GL00803

MAGIC RESOURCE INVESTORS

COST SHARE PROPOSAL TO DOE

USER-COUPLED CONFIRMATION DRILLING PROGRAM

MARCH 13, 1981

DOE/MRI COST SHARE STRATEGY

- Current strategy based on geothermal source temperature and flow rate

- Proposed strategy based on the value of the energy provided by the source for the defined end use

PROPOSED STRATEGY

- Define the cost of a conventional energy source (natural gas) as the baseline for an unsuccessful well

- Define the energy cost from the geothermal source necessary to attract an alcohol plant enterprise as a completely successful well

- Base the degree of success for the project on the final energy cost

DEFINE CONVENTIONAL ENERGY COST = baseline for unsuccessful well

- Assumptions
  - Natural Gas Boiler Cost = $120,000[a]
  - Interest Rate = 18%[b]
  - Finance Period = 10 years[b]
  - Natural Gas Cost = $4.00/$10^6$ Btu[c]
  - Boiler Efficiency = 82.5%[d]
  - Alcohol Process Thermal Energy Requirements = 65,000 Btu[e]
  - Alcohol Plant Capacity = 2 million gallons/year[b]
- Annual Energy Requirement for Alcohol Production = 130,000 million Btu/year
- Amortized Capital Cost (120,000) = $26,700/year
- Amortized Capital Cost/Annual Energy = $0.21/million Btu
- Natural Gas Cost = 4.85/million Btu (taking efficiency into account)
- Total Energy Cost = $5.06/million Btu = totally unsuccessful cost share

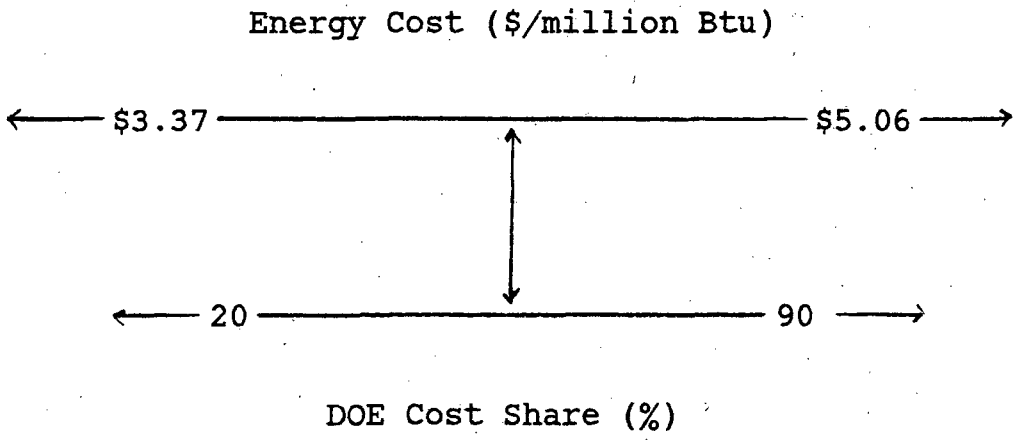
[a] Richardson Rapid System
[b] Client
[c] Intermountain Gas, LV-1
[d] Chemical Engineering
[e] Bohler Brothers of America

DEFINE ATTRACTIVE ENERGY COST

- One-third reduction from conventional energy cost is necessary to attract an alcohol enterprise

- $3.37 per million Btu

DEGREE OF PROJECT SUCCESS (DOE Cost Share)



SENARIO I: ASSUMPTIONS

- o 240°F
- o 600 gpm
- o 1,000 feet well (assumed cost is linear)
- o DOE cost share = 36%

SENARIO I: ECONOMIC CALCULATIONS

- Total Investor Capital Cost

- Well Cost = ($400,000)(.64)	=	$ 256,000
- Ancillary Cost	=	290,000
- MTI Equipment Cost	=	900,000
		$1,446,000

  - Amortized Cost (18%, 10 years) $322,500
  - O&M Cost (5% MTI Cost) 45,000
  - Electrical Energy (COP = 6.7, $.025/kW) 141,000

- Total Annual Investor Cost $508,500
- Cost/Million Btu $3.91

SENARIO II: ASSUMPTIONS

- 240°F
- 600 gpm
- 3,000 feet
- DOE cost share = 36%

SENARIO II: ECONOMIC CALCULATIONS

- Total Investor Capital Cost

- Well Cost = ($1,200,000)(.64)	=	$ 768,000
- Ancillary Well Cost	=	290,000
- MTI Equipment Cost	=	900,000
		$1,958,000

- Amortized Cost (18%, 10 years) $436,600
- O&M Cost (5%) 45,000
- Electrical Energy (COP 6.7, $.025/kW) 141,000

- Total Annual Investor Cost $622,600
- Cost/Million Btu $4.79

REVISED SENARIO I

- o 240°F
- o 600 gpm
- o 1,000 feet
- o DOE cost share = 40%

o Total Investor Cost	=	$1,430,000
o Cost/Million Btu	=	$3.88
$3.88	=	41% DOE cost share

REVISED SENARIO II

- o 240°F
- o 600 gpm
- o 3,000 feet
- o DOE cost share = 60%

o Total Investor Cost	=	$1,770,000
o Cost/Million Btu	=	$4.30
$4.30	=	59% DOE cost share

DOE Stake

°F	400gpm	600gpm
285	22%	20%
275		25%
260		40%
220	90%	85%
210	90%	90%