CHAPTER 17
BUILDING ENERGY MANAGEMENT FOR STATE AND LOCAL GOVERNMENT

[Prior to 3/11/87, Energy Policy Council[380] Ch 17]

565—17.1(473) General. The building energy management for state and local government program was established to reduce consumption and associated costs of conventional energy resources in public buildings owned or leased by state of Iowa, board of regents, and units of local government. This objective is to be accomplished through several means, including:

1. Identifying and implementing improved operation and maintenance programs.
2. Identifying and implementing energy conservation measures, including solar energy or renewable resource measures.
3. Conducting training courses in energy management for state and local government personnel.
4. Establishing the position of energy management technician in area education agencies.

17.1(1) *Purpose and scope.* This chapter establishes requirements for:

a. The conduct of preliminary energy audits and energy audits, the qualifications of persons conducting them and allowable costs of energy audits.

b. A technical assistance program and the eligibility criteria to receive a grant.

c. Eligibility criteria to receive a grant to install energy conservation measures including solar and other renewable resource measures.

d. Establishing programs and materials to train local government operating personnel in effective methods of energy management specific to their jobs.

e. Continuing a pilot project in area education agencies to employ energy management technicians who will provide information and assistance to Iowa's public and private schools.

17.1(2) *Definitions.* For purposes of these rules:

"*Average simple payback period*" means the total estimated costs of all measures divided by the total estimated annual cost savings.

"*Building*" means any structure which includes a heating or cooling system, or both.

"*Complex*" means a closely situated group of buildings on a contiguous site or a closely situated group of buildings served by a central utility plant, such as a college campus or a multibuilding hospital.

"*Degree-days*" are the sum of heating degree-days and cooling degree-days. An average value, preferably taken from the National Oceanographic and Atmospheric Administration official averages, may be used.

"*Eligible application*" is an application for financial assistance which has been reviewed by department staff and board of regents (when applicable) and found to be complete and correct. It is eligible for ranking and funding.

"*Energy audit*" means a survey of a building or complex that is conducted in accordance with the requirements of this rule.

"*Energy conservation measure*" means an installation in a building which is primarily intended to reduce energy consumption or allow the use of an alternative energy source.

"*In-kind contribution*" means the value of noncash contributions provided by the grantee. In-kind contributions may be in the form of charges for real property and nonexpendable personal property and the value of goods and services directly benefiting and specifically identifiable to the project or program.

"*Preliminary energy audit*" means a determination of the energy consumption characteristics of a building.

"*Simple payback period*" means the estimated total costs of the measure (including design, materials and installation) divided by the estimated annual cost savings for the measure. For renewable and coal conversions, savings are based on the fuel replaced.

"*Square feet*" means the total gross conditioned floor area of a building.

"Unit of local government" means the government of a county, municipality, or township, which is a unit of general purpose government below the state, determined on the basis of the same principles as are used by the Bureau of the Census for general statistical purposes; the recognized governing body of an Indian tribe which governing body performs substantial governmental functions; libraries owned by any of the foregoing; and public libraries which serve all residents of a political subdivision below the state level, such as a community, district or region, free of charge and which derive at least 40 percent of their operating funds from tax revenues of a taxing authority below the state level.

565—17.2(473) Eligibility. To be eligible to receive financial assistance, an applicant must:

17.2(1) Be a unit of state of Iowa or local governments, and apply for owned or leased buildings, not including schools and hospitals (which are eligible for building energy management grants under Institutional Conservation Program) except buildings owned or leased by board of regents institutions which are eligible.

17.2(2) Give assurance that it has implemented all energy conservation operation and maintenance procedures identified in the energy audit and the technical assistance audit, or provide a written plan and time schedule for implementing specific operation and maintenance procedures so identified;

17.2(3) For technical assistance, an energy audit must be completed in the building for which financial assistance is requested, subsequent to the most recent construction, reconfiguration or utilization change which significantly modified energy use within the building;

17.2(4) For energy conservation measures, a technical assistance audit or its equivalent must be completed in accordance with these rules in the building for which financial assistance is requested; and

a. Have no plan or intention at the time of application to close or otherwise dispose of the building for which financial assistance is requested within the simple payback period of any energy conservation measure recommended for that building. The simple payback period shall be calculated in accordance with 17.1(2); and

b. Demonstrate that the simple payback period of each energy conservation measure is not greater than seven years, and the estimated useful life of the measure is greater than its simple payback period.

17.2(5) Submit an application in accordance with the provisions of these rules.

565—17.3(473) Auditor qualifications. Energy auditors must be able to comply with the conflict of interest requirement which states that the energy auditor shall disclose any interest greater than 10 percent in a company that manufactures or installs devices that may be required as a result of the energy audit.

17.3(1) *Energy auditors.*

a. All Iowa registered architects and Iowa registered engineers who are Class A energy auditors and associate Class A energy auditors (see 565—subrule 6.1(3)), are qualified as energy auditors for this program.

b. Persons who are certified as having attended an energy audit workshop will be qualified as energy auditors.

c. Reciprocity will be recognized for persons who have attended similar workshops in other states, if those workshops have been approved by the director.

d. Energy auditors must be someone other than the person directly responsible for the day-to-day operations of the building.

e. An energy audit shall include a statement signed by the auditor that the auditor meets the applicable qualifications, the auditor has indicated any financial interests, and the audit was conducted in accordance with the requirements of 17.5(1).

17.3(2) *Technical assistance analysts.* In order to qualify as a technical assistance analyst, a person must:

a. Be a certified Class A energy auditor as prescribed in 565—Chapter 6; or

b. Be a registered engineer, as defined in Iowa Code chapter 542B, or in the case of an architect, be registered in accordance with Iowa Code chapter 544A, and be a part of an architect-engineer team; and be knowledgeable and experienced in energy conservation matters.

565—17.4(473) Preliminary energy audits — contents. Preliminary energy audits will be completed on all buildings for which grant applications are submitted. A preliminary energy audit shall provide:

17.4(1) A description of the building or complex and its energy-using characteristics, including:

a. The functional use of the building;

b. The size of the building expressed in gross square feet;

c. The date of construction of the building;

d. Approximate daily hours of operation, including periods of partial use, if applicable;

e. An identification of major energy-using systems;

f. Fuel use in physical units and cost data by type for the most current 12-month period ending June 30, by month if practicable, using actual data or an estimate if actual figures are unavailable;

17.4(2) A brief description of activities which have been undertaken to conserve energy in the building or complex being audited;

17.4(3) Information regarding site, building, and heating and hot water systems related to solar energy or other renewable resource potential.

565—17.5(473) Energy audits. Energy audits will be completed on all buildings for which grant applications are submitted.

17.5(1) *Contents of an energy audit.* An energy audit shall include a description of:

a. Major changes in functional use or mode of operation planned in the next seven years;

b. Terminal heating and cooling, such as radiators, unit ventilators, fan coil units, or double duct reheat systems;

c. General building conditions;

d. Energy conservation operation and maintenance procedures that have been implemented for the building;

e. Recommend appropriate energy conservation operation and maintenance procedures on the basis of an on-site inspection with a general estimate of energy and cost savings, if practicable;

f. The need for the acquisition and installation of energy conservation measures and potential for retrofit;

g. Whether building conditions or characteristics present an opportunity for use of solar heating and cooling systems or solar hot water systems;

h. The need for major changes requiring technical analysis prior to implementation.

17.5(2) *Cost of energy audits.*

a. Buildings owned or leased by state of Iowa and board of regents may receive funds for the full cost of energy audits, with maximum grants and exceptions as provided in this subrule. Local government buildings may receive grants for the lesser of 50 percent of the actual cost of an energy audit or 50 percent of the maximum grant (as shown in paragraph *"b"*). Applicant's share of cost may be based on cash and in-kind contribution.

b. Except as provided in paragraph *"c"* of this subrule, the grant award for an energy audit shall be the actual cost of the audit, or the following:

Building Gross Square Feet	Maximum Grant
Up to 30,000	$ 800.00
30,000 to 100,000	1,000.00
100,000 and above	1,200.00

Complex: The sum of individual building allowances for the first 150,000 gross square feet and 80 percent of individual building allowances above 150,000 gross square feet but not to exceed $10,000.

c. Where necessary, the department may increase the allowable cost of an energy audit for:

(1) The amount necessary to provide transportation to perform energy audits of buildings in remote locations; and

(2) The amount necessary to conduct energy audits for a building having an unusually complicated system or configuration.

565—17.6(473) Technical assistance program conducted by qualified analyst.

17.6(1) A technical assistance program shall be conducted by a qualified technical assistance analyst, as set forth in subrule 17.3(2). A technical assistance program shall include a detailed engineering analysis to identify the estimated costs of, and the energy and cost savings likely to be realized from implementing each identified energy conservation operation and maintenance procedure and from acquiring and installing each energy conservation measure.

17.6(2) Contents of a technical assistance audit. The technical analyst shall prepare a final report which shall include:

a. A description of building characteristics and energy data including the results of the preliminary energy audit and energy audit of the building, the operating characteristics of energy using systems, and the estimated remaining useful life of the building;

b. An analysis of the estimated energy consumption of the building, by fuel type (in total Btu's and Btu/square feet yr.), at optimum efficiency (assuming implementation of all energy conservation operation and maintenance procedures);

c. An evaluation of the building's potential for solar conversion, particularly for water heating systems;

d. A listing of any known local zoning ordinances and building codes which may restrict the installation of solar systems;

e. A listing of energy use and cost data for each fuel type used for the most current 12-month period ending June 30;

f. An analysis of all recommendations for acquisition and installation of energy conservation measures setting forth a description for each recommended energy conservation measure, including:

(1) An estimate of the cost of design, acquisition and installation;

(2) An estimate of the useful life and simple payback;

(3) An estimate of increases or decreases in operation and maintenance costs that would result, if any;

(4) An estimate of the salvage value or disposal cost, if any;

(5) An estimate of the annual energy and energy cost savings (using current energy prices). In calculating the potential energy cost savings, the technical assistance analysts shall:

Assume that all energy savings obtained from energy conservation operation and maintenance procedures have been realized;

Calculate the total energy and energy cost savings, by fuel type, expected to result, taking into account the interaction among the various energy conservation measures; and

Calculate that portion of the total energy and energy costs savings attributable to each individual energy conservation measure.

g. Statement signed by the analyst that the analyst meets the applicable qualifications as set forth in subrule 17.3(2), that the analyst has indicated any financial interests in accordance with rule 17.3(473), and that the technical assistance program was conducted in accordance with the requirements of this subrule;

h. The following conversion factors will be used when calculating Btu content of fuels:

Natural gas	1,030 Btu's per cubic foot
Distillate fuel oil	138,690 Btu's per gallon
Residual fuel oil	149,690 Btu's per gallon
Coal	20,000,000 Btu's per standard short ton
LP gases	95,475 Btu's per gallon
Steam	1,050 Btu's per pound
Electricity	3,413 Btu's per kilowatt-hour

565—17.7(473) Energy conservation measures. This program is to fund the design, acquisition, and installation of energy conservation measures to reduce energy consumption or measures to allow the use of solar or other alternative energy resources.

565—17.8(473) Grant applications for technical assistance and energy conservation measures.

17.8(1) Applications for financial assistance shall be submitted for each building and shall include:

a. The applicant's name and mailing address;

b. A written statement certifying that the applicant is eligible under 17.2(473);

c. The results of the preliminary energy audit and energy audit for each building for which financial assistance is requested;

d. A project budget which stipulates the intended use of all funds and identifies the sources and amounts of funds, including in-kind contributions, to be used to meet the cost-sharing requirements described in these rules;

e. A brief description of the proposed technical assistance program and long-term energy conservation goals;

f. A signed statement that the applicant:

1. Has satisfied the requirements set forth in this subrule;
2. Will expend grant funds for the purpose stated in the application and in compliance with requirements;
3. Has implemented or provided a written plan to implement all energy conservation operation and maintenance procedures;
4. Will comply with all applicable reporting requirements;
5. Certifies that the building is not intended for seasonal use and not used primarily as a school or hospital except board of regents institutions;
6. Will not enter into any contract relating to an energy conservation measure which may require expenditure of more than $5,000 (excluding technical assistance costs) that does not conform to the provisions of the Davis-Bacon Act (40 U.S.C. Section 276a to 276a-5) pertaining to minimum wages for construction in the applicant's locality;
7. Certifies the number and types of permanent and temporary jobs that will result from implementation of this project, if applicable.

g. Identification of each building including the name or other identification and its address, the building category, description of functional use, ownership, and the size expressed in gross square feet;

h. The applicant's organizational chart with identification of the staff member responsible for energy management;

i. A list of the proposed energy conservation measures, indicating the cost, the estimated energy and energy cost savings, the projected simple payback period, and the milestone dates for completion of the design, acquisition, and installation for each measure. Also required is the average simple payback period for all measures proposed for the building;

j. If the applicant is aware of any adverse environmental impact which may arise from adoption of any energy conservation measure, an analysis of that impact and the applicant's plan to minimize or avoid such impact.

17.8(2) Reserved.

565—17.9(473) Evaluation and ranking of applications.

17.9(1) *Evaluation.* If an application received by the department is found to be in compliance with the provisions of this chapter, and other laws and regulations, then such application will be eligible for financial assistance.

17.9(2) *Ranking.*

a. All eligible applications for technical assistance and energy conservation measures will be ranked to establish priorities for funding.

b. All applications will be subject to verification. Utility data or energy planning documents may be requested.

c. When steam is an energy source, the department will consider the fuels used to generate the steam prorated by the energy entering the building.

d. Ranking will be determined by the following factors:

(1) The average simple payback period (ASPP) of all energy conservation measures for the building, according to the formula:

$$(7 - \text{ASPP}) \times 10/3 \text{ points}$$

where ASPP is the total estimated cost of all energy conservation measures divided by the total annual estimated energy cost savings.

For renewable and coal conversions, estimated energy cost savings will be based on the fuel replaced.

The point range for ASPP is 0 - 20.

(2) Energy savings:

The type of energy source to which conversion is proposed, according to the formulas:

$(\text{SI} + 20) \times 0.105$ for solar and renewable resources,

$(\text{SI} + 20) \times 0.053$ for coal,

where SI is the percentage of total annual energy costs that will be saved by conversion. The upper limit for SI is 96 percent.

The annual energy savings, according to the formula:

$$\text{QSI} \times 0.116$$

where QSI is the percentage of annual energy consumption (in Btu's) estimated to be saved from all ECMs combined. When the percentage is 50 percent or greater, the value used for QSI will be 50 percent.

The type of energy saved, according to the sum of the formulas:

Oil	R × 5.80
Gas	R × 4.35
LPG	R × 4.35
Electricity	R × 2.90
Other	R × 1.45

where R is the ratio of the net energy savings of that type to the gross energy savings for the building.

The point range for energy savings is 0 - 20.

(3) Employment impact has a point range of 0 - 30 and is applicable only for state agencies and units of local government:

Temporary jobs: 1 point per job × 15 jobs = 15 points.

Permanent jobs: 5 points per job × 3 jobs = 15 points.

(4) Potential for continuation of energy management program has a point range of 0 - 10:

Reversion of savings to ECMs = 5 points.

Other: _____ = 5 points.

(5) Potential for use as a model has a point range of 0 - 10:

Visibility impact (Ability to cause similar projects to occur) = 5 points.

Other: _____ = 5 points.

(6) Applicant's match has a point range of 0 - 10, is applicable only to units of local government, and includes in-kind contributions:

10 percent of total cost matched by applicant = 1 point.

565—17.10(473) Energy management training for local government personnel.

17.10(1) This program is to provide opportunities for operations personnel of units of local government to obtain energy management training which is specific to their job functions.

a. Scope of work.

(1) Identify specific energy topic(s) pertinent to Iowa local government personnel.

(2) Identify existing training materials that are appropriate to Iowa's energy circumstances or identify specific types of materials which do not exist and need to be developed.

(3) Identify specific methods of training and timetable for implementation.

(4) Identify plan for making the training available beyond the term of the contract and without continued financial assistance from the department.

(5) Identify an evaluation plan which can be implemented by the department to determine the effectiveness of the training program.

b. Reserved.

17.10(2) Evaluation criteria.

Factors	Point Values
Number of local government employees to receive training	15
Estimated energy savings	25
Work plan for continuing the training beyond the term of this grant	15
Number of different local governments to receive training	5
Total Possible Point Values	60

565—17.11(473) Energy management technician program.

The purpose of this program is to continue the pilot program in area education agencies which established the paraprofessional career of energy management technician.

17.11(1) Energy management technician will:

a. Direct and coordinate building energy management;

b. Demonstrate energy conservation in public and private schools by identifying and demonstrating operation and maintenance improvements;

c. Motivate more effective energy management in Iowa school buildings;

d. Help to reduce schools' utility and energy costs;

e. Provide an energy information resource to Iowa schools.

17.11(2) *Evaluation criteria.*

Factors	Point Values
Energy saved per dollar invested	35
Number of schools pledging to participate	25
Potential for the position to continue	20
Potential for the project to be a model for others	15
Number of schools served by the agency which have not already received energy audits	5
Total Possible Point Values	100

565—17.12(473) Grant awards.

17.12(1) *Local governments.* The grant awards to units of local government from the department for technical assistance and energy conservation programs shall be a maximum of 50 percent of the actual cost. The grant recipient must provide the remaining 50 percent from local funds or in-kind contributions, as defined in subrule 17.1(2).

17.12(2) *State and regents grants.* Grant awards to agencies of state of Iowa or to regents institutions shall be for full cost of energy management programs approved by the department and, where applicable, board of regents.

565—17.13(473) Records and reports.

17.13(1) Each grant recipient for a technical assistance and energy conservation measure program shall keep all the records required by these rules.

17.13(2) Quarterly performance and financial status reports shall be submitted within 30 days following the end of each calendar quarter.

a. The performance report shall discuss milestones accomplished, those not accomplished, status of in-progress activities, problems encountered, and remedial actions planned.

b. Financial status reports shall be completed in accordance with U.S. Department of Energy and Office of Management and Budget requirements. Forms will be provided to meet this requirement.

17.13(3) Within 60 days of concluding a technical assistance or energy conservation measure program, the grantee shall submit a final report to the department which shall detail as applicable:

a. A summary of all work accomplished;

b. Problems encountered;

c. Final financial status reports completed in accordance with 17.13(2)*"b."*

d. A listing and description of energy conservation measures acquired and installed, a final projected simple payback period for each measure and all the measures taken as a whole, and a statement

that the completed modifications (material, equipment and installation) conform to the technical assistance audit and the approved grant application.

17.13(4) Grantees shall keep all records required by these rules for a minimum of three years after completion of the program for which the grant was awarded.

17.13(5) Grantees shall submit annual reports to the department for 3 years following the program. Such reports shall identify each building and shall provide data on the actual energy use for the most current 12-month period ending June 30. Energy use shall be presented on an annual basis consistent with the energy billing cycle for the building. Annual reports shall be submitted within 60 days of the close of each 12-month period.

This rule is intended to implement Iowa Code section 473.7.

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