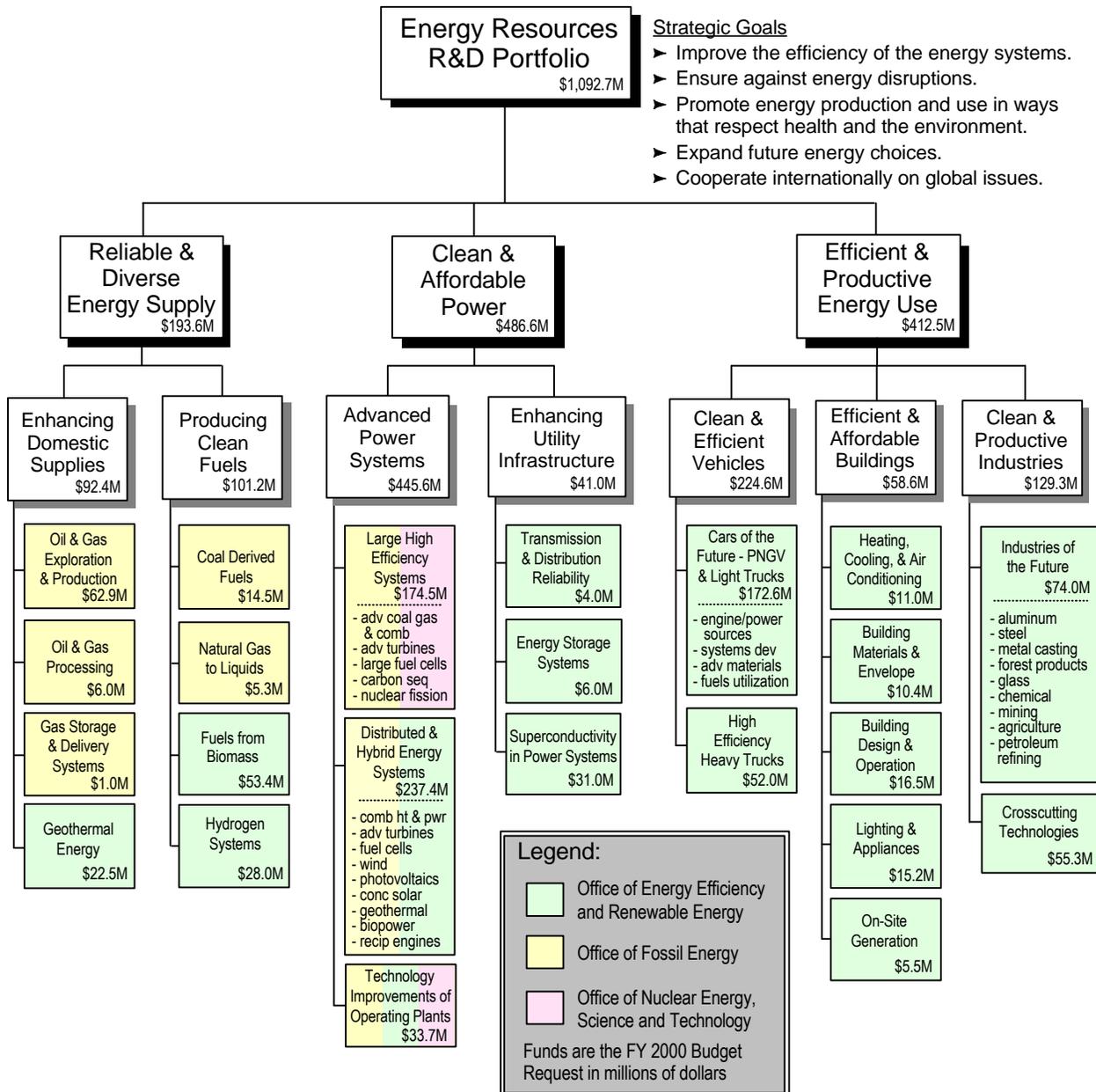


Appendix Budget Profiles



Appendix

Budget Profiles (000\$)

Energy Resources R&D Portfolio Research Areas	FY 1998 Appropriated	FY 1999 Appropriated	FY 2000 Request
Enhancing Domestic Supplies	83,187	83,600	92,400
Oil and Gas Exploration and Production	59,800	60,400	62,900
Diagnostics and Imaging	19,900	20,400	20,100
Drilling, Completion, and Stimulation	9,100	7,500	7,600
Reservoir Life Extension	21,200	23,300	24,200
Drilling and Production Environmental Management	9,600	8,700	9,000
Gas Hydrates	0	500	2,000
Oil and Gas Processing	5,500	6,200	6,000
Low Quality Gas Upgrading	1,100	1,900	1,600
Air Emissions Detection and Control	4,400	4,300	4,400
Gas Storage and Delivery Systems	1,000	1,000	1,000
Geothermal Energy	16,887	16,000	22,500
Geothermal Exploration	5,600	5,500	7,000
Geothermal Drilling and Completion	6,900	5,000	7,500
Geothermal Reservoir Production	4,387	5,500	8,000
Producing Clean Fuels	68,274	86,312	101,243
Coal Derived Fuels	15,844	15,528	14,500
Transportation Fuels and Chemicals	10,039	8,650	8,300
Solid Fuels and Feedstocks	5,064	5,097	4,000
Advanced Research	741	1,781	2,200
Natural Gas-to-Liquids	6,297	6,784	5,302
Ceramic Membrane Reactor Systems	4,785	5,500	4,000
Thermoacoustic Natural Gas Liquefaction	458	600	600
Novel Conversion Processes	1,054	684	702
Fuels From Biomass	30,327	41,750	53,441
Feedstock Production	2,500	2,800	5,500
Ethanol Production	25,027	35,950	37,441
Biodiesel Production	800	750	1,000
Regional Biomass Energy Program	2,000	2,250	3,500
Integrated Bioenergy Technology R&D	0	0	6,000
Hydrogen Systems	15,806	22,250	28,000
Hydrogen Production	4,737	6,259	8,510
Hydrogen Storage and Use	2,238	2,829	5,590
Technology Validation	6,361	10,993	11,420
Analysis and Outreach	2,470	2,169	2,480

Energy Resources R&D Portfolio Research Areas	FY 1998 Appropriated	FY 1999 Appropriated	FY 2000 Request
Advanced Power Systems	353,498	417,601	445,609
Large High Efficiency Systems	147,989	182,116	174,456
Advanced Coal Gasification and Combustion Systems	61,256	68,526	60,873
- <i>Advanced Coal Combustion</i>	21,039	21,500	10,010
- <i>Pressurized Fluidized Bed Combustion</i>	17,875	14,638	12,202
- <i>Integrated Gasification Combined Cycle</i>	22,342	32,388	38,661
Advanced Gas Turbine Systems	45,000	44,500	41,808
Advanced Large-Scale Fuel Cell Power Systems	40,210	44,200	37,649
Carbon Sequestration	1,523	5,890	9,126
Nuclear Fission Systems	0	19,000	25,000
Distributed and Hybrid Energy Systems	188,344	212,750	237,409
Combined Heat and Power Systems	1,000	1,500	2,000
Advanced Turbine Systems - Industrial and Micro	34,650	51,000	31,300
Distributed Fuel Cell Power Systems (EE)	6,400	0	0
Wind Energy Systems	32,128	33,200	45,600
Photovoltaic Systems	64,691	72,200	93,309
Concentrating Solar Power Technology	16,317	17,000	18,850
Geothermal Systems	5,119	6,000	7,000
Biopower Energy Systems	27,789	31,450	38,950
Reciprocating Engines	250	400	400
Technology Improvement of Operating Plants	17,165	22,735	33,744
Aging Effects in Key Components	5,225	6,225	7,000
Nuclear Power Plants	0	0	5,000
Regulatory Compliance	11,211	13,260	14,744
Hydropower Turbines	729	3,250	7,000
Enhancing Utility Infrastructure	43,262	40,000	41,000
Transmission and Distribution Reliability	1,000	3,000	4,000
Real Time System Control	0	2,500	3,400
Power Electronics	0	0	400
Distributed Resource Integration	0	500	200
High Capacity Transmission Technologies	1,000	0	0
Energy Storage Systems	3,839	4,500	6,000
Integration	1,950	2,200	3,000
Components	1,350	1,400	2,100
Analysis	539	900	900
Superconductivity in Power Systems	31,579	32,500	31,000
The Superconductivity Partnership Initiative	14,000	14,500	14,000
The Second Generation Wire Initiative	8,000	8,000	8,000
Strategic Research	9,579	10,000	9,000
Electric and Magnetic Fields R&D	6,844	0	0

Energy Resources R&D Portfolio Research Areas	FY 1998 Appropriated	FY 1999 Appropriated	FY 2000 Request
Clean and Efficient Vehicles	169,956	181,196	224,580
Cars of the Future - PNGV and Light Trucks	139,066	150,356	172,580
Engine/Power Sources	68,280	96,121	123,180
- <i>Advanced Combustion Engine R&D</i>	14,818	34,175	46,800
- <i>Fuel Cells</i>	22,614	33,501	41,380
- <i>High-Power Batteries for Hybrid-Electric Vehicles</i>	8,620	12,750	15,000
- <i>Power Electronics and Electric Machines</i>	4,410	6,875	9,000
- <i>Electric Vehicle Batteries</i>	17,818	8,820	11,000
Systems Development	45,582	24,815	23,900
Advanced Materials	20,855	22,655	17,000
Fuels Utilization	4,349	6,765	8,500
High Efficiency Heavy Trucks	30,890	30,840	52,000
Heat Engine R&D	3,500	3,500	9,000
Systems Development	1,700	1,500	12,000
Advanced Materials	13,015	14,820	16,000
Fuels Utilization	12,675	11,020	15,000
Efficient and Affordable Buildings	42,763	50,393	58,630
Heating, Cooling, and Air Conditioning	14,650	15,390	11,000
Geothermal Heat Pumps	6,400	6,500	0
Absorption Technologies	5,400	5,910	6,500
Desiccants	2,350	2,480	4,500
Furnaces and Boilers	500	500	0
Building Materials and Envelope	7,187	10,723	10,400
Windows and Glazings	4,959	6,829	6,610
Walls, Roofs, and Foundations	2,228	3,894	3,790
Building Design and Operation	11,811	12,970	16,500
Commercial Buildings	5,000	5,200	8,000
Residential Buildings	6,811	7,770	8,500
Lighting and Appliances	8,115	9,560	15,230
Lighting	2,350	3,100	4,500
Refrigeration	3,140	2,860	3,130
Heat Pump Water Heater and Appliances	0	0	2,100
Solar Water Heating	2,625	3,600	5,500
On-Site Generation	1,000	1,750	5,500
Fuel Cells	1,000	1,750	5,500

Energy Resources R&D Portfolio Research Areas	FY 1998 Appropriated	FY 1999 Appropriated	FY 2000 Request
Clean and Productive Industries	93,850	105,480	129,320
Industries of the Future	53,080	57,460	74,020
Aluminum	7,340	8,100	11,180
Steel	9,730	10,530	10,630
Metal Casting	5,480	5,740	5,800
Forest Products	12,040	11,960	21,080
Glass	3,880	4,790	4,830
Chemical	11,610	12,380	12,500
Mining	0	1,980	3,000
Agriculture	0	1,980	4,000
Petroleum Refining	3,000	0	1,000
Crosscutting Technologies	40,770	48,020	55,300
Enabling Technologies	14,470	19,220	22,000
Technical Assistance	15,340	18,100	21,300
Financial Assistance	10,960	10,700	12,000
<i>Energy Resources R&D Total</i>	854,790	964,582	1,092,782