NEA Investment in Naknek Geothermal Project
January 2012

Why Not Diesel?

- Volatile and unpredictable fuel pricing
- Graph: Fuel Costs compared to Naknek Geothermal Project Costs 2008 – 2011
- Regulatory costs
- New energy - new paradigm - clean & renewable
- Value-add trends in the Bristol Bay seafood industry
- Increased load = increased fuel requirement

10 Years Researching Alternatives to Diesel Generation

- Coal Bed Methane
- Tidal
- Wind
- Geothermal

Geothermal Research and Reconnaissance 1999 – 2009 $3M

- Geological, Geochemical & Geophysical Surveys
  - Shallow Boreholes
  - 2-meter temperature probes
  - 3-D Seismic
  - Aerial Magnetics
  - Ground Magnetics
  - Magnetotellurics

Spring 2009

- Budgeting & Planning for Drilling Program
- Select Contractors, Engineers, Consultants & Suppliers
- Purchase Rig #7 **$11.5M (with improvements)**
  - Why buy a drilling rig?
    - Naknek Geothermal Project requires multi-well production field
    - High costs of mobilization and demobilization to remote area
    - High cost of drilling operation and standby day-rates
    - Retained value of rig ownership
- Survey Site and Design Road, Pad and Storage Cells

Summer - Fall 2009

- Barge Rig #7, Materials and Equipment to Naknek, Alaska
  - Northland Services contract for all ocean freight
  - More than 13 million pounds of equipment and supplies, including casing, cement, mud, heavy equipment, mixing tanks, and Rig #7
  - Everything required to commence drilling arrives in Naknek on time
  - Bristol Bay Borough dock crew drops top drive on the dock after it is off-loaded from barge
- Glacier Construction Contract to Build Road, Pads, Cells and Monitoring Wells

Naknek-G #1 Drilling Operations $19.3M

- DNR issued Geothermal Drilling Permit June 2009.
- AOGCC revised the Drilling Permit for Naknek-G #1 August 2009, without regarding geothermal techniques for underbalanced drilling – drilling the first well as an exploratory oil and gas well resulted in unanticipated regulatory compliance cost overruns
- Spud August 16, 2009
- Temperature downhole 9,000' – Baker Hughes survey 290 degrees.
- BJ Services calculated estimated temperatures based on logging and termperatures by drilling at approximately 350 degrees.

- Drilling Naknek-G #1 Sidetrack 1 began January 5, 2010
- Lost Naknek-G #1 Sidetrack 1 and suspended drilling operations January 22, 2010
- Drilling Naknek-G #1 Sidetrack 2 began February 8, 2010
- Lost BHA while drilling Sidetrack 2 April 6, 2010
- Fired company man April 8, 2010

Naknek-G #1 Cleaning & Flowing Operations

- First attempt commenced June 9, 2010
- Ended August 9, 2010 with mechanical failure
- Some of the heavy mud used to drill through production zone removed from fractures
- Temperatures reached 225°F - 250°F consistently with a single point measurement of 300°F at the flow line on August 6, 2010
- Thermal gradient based on Measurement While Drilling tools (MWD) higher than DNR estimates
- Recharge rate increased substantially as cleaning progressed
- Air compression system purchased from Vince Carlyle of Advantage Equipment in Midland, Texas and shipped to Naknek in January 2011
- Second attempt commenced February 18, 2011 using newly purchased air package
- Geothermal consultants on site to supervise flow and temperature tests March 2011
- Formation immediately surrounding well plugged with heavy mud
- Geothermal experts concur that based MWD data regarding inflow/outflow temperature, geologic logging, permeability and drilling fluid loss indicate a hydrothermal system capable of generating electricity.

Bankruptcy Hiatus - Events Leading to Voluntary Filing for Chapter 11 Reorganization

- Line of Credit reduced from $15M to $10M
- Long-term debt on the purchase of Rig #7 reduced from $11.5M to $8.5M
- Congressionally Designated Program (CDP) grants delayed and requiring matching funds
- Environmental Assessment (EA) required before the release of DOE's EGS competitive grant funding
- Co-Bank called in fuel loan requiring Chapter 11 protection for NEA and other creditors
- Rig #7 maintenance and improvements (winterization for year-round operations) performed while waiting for funding and larger capacity air compression system (August 10 2010 – January 2011)
- $.09 rate increase to NEA consumers May 1, 2010 to comply with National Rural Utilities Cooperative Finance Corporation debt covenants and demonstrate ability to cover debt service obligations

Preparations for Naknek-G #2

- AOGCC Drilling Permit for Naknek-G #2 issued mid 2011.
- Casing, cement, drilling chemicals, and equipment delivered to the site in 2009
- Determine drilling parameters for Naknek-G #2 with GeothermEx consultants

NEA Geothermal LLC

- Business Plan and Financial Plan completed in August 2010
- 10-year payback start-up capitalization - $500,000 annual dividends to NEA
- Opportunities for putting NEA Rig #7 to work after completion of the Pikes Ridge field include geothermal prospects at Mt. Spurr, Akutan, and US Air Force bases in the Aleutians; plus oil and gas plays in Alaska

NEA Consumer Support for Naknek Geothermal Project

- Naknek Electric Association voluntarily filed for Chapter 11 to protect the cooperative's assets, restructure debt, and continue the geothermal project
- Under bankruptcy protection NEA is eligible for geothermal project financing

- Board and management moved forward on the project and have focused on tasks that will bring geothermal energy online as soon as possible
- NEA held a Special Membership Meeting December 4, 2010 to vote on changing the Association's Articles of Incorporation debt limit language allowing the debt limit to be set by the Board of Directors through a duly enacted resolution
- The language reflected the standard among rural cooperatives for setting debt limits and was recommended by the Rural Utilities Service (RUS)
- A two-thirds (66%) majority vote was required to change Articles of Incorporation in the state and with surprising membership participation in the vote Amendment 1 was affirmed
- The State of Alaska has approved and recorded the amendment to NEA's Articles of Incorporation
- Amendment 1 Balloting Results:

Valid Ballots Cast	289	100%
"Yes" Votes	214	74%
"No" Votes	75	26%

- Board of Directors ratified NEA Resolution 2010-10 setting the cooperative's debt limit at $75M

Current Bankruptcy Status

- NEA filed Chapter 11 Reorganization September 30, 2010
- U.S. Bankruptcy Court hearing in December 2011 determined that NEA would submit a revised "diesel only" Plan of Reorganization, with a hearing on April 27, 2012.
- The judge will determine if NEA's Plan of Reorganization is in compliance with the U.S. Bankruptcy Code and creditors will decide if they agree to the plan
- If creditors agree unanimously to the terms of the plan then it can be confirmed and becomes binding; specifying the treatment of debts and operation of the utility for the duration of the plan
- The plan's payment schedule may be amended if resource confirmation tasks are funded and the geothermal project moves forward with federal and state renewable energy funding both authorized and prospective
- NEA's creditors understand that proceeding with geothermal resource confirmation, and the approval of the NEA's 2010-2014 Generation Construction Work Plan and loan guarantee by Rural Utilities Service (RUS) is in their best interests

Federal Grant Funding Status

- 2009-2010 Congressionally Directed Project funding (CDP) $5.35M ($2.86M reimbursed)
- $2.5M CDP funds remain (NEA geothermal project management will be meeting with DOE project managers in the next week to continue cost share discussion)
- January 2009 DOE – Energy Efficiency and Renewable Energy (EERE) competitively awarded $12.3M Enhanced Geothermal System Demonstration (EGS) Project funding
- Environmental Assessment completed and signed May 2010..
- NEA reimbursed $150,000 for EGS tasks completed to date; over $12M remains and will be released after NEA emerges from bankruptcy, cost share requirements are determined
- NEA geothermal project management has submitted cost share documentation and remains confident that funds will be made available for crucial resource confirmation tasks
- NEA geothermal project management, DOE project managers, DOE technical team, and Sandia National Laboratory scientists to formulate a plan forward, and revise tasks and Statement of Project Objectives (SOPO) to mitigate formation and heavy mud issues and move the project past the "go-no-go" decision point (resource confirmation
- Experts concur that Naknek-G #1 Sidetrack 3 is the preferred action to obtain resource confirmation

Rural Utilities Service (RUS) Funding – Guaranteed Loan – Catch 22

- RUS Environmental Review (ER) completed and signed in June 2011.
- NEA's guaranteed loan application will be complete when temperature and flow data collected during Naknek-G #1 resource confirmation activities are included in the financial forecast model

- Only after resource confirmation that will substantiate the worst case scenario in NEA's financial forecast will Rural Utilities Service (RUS) approve NEA's 2010-2014 Generation Construction Plan and loan guarantee application
- Senators Murkowski and Begich as well as Representative Young support NEA's project and have communicated this to key staff at RUS, DOE, and the State of Alaska

State Funding – Catch 22

- $1.25M awarded and received in September and October 2010
- Applications are under development for capital project funding consideration through the legislature and the Governor's Office

Resource Confirmation Tasks - Naknek-G #1 Sidetrack 3 $3.2M

- NEA geothermal project management, DOE project managers, DOE technical team, and Sandia National Laboratory scientist to determine best way to mitigate formation/heavy mud issues
- Experts concur that Naknek-G #1 Sidetrack 3 is the preferred action
  - Naknek-G #1 Sidetrack 3 Budget
    - Equipment **$55,500**
    - Supplies **$631,900**
    - Rig Hands & Direct Rig Costs **$708,734**
    - Contractual **$1,075,000**
    - Transportation **$450,000**
    - Contingency (10%) **$292,113**

Bristol Bay's Natural Renewable Resource Base

- Trends in the Salmon Industry
- In 2010 Sockeye Salmon accounted for 92% of the total Bristol Bay salmon harvest, 95% in 2009, and 94% in 2008
- In 2010 67% of the total Bristol Bay sockeye salmon harvest was processed in Naknek, Alaska, 58% in 2009, and 64% in 2008
- In 2010 the value of Sockeye Salmon harvest equaled $148.7M, in 2009 $127.6M, and in 2008 $111.4M
- Vacuum pack fillets and other value add activities are increasing among processors in the Bay which in turn increase ex-vessel value, demand, and energy requirements
- As the Bristol Bay floating processing fleet ages and corresponding operation and maintenance costs increase floating processing capacity will come on-shore
- NEA will realize increased sales if they can meet the demand
- Processors need firm and reliable power – geothermal energy could meet that demand without any increase in environmental liability or exposure to oil price volatility
- Trident Seafoods will build a $30M fish waste processor plant in Naknek, Alaska
- Bristol Bay Salmon Industry Workforce Contributions
  - 13% of Alaska's processing jobs
  - 26.1% of Alaska's harvesting jobs
  - 19.9% of all Alaska fishery jobs

NEA's Current Debt Load

Naknek-G #1	$23.5M
Long-Term debt for the purchase of Rig #7	$ 8.5M
Upgrades to Rig #7	$ 3M
CFC Fuel Loan / DIP Loan	$ 6.5M
Long-Term RUS Existing Loan	$ 3M
TOTAL	**$44.5M**