

## Delta-Montrose Electric Association

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Program: <http://www.dmea.com/geoex/co-zfacts.htm>

Corporate: <http://www.dmea.com>,



**Ownership:** Rural electric cooperative

**Number of Customers and Service Territory:** Delta-Montrose Electric Association (DMEA) serves 28,000 customers in four southwest Colorado counties.

### Background

Delta-Montrose Rural Power Lines Association was organized in August 1938. DMEA is a private, non-profit cooperative owned by the members it serves. DMEA has a history of developing innovative energy programs that have won praise and recognition at the regional and national level.

“I think DMEA is one of the most innovative coops in the country,” said Peggy Plate, an energy services manager for the Department of Energy’s Western Area Power Administration (WAPA).



### History

**Reasons for program, past/recent activities/programs and or primary drivers.** DMEA developed its GeoExchange program as a way to provide service using the concept of “chauffage” or guaranteeing heating bills. Chauffage is a popular financing plan used in Europe and its intent is to lower energy costs by financing the installation of energy efficient technologies and then recouping the investment from the energy savings from these installations. DMEA took this concept into the single-family residential market a step further than the Europeans in designing its geothermal program.

DMEA’s program is called “CO-Z,” and “the intent to remove the first cost barrier” associated with geothermal heat pump installations, explained Paul Bony, DMEA’s Marketing and Customer Service Manager. “DMEA took the loop lease concept to the next level, through the development of the chauffage concept.”

DMEA viewed this program as a way to target both new construction and existing home (retrofit) markets. Targeting the retrofit market offered a new opportunity to increase GeoExchange installations in DMEA’s service territory, while installations in the new construction market would allow DMEA to reach new members as they moved into its territory.



According to company research, DMEA estimated that forced-air fossil fuel systems accounted for approximately 50% of the total systems in its territory. This represented an attractive target market for geothermal heat pumps as a strategy to convert current gas and propane members to GeoExchange systems.

One senior DMEA staff member explained, the retrofit market made an ideal target market for GeoExchange installations “because the duct work was already in place.” GeoExchange would be positioned as a split-system—offering geothermal heating and cooling with a gas or propane back up heating source.

The Co-op also identified “basic houses” as sites for pilot GeoExchange installations. “We targeted houses that had existing gas furnaces...houses that weren’t really tight,” a DMEA staff member explained. This was done deliberately to determine if it was possible to retrofit existing homes with geothermal systems.

DMEA also wanted to increase GeoExchange installations within the new construction market, so the co-op approached builders to promote this technology. Historically, custom builders and higher-end customers in the new construction market have been an easier market in which to promote new technologies, such as GeoExchange, because the financing costs can be included in the mortgage. It is also often easier to install the necessary equipment as a new home is built.

The Co-Z program has been in continuous development for the past four years, because it was necessary to gather all the energy information required to properly calculate the actual operating costs of geothermal systems. But, the Co-Z program is not like traditional ESCo financing programs, because DMEA does not monitor actual energy consumption. Rather, the cooperative relies on the energy model it created to guarantee the GeoExchange energy consumption.

This program also fits in with the overall corporate strategy of DMEA. “GeoExchange systems support our Board of Directors’ vision of providing a variety of high-quality, affordable energy services to our members,” says Dan McClendon, DMEA’s General Manager.

From an economic point of view, geothermal systems represent high load factor, low peak load impacting kilowatt-hour sales to the cooperative. “We are making more money on kilowatt hour sales and we are recouping our expenses for advertising, sales and installation through an imbedded fee,” Mr. Bony explained.

### ***Relevant Program name and description***

#### **Co-Z Energy**

In the Co-Z program, DMEA pays for the installation of major components of a geothermal heat pump (GeoExchange) system for a homeowner. The program does not include ductwork or other “inside the house” elements. The program originally relied on outdoor split GeoExchange equipment. In 2002 the Co-op expanded its Co-Z offering to include more options including package systems and a loop only payment option.

#### ***Price/Cost to Customer:***

The Co-Z Energy Plan is a monthly service agreement between the customer and DMEA. The plan includes the following elements:

- Custom design of a geothermal system
- Installation of the outdoor portion
- On-going maintenance and repair
- An energy credit rate lock, adjustable in 5 year intervals based on the system’s estimated energy usage.

The Co-Z Energy Credit is intended to cover the majority of the system's estimated energy operating costs averaged over 12 months.

Steve Metheny, Chief Operating Officer, explained, "The GeoExchange system is financed for 50 years on a monthly lease payment that includes equipment maintenance. The lease is about \$66/month for my system and that includes financing the outside unit and the split system duct work." However, the monthly cost is much lower compared to the monthly costs to heat with propane.

Mr. Metheny said, "It costs about \$1,400 a year to heat with propane and that is without any air conditioning compared to the geothermal system that provides heating and air conditioning for about \$320 to \$420 per year."

### ***Dates Offered:***

Pilot efforts began in 1997 and the formal program was launched in September of 1998.

### ***How/Where Marketed:***

DMEA promotes its CO-Z program by building awareness of geothermal systems and creating a culture among geothermal owners.

"People are not exposed to geothermal and they don't understand the benefits. We educate the population to the process, the overall concept," Mr. Bony said.

For example, DMEA has brought out a well-known geothermal expert, Doug Rye, to talk to prospective owners about the benefits that geothermal systems offer, especially in conjunction with building an energy efficient home.

The Co-Z program is also promoted in articles in the cooperative's newsletter, on displays at the annual meeting, and on the website.

DMEA is also creating a "geo culture" among system owners. "Sales is a one-on-one process, but when we hit the hundred mark with installations, then we invited all the geo customers to a dinner... We are building a culture for everyone and using it for future referrals," Mr. Bony said.

The cooperative is also "looking for better ways to streamline the (installation) process and better ways for realtors to understand geothermal systems," Mr. Bony added.

### ***Number of Customer Sign-ups:***

According to DMEA, "There were 500 sales for our program to date year-end of geothermal systems, but that doesn't count sales of geothermal heat pumps in our market by other installers in other markets in Colorado," Mr. Bony said.

"Another market is opening up in Durango, CO and three neighboring utilities are now asking us to work with them to promote GeoExchange in their service area doing something (in geothermal)," Mr. Bony said. This includes Xcel Energy, one of the largest investor owned utilities in the country.

### ***Key Vendors/Partners/Allies:***

DMEA took a unique approach to developing relationships with trade partners. Since there wasn't an infrastructure in place to support a geothermal program, DMEA set out to develop it. The electric cooperative is the owner of a heating and air conditioning company called *Intermountain Energy Services One*, owns a stake in a geothermal heat pump manufacturing company called Co-Energies, and has been providing research, development assistance to a drilling company called *TEI Rock Drilling*.

"We started up our own HVAC company with the goal to control our pricing, quality, customer care... We became profitable this year," Mr. Bony said. *Intermountain Energy Services One* installs and services the geothermal systems sold as part of the CO-Z program.

Despite all the growing pains, DMEA set into motion the elements required to grow a sustainable geothermal market. In that way, DMEA has already distinguished itself from the scores of other utility programs that have offered geothermal programs and achieved limited success.

### ***Key Reasons For Success/Failure:***

Although DMEA has been successful in its geothermal program, technological barriers still exist that hamper market development. For example, DMEA reported manufacturing defects with some of the geothermal systems installed, and problems with the electronic thermostats used.

DMEA's Paul Bony said that sometimes he thinks the manufacturers are losing their enthusiasm for the geothermal market. "The manufacturers are cutting back and have the philosophy of not worrying about the installations. They are getting out of the residential market," he explained.

"Technical support from the equipment manufacturers is way down compared to 10 years ago," he added.

Contributing to the problem of diminished manufacturer support is the growing shortage of skilled geothermal technicians. As Mr. Bony observed, "The average HVAC technician is middle aged and we are hitting the wall with technical talent. We cannot get enough good technicians...there is a shortage of skilled technicians available."

Lastly, DMEA's staff also worries about the relatively low level of awareness of geothermal technology. "We promote the program via word-of-mouth and through our campaigns, but there is still only a 50% awareness of geothermal."

He summed up the reasons for geothermal's continual failure to expand nationwide as this, "There is no long-term philosophy in this market, no long-term investment. Utilities might support it but the utility market is not stabilized...GeoExchange is under funded."

## **LESSONS LEARNED**

DMEA illustrates several critical lessons that are important to understand if a utility wants to develop a successful geothermal program. These lessons include:

- **Think outside the box, literally.** DMEA took a sophisticated, but little used, European financing tool to form the basis of its geothermal “lease” program. Chauffage is not commonly used among utilities, especially rural electric cooperatives, because it requires investment and entails market risk. However, as DMEA has demonstrated, this risk can be managed, through careful modeling, and this risk can be profitable. DMEA estimates that they will net \$700,000 in present value revenues from the first 150 geothermal installations they have so far— a pretty handsome return on a \$200,000 investment.
- **Don’t depend on others to create the geothermal program.** DMEA had all the excuses in the world not to develop and deploy a geothermal program. The manufacturers have taken a step back from the market and so have many utilities. Moreover, there is a critical shortage of skilled technicians. Installers and drillers charge market-busting rates. But DMEA didn’t let any of these obstacles stop them from pursuing the market. Rather, they created the market themselves.

They solved the lack of skilled technicians by creating their own heating and air conditioning company to focus exclusively on the installation of geothermal systems. They are working on new drilling methods, and have invested their own funds in a direct-exchange geothermal system that minimizes the hassle and cost of equipment installation, while opening the market to include small lot homes. In other words, they depended on themselves to make the program successful – with no excuses.

- **Create a “geo culture”.** DMEA also learned the importance of building on previous success. By fostering a sense of community among geothermal heat pump owners, DMEA has developed a powerful internal sales force. This sense of camaraderie is especially effective within a member-owned cooperative, where community ties are strong.

### ***Best Way to Learn of New Developments:***

From the web site, newsletter, and the trade press.

### ***Key Staff Individuals:***

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