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## FISCAL IMPACT REPORT

ORIGINAL DATE 02/25/09

SPONSOR Cisneros LAST UPDATED \_\_\_\_\_ HB \_\_\_\_\_

SHORT TITLE Certain Geothermal Heat Pump Tax Credits SB 442

ANALYST Francis

### REVENUE (dollars in thousands)

Estimated Revenue			Recurring or Non-Rec	Fund Affected
FY09	FY10	FY11		
		(\$500.0)	Recurring	General Fund

(Parenthesis ( ) Indicate Revenue Decreases)

Duplicates HB375

### SOURCES OF INFORMATION

LFC Files

US Department of Energy

#### Responses Received From

Taxation and Revenue Department (TRD)

Energy Minerals and Natural Resources (EMNRD)

NM Environment Department (NMED)

### SUMMARY

#### Synopsis of Bill

Senate Bill 442 creates the geothermal ground-coupled heat pump tax credit which is a credit against personal and corporate income tax liability. The credit is for 30 percent of the purchase and installation of an eligible system up to \$9,000. The credit can be carried forward for ten years. The credits must be certified by EMNRD and only \$2 million annually can be certified.

The credit is effective for tax years 2010 to 2020.

From US Department of Energy:

The geothermal heat pump, also known as the ground source heat pump, is a highly efficient renewable energy technology that is gaining wide acceptance for both residential and commercial buildings. Geothermal heat pumps are used for space heating and cooling, as well as

water heating. Its great advantage is that it works by concentrating naturally existing heat, rather than by producing heat through combustion of fossil fuels.

The technology relies on the fact that the Earth (beneath the surface) remains at a relatively constant temperature throughout the year, warmer than the air above it during the winter and cooler in the summer, very much like a cave. The geothermal heat pump takes advantage of this by transferring heat stored in the Earth or in ground water into a building during the winter, and transferring it out of the building and back into the ground during the summer. The ground, in other words, acts as a heat source in winter and a heat sink in summer.

## **FISCAL IMPLICATIONS**

According to TRD, using EMNRD estimates, 100-150 pumps will be installed annually. The relatively high cost of geothermal ground-coupled heat pumps (between \$30 and \$40 thousand), coupled with the slowing economy and tight credit markets, suggests that use of the credit will likely initially be slow. Due to the high cost of the pumps, all credits that are claimed are expected to be for the full \$9,000 credit amount. 60% of claims are assumed to have sufficient tax liability to claim full credit in year of install; 40% of claims are assumed to claim the credit over a 5 year period.

The combination of the cap on individual credits and the overall cap means that the credit cannot cost more than \$2 million annually.

## **SIGNIFICANT ISSUES**

There is a similar federal credit that is for 30 percent of the cost of purchase and installation up to \$2,000.

**Qualified geothermal heat pump property costs.** Qualified geothermal heat pump property costs are costs for qualified geothermal heat pump property installed on or in connection with your home located in the United States. Qualified geothermal heat pump property is any equipment that uses the ground or ground water as a thermal energy source to heat your home or as a thermal energy sink to cool your home. To qualify for the credit, the geothermal heat pump property must meet the requirements of the Energy Star program that are in effect at the time of purchase. The home does not have to be your main home. (Form 5695)

If a typical system costs \$30,000 to install, then the discount through the combined credits will be about 36 percent which should have a tremendous impact on demand for these systems. Going through a “savings calculator” at [www.waterfurnace.com](http://www.waterfurnace.com) indicates annual savings for a medium size house in Albuquerque would be about \$2,600.

NMED:

The State’s coal-fired power plants emit contaminants into the air including oxides of nitrogen, sulfur dioxide, particulates, mercury and carbon dioxide. Those pollutants adversely impact public health, visibility and the global climate. Because SB 442 provides incentives for geothermal heat pumps to provide energy to buildings, it could help to obviate the need to construct new conventional coal-fired power plants that emit more air pollution.

The Environment Department's Air Quality Bureau has a legislative performance measure to reduce annual statewide greenhouse gas emissions to a target level. Similarly, the Governor's Accountability and Performance Contract contains goals for reduction of greenhouse gas emissions. Finally, the Governor's Executive Order on Climate Change also contains goals for reduction of greenhouse gas emissions to 2000 levels by 2012, 10 percent below that by 2020 and 75 percent below 2000 levels by 2050. This Executive Order also requires the Energy, Minerals and Natural Resources Department to establish financial incentives for distributed and centralized renewable energy.

EMNRD:

This is an important clean energy technology that needs to be promoted in New Mexico. Governor Richardson issued Executive Order 2007-053 on Increasing Energy Efficiency to reduce statewide per capita energy consumption 20% by the year 2020, with an interim goal of 10% by 2012 (compared to 2005). The U.S. Department of Energy (DOE) has also established a requirement for states to achieve 25% in energy reductions by 2012, compared to 1990. An incentive program for ground-coupled heat pump systems will help achieve both state and federal goals.

**TECHNICAL ISSUES**

The phrase "ultimately, the sun" is a vague term and could be confused with other tax credits for specifically solar heating systems.

TRD notes that it should be clear what documentation is required from EMNRD to receive the credit and there it should be explicitly stated that the credit is not refundable.

EMNRD has noted several technical issues. First, the agency's understanding of the intent of the law was to have a maximum \$2 million but the language may be construed to allow \$2 million for credits against personal income tax *and* \$2 million against corporate income tax. Second, there are two definitions of "geothermal ground-coupled heat pump," one in the personal income tax section and tailored to residential systems and one in the corporate income tax section, tailored to business applications. There should be a single definition to avoid confusion and to recognize that some business taxpayers may file personal income tax returns rather than corporate.

EMNRD offers the following amendments to address these technical issues:

Page 3 lines 20-25 and Page 4 lines 1 and 2:

"G. As used in this section, "geothermal ground-coupled heat pump" means a system that ~~uses [exchanges energy with] energy from the ground, water or, ultimately, the sun~~ [a combination of ground and water] for distribution of [energy for] heating, cooling or domestic hot water; that has either a minimum coefficient of performance of three and four-tenths or an [energy] efficiency ratio of sixteen or greater; and that is installed by an accredited installer certified by the international ground source heat pump association."

Page 5, lines 19-25 and Page 6 line 1:

~~E. “As used in this section, "geothermal ground-coupled heat pump" means a reversible refrigerator device that provides space heating, space cooling, domestic hot water, processed hot water, processed chilled water or any other application where hot air, cool air, hot water or chilled water is required and that utilizes ground water or water circulating through pipes buried in the ground as a condenser in the cooling mode and an evaporator in the heating mode.~~

As used in this section, "geothermal ground-coupled heat pump" means a system that exchanges energy with the ground, water or, a combination of ground and water for distribution of heating, cooling or domestic hot water; that has either a minimum coefficient of performance of three and four-tenths or an energy efficiency ratio of sixteen or greater; and that is installed by an accredited installer certified by the international ground source heat pump association.”

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***The Legislative Finance Committee has adopted the following principles to guide responsible and effective tax policy decisions:***

- 1. Adequacy:*** revenue should be adequate to fund government services.
- 2. Efficiency:*** tax base should be as broad as possible to minimize rates and the structure should minimize economic distortion and avoid excessive reliance on any single tax.
- 3. Equity:*** taxes should be fairly applied across similarly situated taxpayers and across taxpayers with different income levels.
- 4. Simplicity:*** taxes should be as simple as possible to encourage compliance and minimize administrative and audit costs.
- 5. Accountability/Transparency:*** Deductions, credits and exemptions should be easy to monitor and evaluate and be subject to periodic review.

***More information about the LFC tax policy principles will soon be available on the LFC website at [www.nmlegis.gov/lcs/lfc](http://www.nmlegis.gov/lcs/lfc)***