

**Form GHP: Geothermal Heat Pump Systems  
Utah Renewable Energy Systems Tax Credit  
Investment Tax Credit Certification**



This form must be completed by all applicants seeking Utah tax credits for a geothermal system that provides heating or cooling to a building using ground-coupled heat pumps.

Taxpayer Name

Social Security Number or Federal ID #

Which of the following applies to your GHP system:

- |                                       |                                   |
|---------------------------------------|-----------------------------------|
| Water source/open loop                | Ground source/vertical            |
| Water source/closed loop              | Ground source/horizontal          |
| Vertical direct exchange system       | Horizontal direct exchange system |
| If water source, does the system use: |                                   |
| Surface water                         | Ground water                      |

If ground source/horizontal, what is the depth of the circulating loop?

If ground source/vertical, what is the maximum depth of the circulating loop?

How many vertical bores are in the system?

If water source/open loop, at what depth below the surface is your water intake?

Number of production wells?	Number of injection wells
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If water source/closed loop, what is the maximum depth of the circulating loop?

For all closed loop systems, what is the total length of the circulating loop?

List make and model of heat pumps used (see instruction)

Heat pump 1	Number of units
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Capacity (tons or Btu/hr)	Cooling	Heating
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Heat pump 2	Number of units
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Capacity (tons or Btu/hr)	Cooling	Heating
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If additional heat pumps used, attach additional sheet with form

Total capacity (tons) of the completed system (see instructions)

Total cost of your GHP system

Total eligible GHP equipment cost (see instructions)

Total eligible GHP installation and other costs (see instructions)

Total eligible GHP cost (sum of equipment, installation, and other)

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Reasonable cost limitation (see instructions)

Enter amount of credit claimed for the GHP system above (see instructions)

Vertical Bore Well Driller Information (see instructions)

Name

Street Address

Town/City

State

Phone

I certify that I drilled the vertical bores for the geothermal heat pump system described in Forms A and GHP of this application. I further certify that I am licensed by the Utah Division of Water Rights as a well driller and that the wells drilled for this system were approved by the Division of Water Rights.

Signature

Date

Project Designer Information (see instructions)

Name

Street Address

Town/City

State

Phone

Contractor License Number

License Type

Designer is (check all that apply):

A Utah professional engineer

A certified GeoExchange designer

A certified Energy Manager

An IGSHPA accredited installer

An AHRI certified designer

I certify that I designed the geothermal heat pump system described in Forms A and GHP of this application. I further certify that the system conforms with the ASHRAE Applications Handbook, Chapter 32, or the Air Conditioning Heating and Refrigeration Institute (AHRI) Certified Product Directory, Page 4-8, and that I currently hold the credentials indicated above.

Signature

Date

**Utah Renewable Energy Systems Tax Credit  
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Project Installer Information (see instructions)

Name

Street Address

Town/City

State

Zip

Phone

Contractor License Number

License Type

Is the installer certified by IGSHPA or a Direct Exchange manufacturer?    Yes    No

I certify that I installed the geothermal heat pump system described in Forms A and GHP of this application. I further certify that I currently hold the credentials identified above.

Signature

Date

## **Instructions for Form GHP: Geothermal Heat Pump Systems**

List make and model of heat pumps used: Enter here the manufacturer, model number, and heating and cooling capacity for all heat pumps used in the geothermal heat pump (GHP) system. If multiple heat pumps are used in the same system, enter information for all types and sizes used. If more space is needed, provide the information on an additional sheet.

Total capacity (tons) of the completed system: The capacity of the GHP system should be provided by the system's designer and/or installer. It is not simply the combined capacity of the heat pumps in the system. The capacity listed should be for the designed heating or cooling load for the dominant conditioning mode (heating or cooling) of the building. (Except for southwest Utah, most Utah homes are heating dominant. Commercial buildings are cooling dominant except in limited, higher altitude areas such as Summit County.)

Eligible Equipment Costs: In general, the only equipment that is eligible for credits in a GHP system is components that are unique to the GHP system. In other words, system components that would be in place if the heating and cooling systems used conventional energy sources are not eligible. Eligible components for a GHP system include wells and casings, ground and water loops, water- or ground-source heat pumps, pumps for the

transfer of thermal fluids between ground or water sources and heat pumps, hot water heaters thermally linked to the GHP system, and other equipment that controls pumps and heat pumps. Equipment upstream of heat pumps (e.g., ducts and fans) is not eligible.

In order to be eligible for residential or commercial tax credits, a geothermal heat pump system employed to heat and/or cool a building must derive at least 75% of the heating and cooling from the ground. Systems that provide more than an insignificant amount of energy to the building using combustion, cooling towers, air-source heat pumps, or any other mechanism not involving thermal ground coupling are not eligible.

The geothermal heat pump system must also conform with the design and practice guidelines described in the American Society of Heating, Refrigerating, and Air Conditioning Engineers' (ASHRAE) Applications Handbook, Chapter 32, or the Air Conditioning Heating and Refrigeration Institute (AHRI) Certified Product Directory, Pages 4-8.

For closed loop systems the heat exchanging pipe loop must be warranted by the installer against leakage or breakage for at least three years from the date of installation.

Eligible installation and other costs:

Design and installation costs for a GHP system are eligible but only for the components

of the system that would not normally be associated with a conventional heating and air conditioning system. (Be sure that your installer or contractor separates these costs in the documentation you provide to USEP with this application.) The cost (if any) of obtaining an easement necessary for the installation of a GHP system is also eligible. Costs incurred for the drilling of wells or excavating trenches are eligible if they are actually used within the final GHP system. The costs of exploratory wells or trenches that are not used within the final system are not eligible.

Reasonable Cost Limitation:

Under Utah Code, taxpayers are entitled to established percentages of the reasonable cost of renewable energy systems. USEP is authorized to make a determination of reasonable costs and to limit tax credits based upon that finding. Based upon research and consultation with members of the GHP industry, USEP has determined that the eligible costs of a geothermal heat pump system are reasonable when they are not more than \$4,000 per ton of capacity for the dominant (heating or cooling) conditioning mode of the building.

To calculate your reasonable cost limitation, multiply the total capacity (tons) of the completed system (entered above on Form GHP) by \$4,000.

If the actual cost of your system exceeds the reasonable cost calculated above due to

special circumstances, the taxpayer applicant may request that the reasonable cost limitation above be waived by USEP. In order to do so, the applicant must provide written documentation and explanation from the designer or installer of the system as to why the final system cost exceeded this limit. Granting of such a waiver will be at the discretion of USEP and UGS after investigation as to the validity of the waiver claim.

Enter amount of credit claimed for the GHP system: Form A lists general documentation requirements that apply to all renewable energy systems. In addition to those requirements, documentation submitted for a

For a residential system:

Step 1 – Begin by comparing your total eligible costs to the reasonable cost limitation above. If the cost of your system exceeds the limitation, use the reasonable cost limitation amount to go to Step 2. If your total eligible costs are less than or equal to the reasonable cost limitation, use your total eligible costs amount for Step 2.

Step 2 - If you received a refund or rebate for your system, subtract that amount from the amount from Step 1. Do not subtract the value of any federal tax credits you have received or may claim. (Note: Any refunds and rebates should be listed on Form A.)

Step 3 - Multiply the amount from Step 2 by 0.25.

Step 4 - If the amount from Step 3 is less than \$2,000, enter that amount on Form GHP for your credit amount. If the amount from Step 3 is \$2,000 or higher, enter \$2,000 for

your credit amount.

For a commercial system:

Step 1 – Begin by comparing your total eligible costs to the reasonable cost limitation above. If the cost of your system exceeds the limitation, use the reasonable cost limitation amount to go to Step 2. If your total eligible costs are less than or equal to the reasonable cost limitation, use your total eligible costs amount for Step 2.

Step 2 - If you received a refund or rebate for your system, subtract that amount from the amount from Step 1. Do not subtract the value of any federal tax credits you have received or may claim. (Note: Any refunds and rebates should be listed on Form A.)

Step 3 - Multiply the amount from Step 2 by 0.10.

Step 4 - If the amount from Step 3 is less than \$50,000, enter that amount on Form GHP for your credit amount. If the amount from Step 3 is \$50,000 or higher, enter \$50,000 for your credit amount.

Vertical Bore Well Driller Information: For systems using a vertical bore (either ground source or water source), drilling must be performed by a water well driller licensed by the Utah Department of Natural Resources, Division of Water Rights. Wells drilled for a vertical bore must also obtain a provisional well approval from the Division of Water Rights. The well driller must certify that these requirements have been met by signing Form GHP where indicated.

Project Designer Information: In order to be eligible for tax credits, a GHP system must have been designed by one of the following:

1. A Professional Engineer licensed in Utah;
2. A person designated as a “Certified GeoExchange Designer” by the Association of Energy Engineers; or
3. A person designated as a “Certified Energy Manager” by the Association of Energy Engineers; or
4. For geothermal heat pump systems installed in a residential unit only, a person designated as an “Accredited Installer” by the International Ground Source Heat Pump Association (IGSHPA).

A system’s design also must conform with the design and practice guidelines described in the American Society of Heating, Refrigerating, and Air Conditioning Engineers’ (ASHRAE) Applications Handbook, Chapter 32. The system designer must certify that he/she currently has the appropriate credentials and that these requirements have been met by signing Form GHP where indicated.

Project Installer Information: In order to be eligible for tax credits, a GHP system must have been installed by a one of the following:

1. A plumber licensed in Utah;
2. A HVAC contractor licensed in Utah; or
3. An installer certified by the International Ground Source Heat Pump

Association (IGSHPA).

The system installer must certify that he/she has installed the system and currently has the appropriate credentials by signing Form GHP where indicated.

System Documentation: Form A lists general documentation requirements that apply to all renewable energy systems. In addition to those requirements, documentation submitted for a GHP system must include a copy of all required permits for the project and a water rights certification for systems using vertical bores.