

Geothermal Heat Pump Provisions in the Inflation Reduction Act

The recently enacted Inflation Reduction Act (H.R. 5376) contains multiple provisions affecting the geothermal heat pump industry. Now that the bill has become law, there are months of work ahead for the U.S. Treasury, Internal Revenue Service, and other agencies to implement the various programs, credits, rebates, and deductions. GeoExchange will continue to weigh in with the appropriate offices and staff to ensure that industry input helps guide the implementation process.

Below are various parts of the law that have relevance to the geothermal heat pump (GHP) industry. Please reach out to info@geoexchange.org with questions on any of the information below. We will continue to update this document as certain programmatic aspects become more clearly defined. To read the law, please go [here](#).

We are not tax professionals and this should not be interpreted as tax advice. Please consult your own accountant and/or lawyer for guidance on claiming any of the following incentives.

Residential Clean Energy Credit (IRC Sec. 25D)

- Formerly known as the Residential Energy Efficient Property Credit
- Section 25D includes credits for geothermal heat pumps, solar panels, solar thermal systems, fuel cells, small wind systems, biomass heaters, and for the first time beginning in 2023, battery storage systems.
- The bill extends the credit for all Section 25D technologies at the following rates:
 - 26% (2021)
 - 30% (2022-2032)
 - 26% (2033)
 - 22% (2034)
 - 0% (2035)
- These credits are not refundable. The credit can be carried forward for a maximum of ten years. Distribution equipment such as ductwork or radiant flooring are not eligible for the credit.

Investment Tax Credit (Commercial Installation Credits – IRC Sec. 48)

- Section 48 is extended under a two-tier structure:
 - A “base rate” of 6% (or 1/5 of the bonus rate)
 - A “bonus rate” of 30%

- In order to receive the bonus rate, projects will have to either: (1) meet prevailing wage and apprenticeship requirements; or (2) be “a project with a maximum net output of less than 1 megawatt of electrical or thermal energy.” GeoExchange is convening an industry working group to examine how to recommend the IRS best measure system capacity and its 1 MW equivalency.
- Section 48 technologies will transition to a technology-neutral clean electricity production investment tax credit (the Wyden Tech Neutral approach) starting in 2025. However, geothermal heat pumps will continue to be eligible for the Section 48 credit through 2034 at the following rates:
 - 10% (2021)
 - 10% OR 30% bonus/6% base (2022) – There is a potential drafting error in how the Inflation Reduction Act impacts the 2022 rate. GeoExchange alerted Senate Finance Committee staff regarding the inconsistency in the revised language released on July 27. While the Senate Finance Committee made last minute adjustments to the problematic language prior to the bill passing the Senate, it is unclear whether the IRS will determine that the 2022 rate is 10% or 30%.
 - 30% bonus/6% base (2023-2032)
 - 26% bonus/5.2% base (2033)
 - 22% bonus rate/4.4% base (2034)
- Certain entities that have no tax liability can elect to receive a direct payment from the U.S. Treasury equal to the amount allowed under the applicable rate. Direct pay is available under Section 48 for the following entities:
 - tax-exempt organizations;
 - state or local government (or political subdivision thereof);
 - Tennessee Valley Authority;
 - Indian tribal government;
 - Alaskan Native Corporations; and
 - Rural Electric Cooperatives.
- The law includes a domestic content bonus credit for facilities that use domestic steel, iron, and manufactured products. The bonus credit is two-tiered:
 - 10% (projects that either meet prevailing wage/apprenticeship requirements or are under 1MW of electrical or thermal energy)
 - 2% (projects over 1MW that don’t meet prevailing wage/apprenticeship requirements)

The domestic content requirement is fulfilled under the following circumstances:

- Construction material for the facility made primarily of steel or iron must be 100% produced in the U.S.
- Manufactured products are deemed to have been manufactured in the United States if the adjusted percentage of the total cost of the components and

subcomponents of the project is attributable to components that are mined, produced, or manufactured in the United States. The adjusted percentage is:

- 40% for projects that begin construction before 2025,
 - 45% for projects that begin construction in 2025,
 - 50% for projects that begin construction in 2026, and
 - 55% for projects that begin construction thereafter.
- The law includes an additional bonus credit of 10% (or 2% for projects over 1MW that don't meet prevailing wage/apprenticeship requirements) for Section 48 technologies that are installed in "energy communities." Energy communities are defined as:
 - A brownfield site;
 - A city with a certain population employed in or tax revenues derived from extraction, processing, transport, or storage of coal, oil, and natural gas with unemployment rates above the national average; or
 - A census tract (or adjoining census tract) with a coal mine that has closed since 2000 or a coal-fired power plant that has closed since 2010.
 - The law allows taxpayers who are ineligible for direct pay to opt to transfer any applicable Sec. 48 credit to another taxpayer. Project owners are able to monetize the credits by selling or transferring them to third-parties. Previously, complex credit swaps and sales involving Wall Street investment firms made tax equity sales costly and unattractive to system owners. Now, they'll be able to sell all or part of their credit to an unrelated party. The sale must be for cash and is subject to penalties if the sale exceeds the value of the credit.
 - Accelerated depreciation remains unchanged. Under the Modified Accelerated Cost Recovery System in Sec. 168 of the Revenue Code, commercial GHP systems are eligible for a five-year cost recovery schedule on projects claiming the ITC.

Energy Efficient Commercial Buildings Deduction (IRC Sec. 179D)

- The 179D deduction is a longstanding tax incentive that has been underutilized by the geothermal heat pump industry. In 2021 it was made permanent in the Revenue Code and a lifetime limitation on its use was eliminated. The Inflation Reduction Act made significant increases in the available deduction.
- 179D allows a deduction on a per square foot basis for energy-saving improvements to a commercial building. Eligible improvements can be for:
 - Interior lighting;
 - Heating, cooling, ventilation, or hot water system; and
 - The building envelope.
- A qualifying building must increase its efficiency relative to a reference baseline by 25%. The reference standard cited in the law is ASHRAE 90.1-2007.

- The base rate for the deduction is \$0.50 per square foot and is increased by \$0.02 for each percentage point increase in energy savings above the minimum 25% improvement over the baseline. The maximum deduction for any such project is \$1.00 per square foot.
- There is a bonus rate for projects that meet prevailing wage and apprenticeship requirements. For these projects, the deduction is \$2.50 per square foot and is increased by \$0.10 for each percentage point increase, with a maximum deduction of \$5.00 per square foot.
- Tax-exempt building owners are able to allocate the deduction to the project designer. While this benefit was previously available to governmental entities, the IRA expands it to other tax-exempt building owners.
- This deduction can be claimed in combination with the commercial Investment Tax Credit.

New Energy Efficient Home Credit (IRC Sec. 45L)

- This provision extends and increases an existing tax credit for home builders selling qualified energy-efficient new homes.
- For homes sold after 2021, a \$2,500 credit is available if the home meets certain Energy Star standards, and a \$5,000 credit is available if the home is certified as “zero-energy ready.”

Home Owner Managing Energy Savings (HOMES) Rebate Program

- This is a brand-new program designed to help homeowners reduce their energy costs by offering rebates for a variety of efficiency upgrades. \$4.3 billion has been allocated for disbursement to state energy offices which will in turn manage the program. States will be required to apply for the funds.
- Single-family homes are eligible for rebates of up to \$4,000 for modeled energy savings greater than 35% and \$2,000 for modeled savings of 20-35%. Low- or Moderate-Income households (defined as a household earning less than 80% of area median income (AMI)) are eligible for up to \$8,000 in rebates. HVAC improvements and other efficiency projects that meet the required energy savings are eligible for these rebates.
- Multifamily building owners are eligible for \$2,000 per unit up to \$200,000 per building for modeled energy savings greater than 20% and less than 35% and for \$4,000 per unit up to \$400,000 per building.
- This rebate program may not be combined with other federal rebate or grant programs including the High-Efficiency Electric Home Rebate Program. This program is for household retrofits only and new homes are not eligible.

High-Efficiency Electric Home Rebate Program

- This is another new program very similar to the HOMES Program. \$4.5 billion is allocated for state energy offices and Indian tribes. States and tribes will be required to apply for access to these funds.
- This program is means-tested at 150% of AMI and only households making less than that are eligible. Households at 80-150% are eligible for rebates of 50% of project costs up to measure-specific caps. Households at less than 80% AMI are eligible for rebates of 100% of project costs up to the caps.
- There is a total home cap of \$14,000 as well as the following specific caps:
 - \$8,000 for a geothermal or air-source heat pump;
 - \$1,750 for a heat pump water heater;
 - \$4,000 for a main panel upgrade;
 - \$2,500 for wiring;
 - \$1,600 for insulation, air sealing, and ventilation;
 - \$840 for an electric stove, cooktop, range, or oven; and
 - \$840 for an electric heat pump clothes dryer.

Outstanding Questions and Clarifications

- There are numerous implementation questions still outstanding that GeoExchange will be seeking guidance on in the coming weeks and months. These issues include:
 - Lack of clarity on effective date and corresponding rate in Sec. 48
 - Can direct pay be taken for eligible entities in 2022 and at what rate?
 - Domestic content bonus requirements
 - Calculation of 1 MW thermal capacity
 - How eligible entities will claim direct pay of credits
 - What are Energy Star standards to claim 45L credits?