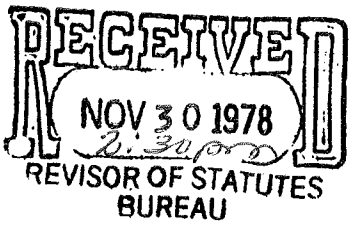
Ind 18



STATE OF WISCONSIN)
) SS
DEPARTMENT OF INDUSTRY,)
LABOR AND HUMAN RELATIONS)

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Zel S. Rice II, Secretary of the Department of Industry, Labor and Human Relations, and custodian of the official records of said department, do hereby certify that the attached rules to Wisconsin Administrative Code chapter Ind 18--Alternative Energy Tax Credit, were adopted by this department on November 28, 1978.

I further certify that said copy has been compared by me with the original on file in this department and that the same is a true copy thereof and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the department at the Capitol, in the City of Madison, this 28th day of November, A.D., 1978.

for Wayne F McGowan
Zel S. Rice II, Secretary

ORDER OF

DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Pursuant to authority vested in the Department of Industry, Labor and Human Relations by section 71.09 (12) (d), Wis. Stats., the Department of Industry, Labor and Human Relations hereby creates and adopts rules of Wisconsin Administrative Code chapter Ind 18--Alternative Energy Tax Credits.

The rules attached hereto shall become effective on the first day of the month following publication in the Wisconsin Administrative Register, as provided in section 227.026, Wis. Stats.

Chapter Ind 18, Alternative Energy Tax Credit, is created to read:

CHAPTER IND 18

ALTERNATIVE ENERGY TAX CREDIT

PART I--SCOPE, PURPOSE AND DESIGN

Ind 18.001 SCOPE. The alternative energy system tax credit law's declaration of policy states that "it is in the interest of the state to use renewable, in-state sources of energy which do not pollute the environment and which diversify the supplies of energy now used in this state." It is the purpose of the law "that the expedient development of alternative sources of energy not now economically competitive should be fostered by providing temporary state financial incentives . . . which encourage the use of such sources."

(1) Department duties. Section 71.09 (12), Stats., provides that the department of industry, labor and human relations, in consultation with the department of administration, establish performance standards for alternative energy systems to:

(a) Energy. Produce the maximum practical amount of energy.

(b) National standards. Conform, where feasible, with national performance standards.

(c) Energy savings. Produce present value energy savings which, within 25 years, pay for the present value cost of the design, construction, equipment and installation of the alternative energy system.

(d) Innovative systems. Not hamper individual development of innovative alternative energy systems.

(2) Application of rules. All alternative energy systems, as defined in section Ind 18.10 (2), shall comply with the requirements of this chapter in order to qualify for tax benefits. Those systems for which a tax benefit is not sought need not comply with the requirements of this chapter.

Ind 18.002 PURPOSE. The purpose of this chapter is to establish the criteria the department will use for certifying alternative energy systems for individual income or corporate/franchise income tax benefits, as specified in the law. Compliance with the criteria shall be demonstrated by the submission of the necessary documentation required by section Ind 18.30 and through detailed calculations or by the use of the appropriate application forms available through the department.

Ind 18.01 HEALTH AND SAFETY. This chapter is not a health and safety code or a design manual, but specifies minimum requirements for alternative energy systems applying for tax benefits. The requirements of this chapter do not relieve responsibility for compliance with any health or safety codes. Where conflict between requirements occur, health and safety requirements shall govern.

Note: All alternative energy systems may be subject to applicable portions of other Wisconsin administrative codes (i.e., chapters Ind 50-64--building and heating, ventilating and air conditioning code; chapters Ind 20-25--uniform dwelling code; Vol. 2, Wisconsin state electrical code; H-62--design, construction, inspection, supervision and installation of plumbing; and related codes).

Ind 18.02 DESIGN. All alternative energy systems shall be designed using recognized engineering techniques and principles. Where feasible, alternative energy systems shall comply with national standards applicable to such systems.

Note 1: The department recommends conformance with the following standards: (1) "Intermediate Minimum Property Standards for Solar Heating and Domestic Hot Water Systems," HUD 4930.2; (2) "Interim Performance Criteria for Solar Heating andCombined Heating/Cooling Systems and Dwellings," National Bureau of Standards (NBS) Stock No. 003-003-01388; (3) "Interim Performance Criteria for Solar Heating and Cooling Systems in Commercial Buildings," National Bureau of Standards, NBSIR-76-1187 (above standards available from Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402); (4) "Uniform Solar Energy Code," 1976 (available from International Association of Plumbing and Mechanical Officials, 5032 Alhambra Ave., Los Angeles, California 90032); (5) "Heating and Air Conditioning Systems Installation Standards for One and Two-Family Dwellings and Multi-Family Housing Including Solar" (available from Sheet Metal and Air Conditioning Contractor's National Association, Inc., 8224 Old Courthouse Road, Tysons Corner, Vienna, Virginia 22180); (6) "Methods of Testing to Determine the Thermal Performance of Solar Collectors," ASHRAE 93-77; (7) "Methods of Testing Thermal Storage Devices Based on Thermal Performance," ASHRAE 94-77 (ASHRAE publications available from ASHRAE Publications Sales Department, 345 East 47th St., New York, N. Y. 10017).

Note 2: The department may expand this list and recommend new standards for solar, wind and waste conversion systems as they become available.

PART II--DEFINITIONS

Ind 18.10 DEFINITIONS.

(1) Active thermal solar energy system. An active thermal solar energy system is a system which uses mechanical equipment to collect, store and distribute solar thermal energy.

(2) Alternative energy system. An alternative energy system is a solar energy system, waste conversion energy system, or a wind energy system that is used to supplement or replace a conventional energy system, exclusive of all equipment or components which would be present as part of a conventional energy system.

(3) Auxiliary. An auxiliary is a conventional energy system, or component thereof, which supplies all of the energy required by the load that cannot be supplied by the alternative energy system.

(4) Conventional energy system. A conventional energy system is an energy system supplied with conventional fuels or energy derived from conventional fuels.

(5) Conventional fuels. A conventional fuel is any depletable fuel or energy resource exclusive of waste, such as coal, petroleum products, natural gas, propane, cord wood, or any fuel or energy purchased from a public or private utility.

(6) Department. The department is the department of industry, labor and human relations.

(7) Design life. The design life is the period during which an alternative energy system or component thereof is expected to perform its intended function and operate correctly without requiring replacement or major overhaul.

(8) Discount rate. The discount rate is the estimated rate of return on the best alternative investment.

(9) Equipment. Equipment is a mechanical or electrical, as opposed to biological, device.

(10) Fuel inflation rate. The fuel inflation rate is the estimated percentage increase in the cost of fuel, and includes the general economic inflation rate.

(11) Inflation-discount factor. The inflation-discount factor is a factor which includes the fuel inflation and discount rates for a specified number of years into a single number. That number is used in determining the fuel savings over the design life of the alternative system.

(12) Load. A load is the energy requirements of a building, structure, device, system or process.

(13) Passive thermal solar energy system. A passive thermal solar energy system is a system which collects, stores and distributes solar thermal energy without the use of mechanical equipment.

(14) Photovoltaic solar energy system. A photovoltaic solar energy system is a solar energy system that converts radiant solar energy directly into electrical energy.

(15) Solar energy system. A solar energy system is the equipment (active thermal, passive thermal or photovoltaic) which converts and then transfers or stores solar energy into usable forms of energy for space heating or cooling, crop drying, electricity generation, hot-water heating, or swimming-pool heating.

(16) Waste. Waste is the solid, liquid, or gas byproducts of a residential institutional, commercial, industrial or agricultural process that may be used as, or processed to become, a fuel.

(17) Waste conversion energy system. A waste conversion energy system is the equipment which converts wastes into usable forms of energy, but does not include conventional-fuel-consuming devices or solid-fuel-consuming devices for residential purposes.

(18) Wind energy system. A wind energy system is the equipment which converts and then transfers or stores energy from the wind into usable forms of energy, but does not include vehicles which utilize wind power.

PART III--ELIGIBILITY AND BENEFITS

Ind 18.20 GENERAL ELIGIBILITY CRITERIA. All persons, businesses or corporations owning an alternate energy system and applying for a tax credit shall comply with the eligibility criteria specified in chapter 313, laws of 1977.

Note 1: Chapter 313, laws of 1977, created sections 20.835 (2) (e), 71.04 (16), 71.09 (12), 73.03 (14) and 79.25 (8m), Stats.

Note 2: Portions of chapter 313, laws of 1977, dealing with eligibility and tax benefits are outlined in Appendix A.

Ind 18.21 EQUIPMENT AND SYSTEM ELIGIBILITY CRITERIA. The cost of equipment unique to the alternative energy system shall be eligible for tax benefits as follows:

(1) Existing systems. If an existing conventional energy system is modified to allow it to utilize a nondepletable fuel or nondepletable energy resource, the cost of the modification and the cost of the equipment needed to produce the alternative fuel shall be eligible for tax benefits.

(2) New systems. If new equipment normally used in a conventional energy system is employed in an alternative energy system and is supplied solely with a nondepletable fuel or nondepletable energy resource, the cost of that equipment shall be eligible for tax benefits.

Note: See Appendix B for a listing of devices, equipment, systems and applications which generally will not qualify for income tax benefits.

PART IV--CERTIFICATION REQUIREMENTS FOR THE BUSINESS/CORPORATE AND INDIVIDUAL APPLICANT

Ind 18.30 DOCUMENTATION. All persons applying for a tax credit shall submit the following documentation:

(1) Energy savings information. Information shall be submitted to the department demonstrating that the alternative energy system produces present value savings within a 25-year period.

(a) The following parameters shall be considered: the average annual load; the percent of the load supplied by the alternative energy system; the design life of the system; the conventional and auxiliary energy costs; and the first costs of the design, construction, equipment and installation of the system, reduced by the tax benefits expected under section 71.04 (16) or 71.09 (12), Wis. Stats. (as created by ch. 313, laws of 1977) plus any allowed federal tax benefits (as created by the Energy Tax Act of 1978 [P.L. 95-618]).

(b) A discount rate of 7% for individuals, businesses or corporations, and the fuel inflation rates shown in Table 18.30 shall be used in the analysis.

Note 1: See Appendix C for an energy savings calculation and sample problem.

Note 2: The department has developed submittal forms which may be used to demonstrate compliance with this section. The forms may be obtained by writing to: Department of Industry, Labor and Human Relations
Division of Safety and Buildings
P. O. Box 7969
Madison, Wisconsin 53707

TABLE 18.30

Type of Fuel	Fuel Inflation Rate
Gas	15%
Fuel oil, propane, LP gas	15%
Electricity	12%
Other	10%

(2) Schematic drawing. A schematic drawing illustrating how the system functions shall be submitted to the department. The drawing shall also illustrate all electrical and plumbing components including, but not limited to, the location of all electrical controls, switches, safety devices, and all fluid back-flow preventers, bypass valves, pressure and temperature relief valves, drain valves, the water main connection, expansion tanks and all other valves and connections in the system. The specific properties of the heat transfer fluid, such as type, toxicity and flammability, shall be documented.

(3) Performance and durability information. The performance and durability of all manufactured alternative energy systems and major components shall be documented. Major components of alternative energy systems shall include, but are not limited to, solar collectors, heat exchangers, thermal energy storage devices, wind turbine generators, wind turbine support towers, electrical storage batteries, and methane gas generators. Such devices as pumps, valves and control mechanisms are not considered major components.

Note: This documentation requirement may be waived if the alternative energy system or major component has a manufacturer's approval number issued by the department in accordance with the requirements of section Ind 18.31.

(a) Performance. The performance of the manufactured alternative energy system and major components shall be documented by design data, test results, the manufacturer's informational product bulletin or other substantiating evidence.

(b) Durability. The design life of manufactured alternative energy systems and major components shall be demonstrated to be at least one year. The materials, workmanship and corrosion resistance of the system or major components shall be proven to be durable and reliable for a minimum of one year of service use. Compliance shall be demonstrated by design data, test results, a product warranty, or other substantiating evidence.

1. Exception. Solar collectors shall have a minimum design life of 3 years. The materials, workmanship and corrosion resistance of a solar collector shall be proven to be durable and reliable for a minimum of 3 years of service use.

(4) Additional documentation. When requested, additional data pertaining to the design, construction, equipment, materials and component function shall be submitted to demonstrate compliance with the rules.

Ind 18.31 OPTIONAL APPROVAL OF MANUFACTURED EQUIPMENT. A manufacturer of alternative energy systems or major components has the option of applying for a system or major component approval by the department. The department approval relieves the responsibility of the tax benefit applicant to document the performance and durability/reliability of the manufactured equipment.

Note: The department has developed an information sheet, including a list of accredited testing laboratories and certifying agencies, for those manufacturers wishing to obtain this optional approval. That information may be obtained by writing to: Materials Approval Engineer
Department of Industry, Labor and Human Relations
Division of Safety and Buildings
P. O. Box 7969
Madison, Wisconsin 53707

APPENDICES

The material contained in the appendices is for clarification purposes only; it is not a part of the rule and will not be enforced as a part of the rule. The material is numbered to correspond to the number of the rule as it appears in the text of the code.

APPENDIX A

A-18.20 GENERAL ELIGIBILITY CRITERIA.

ELIGIBILITY

The following information is based upon chapter 313, laws of 1977, and is included to provide information regarding the eligibility and tax benefit criteria necessary for individuals, businesses or corporations applying for tax credit.

(1) Period of application. Only those expenses for the alternative energy system that were incurred on or after April 20, 1977 and before January 1, 1985 are eligible for tax benefits.

(2) Costs. The cost eligible for tax benefit is defined as follows:

(a) Businesses and corporations. The total cost of an alternative energy system, including the design, construction, installation and equipment of the system, for corporations, joint stock companies or associations.

(b) Individuals. The cost of an alternative energy system, including the design, construction, installation and equipment of the system, for an individual. The expenses must exceed $500 in a single year but cannot exceed $10,000 per system. If the total cost of the alternative energy system exceeds $10,000, only $10,000 is eligible.

(3) Claims. An alternative energy system may be certified for tax benefits only once. Once an owner has received tax benefits for an alternative energy system, all subsequent owners may not claim benefits for the same system. An owner may apply for certification of more than one alternative energy system provided that each system performs a different function or is installed at a different site and no cost is claimed twice. Additions to existing alternative energy systems are eligible for certification as long as no cost from the existing alternative energy system is claimed twice.

(4) Labor. All labor costs for the design, construction and installation of the alternative energy system are eligible to be included in the total cost of that system. The design costs directly attributable to passive solar energy systems are eligible costs provided they are identified and itemized. The department of revenue has stated that the cost of any labor or time of an individual applicant is not eligible, regardless of whether that time or labor was used to design, construct or install the alternative energy system.

TAX BENEFITS

(1) Businesses and corporations. The total eligible cost of the installed alternative energy system for businesses and corporations may be deducted in the year paid, may be depreciated over the system's design life, or may be amortized over a period of 5 years. The election, once made, may not be changed.

(2) Individuals. An individual may credit against state income taxes due, a percentage of the eligible cost of the alternative energy system. The percentage of costs for alternative energy systems installed on new or existing buildings, as determined by appearance on the local tax roll, is specified in Table 18.21. The alternative energy system must be installed on property owned by the applicant and the applicant must document the percentage of cost used.

TABLE 18.21

Real Property Improvements Appearing on the Local Tax Rolls	Costs Incurred During			
	1977-1978	1979-1980	1981-1982	1983-1984
Prior to April 20, 1977 (Existing buildings)	30%	24%	18%	12%
On or after April 20, 1977 (New construction)	20%	16%	12%	8%

APPENDIX B

A-18.21 EQUIPMENT AND SYSTEM ELIGIBILITY. The following is a partial list of devices, equipment systems and applications which will, generally, not qualify for income tax benefits:

(1) Passive thermal solar energy

(a) Structural elements which provide shade, such as awnings, eaves and wing walls;

(b) Trees and shrubbery;

(c) Thermal mass not within the insulated envelope of the building;

(d) Thermal mass not illuminated by sunlight;

(e) Glazing without thermal mass or insulation and not part of a total passive solar system;

(f) Greenhouses not connected to a building that requires space heating;

(g) Curtains or drapes;

(h) Dark paint on exterior surfaces or conventional interior surfaces;

(i) Swimming polls;

(j) Building insulation not part of a total passive solar system.

(2) Active thermal solar energy

(a) Heat pumps;

(b) Humidifiers;

(c) Evaporative coolers;

(d) Any furnace, heater or fireplace that relies on a conventional fuel as defined in section Ind 18.10 (5).

(e) Pool filtration or cleaning equipment;

(f) Heat recovery equipment;

(g) Water softener units.

(3) Wind energy systems

(a) Sailboats, iceboats or other wind-powered vehicles.

(4) Waste conversion energy system

(a) Wood-burning stoves, furnaces or fireplaces for residential applications;

(b) Trash compactors;

(c) Heat-recovery equipment.

APPENDIX C

A-18.30 DOCUMENTATION. The following equation may be utilized to demonstrate compliance with (1) of this section:

(FS) x (IDF) must be greater than (A + B) where,

FS = Annual fuel savings from the alternative energy system

IDF = Inflation-discount factor = $\frac{1}{D - 1}\left[1 - \left(\frac{1 + I}{1 + D}\right)^{N}\right]$ where

D = Discount rate

I = Fuel inflation rate

N = Design life of the system

A = Total cost of the design, construction, installation and equipment of the alternative energy system (minus the state tax benefits and the allowed federal tax benefits, if applicable).

B = Present cost of any estimated minor replacement costs of the alternative energy system

This equation determines if the saved fuel costs over the design life of the alternative energy system exceeds the total present value cost of that system, with any minor replacement costs, minus the state tax benefits and the federal tax benefits if applicable.

The following example uses this formula to determine if an alternative energy system is eligible for the tax benefit:

Information and data:

(1) Existing residence with electrical resistance heating;

(2) Solar energy system for space and water heating which was installed in November 1978;

(3) Solar system cost (total) = $10,000;

(4) System is eligible for the 30% state tax benefit of the $10,000 total system cost which is $3,000 (see Appendix A, Table 18.21);

(5) System is eligible for the maximum federal tax benefit of $2,200*;

(6) Design life of the system = 25 years;

(7) Minor replacement cost (for heat exchanger fluid) over the 25-year design life = $200 total;

(8) Estimated fuel savings from the solar system = $150 per year.

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*Reference: Energy Tax Act of 1978 (P.L. 95-618).

The equation is:

(FS) x (IDF) must be greater than (A + B)

FS = $150

$$IDF = \frac{1}{D - I}\left[1 - \left(\frac{1 + I}{1 + D}\right)^{N}\right]$$

D = 7% or .07 (from Table 18.30)

I = 12% or .12 (from Table 18.30)

N = 25 years

$$IDF = \frac{1}{.07 - .12}\left[1 - \left(\frac{1 + 0.12}{1 + 0.07}\right)^{25}\right] = 42.64$$

A = $10,000 - ($3,000 + $2,200) = $4,800

B = $200

($150 x 42.64) must be greater than ($4,800 + $200)

($6,396) must be greater than ($5,000)

Therefore, this system satisfies the equation and would be eligible for tax benefit.

APPENDIX B

A-18.21 EQUIPMENT AND SYSTEM ELIGIBILITY. The following is a partial list of devices, equipment systems and applications which will, generally, not qualify for income tax benefits:

(1) Passive thermal solar energy systems

(a) Structural elements which provide shade, such as awnings, eaves and wing walls;

(b) Trees and shrubbery;

(c) Thermal mass not within the insulated envelope of the building;

(d) Thermal mass not illuminated by sunlight;

(e) Glazing without thermal mass or insulation and not part of a total passive solar system;

(f) Greenhouses not connected to a building that requires space heating;

(g) Curtains or drapes;

(h) Dark paint on exterior surfaces or conventional interior surfaces not used as thermal mass;

(i) Swimming pools;

(j) Building insulation not part of a total passive solar system.

(2) Active thermal solar energy systems

(a) Heat pumps;

(b) Humidifiers;

(c) Evaporative coolers;

(d) Any furnace, heater or fireplace that relies on a conventional fuel as defined in section Ind 18.10 (5).

(e) Pool filtration or cleaning equipment;

(f) Water softener units.

(3) Wind energy systems

(a) Sailboats, iceboats or other wind-powered vehicles.

(4) Waste conversion energy systems

(a) Wood-burning stoves, furnaces or fireplaces for residential applications;

(b) Small scale (home) trash compactors;

(c) Waste transportation equipment (fork lifts, dump trucks and similar vehicles).

(5) Energy conservation equipment

APPENDIX C

A-18.30 (1) ENERGY SAVINGS INFORMATION. The following equation may be utilized to demonstrate compliance with this subsection:

(FS) x (IDF) must be greater than (A + B) where,

FS = Annual fuel savings from the alternative energy system. (The calculation used to determine the annual fuel saving must be submitted. See Ind 18.30 (1) Note 2.)

IDF = Inflation-discount factor = $\frac{1}{D - I}\left[1 - \left(\frac{1 + I}{1 + D}\right)^{N}\right]$ where

D = Discount rate

I = Fuel inflation rate

N = Design life of the system

A = Total cost of the design, construction, installation and equipment of the alternative energy system (minus the state tax benefits and the allowed federal tax benefits if applicable). (Copies of all invoices and receipts must be submitted.)

B = Present cost of any estimated minor replacement costs of the alternative energy system. (Calculations of these costs must be submitted.)

This equation determines if the saved fuel costs over the design life of the alternative energy system exceeds the total present value cost of that system, with any minor replacement costs, minus the state tax benefits and the federal tax benefits if applicable.

The following example uses this formula to determine if an alternative energy system is eligible for the tax benefit:

Information and data:

(1) Existing residence with electrical resistance heating;

(2) Solar energy system for space and water heating which was installed in November 1978;

(3) Solar system cost (total) = $10,000;

(4) System is eligible for the 30% state tax benefit of the $10,000 total system cost which is $3,000 (see Appendix A, Table 18.21);

(5) System is eligible for the maximum federal tax benefit of $2,200*;

(6) Design life of the system = 25 years;

(7) Minor replacement cost (for heat exchanger fluid) over the 25-year design life = $200 total;

(8) Estimated fuel savings from the solar system = $150 per year.

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*Reference: Energy Tax Act of 1978 (P.L. 95-618).

The equation is:

(FS) x (IDF) must be greater than (A + B)

FS = $150

$$IDF = \frac{1}{D - I}\left[1 - \left(\frac{1 + I}{1 + D}\right)^{N}\right]$$

D = 7% or .07 (from Table 18.30)

I = 12% or .12 (from Table 18.30)

N = 25 years

$$IDF = \frac{1}{.07 - .12}\left[1 - \left(\frac{1 + 0.12}{1 + 0.07}\right)^{25}\right] = 42.64$$

A = $10,000 - ($3,000 + $2,200) = $4,800

B = $200

($150 x 42.64) must be greater than ($4,800 + $200)

($6,396) must be greater than $5,000)

Therefore, this system satisfies the equation and the requirements of section Ind 18.30 (1).