

CHAPTER 6
BUILDING ENERGY MANAGEMENT PROGRAMS

565—6.1(473) General. Building energy management programs are established for public and private schools, merged area schools, area education agencies, cities, counties and other political subdivisions, hospitals, health care facilities, private colleges, nonprofit organizations, and the state and state agencies to reduce energy consumption and energy costs. These programs are established under Iowa Code sections 473.13A and 473.19 and Iowa Code Supplement section 473.20 and follow the guidelines of 10 CFR 420 (1976).

The state of Iowa and its agencies, public schools, merged area schools, area education agencies, cities, counties and other political subdivisions of the state are required to identify and implement through energy audits and technical engineering analyses all cost-effective energy management improvements for which the building energy management programs make financing available. Private schools and colleges, hospitals, health care facilities, and nonprofit organizations are also authorized and encouraged to participate in building energy management programs.

These programs are administered by the energy and geological resources division of the Iowa department of natural resources.

These programs are carried out by:

1. Conducting energy audits as needed on buildings and facilities owned or leased by mandated and eligible institutions;
2. Implementing operation and maintenance procedures;
3. Conducting technical engineering analyses as needed to identify energy management improvements;
4. Establishing an energy bank and energy loan program;
5. Funding or arranging financing for cost-effective energy management improvements;
6. Establishing energy accounting procedures; and
7. Providing for appeals and reporting measures.

6.1(1) Purpose and scope. This chapter establishes requirements for eligibility, and procedures for conducting an energy audit, conducting a technical engineering analysis, establishing a loan program, funding and arranging financing for cost-effective energy management improvements, and providing for possible appeals and enforcement measures.

6.1(2) Definitions. For the purpose of these rules:

“*Analyst*” means a licensed professional engineer or architect in the state of Iowa who has satisfied the requirements for being placed on the department’s list of qualified analysts as set out in the department’s technical engineering analysis guidelines.

“*Aggregate simple payback period*” means the total estimated cost of all studied and recommended energy management improvements in a building or facility, divided by the total estimated annual energy cost savings.

“*Btu*” means British thermal units, units of energy measurement.

“*Building*” means any structure that is heated, cooled, or lighted.

“*Cost-effective*” means that an energy management improvement or package of energy management improvements will, within the useful life of the improvement(s), generate savings sufficient to pay for the total costs of implementing the improvement(s). Under no circumstances is any improvement or package of improvements cost-effective if the time needed for the savings to pay for the improvement(s) exceeds the expected remaining useful life of the building or facility in which the improvement(s) is implemented.

“*Degree day*” means a unit of measure that is used to help describe the effect of weather severity on the amount of energy needed for heating or cooling a building. A degree day represents the difference between a given base temperature (usually 65° Fahrenheit) and the mean daily temperature (average of the daily maximum and minimum air temperatures). One heating (or cooling) degree day is accumulated for each whole degree that the daily mean temperature is below (or above) the base temperature. The more extreme the weather, the higher the number of degree days (either daily or annual totals).

“*Department*” means the department of natural resources.

“*Energy accounting system*” means a computerized or manual mechanism that allows facilities to track, at a minimum, their monthly energy consumption by unit and cost per square foot, and Btu per square foot per degree day.

“*Energy audit*” means an energy survey of a building that is conducted by means of a walk-through during a visit to the building or facility in accordance with requirements of rule 6.3(473).

“*Energy auditors*” means paraprofessionals, approved by the department, trained and qualified in energy auditing and in identifying energy management improvements. This includes certified energy managers as designated by the Association of Energy Engineers.

“*Energy management improvement*” means construction, rehabilitation, acquisition, or modification of an installation, of any of the fixtures, or of any of the equipment in a building or facility, which is intended to reduce energy consumption or energy source, and which may contain integral control and measurement devices.

“*Expected remaining useful life of a building or facility*” means the time period planned or estimated until the building or facility is abandoned, demolished, or fundamentally rebuilt to the extent that its basic function is altogether changed. This time period is determined and explained in the report of the energy audit or technical engineering analysis conducted for each mandated and eligible institution participating in a building energy management program.

“*Facility*” means any structure, system or processing site that consumes energy to carry out a function or service of a mandated or eligible institution, including its installed energy-consuming machinery.

“*Health care facility*” means an institution as defined in Iowa Code section 139A.1(10).

“*Hospital*” means an institution that is licensed and regulated under Iowa Code chapter 135B.

“*Local government*” means any city, county, municipality, or any other political subdivision of the state of Iowa.

“*Mandated and eligible institutions*” means (1) the state, state agencies, political subdivisions of the state, school districts, area education agencies, and community colleges that are required under Iowa Code section 473.13A to identify and implement, through energy audits and technical engineering analyses, all energy management improvements for which financing is made available by the department; and (2) private schools and colleges, hospitals, health care facilities, and other nonprofit organizations that are authorized and encouraged to also participate in building energy management programs.

“*Operation and maintenance procedures*” means the routine functioning and upkeep of a facility that consume energy as they are performed. Energy savings from operation and maintenance procedures are obtained when low- or no-cost measures are taken to improve the efficiency of such things as worker schedules and facility occupancy schedules, thermostat settings, hot water temperatures and usage, building envelope sealing and regular facility repairs, scheduled equipment repairs and servicing, equipment power optimization, and facility lighting levels.

“*School*” means any public school district, area education agency, or merged area school (public community colleges and vocational/technical schools) which is defined by the department of education administrative rules in 281—Chapter 1.

“*Simple payback period*” means the time required for the cumulative savings from an energy management improvement project to recover its initial investment cost and other accrued costs, without accounting for the time-value of money. It is calculated by dividing the estimated total costs of acquiring the materials and installation for the implementation of an energy management improvement by the estimated annual savings for the energy management improvement. For renewable and coal conversions, savings are based on the fuel replaced.

“*Square feet*” means the total gross conditioned floor area of a building or facility.

“*Technical engineering analysis*” means the thorough examination of, and written report for, a building or facility, conducted in accordance with the current guidelines established by the department. A technical engineering analysis identifies energy management improvement opportunities, including operations and maintenance improvements, with estimated costs of the improvements broken down by materials and installation costs, estimated annual cost savings by fuel type, and calculated simple payback periods. The analysis report is signed and certified by an analyst who is employed by a firm on the list of qualified engineering/architectural firms that is maintained by the department and updated periodically according to the most current guidelines established by the department.

“*Useful life*” or “*service life*” means the time period an energy management improvement is estimated to last until it wears out, needs to be replaced, or no longer performs the function for which it is intended. This also means the time during which a particular system or component of a system remains in its original service application.

565—6.2(473) Applicability. The requirements of this chapter apply to all buildings and facilities owned or leased by mandated or eligible institutions.

6.2(1) *Applicability for energy audit.* An energy audit is required for all buildings and facilities that are part of mandated or eligible institutions and that meet the criteria identified in rule 6.3(473).

6.2(2) *Applicability for technical engineering analysis.* A technical engineering analysis is required for all buildings and facilities for which the criteria identified in rule 6.4(473) have been met.

6.2(3) *Applicability for building energy management programs.* Building energy management programs are applicable to all buildings and facilities for which:

a. A mandated or eligible institution provides a technical engineering analysis and summary of recommended energy management improvements approved by the department and a schedule for implementation of existing and new operation and maintenance procedures; or the mandated or eligible institution provides an energy audit, or small building energy audit, whichever the department authorizes as appropriate, and a summary of recommended energy management improvements approved by the department for a building or facility not meeting the criteria identified in rule 6.4(473),

b. Energy management improvements have been recommended by the department, and

c. The mandated or eligible institution has no formal plan adopted by its own governing body, including any formal plans which are subject to the occurrence of any conditions precedent, to close or otherwise dispose of the building or facility during the aggregate simple payback period for which funding is requested.

565—6.3(473) Energy audits.

6.3(1) *Objective.* The purpose is to conduct an initial energy survey of buildings or facilities, as preapproved by the department, to identify operation and maintenance procedures and their scheduled implementation, and to identify potential energy management improvements, in accordance with the energy audit guidelines established and periodically updated by the department. In addition, an energy audit may serve as a basis for proceeding with a technical engineering analysis if authorized by the department.

6.3(2) *Qualified auditors.* Energy audits shall be conducted by any person, firm, or certified energy manager as preapproved by the department.

6.3(3) *Contents of an energy audit.* The energy audit will be completed on forms prescribed and approved by the department, and in accordance with the energy audit guidelines established and periodically updated by the department.

6.3(4) *Exemption.* Rescinded IAB 3/20/02, effective 4/24/02.

565—6.4(473) Technical engineering analysis.

6.4(1) *Objective.* The objective of the technical engineering analysis is to perform a comprehensive examination and written report to identify and analyze opportunities for energy management improvements, and improved operation and maintenance procedures, with estimates of costs and annual cost savings.

6.4(2) *Technical engineering analysis conducted.* Technical engineering analyses shall be conducted for all buildings or facilities recommended by the department in accordance with the following criteria:

- a. Annual Btu consumption per square foot, compared with similar building or facility types as determined by the department on a periodic basis; and
- b. If applicable, the type or nature of energy audit findings.

A technical engineering analysis shall also be conducted for any facility that has previously had a technical engineering analysis completed more than three years before making a new application for financing through a building energy management program.

6.4(3) Procedures.

a. Mandated and eligible institutions select and contract with an analyst qualified to perform technical engineering analyses. A request for proposals shall be sent by each participating mandated or eligible institution to all firms on the qualified analyst list maintained by the department. The department may modify requirements in the procurement of the firm consistent with applicable state and federal regulations. Following accepted practices, the mandated or eligible institution will select the qualified firm that best meets its needs and that has no conflicts of interest with the institution.

b. In accordance with the department's technical engineering analysis guidelines, each participating mandated or eligible institution shall identify the needs the institution wants to be considered in its technical engineering analysis.

c. Upon request of the mandated or eligible institution, the department may allow completion of technical engineering analyses of all of the institution's buildings or facilities in phases or stages.

d. Upon the mandated or eligible institution's receipt of the completed technical engineering analysis, a copy is submitted to the department.

The department will review the technical engineering analysis and notify the mandated or eligible institution of any technical concerns that need to be discussed and resolved.

The department will approve or reject the technical engineering analysis based on compliance with the department's Technical Engineering Analysis Guidelines, which are periodically updated by the department.

6.4(4) *Contents of a technical engineering analysis.* The technical engineering analysis shall include the information required in the current Technical Engineering Analysis Guidelines as developed, maintained, and periodically updated by the department.

6.4(5) *Exemptions.* The required technical engineering analysis may be waived by the department on a case-by-case basis as negotiated with the department.

6.4(6) *Analyst firms retained.* Mandated and eligible institutions shall retain qualified analyst firms that are free from conflicts of interest with the respective institutions to perform the professional services required for each technical engineering analysis. Qualification standards and procedures for analyst firms have been adopted by the department and are available upon request.

565—6.5(473) Installation of cost-effective energy management improvements.

6.5(1) Objective. All cost-effective energy management improvements are to be installed in the buildings and facilities of all mandated and eligible institutions.

6.5(2) Installation of cost-effective energy management improvements required. Installation of cost-effective energy management improvements shall be required for buildings and facilities as follows:

a. Energy management improvements, as recommended by the technical engineering analysis, which have an aggregate simple payback that meets the criteria detailed in the Guidelines for Cost-Effective Energy Management Improvement Projects as adopted and periodically updated by the department.

b. Upon request of a mandated or eligible institution, the department may approve the installation of energy management improvements in phases or stages. The mandated or eligible institution shall submit an implementation schedule for the department's approval.

6.5(3) Procedures.

a. Plans and specifications shall be prepared for selected energy management improvements by a qualified engineer selected by the mandated or eligible institution, provided the engineer has no conflict of interest with the institution.

b. Bidding, award, and installation of energy management improvements shall be accomplished in accordance with applicable state law.

c. Installation of energy management improvements shall be completed in a building or facility within 24 months of the review of the technical engineering analysis and approval of the recommended energy management improvements by the department.

d. Upon completion of the installation of each energy management improvement, the mandated or eligible institution shall submit to the department a certificate of completion that:

- (1) Describes the improvement, its location, and cost;
- (2) Certifies that the installation was in accordance with recommendations of the technical engineering analysis (noting instances of substantial changes of final project scope from original recommendations); and
- (3) Certifies that the improvement is operating properly.

565—6.6(473) Funding and fees.

6.6(1) Objective. Building energy management programs are established to provide direct funding, grants, loans, leases, and alternative financing for conducting energy audits and technical engineering analyses and for implementing energy management improvements.

6.6(2) Funding and financing sources.

a. Funding for these programs may be from gifts, federal grants, state appropriations, and other sources.

b. Financing for these programs may be provided by private sources as arranged by the department.

c. Costs of a technical engineering analysis may be included in financing for the installation of energy management improvements.

6.6(3) Funding for energy audits and technical engineering analysis.

a. Short-term, interest-free loans and grants, as funds are available, will be provided by the department to mandated and eligible institutions upon request to pay the professional audit and engineering fees for energy audits and technical engineering analyses and to pay for the deferred billing of administrative costs recovery provided under subrule 6.6(5). Design costs for energy management improvements are considered for inclusion in the overall financing provisions of the building energy management programs.

b. Costs of the energy audits and technical engineering analyses, and payment for the recovery of administrative costs as provided under subrule 6.6(5), may be included in financing for the installation of energy management improvements, provided that within six months after the approval of the energy audits or the technical engineering analyses, the participating mandated and eligible institutions proceed to implement energy management improvements.

c. The energy loan program is established in the office of the treasurer of the state to be administered by the energy and geological resources division, department of natural resources, for making loans and grants to mandated and eligible institutions to complete technical engineering analyses. Funding for this program may come from gifts, federal funds, state appropriations, and other sources.

6.6(4) *Funding for cost-effective energy management improvements.*

a. Financing is available for all cost-effective energy management improvements identified in energy audits and technical engineering analyses.

b. Energy management improvement financing shall be supported by, but not limited to, payments from energy savings resulting from the energy management improvements.

6.6(5) *Recovery of the programs' administrative costs.* Participating mandated and eligible institutions shall help pay for the programs' administrative costs. Payment to the department shall be made within six months of the approval of submitted energy audits or technical engineering analyses, based upon a sliding scale related to the total square footage of each building in the program, or on a case-by-case basis as agreed upon in advance by a mandated or eligible institution and the department, in accordance with schedules adopted and periodically updated by the department.

565—6.7(473) Energy accounting system.

6.7(1) *Objective.* Energy accounting procedures are established, as funds are available, for:

a. Developing information for comparative and management review of energy and dollar consumption for mandated and eligible institutions, and on a statewide basis to assist them and the department to accomplish the goals of the building energy management programs.

b. Comparing mandated and eligible institutions' energy consumption and energy costs before and after energy management improvements have been installed in buildings or facilities to confirm energy and cost savings.

6.7(2) *Energy accounting system participation.* The energy accounting system established by mandated and eligible institutions shall be in accord with requirements established by the department.

6.7(3) *Procedures.*

a. The energy accounting system will be initiated by the department by notifying selected mandated and eligible institutions. Instructions and guidelines will be provided by the department.

b. Copies of monthly utility bills and other related information will be provided by the mandated and eligible institutions, upon request of the department, to:

(1) Establish energy consumption levels and energy costs prior to the installation of energy management improvements;

(2) Establish the current and future level of savings in energy consumption and costs after the installation of energy management improvements.

c. Reports will be developed, printed, and distributed under the department's direction on a periodic basis.

565—6.8(473) Appeals and reporting measures.

6.8(1) *Scope and applicability.*

a. This rule provides procedures governing appeals from administrative orders to mandated and eligible institutions concerning requirements of the building energy management programs.

b. Rules of Iowa Administrative Code 561—Chapter 7, "Rules of Practice in Contested Cases," shall govern appeals to the department.

6.8(2) Procedures.

a. Appeal procedures shall be in accord with Iowa Administrative Code 561—Chapter 7, “Rules of Practice in Contested Cases,” governing appeal of administrative orders of the department of natural resources.

b. Any mandated or eligible institution appealing an action of the department shall file a written notice of appeal within 30 days of the receipt of the department’s action. Written notice of appeal shall contain information explaining why the appeal is being made.

These rules are intended to implement Iowa Code sections 473.13A and 473.19 and Iowa Code Supplement section 473.20 and 10 CFR 420 (1976).

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CHAPTER 7

**ENERGY MEASURES AND ENERGY AUDITS GRANT PROGRAMS
FOR SCHOOLS AND HOSPITALS AND BUILDINGS OWNED BY
UNITS OF LOCAL GOVERNMENT AND PUBLIC CARE INSTITUTIONS**

[Appeared as Ch 5, IAC 10/3/79]

[Appeared as Ch 6, renumbered Ch 7, IAC 12/23/81]

[Prior to 3/11/87, see Energy Policy Council[380] Ch 7]

Rescinded IAB 7/9/03, effective 8/13/03

CHAPTER 8

**TECHNICAL ASSISTANCE AND ENERGY CONSERVATION:
GRANT PROGRAMS FOR SCHOOLS AND HOSPITALS
AND FOR BUILDINGS OWNED BY UNITS OF LOCAL
GOVERNMENT AND PUBLIC CARE INSTITUTIONS**

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[Prior to 3/11/87, see Energy Policy Council[380] Ch 8]

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CHAPTERS 9 to 12

Reserved