



UNDERSTANDING THE
FEDERAL TAX INCENTIVES
FOR COMMERCIAL
GEO THERMAL HEAT PUMPS



Available Federal Tax Incentives

Thirty Percent Investment Tax Credit (ITC)

The Inflation Reduction Act¹ has added new, changed and extended previously existing clean energy tax credits. The Section 48 energy Investment Tax Credit (ITC) allows owners to claim a tax credit for the cost of energy property placed in service during the tax year. Such energy property includes geothermal heat pumps (GHPs). Upon election, tax-exempt entities, state, local and tribal governments are also eligible for direct payments of the ITC. The ITC was extended with a 6% base credit and up to 30% when certain requirements are fulfilled. Geothermal projects under 1MW (approx. 284 tons) qualify for the 30% credit but the prevailing wage and apprenticeship requirements must be met for projects over 1MW, otherwise, the lower 6% base credit applies. The geothermal project must begin construction before Jan 1, 2035.

Ten Percent Credit for Domestic Content Projects





The Domestic Content bonus credit is for incorporating domestically manufactured products into ITC eligible projects. The Domestic Content bonus tax credit is 10% for projects less than 1MW. The bonus credit is 2% for larger projects unless the apprenticeship and prevailing wage requirements are met. For manufactured products, the domestic cost percentage must exceed 40% for the project to qualify for the domestic content bonus credit. The project must begin construction prior to January 1, 2035. The domestic content credit also applies to tax-exempt entities, state, local and tribal governments.

Ten Percent Credit for Energy Communities

The Energy Community bonus tax credit is for clean energy development in communities that have been sites of legacy energy production. The Energy Community bonus tax credit is 10% for projects less than 1MW. The bonus credit is 2% for larger projects unless the apprenticeship and prevailing wage requirements are met. The credit also applies to tax-exempt entities, state, local and tribal governments. The IRA defines energy communities as:

- A brownfield site (as defined in certain subparagraphs of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA))
- A "metropolitan statistical area" or "non-metropolitan statistical area" that has (or had at any time after 2009) 0.17% or greater of direct fossil fuel employment or 25% or greater local tax revenues related to the extraction, processing, transport, or storage of coal, oil, or natural gas; and has an unemployment rate at or above the national average unemployment rate for the previous year
- A census tract (or directly adjoining census tract) in which a coal mine has closed after 1999; or in which a coal-fired electric generating unit has been retired after 2009

The following QR codes are linked to useful mapping resources for Energy Communities.

Department of Energy Mapping Tool	Coal Power Plants	American Clean Power Association	EPA
			



Available Federal Tax Incentives

Accelerated Depreciation of Energy Property

Qualified energy property is classified as a 5-year property in section 168(e)(3)(B)(vi) of the Internal Revenue Code, meaning the cost of the property can be deducted on an accelerated MACRS basis. For depreciation purposes, the cost basis must be reduced by one-half of the energy tax credit. In addition to accelerated MACRS depreciation, a one-time bonus depreciation is available. In 2024, the taxpayer can depreciate 60% of the reduced basis in the first year with the one-time bonus depreciation.

EPAcT 179D

This energy efficiency commercial building tax deduction applies to new and existing buildings that have been completed since Jan. 1, 2006. The buildings must meet certain American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) efficiency standards to qualify. It allows for a tax deduction in the year the property is placed in service. The deduction can be up to \$5 per square foot for projects meeting prevailing wage and apprenticeship labor requirements with the amount depending on reduction of total annual energy and power costs for the building. With for-profit businesses, the deduction can be taken by the building owner. The deduction includes buildings owned by not-for-profits, instrumentalities, and Indian Tribal Governments. For not-for-profit organizations, the deduction can be taken by the designers of these buildings.

Who's Eligible for the Geothermal Tax Incentives?

Equipment that uses the ground or ground water as an energy source for heating and cooling a building is eligible for the Section 48 tax credit. The system must be in the United States and the tax incentives can benefit for-profit or not-for-profit organizations. After equipment is installed, the taxpayer must take legal title of the equipment and have all necessary licenses and permits needed for its operation. Section 6418 allows for commercial taxpayers to transfer the credit to other taxpayers.

How to Claim These Tax Advantages

Use IRS Form 3468 to claim the ITC. The Section 48 tax credit can be used to offset both regular income taxes and alternative minimum taxes (AMT). If the tax credit exceeds the income tax liability, the loss can be carried back 3 taxable years and the remaining balance can be carried into future years. Use IRS Form 4562 to claim 5-year MACRS depreciation and first year bonus depreciation. Commercial building owners can take the 179D for building projects completed since Jan 1, 2006. A standard form for 179D will be available within IRS Form 7205. To claim a 179D deduction, use the "Other" deduction line. IRS Form 3115 is used for catch-up on all prior year unclaimed EPAcT 179D deductions. Designers of government projects must amend prior year returns and can only adjust the prior 3 years.

With the Inflation Reduction Act, projects completed in 2023 with a geothermal loop and heat pumps may qualify for:

- **Up to 30%** credit on system cost
- **Up to 10%** credit for domestic content
- **Up to 10%** credit for energy communities
- **Up to \$5 per square foot** tax deduction
- **5-year** accelerated depreciation and a **1-year** bonus depreciation



New construction example

A corporation installs a geothermal HVAC system at a cost of \$1,500,000 in its new office building.

Geothermal HVAC Cost	Tax Rate		Year						
\$1,500,000	21%								
WITH TAX INCENTIVES	0	1	2	3	4	5	6		
30% Tax Credit		\$450,000							
10% Domestic Content		\$150,000							
10% Energy Community		\$150,000							
Value of 60% Bonus		\$141,750							
Value of 5 year MACRS		\$18,900	\$30,240	\$18,144	\$10,886	\$10,886	\$5,443		
Total Tax Incentive		\$910,650	\$30,240	\$18,144	\$10,886	\$10,886	\$5,443		
% paid for by Tax Incentives in 1st year	61%								

For this example, the project meets the requirements for prevailing wage, apprenticeship and domestic content. The project was completed in 2023.



Retrofit construction example

A corporation has an existing building that uses a water-loop heat pump system with a boiler and cooling tower. They remove the existing boilers and cooling tower and install a backup boiler for \$100,000. They install a geothermal heat exchange loop and upgrade their heat pumps to high-efficiency geothermal models with a total cost basis for the system of \$1,000,000.

Boiler	Geothermal HVAC Cost	Tax Rate
\$100,000	1,000,000	21%

WITH TAX INCENTIVES	Year						
	0	1	2	3	4	5	6
30% Tax Credit		\$300,000					
10% Domestic Content		\$100,000					
10% Energy Community		\$100,000					
Value of 60% Bonus		\$107,100					
Value of 5 year MACRS		\$12,600	\$20,160	\$12,096	\$7,258	\$7,258	\$3,629
Value of 15 year QIP for Boiler		\$280	\$560	\$560	\$560	\$560	\$560
Total Tax Incentive		\$619,980	\$20,720	\$ 12,656	\$7,818	\$7,818	\$4,189
% paid for by Tax Incentives in 1st year	62%						

For this example, the project meets the requirements for prevailing wage, apprenticeship and domestic content. The project was completed in 2023.





ASK US HOW YOU CAN SAVE UP TO 50% ON YOUR NEXT COMMERCIAL PROJECT

With the Inflation Reduction Act, projects completed with a geothermal loop and heat pumps may qualify for:

- Up to 30% credit on system cost
- Up to 10% credit for domestic content
- Up to 10% credit for energy communities
- Up to \$5 per square foot tax deduction
- 5-year accelerated depreciation and a 1-year bonus depreciation

1. Additional benefits are available under the Inflation Reduction Act and are not covered in this brochure. The Federal tax credits may be combined with utility rebates and other tax incentives.

Statements in this document are being finalized by the federal government and are subject to change and interpretation. To understand what you qualify for, please consult your tax professional.

Sources: Energy Tax Savers, Inc., Geothermal Exchange Organization, and the Inflation Reduction Act of 2022.

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