

California Energy Commission

**DOCKETED**

**13-IEP-1P**

TN # 70549

APR. 29 2013

# Plumas-Sierra REC GeoExchange Program



**JESSICA NELSON  
MEMBER SERVICES MANAGER  
PLUMAS-SIERRA RURAL ELECTRIC COOPERATIVE  
OCTOBER 2<sup>ND</sup>, 2009**



**PLUMAS-SIERRA REC**  
Electricity • Telecommunications

Your Touchstone Energy® Cooperative 

# Overview



- **PSREC PROGRAM HISTORY & ACCOMPLISHMENTS**
- **PSREC MEMBER BENEFITS**
- **LOOP LEASE CONCEPT**
- **IMPORTANT PROGRAM DETAILS**
- **PSREC BENEFITS**
- **NON-ENERGY BENEFITS**
- **PROGRAM CHALLENGES & LESSONS LEARNED**
- **FUTURE DIRECTION OF PSREC PROGRAM...**

# PSREC Program History & Accomplishments



- PSREC GeoExchange Program began pilot program in 1993 and expanded program 1997
- Robust network of HVAC, driller and excavator contractors
- 2442 Tons of GHP installed
- One of the highest densities of GHP installations, per capita, in the country: 453 installs/6,500 members

# PSREC Member Benefits

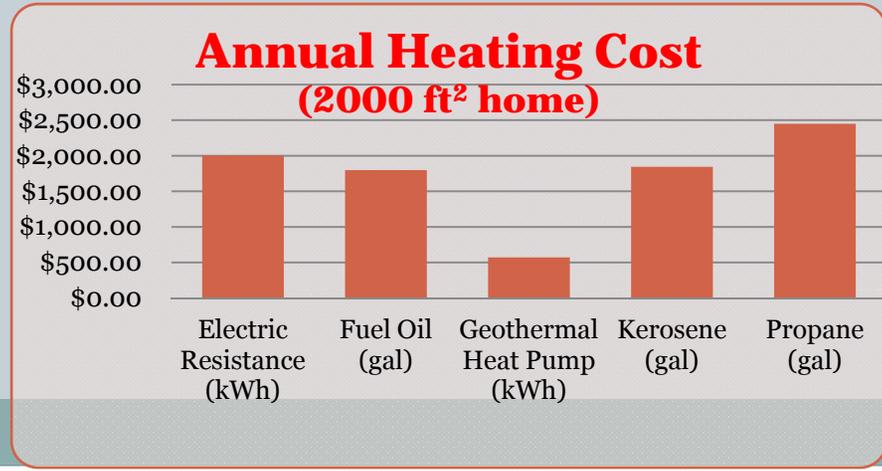


- High efficiency heating and cooling technology
- Rebates and incentives
- Well-established contractor network
- Loop Lease program

# Comparative Energy Costs



2000ft <sup>2</sup> Home (60 million Btu annually)				
Heat Type (unit)	Current Prices per unit	Cost Per Million Btu	Annual Heating Price	Annual Savings from Geoexchange
Electric Resistance (kWh)	\$0.1140	\$33.40	\$2,004.12	\$1,431.51
Fuel Oil (gal)	\$3.86	\$29.96	\$1,797.42	\$1,224.81
Geothermal Heat Pump (kWh)	\$0.1140	\$9.54	\$572.61	NA
Kerosene (gal)	\$3.86	\$30.76	\$1,845.33	\$1,272.72
Propane (gal)	\$3.43	\$40.82	\$2,449.47	\$1,876.86



# Loop Lease Concept



- 30-year INTEREST FREE lease on the exterior loops, maximum \$15,000
- Does not include the cost of the interior unit or ducting modification
- Non-transferable
- Loop lease is only available to members who utilize certified contractors
- Fixed lease payment is added to monthly electric bill

# Monthly Loop Lease Payments



## Horizontal Installation

Heat Exchanger Size	Monthly Price (360 months)
3 ton	\$12.45
4 ton	\$14.95
5 ton	\$17.95
6 ton	\$20.45
7 ton	\$22.95
8 ton	\$25.95
9 ton	\$28.95
10 ton	\$31.95

## Vertical Installation

Heat Exchanger Size	Monthly Price (360 months)
3 ton	\$24.95
4 ton	\$29.95
5 ton	\$36.95
6 ton	\$41.65

# Contracts, Permits and Important Program Details



- Letter of Intent
- Lease & License
- File Short Form Deeds of Trust
- County permit requirements
- General Liability Insurance and Workers Comp
- Require applicable contractors license
- Develop “Efficient Operation” standards
- Call Before You Dig (Dial 811)

# PSREC Benefits



- Load building program
- Discourages fuel switching
- Efficient use of our distribution system
- Improved load factor
- Public Image

# Non-Energy Benefits



- “Green niche” for building contractors
- Added value for real estate
- Local employment
- Increased comfort
- Decreased maintenance
- Less local emissions from fossil fuels
- Environment

# Program Challenges and Lessons Learned



- Know your geology!
- Climate and seasonal considerations
- Locate qualified drillers
- County regulation
- Retrofits are more difficult
- Education on optimal system operation
- Cap Loop Lease maximum
- Manage expectations
- Eliminate excessive incentives
- Limit your liability!
- Limitation in cash available for loop lease funding

# Future Direction of PSREC Program



- Loans from RUS?
- Evaluating the interest rate?
- Green building program?

# Thank you!



**FOR MORE INFORMATION:**

**Plumas-Sierra REC**

**[www.psrec.coop](http://www.psrec.coop)**

**Jessica Nelson, Member Services Manager**

**(530) 832-4261 (ext. 6004)**

**[jnelson@psrec.coop](mailto:jnelson@psrec.coop)**