



# The Utility-Owned Geothermal Loop Program

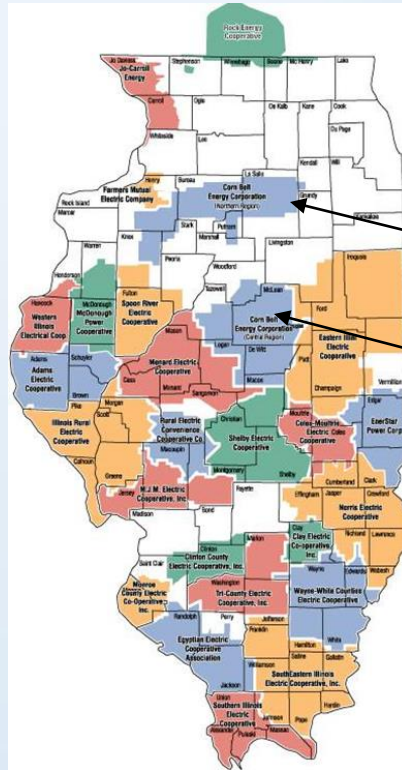
Michael Volker  
Corn Belt Energy Corporation

# Who is Corn Belt Energy?

- Formed in 1938
- 85 employees
- 35,000 members in 17 counties
- Over 5,000 miles of line
- Suburban/rural mix



# Illinois Electric Cooperatives



Northern Region

Central Region



# Why Utility Owned?

- Where does Corn Belt Energy's service end?
- Why go past the electric meter?  
(economies of scope)
- Services past the meter: Lighting, Energy Efficiency Services, Geothermal Loops



# Why Encourage Geothermal?

## Societal Perspective

- Greenest space-heating alternative
  - Net carbon impact benefit
  - “Renewable”
- Encourages efficient use of resources
- Tried and true technology



# Why Encourage Geothermal?

## Utility Perspective

- Reduces summer peak demand
- Valley fill with non-summer sales
- More efficient use of grid
- Profitable
- Customer satisfaction



# Why Encourage Geothermal?

## Customer Perspective

- Very comfortable – 100(?) + degrees
- Very green space conditioning
- Reliable and long-lasting
- Cost effective



# Benefits to Member / Society

- Cost Effective

| <b>Propane</b>                              |                            |  |   |                 |                 |
|---|----------------------------|--|---|-----------------|-----------------|
| Furnace efficiency                          | BTUs/gallon                | Actual number of BTUs received from 1 gallon | Gallons needed to get 1 million BTUs (1MMBTU) | Cost per gallon | Cost per 1MMBTU |
| 95.00%                                      | 90,000                     | 85,500                                       | 11.70   | \$2.00          | \$23.39         |
| <b>Natural Gas</b>                          |                            |  |   |                 |                 |
| Furnace efficiency                          | BTUs/therm                 | Actual number of BTUs received from 1 therm  | Gallons needed to get 1 million BTUs (1MMBTU) | Cost per therm  | Cost per 1MMBTU |
| 95.00%                                      | 100,000                    | 95,000                                       | 10.53   | \$0.75          | \$7.89          |
| <b>Electricity</b>                          |                            |  |   |                 |                 |
| Electric ground source heat pump efficiency | BTUs/kWh (resistance heat) | Actual number of BTUs received from 1 kWh    | kWh needed to get 1 million BTUs (1MMBTU)     | Cost per kWh    | Cost per 1MMBTU |
| 300.00%                                     | 3,414                      | 10,242                                       | 97.64   | \$0.07500       | \$7.32          |





# Corn Belt Energy Geothermal Loop Program – Parameters\*

- CBE owns and pays for the loop
  - New or existing homes
  - Easement
  - This will be a normal utility service
- Connection fee on utility bill
  - Estimate \$7/ton/month
  - Discounted winter heating rate
  - Customer may buy loop from CBE

**\* Not Yet Board Approved!**



# Corn Belt Energy Geothermal Loop Program – Parameters\*

- CBE will NOT install loops
  - Partner with contractors
- Securitization
  - “Cloud” on the title
  - Informational Lien if property changes hands

**\* Not Yet Board Approved**



# Why Electric Cooperatives?

- What makes a coop a good fit?
  - Utilities: most capital intensive industry
    - Loops are capital intensive
  - Utility assets – long lasting (37 years!)
  - Access to low cost capital
    - Yes we are a bank
  - Rural nature of most coops
    - Propane is not cost-effective



# Why aren't there more installs?

- Assumption of well performing markets
  - Capital costs are relatively small part of total cost of service
  - Results in a barrier to entry
  - Consumers don't have access to capital
- Utility owned loops tear down barriers
  - Capital cost issue removed



# How to Market the Program

## The 4 P's

- Product: Quality network of installers
- Price: Connect fee just right
- Place: Subdivisions? Retrofits?
- Promotion: Contractors/Trade Allies, target market to rural areas



# Next Steps

- Board Approval
- Meet with manufacturers, HVAC and loop installers, builders, etc.
- Promotional materials
- Drill baby, drill!



# Q&A

Michael Volker

[Michael.Volker@cornbeltenergy.com](mailto:Michael.Volker@cornbeltenergy.com)

Justin Stuva

[Justin.stuva@cornbeltenergy.com](mailto:Justin.stuva@cornbeltenergy.com)



