</b>	<b>\$ -20,462</b>
<b>(Subtotal, Energy Conservation Grants) (Non-Add)</b>	<b>\$ (168,500)</b>	<b>\$ (190,580)</b>	<b>\$ (311,000)</b>	<b>\$ (120,420)</b>
<b>(Subtotal, Energy Conservation R&amp;D) (Non-Add)</b>	<b>\$ (581,701)</b>	<b>\$ (624,863)</b>	<b>\$ (483,981)</b>	<b>\$ (-140,882)</b>
Transfer from Biomass (Non-Add)	\$ (-25,000)	\$ (-2,000)	\$ (0)	\$ (2,000)
<b><u>Total, Energy Conservation</u></b>	<b><u>\$ 750,201<sup>a</sup></u></b>	<b><u>\$ 815,443<sup>b</sup></u></b>	<b><u>\$ 794,981<sup>c</sup></u></b>	<b><u>\$ -20,462</u></b>

<sup>a/</sup> Reflects adjustment for approved reprogramming 00-R-3 of \$-7,724,000 for the Small Business Innovative Research (SBIR) program and \$-463,000 for the Small Business Technology Transfer Pilot Program (STTR).

<sup>b/</sup> Reflects adjustment of \$-1,797,000 for Omnibus Rescission and \$300,000 for Supplemental Appropriation, P.L. 106-554.

<sup>c/</sup> The FY 2002 amount will be modified by a budget amendment to be submitted shortly. Energy Conservation will be decreased by a net of \$39,176,000 within the Transportation Sector.

DEPARTMENT OF ENERGY  
 FY 2002 CONGRESSIONAL BUDGET REQUEST  
 ENERGY CONSERVATION APPROPRIATION  
 (Dollars in Thousands)

ENERGY CONSERVATION APPROPRIATION  
 PROGRAM FUNDING SUMMARY

Activity	FY 2000 Enacted	FY 2001 Enacted	FY 2002 Request
Building technology, state and community sector			
Building research and standards			
Technology roadmaps and competitive R&D.....	\$6,790	\$6,870	\$857
Residential buildings integration.....	\$11,212	\$12,120	\$7,478
Commercial buildings integration.....	\$3,885	\$4,583	\$2,510
Equipment, materials and tools.....	\$36,990	\$40,670	\$19,718 *
Total, Building research and standards.....	\$58,877	\$64,243	\$30,563
Building technology assistance.....			
Weatherization assistance program.....	\$135,000	\$152,664	\$273,000
State energy program.....	\$33,500	\$37,916	\$38,000
Community partnerships.....	\$17,915	\$18,095	\$8,488
Energy star program.....	\$2,676	\$2,204	\$2,000
Total, Building technology assistance.....	\$189,091	\$210,879	\$321,488
Cooperative programs with states.....	\$1,930	\$1,996	—
Energy efficiency science initiative.....	\$3,864	\$3,891	—
Management and planning.....	\$13,928	\$14,133	\$15,090
Total, Building technology, state and community sector.....	\$267,690	\$295,142	\$367,141

\* These amounts will be modified by a budget amendment to be submitted shortly. Energy Conservation will be decreased by a net of \$39,176 thousand. The transportation sector, will be reduced, offset by increases in buildings research and standards, policy and management, and the Energy Supply account.

Activity	FY 2000 Enacted	FY 2001 Enacted	FY 2002 Request
Federal energy management program			
Federal energy management program activities.....	\$20,731	\$21,227	\$8,900
Program direction.....	\$3,187	\$4,434	\$4,400
Total, Federal energy management program.....	\$23,918	\$25,661	\$13,300
Industry sector			
Industries of the future (specific).....	\$65,644	\$72,390	\$46,424
Industries of the future (crosscutting).....	\$57,609	\$61,719	\$31,900
Cooperative programs with states.....	\$1,964	\$1,996	—
Energy efficiency science initiative.....	\$3,830	\$3,891	—
Management and planning.....	\$8,369	\$8,626	\$9,400
Total, Industry sector.....	\$137,416	\$148,622	\$87,724
Power technologies			
Distributed energy resources			
Distributed generation technology development.....	\$44,000	\$43,903	\$43,896
End-use systems integration and interface.....	\$4,000	\$1,996	\$2,000
Total, Distributed energy resources.....	\$48,000	\$45,899	\$45,896
Management and planning.....	\$1,555	\$1,447	\$1,450
Total, Power technologies.....	\$49,555	\$47,346	\$47,346

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Activity	FY 2000 Enacted	FY 2001 Enacted	FY 2002 Request
Transportation sector			
Vehicle technology R&D.....	\$138,365	\$159,610	\$154,116
Fuels utilization R&D.....	\$21,196	\$23,509	\$23,529
Materials technologies.....	\$41,580	\$42,223	\$41,293
Technology deployment.....	\$12,826	\$15,017	\$10,200
Cooperative programs with states.....	\$1,964	\$1,996	—
Energy efficiency science initiative.....	\$3,830	\$3,891	—
Management and planning.....	\$8,995	\$9,152	\$10,232
Total, Transportation sector.....	\$228,756	\$255,398	\$239,370 *
Policy and management.....	\$42,866	\$43,274	\$40,100 *
Total, Energy Conservation.....	\$750,201	\$815,443	\$794,981

\* These amounts will be modified by a budget amendment to be submitted shortly. Energy Conservation will be decreased by a net of \$39,176 thousand. The transportation sector, will be reduced, offset by increases in buildings research and standards, policy and management, and the Energy Supply account.