

entitled "Energy Management in the Federal Government."

APPENDIX A TO PART 436—ENERGY CONSERVATION STANDARDS FOR GENERAL OPERATIONS [RESERVED]

APPENDIX B TO PART 436—GOAL SETTING METHODOLOGY

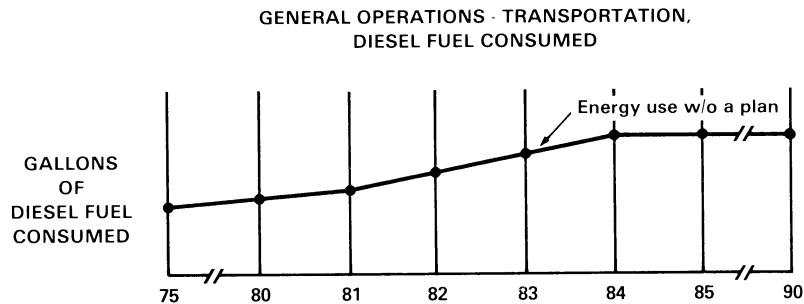
In establishing and updating agency goals for energy conservation, the following methodology or an equivalent method should be utilized:

(a) For overall energy consumption—

(1) An analysis shall be made to determine what factors have the most significant impact upon the amount of each fuel type used by the agency in performing functions in support of its overall mission. Consideration is to be given, but not limited to, the following factors: Number of people using energy; number of vehicles using gasoline; amounts of other equipment using energy; tempo of operations (one, two, or three

shifts); the type of operations (degree of equipment or labor intensity); equipment fuel limitations; environmental conditions (tropical versus arctic, etc.); budget levels for fuel, operations, maintenance, and equipment acquisition; and phase-out schedule (of older equipment or plants which may be inefficient). After identifying these factors, a further analysis shall be made to identify any projected workload changes in the quality or quantity of these factors on a yearly basis up to 1990.

(2) Based upon the analysis in (a)(1) and an evaluation of available information on past energy usage, a baseline of energy use by fuel type by functional category shall be established beginning with FY 1975. In addition to "General Transportation," other functional categories should be selected to enhance energy management. Total fuel use for a particular activity may be allocated to the functional category for which the preponderance of fuel is used. Figure B-1 is an example of one such baseline.



**FIGURE B-1: GENERAL OPERATIONS - TRANSPORTATION,  
DIESEL FUEL CONSUMED**

This example shows an increase in energy use, for a specific fuel type, during the period 1975-1981, with a further increase from 1981 to 1984 and a leveling off and no growth from 1984-1990. A justification, based on factors as discussed above, shall accompany each baseline.

(3) Thereafter, analyses should be made of the measures available for reducing the energy consumption profiles without adverse impact on mission accomplishment. Finding viable opportunities for reducing energy use, increasing energy efficiency and switching energy sources, will require consultation with specialists in the fields of operations,

maintenance, engineering, design, and economics, and consideration of the measures identified in Appendix C. The DOE Federal Energy Management Programs Office can, upon request, provide information on where such resources can be located. Once these measures are identified, they are to be incorporated into a time-phased investment program, (using where appropriate, the life cycle costing factors and methodology in subpart A of this part). If investment and other costs for implementing a measure are insignificant, a Federal agency may presume that a measure is cost-effective without further analysis. An estimate must then be

made as to the lead time required to implement the program and realize energy reductions.

Figure B-2 shows a summarized investment program, which should be accompanied

by a detailed description of the measures, projects, and programs making up the total planned investments for each year. This summary need not be by function or fuel type.

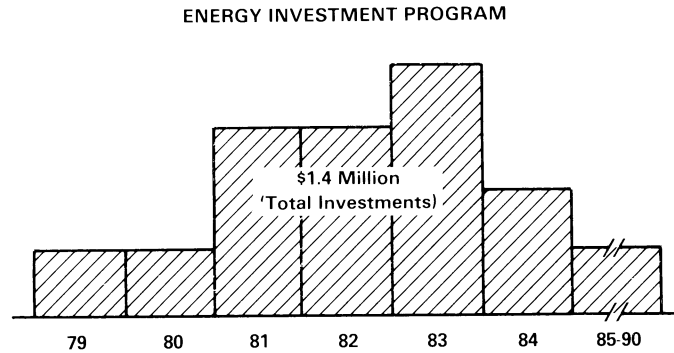


FIGURE B-2: ENERGY INVESTMENT PROGRAM

These analyses should enable the agency to project an energy consumption goal, with the assumption that funds for executing the planned projects will be approved. Figure B-3 shows a new energy use profile, with planned initiatives and related investments

taken into consideration, and the resulting goal entitled "Energy Use With A Plan" superimposed on Figure B-1. Included are the anticipated effects on consumption cause by improvements in energy efficiency and fuel switching.

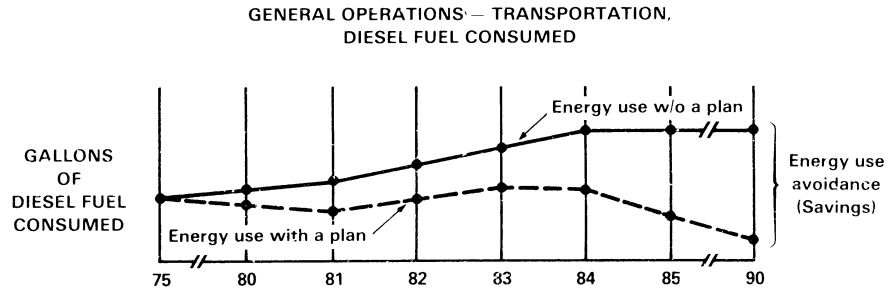


FIGURE B-3: GENERAL OPERATIONS - TRANSPORTATION, DIESEL FUEL CONSUMED

A comparison of these projections will show the energy use avoidance resulting from the investment program as depicted in Figure B-2. Using the prices of fuel con-

tained in Appendix C to Subpart A, the dollars saved can be projected against the dollars invested. Life cycle costing methodology pursuant to subpart A, will be used to

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determine priorities for submitting individual initiatives into the appropriate budget year.

(b) For energy efficiencies—Energy efficiency baselines and goals for each fuel type shall be calculated using the same consumption factors and similar methodology to that outlined in paragraph (a). Energy consumption by fuel type shall be linked to mission through the functional categories listed in § 436.106(a)(2). This will identify a rate which will indicate energy efficiency trends. This linkage may be accomplished through the following algorithm:

*Step 1:* Determine functional categories from section 436.106(a)(2) which best describe the Agency overall mission.

*Step 2:* Determine types of fuels used to support the functions selected in Step 1.

*Step 3:* Determine quantities of fuel consumed or planned for consumption over a specific period of time.

*Step 4:* Determine quantity of output of function for same period of time used in Step 3. Quantify output in a standard measure which best describes functional category.

*Step 5:* Determine the energy efficiency ratio by dividing quantity from Step 4 by quantity from Step 3.

This ratio of fuel consumed to a unit measure of output will be used to develop a pro-

jection of a baseline and goals through 1990, and used in reporting variance. Examples of ratios that should be considered are:

- Production or industrial process type operations

Ton of product

Cu. ft. of natural gas

- Services, such as postal delivery

Customers served or

pounds delivered

Gallons of automotive gasoline

- General transportation

Passenger miles

Gallons of automotive gasoline

- Training

Persons trained

or in training

Gallons of navy special

Agencies shall select one or more of these ratios, which shall be used throughout the planning period, or use more appropriate energy efficiency ratios, to describe their overall functions. Figure B-4 illustrates the planning baseline and goal resulting from this type of analysis.

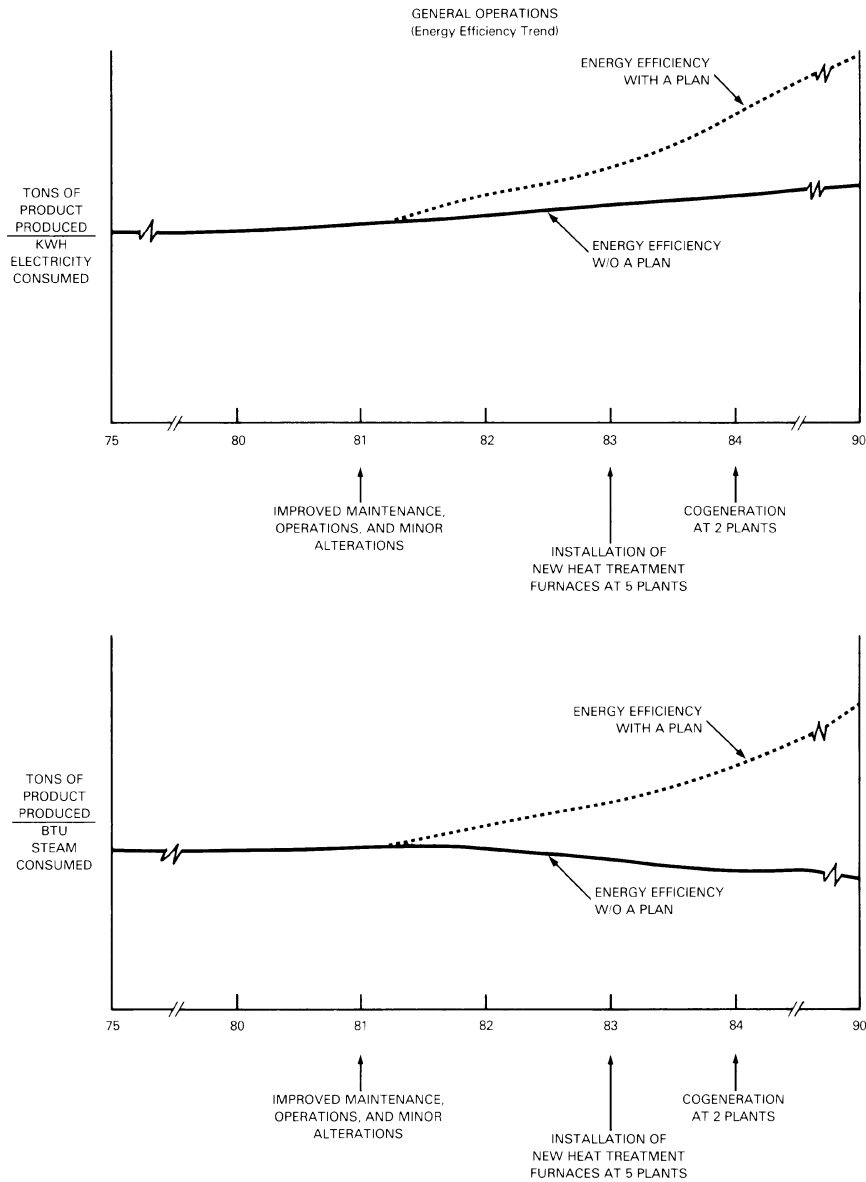


FIGURE B-4: GENERAL OPERATIONS, ELECTRICITY, STEAM CONSUMED.

(c) For fuel switching—Fuel switching goals for gasoline other oil-based fuel and natural gas may be calculated as follows:

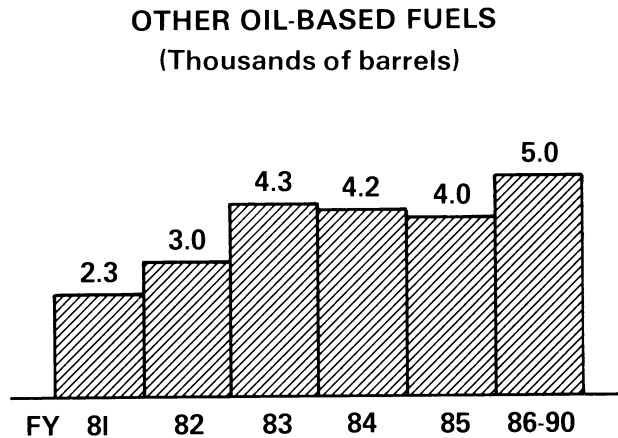
*Step 1:* For each fiscal year, identify investments, where appropriate, in fuel switching

from gasoline, other oil-based fuel and natural gas to alternate renewable or nonrenewable fuel sources.

Step 2: Project for each fiscal year, the avoidance in the use of gasoline, other oil-

based fuel and natural gas resulting from previous fuel switching investments.

Completion of these steps will permit the formulation of charts such as that shown in Figure B-5.



**FIGURE B-5**  
**FUEL SWITCHING GOALS**

**APPENDIX C TO PART 436—GENERAL OPERATIONS ENERGY CONSERVATION MEASURES**

(a) The following individual measures or set of measures must be considered for inclusion in each agency 10-year energy management plan:

(1) Federal Employee Ridesharing Programs—Includes the use of vanpooling and carpooling and complies with existing orders and regulations governing parking for vanpools and carpools.

(2) Fleet Profile Change—Includes energy considerations in equipment selection and assignment.

(3) Fleet Mileage Efficiency—Includes agency plans to implement existing orders, goals, and laws related to vehicle fuel economy.

(4) Driver Training—Includes development of appropriate programs for training operators of U.S. Government vehicles in energy conservation.

(5) Maintenance Procedures Improvement—Includes activities to insure proper vehicle maintenance to optimize energy conservation.

(6) Operating Procedures Improvement—Includes use of cooperative passenger shuttle and courier services on an interagency or other basis within each metropolitan area.

(7) Mass Transit—Includes employee use of existing services for business-related activities and commuting.

(8) Public Education to Promote Vanpooling and Carpooling—Includes activities to support the EPCA requirement to establish “responsible public education programs to promote vanpooling and carpooling arrangements” through their employee awareness programs.

(9) Elimination of Free or Subsidized Employee Parking—Includes elimination of free or subsidized employee parking on Federal installations in accordance with OMB Cir. A-118, August 13, 1979.

(10) Two-Wheeled Vehicle Programs—Includes activities to encourage the substitution of bicycles, mopeds, etc. for automobiles for commuting and operational purposes. These may include the establishment of weather-protected secure storage facilities, shower and locker facilities, and restricted routes for these vehicles on Federal property. Cooperative programs with local civil authorities may also be included.