

# ALTERNATIVE ENERGY SYSTEMS CREDIT

## EXPLANATION OF THE CREDIT

The 1977 Legislature enacted the credit for alternative energy systems. Section [15-32-201](#), MCA, lists the eligibility criteria:

- ✓ Resident individual taxpayer;
- ✓ Installation of an energy system using a **recognized nonfossil form of energy generation** or using a **low-emission wood or biomass combustion device**; and
- ✓ Installation is in the taxpayer's principal dwelling.

The 1977 Legislature enacted the credit. In 2018, 912 taxpayers claimed \$507,838 in credits.

The credit is equal to the cost of the system and installation costs, but may not exceed a \$500 credit per taxpayer. The credit for an energy system using recognized nonfossil form of energy generation must be reduced by the amount of any grants received. The credit is not refundable but may be carried forward for 4 tax years.

ARM [42.4.118](#) allows the credit to be claimed by each taxpayer who invests in a qualifying alternative energy system. A married couple who makes a capital investment in their residence may each claim a credit. For each spouse to claim the full \$500 credit, the couple must spend at least \$1,000.

### DEFINITIONS COULD BE SIMPLIFIED

Section [15-32-102](#), MCA, provides defined terms for the credit. The **bold** terms in the previous paragraph are defined below. All defined terms are in **bold** typeface.

- **Alternative energy system** means the generation system or equipment used to convert energy sources into usable sources using fuel cells that do not require hydrocarbon fuel, **geothermal systems**, low-emission wood or biomass, wind, photovoltaics, geothermal, small hydropower plants under 1 megawatt, and other **recognized nonfossil forms of energy generation**.
- **Geothermal system** means a system that transfers energy either from the ground, by way of a closed loop, or from ground water, by way of an open loop, for the purpose of heating or cooling a residential building.

- **Low-emission wood or biomass combustion device** means:
  - (a) a wood-burning appliance that is:
    - (i) certified by the U.S. environmental protection agency pursuant to 40 CFR 60.533; or
    - (ii) qualified for the phase 2 white tag under the U.S. environmental protection agency method 28 OWHH for outdoor hydronic heaters;
  - (b) an appliance that uses wood pellets as its primary source of fuel; or
  - (c) a masonry heater constructed or installed in compliance with the requirements for masonry heaters in the International Residential Code for One- and Two-Family Dwellings.
  
- **Passive solar system** means a direct thermal energy system that uses the structure of a building and its operable components to provide heating or cooling during the appropriate times of the year by using the climate resources available at the site. The term includes only those portions and components of a building that are expressly designed and required for the collection, storage, and distribution of solar energy and that are not standard components of a conventional building.
  
- **Recognized nonfossil forms of energy generation** means:
  - (a) a system that captures energy or converts energy sources into usable sources, including electricity, by using:
    - (i) solar energy, including **passive solar systems**;
    - (ii) wind;
    - (iii) solid waste;
    - (iv) the decomposition of organic wastes;
    - (v) geothermal;
    - (vi) fuel cells that do not require hydrocarbon fuel; or
    - (vii) an **alternative energy system**;
  - (b) a system that produces electric power from biomass or solid wood wastes; or
  - (c) a small system that uses water power by means of an impoundment that is not over 20 acres in surface area.

The definitions for "alternative energy system" and "recognized nonfossil forms of energy generation" are repetitive and circular. The energy systems included in one definition are also included in the other because each defined term includes the other defined term. The definitions also separately list most of the same types of energy systems, though sometimes using different language (such as solar energy instead of photovoltaics).

The definition of "alternative energy system" lists geothermal systems twice and refers to low-emission wood or biomass but does not use the defined term "low-emission wood or biomass combustion device." The definition of

recognized nonfossil forms of energy generation also seems to refer to the same types of systems as "a system that produces electric power from biomass or solid wood wastes."

The section of law providing for the alternative energy system tax credit does not reference the defined term "alternative energy system." As stated above, the credit is for installing an energy system using a recognized nonfossil form of energy generation or using a low-emission wood or biomass combustion device. Other than in the definition of nonfossil form of energy generation, the only references to "alternative energy system" in the Montana Code Annotated are in sections of law pertaining to an alternative energy revolving loan program and an energy development and demonstration grant program. Legislation creating the alternative energy revolving loan program in 2001 included the definition of "alternative energy system" and used the term only in reference to that program. Staff suggestions for simplifying these definitions are included in the last section of this document.

### ENERGY SYSTEMS ELIGIBLE FOR CREDIT

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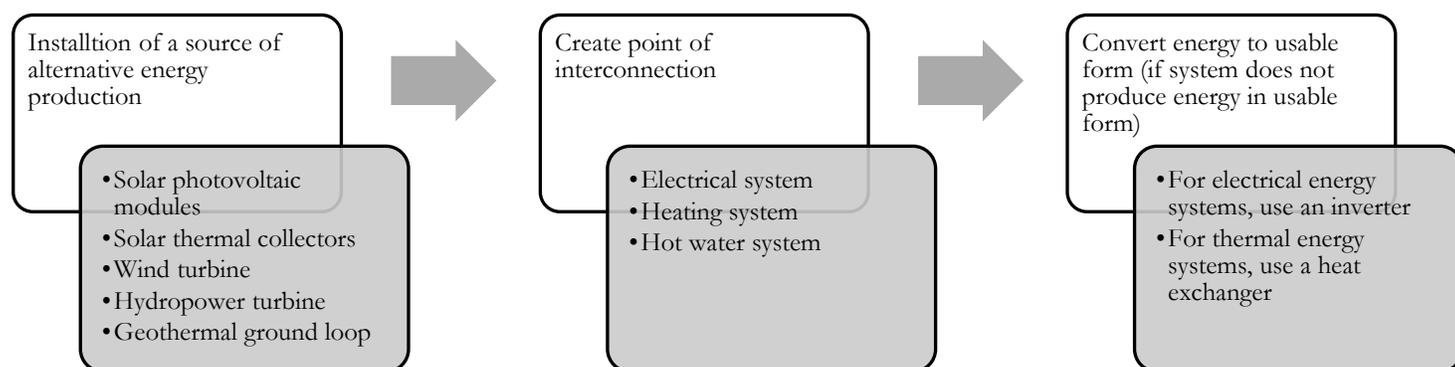
The alternative energy system credit is available for installation of an energy system using a recognized nonfossil form of energy generation or using a low-emission wood or biomass combustion device. This section provides additional details about eligible energy systems.

Section [15-32-203](#), MCA, directs the Department of Revenue to prescribe rules for the alternative energy systems credit. The administrative rules provide more information about eligible systems using recognized nonfossil forms of energy generation.

### RECOGNIZED NONFOSSIL FORM OF ENERGY GENERATION

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The installation of an energy system using a recognized nonfossil form of energy generation requires an installation process included in [ARM 42.4.104](#) and demonstrated in the following graphic.



A passive solar system is also included within the definition of recognized nonfossil form of energy generation, and ARM [42.4.105](#) lists the following eligible systems.

Solar greenhouses, sun porches, and like structures that are properly situated, constructed, and ducted

Components of a building that have been altered for energy collection, storage, or distribution to benefit the rest of the building, such as triple glazed windows to enclosed porches

Windows installed in excess of "double glazing"

Thermal collection masses such as brick, stonework, and other types that were not present in the original structure and were not installed for purposes other than energy storage

Components of an envelope house necessary for energy generation and distribution in the envelope house such as the envelope area devoted solely to energy collection, storage, and distribution

Standard components of conventional structures are not eligible for the credit. That term is defined in ARM [42.4.110](#) as "those structures that are generally necessary for structural support, shelter, ventilation, temperature control, lighting, or maintenance of the occupant's regular life style."

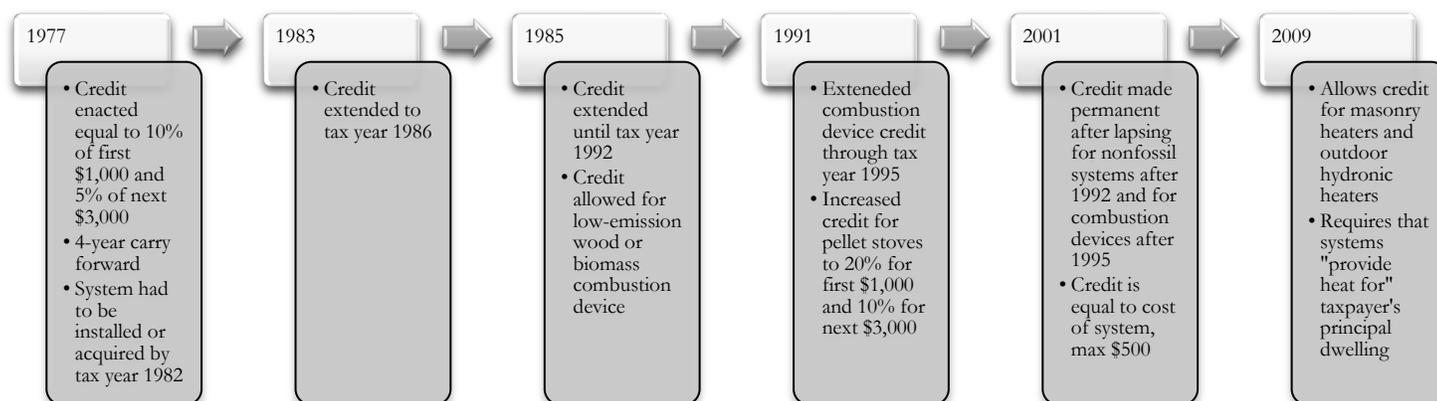
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#### LOW-EMISSION WOOD OR BIOMASS COMBUSTION DEVICE

The definition of low-emission wood or biomass combustion device is detailed enough that the Department of Revenue has not adopted administrative rules offering additional guidance about eligible systems. The definition links to standards adopted by the U.S. Environmental Protection Agency and included in the International Residential Code, which is a national model for construction codes adopted by an industry group known as the International Code Council.

## PURPOSE AND LEGISLATIVE HISTORY

### LEGISLATURE EXTENDS CREDIT 3 TIMES, MAKES IT PERMANENT IN 2002



#### 1977: LEGISLATURE ENACTS CREDIT

The Legislature enacted the credit for alternative energy systems without including a purpose statement. A review of the legislative history of the credit may allow the committee to infer the intended purpose.<sup>1</sup>

The title of the bill enacting the credit included the following: "providing incentives for the installation or acquisition of solar or other recognized nonfossil forms of energy generation by taxpayers by providing income tax credit for the costs of the systems." Sen. Tom Rasmussen, the sponsor of the bill, stated in the House hearing that the purpose of the bill was to encourage development of renewable energy projects.<sup>2</sup>

#### 1979: CREDIT ALLOWED FOR PASSIVE SOLAR SYSTEMS

The 1979 Legislature allowed the alternative energy system credit for a passive solar system. The legislation defined "passive solar system" and added that term to the definition of "recognized nonfossil forms of energy generation."<sup>3</sup>

<sup>1</sup> Ch. 574, L. 1977.

<sup>2</sup> Hearing of the House Natural Resources Committee, March 29, 1977.

<sup>3</sup> Ch. 652, L. 1979.

## 1983: EXTENSION OF CREDIT THROUGH 1986

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The original enactment of the credit for alternative energy systems only applied through tax year 1982. The 1983 Legislature extended the credit through tax year 1986.<sup>4</sup>

## 1985: CREDIT ALLOWED FOR LOW-EMISSION WOOD OR BIOMASS COMBUSTION DEVICES AND EXTENDED THROUGH 1992

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The 1985 Legislature allowed the credit for alternative energy systems through tax year 1992 and extended the credit to low emission wood or biomass combustion devices by defining that term and including it in the definition of "recognized nonfossil forms of energy generation."<sup>5</sup>

In the House hearing, bill sponsor Sen. John Mohar stated the purpose of the bill is to address air pollution from woodburning stoves. Jim Carlson, of the Missoula City/County Health Department, added that the credit encourages the purchase of wood stoves with lower emissions.<sup>6</sup>

A statement of intent that accompanied the bill directed the predecessor to the Department of Environmental Quality (DEQ)<sup>7</sup> to adopt rules establishing emission testing and certification standards modeled on similar rules in Oregon and to maintain a list of certified devices. Mr. Carlson's testimony indicated that stoves eligible for the credit emit one-thirtieth as much as standard wood stoves.

## 1991: LARGER CREDIT FOR PELLET STOVES AND EXTENSION THROUGH 1995 FOR ALL COMBUSTION DEVICES (BUT NOT NONFOSSIL SYSTEMS)

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The 1991 Legislature revised the credit for low-emission wood or biomass combustion devices by revising which devices are eligible for the credit and by offering a larger credit for devices that burn wood pellets or nonfossil biomass pellets.<sup>8</sup>

Rep. Bob Ream, the sponsor of the bill, told the House Taxation Committee that the change to the credit was necessary because the definition at the time allowed a credit for all wood stoves.<sup>9</sup> The Environmental Protection Agency enacted regulations setting minimum emission standards and that minimum set a higher standard than the credit eligibility criteria at the time.

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<sup>4</sup> Ch. 480, L. 1983.

<sup>5</sup> Ch. 513, L. 1985.

<sup>6</sup> Hearing of the House Taxation Committee, March 21, 1985.

<sup>7</sup> Statute used to require a bill granting rulemaking authority to include a statement of intent.

<sup>8</sup> Ch. 467, L. 1991.

<sup>9</sup> Hearing of the House Taxation Committee, January 31, 1991.

The legislation allowed a credit for pellet stoves of 20% for the first \$1,000 and 10% for the next \$3,000 in costs. Devices that burned wood and other nonfossil biomass with particulate emission rates of less than 4.1 grams per hour were eligible for a credit of 10% of the first \$1,000 and 5% of the next \$3,000 in costs, the same amount as the previous credit and the credit for energy systems using a recognized nonfossil form of energy generation.

The statement of intent included with the legislation indicates that the changes in the credit eligibility and amounts were necessary to encourage use of more efficient devices that reduce air pollutants.

The bill also extended the credit for low-emission wood or biomass combustion devices through tax year 1995, but retained language allowing the credit for an energy system using a nonfossil form of energy generation to expire after tax year 1992.

Testimony offered during the House hearing providing the reason for extending the credit for low-emission wood and biomass combustion devices: the Clean Air Act required compliance with PM-10 and carbon monoxide standards during the extension period.<sup>10</sup>

## 2001: REENACTMENT OF CREDIT EQUAL TO COST OF SYSTEM, \$500 MAX

The credit for an energy system using a recognized form of nonfossil energy generation lapsed after 1992 and the credit for low-emission wood or biomass combustion devices ended in 1995. The 2001 Legislature amended the law to:

- allow the credit for systems and devices installed in tax year 2001 and after (making the credit permanent);
- revise the credit amount to the cost of the system or device, up to \$500 maximum;
- remove the increased credit for pellet stoves; and
- amend the definition of recognized nonfossil form of energy to include fuel cells that do not require hydrocarbon fuel.<sup>11</sup>

The 2001 legislation included broader changes to energy system and alternative energy system laws, and the Legislature's discussions focused on parts of the bill other than the alternative energy systems credit.

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<sup>10</sup> Robert Raisch, Montana Department of Health and Environmental Sciences, Written testimony to the House Taxation Committee, January 31, 1991.

<sup>11</sup> Ch. 591, L. 2001.

## 2003: SIMPLIFICATION OF LOW-EMISSION WOOD OR BIOMASS COMBUSTION DEVICE DEFINITION

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The 2003 Legislature simplified the definition of "low-emission wood or biomass combustion device."<sup>12</sup> The previous definition included separate parts for pellet stoves and wood stoves, which was necessary when there was a larger credit for pellet stoves. The new definition included certain wood-burning appliances certified by the U.S. Environmental Protection Agency and those that use wood pellets as the primary fuel source. The new definition no longer required the Department of Environmental Quality to adopt rules identifying eligible devices.

## 2009: EXTENSION OF CREDIT TO MASONRY AND HYDRONIC HEATERS

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The 2009 Legislature again revised the definition of "low-emission wood or biomass combustion device." This change allows the alternative energy systems credit for masonry heaters and outdoor hydronic heaters.<sup>13</sup> The legislation also included language in 15-32-201(2), MCA, requiring a low-emission wood or biomass combustion device to be used "to provide heat for" the taxpayer's dwelling. The reason for the language was likely to prohibit a credit for a device that was decorative in nature.

The legislation also added "to provide heat for" to 15-32-201(1), MCA, which is the section that pertains to energy systems that use a recognized nonfossil form of energy generation. However, the requirement that these energy systems provide heat seems to be inadvertent.

The requirement that a combustion device be used to provide heat was included in an amendment in the House Taxation Committee. The amendment includes a detailed explanation prepared by the drafter and there is no mention of a requirement that an energy system that uses a nonfossil form of energy generation be used to provide heat. The House Taxation Committee did not discuss this change during the committee hearing or executive action, and neither did the Senate Taxation Committee. In addition, the fiscal note does not mention this new requirement, which would likely reduce eligibility and the cost of the credit. The Department of Revenue interprets the requirement that an energy system that uses a recognized nonfossil form of energy generation be used to provide heat as a drafting error. The form used to claim the credit does not require confirmation that the energy system is used for heating purposes.

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<sup>12</sup> Ch. 155, L. 2003.

<sup>13</sup> Ch. 334, L. 2009.

## TAXPAYER USE OF CREDIT VARIES

The following table shows the usage of the alternative energy systems credit. DOR provided the data, which covers the even-numbered years between 1982 and 1988 and all years from 1990 to the present. The table also shows which systems were eligible for credits and other incentives that were available at the same time.

The years 1992 through 2001 appear in italics because data for those years also includes figures for the geothermal energy credit. The tax form included one line to claim both credits.

Year	Type of Credit				Credits Claimed			Other Incentives	
	Nonfossil System		Combustion Device		Number	Total Dollars	Average <sup>14</sup>	Federal Credit	State Loan
	Available	Amount	Available	Amount					
1982	✓	10% first \$1,000, 5% next \$3,000 (\$250)			810	\$74,576	\$92.07	✓	
1984	✓				631	\$41,081	\$65.10	✓	
1986	✓		✓	10% first \$1,000, 5% next \$3,000 (\$250)	613	\$60,891	\$99.33		
1988	✓		✓		533	\$52,726	\$98.92		
1990	✓		✓		560	\$72,951	\$130.27		
1991	✓		✓		884	\$159,171	\$180.06		
1992	✓		✓		1,395	\$277,260	\$198.75		
1993	Carry forward only		✓	Pellet: 20% first \$1,000, 10% next \$3,000 (\$500)	1,280	\$269,738	\$210.73		
1994			✓	Wood: 10% first \$1,000, 5% next \$3,000 (\$250)	898	\$185,989	\$207.11		
1995			✓		727	\$142,396	\$195.87		
1996						368	\$69,395	\$188.57	
1997			Carry forward only		329	\$61,841	\$187.97		
1998				271	\$52,647	\$194.27			
1999				217	\$41,616	\$191.78			
2000					197	\$38,336	\$194.60		
2001					207	\$40,193	\$194.17		✓

<sup>14</sup> The average credit may exceed the maximum credit because taxpayers may claim a credit for an energy system that uses a recognized nonfossil form of energy generation and a credit for a low-emission wood or biomass combustion device and MFJ taxpayers are each eligible for the credit, so they could claim double the credit amount on a single return.

Year	Type of Credit				Credits Claimed			Other Incentives	
	Nonfossil System		Combustion Device		Number	Total Dollars	Average	Federal Credit	State Loan
	Available	Amount	Available	Amount					
2002	✓	100%, \$500 max	✓	100%, \$500 max	472	\$228,283	\$483.65		✓
2003	✓		✓		656	\$300,489	\$458.06		✓
2004	✓		✓		942	\$445,967	\$473.43		✓
2005	✓		✓		1,544	\$640,431	\$414.79		✓ <sup>15</sup>
2006	✓		✓		1,633	\$677,311	\$414.76	✓	✓
2007	✓		✓		1,392	\$712,228	\$511.66	✓	✓
2008	✓		✓		1,804	\$997,615	\$553.00	✓	✓
2009	✓		✓		2,321	\$1,302,796	\$561.31	✓	✓
2010	✓		✓		2,476	\$1,377,478	\$556.33	✓	✓
2011	✓		✓		1,534	\$823,533	\$536.85	✓	✓
2012	✓		✓		626	\$347,322	\$554.83	✓	✓
2013	✓		✓		1,159	\$632,607	\$545.82	✓	✓
2014	✓		✓		1,104	\$617,949	\$559.74	✓	✓

<sup>15</sup> Maximum loan amount increased from \$10,000 to \$40,000 and term increased from 5 years to 10 years.

Year	Type of Credit				Credits Claimed			Other Incentives	
	Nonfossil System		Combustion Device		Number	Total Dollars	Average	Federal Credit	State Loan
	Available	Amount	Available	Amount					
2015	✓	100%, \$500 max	✓	100%, \$500 max	1,024	\$453,590	\$442.96	✓	✓
2016	✓		✓		1,164	\$668,542	\$574.35	✓	✓
2017	✓		✓		1,032	\$451,738	\$437.73	✓	✓
2018	✓		✓		912	\$507,838	\$556.84	✓	✓

## ADDITIONAL CONSIDERATIONS

### TAXPAYERS MAY BE UNCERTAIN ABOUT ELIGIBILITY FOR CREDIT

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DOR gets many questions about the alternative energy systems credit. Taxpayers are confused about the difference between this credit and other credits such as the credit for energy-conserving expenditures, the geothermal credit, and the credit for alternative energy generation.

DOR originally interpreted the law to only apply to installation of a system and not to expansion of the system. After further review and consideration, DOR now allows the credit for expansion of an existing system. However, the credit may not be claimed for repairs made to an existing system.

The Department of Environmental Quality (DEQ) provides input to DOR on the development of administrative rules for the alternative energy systems credit. DEQ receives federal funds to promote energy conservation and uses some of that funding to provide [information on its website](#) and publish a brochure about the credit.

### OTHER INCENTIVES MAY IMPACT USE OF CREDIT

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The availability of federal tax credits and a state revolving loan fund allows taxpayers to layer incentives and may make the alternative energy system credit more desirable. Some local governments and utility providers also offer incentives that could be used in conjunction with the alternative energy systems credit.

### FEDERAL CREDITS VARY FROM YEAR TO YEAR

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Montana taxpayers could claim federal and state tax credits for the same expenditures in certain tax years when federal law allowed credits. The availability of federal tax credits may have increased usage of this credit, but changes to the Montana credit in years when no federal credit was available make it difficult to determine the impact of federal credits.

There was an increase in credits claimed in 2008 that continued through 2009 and 2010. The first year with no maximum federal credit for a solar energy system was 2008, and there was no maximum for any eligible system, except fuel cells, in 2009 and 2010. The table below summarizes federal credit eligibility and amounts.<sup>16</sup>

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<sup>16</sup> Margot L. Crandall-Hollick and Molly F. Sherlock, "Residential Energy Tax Credits: Overview and Analysis," *Congressional Research Service*, April 9, 2018, p. 16-19.

Years	Eligible Systems				Credit Amount
	Solar	Wind	Geothermal	Fuel Cells	
Through 1980	✓	✓	✓		30% of first \$2,000, 20% of next \$8,000; maximum value of \$2,200; can't exceed \$2,500 when combined with energy conservation credit
1980-1985	✓	✓	✓		40% for first \$10,000, maximum value of \$4,000
2006-2007	✓			✓	30%, maximum \$2,000 for solar and \$500 for fuel cells
2008	✓	✓	✓	✓	30%, maximums: \$500 per half kilowatt up to \$4,000 wind, \$2,000 geothermal, \$500 fuel cells, no maximum for solar
2009-2016	✓	✓	✓	✓	30%, no maximums except for fuel cells: \$500
2017-2018	✓				30%
2019-2021	✓	✓	✓	✓	2019: 30%; 2020: 26%; 2021: 22%

#### REVOLVING LOAN PROGRAM MAY BE USED FOR SAME ENERGY SYSTEMS

The 2001 Legislature created the Alternative Energy Revolving Loan Program, which provides low-interest loans for alternative energy systems. The loans are available to individuals, businesses, nonprofits, local governments, and universities and may be used for the same systems that are eligible for the alternative energy systems credit. The original law allowed loans of up to \$10,000 with a repayment period of 5 years.<sup>17</sup> Current law allows loans of up to \$40,000, and the loans must be repaid within 10 years.<sup>18</sup>

#### NET-METERING AVAILABLE SINCE 1999

The 1999 Legislature authorized a net-metering law that applies to customers of investor-owned utilities. Net-metering is a billing mechanism that gives customers credit for surplus energy generated that goes back on the utility's electric system. Net-metering may be used for systems up to 50 kilowatts that generate electricity using solar, wind, or hydropower.

<sup>17</sup> Ch. 591, L. 2001.

<sup>18</sup> Title 75, chapter 25, part 1, MCA.

## GEOTHERMAL SYSTEM IS NOT ELIGIBLE FOR TWO CREDITS

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Installation of a geothermal system is eligible for an alternative energy systems credit because it is an energy system that uses a recognized form of nonfossil energy generation. However, there is a separate state tax credit for a geothermal system in 15-32-115, MCA, with a maximum credit amount of \$1,500. A taxpayer who installs a geothermal system gets a larger credit by claiming the geothermal credit. ARM 42.4.121 prohibits a taxpayer from claiming the alternative energy system credit and the geothermal system credit for the same geothermal system. The Legislature may wish to add this prohibition to statute.

## CREDIT REDUCES FEDERAL DEDUCTION FOR STATE INCOME TAXES

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The benefit of the alternative energy systems credit for taxpayers who itemize their federal deductions is reduced because the taxpayer receives a smaller federal deduction for state income taxes paid. However, the \$10,000 limit on state and local tax deductions included in the Tax Cuts and Jobs Act may limit the deduction already so there may be no effect from a reduced federal deduction for state income taxes paid because the taxpayer claimed the alternative energy systems credit.

## POSSIBLE AREAS FOR REVISION

This section identifies possible areas for revision related to the alternative energy systems credit. The areas identified are intended to make the statute clearer and are separate from any policy changes.

### SOME DEFINITIONS ARE CIRCULAR AND REPETITIVE

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As discussed at the beginning of this report, the definitions of "alternative energy system" and "recognized nonfossil forms of energy generation" are circular and repetitive. The committee may wish to request legislation to simplify these definitions.

### ADD PROHIBITION ON ALTERNATIVE ENERGY AND GEOTHERMAL CREDIT

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ARM 42.4.121 provides that a taxpayer may not claim the alternative energy system credit and the geothermal system credit for the same geothermal system. The committee may wish to add this to statute.

### REQUIREMENT THAT ALTERNATIVE ENERGY SYSTEM "PROVIDE HEAT"

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The requirement in 15-32-201(1) that an energy system using a recognized nonfossil form of energy generation be used to provide heat was likely a drafting error and is not enforced by the Department of Revenue. The committee may wish to request legislation to remove this requirement.

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