GVEA Quick Facts

- Incorporated in 1946
- 30,700+ members, 41,700 meters
- 14.5 customers per mile of line, 2,885 miles of line
- 2,327 square mile territory
- Record low -79°F, high +99°F, year round average 22°F
- Five generation sites
  - North Pole – Combined Cycle Gas Turbine
  - Zhender – Gas Turbine
  - Delta – Gas Turbine
  - Healy – Coal Fired
  - Bradley Lake – Hydro
- World’s most powerful UPS – BESS – 46 MW battery
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So the first question was: Do we even have wind resources in the Interior? A study was commissioned with TrueWind to compare topology with high wind data.

- This study suggested that wind resources are indeed viable in the interior.

We set about selecting test locations with the aid of a meteorologist Rich Simon of the WinDots group.
GVEA’s Met Towers

The first of nine towers, one of a pair on Murphy Dome, 17 miles from Fairbanks.
Risk Mitigation

- Up front due diligence reduces contingency cost additions later.
  - Wind resource multi-year multi-site logging
  - Land access and lease/own determinations
  - Avian issues
  - Environmental / archeological research
  - Geotechnical investigation
  - Involvement with the local people
  - Logistics – road and rail access
  - FAA, DNR and other agency interaction
Things we found

- Both at Eva Creek and Murphy Dome we have approximately a 32% net capacity factor.
- Murphy Dome needs 17 miles of line (we do have ROW) and has a military radar site within a mile.
- Eva Creek straddles the Intertie, has reasonable existing roads, and is miles away from any residences, but no road bridge. Railroad access same side of Nenana River.
- Zero correlation to Eva and Murphy winds.
- 2 – 4% correlation to Murphy and Fairbanks International.
- Both sites are above 2,000 feet elevation and benefit from the temperature inversion.
- When it is windy the wind tends to be warm, relatively (GE 1.5 MW wind turbine low temp cut-off is -22F.)
To Weld or Not to Weld…

Eva Creek, Site 202, Wind Power Rose, September 2004-August 2005
Financial approaches

- There are four primary ways for an RUS coop to build a wind generation site:
  - Conventional/RUS loans and do it yourself
  - CREB (zero interest bonds for rural coops)
  - BOT – Build / Own / Transfer
    - New interest from independent investors to fund BOT/BOO.
  - Pursue grants for some percentage of total cost

- Most rural coops have aging infrastructure and have a significant challenge handling the capital projections for the next decade or so.
Renewables Availability
Same Deal with Wind
Focus 2007 and on

- Complete the Wind Integration Study to determine the capacity of the grid to accommodate wind generation.
- Plan the scope of the avian and other studies.
- Track new developments such as the General Compression “dispatchable” wind technologies.
- Form associations with construction groups and manufacturers.
- Work through all the time consuming risk mitigation elements of the project so when the Board of Directors sees fit to go with a wind generation project it can be an informed decision, lowest cost and easily fast tracked.
Thank you, you have been a wonderful audience….

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