MAGIC RESOURCE INVESTORS

COST SHARE PROPOSAL TO DOE

USER-COUPLED CONFIRMATION DRILLING PROGRAM

MARCH, 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

- 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 = $26,700/year
- Amortized Capital Cost/Annual Energy = $0.21/million Btu
- Natural Gas Cost = 4.85/million Btu
- Total Energy Cost = $5.06/million Btu

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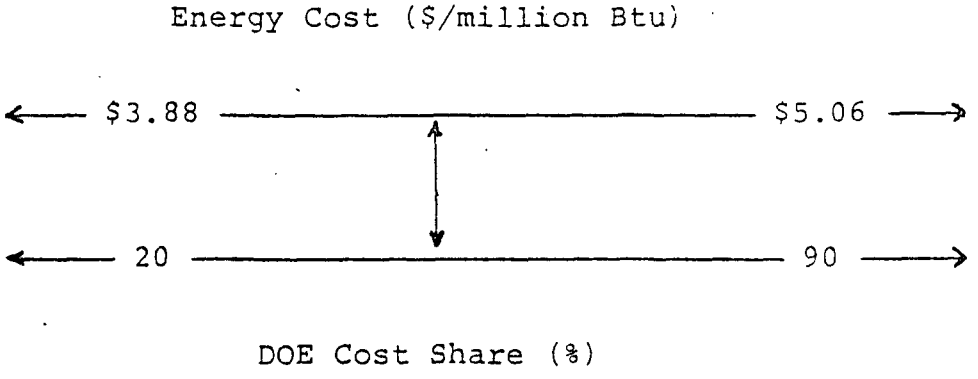
[a]Richardson Rapid System
[b]Client
[c]Intermountain Gas, LV-1
[d]Chemical Engineering
[e]Bohler Brothers of America

DEFINE ATTRACTIVE ENERGY COST

- Attractive Energy Cost = $3.88/million Btu
- Cost results in a DOE share of 40 percent at 260° F. and 600 GPM

DEGREE OF PROJECT SUCCESS (DOE Cost Share)



DERIVATION OF COST SHARE MATRIX

- o Assumptions
  - 260° F.
  - 600 GPM
  - 3000 Ft. Well (Assumed in all cases)

1. Assume an MRI Cost Share
   Let MRI Share = 60%

2. Calculate Total Capital Cost

o Well Cost = ($1,031,000)[1](.6)	= $	618,600
o Ancillary Cost[2]	=	290,000
o MTI Equipment Cost[3]	=	870,000
		$1,778,600

3. Calculate Annual Cost

o Amortized Capital Cost (18%, 10 Yr.)	$ 395,738
o Maintenance Cost (5% MRI)	43,500
o Electricity Cost (1.3×10^{11} Btu[4], COP = 8.72[3], 1 kw = $.025)	109,202
	$ 548,440

4. Calculate Cost Per Million Btu (÷ 130,000) $4.22

5. Determine Due Cost Share On Linear Scale 40%

6. Repeat Steps 1-5 Until MRI Share + DOE Share = 100%

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[1]Per DOE Proposal
[2]Per MRI
[3]See MTI Cost Chart
[4]See Conventional Energy Cost

MTI COST AND PERFORMANCE CHART

400 GPM

Temperature	Equipment Cost	COP
210	$2,360,000	3.68
220	1,960,000	3.94
230	1,840,000	4.29
240	1,510,000	4.65
250	1,290,000	5.13
260	1,030,000	5.71
270	980,000	6.36
280	880,000	7.17
290	875,000	8.18

500 GPM

210	1,835,000	4.20
220	1,510,000	4.59
230	1,290,000	5.06
240	1,285,000	5.63
250	980,000	6.26
260	880,000	7.25
270	875,000	8.29
280	870,000	9.66
290	490,000	11.92

MTI COST AND PERFORMANCE CHART (continued)

600 GPM

Temperature	Equipment Cost	COP
210	$1,295,000	4.68
220	1,290,000	5.16
230	985,000	5.75
240	980,000	6.50
250	875,000	7.46
260	870,000	8.72
270	865,000	10.23
280	455,000	12.82
290	445,000	16.92

DOE COST SHARE PLAN

Geothermal Water Temperature	Flow Rate, Gallons Per Minute		
	400	500	600
290	42	20	20
280	46	38	20
270	56	42	36
260	63	46	40
250	83	57	44
240	90	78	55
230	90	83	59
220	90	90	83
210	90	90	87