# GL01407



Department of Energy Bonneville Power Administration P.O. Box 3621 Portland, Oregon 97208

PRT In reply refer to:

COPIES. SCHULTZ KNUTH SEP 1 5 1978 SIMPSON RAMSTHALER GERTICH MIKE WRIGHT -UURI OFFICE OF THE ADMINISTRATOR STAN WARD -

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1978 SEP 7

Mr. Joe Hanny EG&G Idaho, Inc. P.O. Box 1625, UPD Idaho Falls, Idaho 83401

Dear Mr. Hanny:

The enclosed answers to your questionnaire are in response to an August 14, 1978, request by Mr. Clayton Nichols of the DOE-Idaho Operations Office. The questionnaire is associated with the Regional Hydrothermal Commercialization Plan--Rocky Mountain Basin and Range Region of July 14, 1978, by the DOE-IF and your company.

We have a few comments about the Plan. These comments are related to our marketing area which includes primarily Oregon, Washington, Idaho, and western Montana. Small portions of California, Nevada, Utah, and Wyoming are also in our service area.

BPA is firmly committed to the development of alternative and renewable resources, including geothermal. We are ready to assist in these developments to the extent that we can. Under our present authorization, this is limited primarily to assisting in the marketing of the electrical energy, transmission, and, subject to operating limitations, providing service such as storage and loadshaping. We are participating with the Idaho Falls DOE office in the Raft River Geothermal Project and have offered our assistance in the marketing of the energy, transmission over the Federal System, design, equipment loans, etc. If the regional power purchase legislation now before Congress passes, BPA could have increased authority and involvement in the project.

Your Plan is a necessary survey of geothermal generation potential, but some of the contents might be a detriment to other alternative or renewable resources being investigated in the Pacific Northwest, including wind, solar, biomass, and cogeneration. The overly optimistic statements in your Plan as to costs and potential installations may lead the layman to believe that geothermal is the primary alternative. The following comments relate to the Introduction portion of the Plan:

Letter to Mr. Joe Hanny, Subject: Questionnaire Regarding Actual or Potential Initiatives Designed to Speed Commercialization of Hydrothermal Energy

- 1. The creation of the Rocky Mountain Basin Range Region is not consistent with the regional structure established for the Federal Geothermal Energy Program. Region 3 of the Federal Geothermal Energy Program is consistent with the BPA marketing area. This difference in regions is confusing, especially since DOE is involved in both programs.
- 2. Under the paragraph on high-grade reservoirs, the sentence, "These systems can provide cost-competitive electrical power under current economic and technical conditions" is suspect. This sentence should probably be qualified since we know of no proof for this statement. On the contrary, most reports we have reviewed have speculative costs.
- 3. Under the paragraph on medium-to-high grade reservoirs, the sentence, ". . . may be expected to be found that could provide cost competitive electrical power with improved technology and rising fossil fuel costs" needs reexamination. This sentence also appears to be too positive considering the speculative nature of reservoir prospecting.
- 4. Table I shows 1000 MW of implied high-grade resources in Idaho. The method of presentation in the table implies that the values are firm, whereas we believe they are based on estimates.

We appreciate the opportunity to review this document. When a similar report evaluating the area including Oregon and Washington is available, we would appreciate receiving a copy for review.

Sincerely,

Administrator

Enclosure: Questionnaire

cc:

Jack Salisbury, DOE - Washington, D.C. Clayton Nichols, DOE - Idaho Falls, Idaho

	<u>Initiatives</u>		`
1. Collective planning entities, attempting has the active support	to develop a region	nal commercialization	
(Check one)Terrible idea	Undesirable	Desirable	X Great idea
Comments:			
<ol><li>Industry-coupled,</li></ol>	cost-shared drill	ing to confirm new r	eservoirs.
Terrible idea	Undesirable	X _Desirable	Great idea
Comments: (If desirated Large enough to detail		gram would you recom nd duration of each p	*
3. Publication of da- generation of case st	ta acquired under udies of different	the Industry-Coupled types of reservoirs	Program and the
Terrible idea _	Undesirable	<u>X</u> Desirable	Great idea
Comments:	•		
4. 50 MWe demonstrat	ion plant at the Va	alles Caldera.	
Terrible idea	Undesirable	X Desirable	Great idea
Comments: (If desirate plants would you record		what kind of additio	nal demonstration

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.	
Terrible ideaUndesirableX _DesirableGreat idea	
Comments: (If desirable, prioritize.)	
6. Support for development of wellhead (5-10MWe) generators.	
Terrible ideaUndesirableX DesirableGreat idea	
Comments:	
7. Loan guaranty program.	
Comments:	
8. Reservoir insurance.	
Terrible ideaUndesirableXDesirableGreat idea	
Comments:	
9. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirableX_DesirableGreat idea	
Comments:	
•	
10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.	
Terrible ideaUndesirableX_DesirableGreat idea	
Comments:	

<ul> <li>11. User assistance for guidance on resource pote</li> </ul>				initial
Terrible idea _	Undesirable	χ	Desirable	Great idea
Comments:				
12. State-coupled progra moderate-temperature reso				low-and
Terrible idea	Undesirable		Desirable	X _Great idea
Comments:		,	•	•
13. Further support of d region.	irect heat applica	ations d	emonstratio	ns in the
Terrible idea	Undesirable	X	Desirable	Great idea
Comments: (If desirable,	how many per stat	te?)		
			•	
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Name May tolken				•
Sterling Munro, Ad Bonneville Power A			•	
' Portland, Oregon				

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Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, Idaho 83401

August 14, 1978

Dear

The Division of Geothermal Energy recently mailed a copy of the Rocky Mountain Basin and Range Regional Hydrothermal Commercialization Plan to you for your information and use. The same document was distributed at the annual Geothermal Resources Council meeting held during July at Hilo, Hawaii. The questionnaire attached to this letter was used at Hilo to obtain input for continued participative planning of the DOE effort within the region. The responses to the questions were interesting and helpful. After reviewing these responses, we felt that a larger sample would provide additional information to develop an expanded basis for continued support or rejection of various components of the DOE-planned effort. The questionnaire relates to DOE involvement in accelerating the use of hydrothermal energy within the region. The questions are selected primarily from material contained in Section VI of the commercialization plan.

We would appreciate receiving your response to the thirteen questions on the attachment, and any other comments you may wish to make. If possible, we would like to receive your response by September 5, 1978. Please return questionnaires to Joe Hanny, EG&G Idaho, Inc., P.O. Box 1625, UPD, Idaho Falls, Idaho 83401.

Thank you very much for your cooperation and interest.

Sincerely,

Clayton Nichols Assistant Director for Geothermal Energy

Attachment: As stated



OR

# QUESTIONNAIRE

the desirability of these initiatives so that we can make sure that our
program is truly responsive to the Region's needs.
<u>Initiatives</u>
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>
(Check one)Terrible ideaUndesirableXDesirableGreat idea
comments: I Question a "something for everyone" policy. The above parties have different goals
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible idea Undesirable Desirable $\chi$ Great idea
comments: (If desirable, what size program would you recommend?) As large as necessary as long as there are no tax incention or depletion allowences (nor then one way to skin a cat)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableX_Great idea
Comments: The more information available concerning success and failure the more the state of the art will be perfected.
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirable
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?) Only as many as accessary to convince private money lending institutions that such a plant would be a fine investment

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5. Support of R&D to dereservoir stimulation to conversion equipment.			
Terrible idea	Undesirable	Desirable	K Great idea
Comments: (If desirable place exploration conjugate first	, prioritize.) Beconstant and closely followed	ng in exploration of advanced to by the others	conversion
6. Support for develop	ment of wellhead (5-	10MWe) generators.	
Terrible idea	Undesirable	Desirable	Great idea
comments: Better utilized by bassibly b	·	ve than a 50	is and nue plant
Terrible idea		Desirable	V Great idea
Comments Should us	ate the band	Line Vate	to C
secure in their	l'ivestments us	til such tien	s teel mon
comments: Should us secure in their energy is accept	sted by the b.	anting indus	Toy as viable
8. Reservoir insurance			
Terrible idea	Undesirable	Desirable	Great idea
Comments: Will only assessment as	further bady	reology and	reservoir
assessment au	ed enqueer	caig -	
9. Tax treatment equiv	alent to fossil fuel	· S . ·	
Terrible idea			✓ Great idea
Comments: With rus	Todasletia	a llowence	and tax
comments: Withour investment e greatly hamp	redits geoth	ernalenerge	, will be
greatly hamp	ered in der	clopusat	
10. Support of combined economics to provide com			r development
Terrible idea	Undesirable	Desirable	Great ide
Comments: Would	Tand to av	oid the ald	"apples and
oranges "situ	ation		•

	nce for direct heat ap rce potential and surf	•	
Terrible idea	undesirab	leDesirab	le <u></u> Great idea
Comments: It u	rould give the	"little fellow"	the technical obig companies to moderate Ten
expertise	remerall availab	le to only th	o big companies
geothermal	every spa	ruse of low	lo moderate (en
12. State-couple	d program for a state- ure resources for dire	-by-state inventory	of low-and
Terrible idea	undesirab	leDesirab	le Great idea
comments: The	average personergy potential	al to heat as	area because of ations in the
region.			
Terrible idea	undesirab	leDesirab	le <u>X</u> Great idea
comments: (If des a thousand be most	sirable, how many per words." In beneficial	state?) One po n Arizona :	icture is worth 3 or 4 would
Name Whice	hard Halle	ran f.	

Listed below are some of the actual or potential DDE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

### Initiatives

<u> 1010</u>	atives		
<ol> <li>Collective planning with indu- entities, attempting to develop a has the active support of all the</li> </ol>	regional	commercialization	
(Check one)Terrible ideaUndesir	rable	Dèsirable	Great idea
Comments:			
		* x	
2. Industry-coupled, cost-shared	drilling	to confirm new re	servoirs.
Terrible ideaUndesir	able	Desirable	Great idea
Comments: (If desirable, what s	ze progra	m would you recomm	end?)
<ol><li>Publication of data acquired generation of case studies of dif</li></ol>			
Terrible ideaUndesir	able	Desirable	Great idea
Comments: Information That a when Con	has	10/270	~ 5°
That a office can	Ben	The Tree	
4. 50 MWe démonstration plant at	the Vall	es Caldera.	
Terrible ideaUndesir	able	Desirable	Great idea
Comments: (If desirable, how mar plants would you recommend?)	y and Wha	t kind of addition	al demonstration

5. Support of R&D to develop better drilling reservoir stimulation techniques, exploration conversion equipment.		
Terrible ideaUndesirable	Desirable	Great idea
Comment: (If desirable, prioritize.)		. ,
6. Support for development of wellhead (5-10	OMWe) generators	•
Terrible ideaUndesirable	Desirable	Great idea
Comment:		
7. Loan guaranty program:		
Terrible ideaUndesirable	Desirable	Great idea
Comments:		
	·	
8. Reservoir insurance.	•	17
	Desirable	Great idea
Comments:		
		. /
9. Tax treatment equivalent to fossil fuels	•	
Terrible ideaUndesirable	Desirable	Great idea
Comments:		
10. Support of combined developer-utility and economics to provide common ground for negot		oir development
Terrible ideaUndesirable	Desirable	Great idea
Comments:		35. <del>(200</del>

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.				
guidance on resource potential and surface equipment needs.  p Terrible ideaUndesirableDesirableGreat ide  Comments:		·	•	·
Comments: This management with a series will be a state of the support of direct heat applications.  Terrible idea				
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.				Great idea
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.		Comments: This is model, alsons	will	Duchubly
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.	_	mot feelege allesaure 17	Hay	a de la
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.	-	Love Lefe		
13. Further support of direct heat applications demonstrations in the region.	•	12. State-coupled program for a state-by-state in	ventory of	low-and
13. Further support of direct heat applications demonstrations in the region.  Terrible ideaUndesirableDesirableGreat.ide  Comments: (If desirable, how many per state?)  His many and (Dor) can		Terrible ideaUndesirableDe	sirable	Great idea
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Comments: (If desirable, how many per state?)  As many and pane (Doc) Can and a factor of the factor			emonstratio	ns in the _
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I am associated with a: (Check one) DeveloperUtilityFinancial InstitutionState GovernmentFederal Government	,	Comments: (If desirable how many non state?)	,	<del></del>
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er Federal n plan that Great idea
eservoirsGreat idea mend?) // FOOMES CANOS
Program and the Great idea
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Listed below are some of the actual or potential DOE initia designed to speed the commercialization of hydrothermal energy Rocky Mountain Basin & Range Region. We would value your of the desirability of these initiatives so that we can make s program is truly responsive to the Region's needs.

# <u>Initiatives</u>

1. Collective planning with industry, entities, attempting to develop a regio has the active support of all those inv	nal commercialization	
(Check one)Undesirable	Desirable	Great idea
Comments:		
2. Industry-coupled, cost-shared drill	ing to confirm new res	ervoirs.
Terrible idea <u></u> Undesirable	XDesirable	Great idea
Comments: (If desirable, what size pro I would like to see DOF co	gram would you recomme is seem esseedolas /A	end?) J Foolings Lawi
WITH SUBSEQUENT LEASING OF "	KNOJN" RESOURCE.	
<ol><li>Publication of data acquired under generation of case studies of different</li></ol>		rogram and the
Terrible ideaUndesirable	Desirable	Great idea
Comments:		
4. 50 MWe demonstration plant at the V	alles Caldera.	
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, how many and	what kind of additiona	l demonstration

I JOULD LIKE TO SEE SMALLER, PORTABLE PACKAGE PLANTS WHICH COULD BUT USED AS DEMONSTRATIONS AND MOUTE SO PRINATULY DETRATED,

PACILITIES COULD BF INSTALLED.

plants would you recommend?)

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.
Terrible ideaUndesirableGreat ide
Comments: (If desirable, prioritize.)  1) GERLORATION TERNOLOGY  2) BETTER ORILLING & COMPLETION 4) AQUANCED CONUSAGION
6. Support for development of wellhead (5-10MWe) generators.
Terrible ideaUndesirableDesirableGreat ide
Comments: SMALLER INSTALLATIONS CAN BE PUT ON LINE FASTER. THE RESERVOIR ODES NOT MANE TO MANE SUCH A LARGE MINIMUR CAPACITY.
7. Loan guaranty program.
Terrible ideaUndesirableDesirableX Great ide
Comments: EXTUND RANGE OF PROGRAM TO INCLUDE LOW COST.  DIESCE USE PROVECTS. MAKE PUNDS FOR DIRECT USU GAST.  TO GET.
8. Reservoir insurance
Terrible ideaUndesirableDesirableGreat ide  Comments: Chrear FOR 17 {
9. Tax treatment equivalent to fossil fuels.
Terrible ideaUndesirableTesirableGreat ide
Comments: SHOULD BUT BETTER THAN EQUIDALENT.  A GEOTHERMAL INSTALLATION REQUIRES MUCH MORE WORK TO GET ON LINE.
O. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.
Terrible ideaUndesirable $X$ _DesirableGreat ide
Comments:

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Comments: RESOURCE DEPINITION MORE IMPORTANT FOR DIRECT USE THAN SCUTCERICAL PRODUCTION.
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments: Names to HAUS GREATLY INCREASED PUNDING WITH A REQUIREMENT FOR SITU RANKING THROUGH THE PLANNING PROGRAM.  13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
A FOW IN EACH STATE WITH EMPASIS ON GREATURS T ENDAGY USES. SUCH AS: HEATING DISTRICT, BREWNHOUSES, MUNICIPAL BUILDING SPACE HEAT CONJURSION AND COMMUNICIAL PROCESSING WHERE FEMSIBLE.  Name Litt C Blown

RECEIVED J. A. HANNY
AUG 2 8 1978

QUESTIONNAIRE	Action Info File
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Listed below are some of the actual or potential DO	E initiatives
designed to speed the commercialization of hydrothe	rmal energy within the
Rocky Mountain Basin & Range Region. We would value	e your opinion of
the desirability of these initiatives so that we ca	n make sure that our
program is truly responsive to the Region's needs.	
Initiatives	
1. Collective planning with industry, state, local entities, attempting to develop a regional commerci has the active support of all those involved.	
(Check one)Terrible ideaUndesirableDesi	rableGreat idea
Comments:	·
2. Industry-coupled, cost-shared drilling to confi Terrible ideaUndesirableDesi Comments: (If desirable, what size program would y	rableGreat idea
3. Publication of data acquired under the Industry generation of case studies of different types of re	-Coupled Program and the servoirs.
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Comments:	
4. 50 MWe demonstration plant at the Valles Calder	
Terrible ideaUndesirableDesi	rable <u>Great idea</u>
Comments: (If desirable, how many and what kind of plants would you recommend)  5 more not water, hydrotte	additional demonstration fermal plants

res	Support of R&D ervoir stimulativersion equipmen	ion tech					
	Terrible idea		Undesirab]	le _	Desirable	Grea	t idea
Con	nments: (If desing).	rable, p Res Bett B. <b>Le</b>	rioritize.) servoir stilling vanced o	mulati and c	on technique completion. sion equy	res Technology Joment	
6.	Support for dev	velopmen	t of wellhea	ad (5-10	)MWe) generato	rs.	
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7.	Loan guaranty p	-					
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Con	ments:						
8.	Reservoir insur	rance.					
	Terrible idea		Undesirabl	e _	Desirable	Great	t idea
Соп	ments:						
9.	Tax treatment e	equivale	nt to fossil	fuels.			
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	nomics to provid					· - <b>F</b> ····	_
	Terrible idea	<del></del>	Undesirabl	e _	Desirable	_1 Great	t ide
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	11. User assistance for direct heat applications to provide initial
<b>y</b>	guidance on resource potential and surface equipment needs.
	Terrible ideaUndesirableDesirableGreat idea Comments:
	12. State-coupled program for a state-by-star inventory of low-and moderate-temperature resources for direct heat applications.
	Terrible ideaUndesirableDesirableGreat idea  Comments:
	13. Further support of direct heat applications demonstrations in the region.
	Terrible ideaUndesirableDesirableGreat idea
Itlean	comments: (If desirable, how many per state?) It & per state. So four, New Mexico doesn't . have any demonstrations for direct heat yeps
	Name Dennis G. Fedor

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#### THE UNIVERSITY OF WYOMING

UNIVERSITY STATION, BOX 3355

LARAMIE, WYOMING 82071

August 16, 1978



Mr. Clayton Nichols
Assistant Director for Geothermal Energy
DOE, Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

Dear Clay:

Enclosed is the questionnaire you sent with your 14 August letter.

Our Consortium (now officially named the Consortium of Universities for Research on Energy, CURE) now consists of eight universities: Colorado State, Montana State, Utah State, South Dakota Tech, and the universities of Idaho, Nebraska-Lincoln, North Dakota, and Wyoming. We remain interested in a contract for the O. R. Geothermal program in the ID, MT, WY, ND, SD region with the understanding that we would subcontract directly with each state for the work in that state. Or we would be interested in a contract to coordinate the five-state effort; DOE contracting with each state for the work in that state.

Sincerely yours,

E. Gerald Meyer

Vice President for Research

Chairman, CURE

Enclosure

program is truly responsive to the Region's needs.
<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one) Terrible idea Undesirable Desirable / Great idea
comments: Deba great but change of valeging here
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirable
Comments: (If desirable, what size program would you recommend?)
Don't know enough about costs to give a figure
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirable
Comments: The should be a contractor to do the
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableS DesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)
Suggest one demonstration was low tenf gentleme

5. Support of R&D to develop better drill reservoir stimulation techniques, explorat conversion equipment.			
Terrible_ideaUndesirable	Desirable	Great i	dea
Comments: (If desirable, prioritize.)  Syphostron  Compensor	·		
6. Support for development of wellhead (5	,		
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Comments:			
7. Loan guaranty program.			
Terrible ideaUndesirable	$\underline{\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}\hspace{0.1cm}$	Great i	dea
comments: Should include book of	poots who we	se to	
8. Reservoir insurance.			
Terrible ideaUndesirable	Desirable	Great i	dea
Comments: Don't humans enough	h about This.	to comment	<del>(</del>
9. Tax treatment equivalent to fossil fue	ls.		
Terrible ideaUndesirable	Desirable	Great i	dea
Comments: Of course the question of which tayes !	is which	- Forme	Fral
10. Support of combined developer-utility a economics to provide common ground for nego		ir development	, '
Terrible ideaUndesirable	Desirable	∠ Great i	dea
Comments:		/	

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Suportant to jain her coceptance
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments: This is The starting from
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?) The maybe two
Name E. Gerald Meyer

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program is truly responsive to the Region's needs.	
<u>Initiatives</u>	
1. Collective planning with industry, state, local entities, attempting to develop a regional commercia has the active support of all those involved.	and other Federal lization plan that
(Check one)Terrible ideaUndesirableDesirable	ableGreat idea #5
Comments:	
2. Industry-coupled, cost-shared drilling to confirm	m new reservoirs.
Terrible ideaUndesirableDesir	ableGreat idea
Comments: (If desirable, what size program would yo	ı recommend?)
<ol> <li>Publication of data acquired under the Industry- generation of case studies of different types of res</li> </ol>	
Terrible ideaUndesirableDesir	ableGreat idea
Comments:	
4. 50 MWe demonstration plant at the Valles Caldera	
	-10
Comments: (If desirable, how many and what kind of plants would you recommend?)  Don't particularly like demonstration or controlled by Fed. Gut.	additional demonstration

res	ervoir stimul version equip	ation techr oment.	niques, explora	ling and completion tion technology and	technology advanced
ຍ 	Terrible id	lea	Undesirable	Desirable	Great 10
Соп	nments: (If de				
_	Cuppout for	dava lanmant	h of wollhood /	5 30MUs) consustant	
о.	• •	•	·	5-10MWe) generators.	
	<del></del>	lea	_Undesirable	Desirable	Great idea +5
Com	ments:				
7.	Loan guarant				
	Terrible id	lea	Undesirable	Desirable	Great idea 15
Con	ments:			·	
8.	Reservoir in	surance.		/	X
	Terrible id	lea	_Undesirable	Desirable	Great idea 1
Con	ments:				
9.	Tax treatmen	t equivaler	nt to fossil fu	els.	Great idea 110
	Terrible id	lea	_Undesirable	Desirable	Great idea 110
Com	ments:				
10 <i>.</i> eco			veloper-utility n ground for ne		·
	Terrible id	lea	_Undesirable	Desirable	Great ide 5
Com	ments:				

lerrible idea	undesirable	Desirable	Great idea
Comments:			
12. State-coupled moderate-temperatu	d program for a state-by ure resources for direct	-state inventory of heat applications.	low-and
Terrible idea	aUndesirable		Great idea
Comments:			
region.	ort of direct heat appli	•	
Terrible idea	undesirable	Desirable	Great idea
Comments: (If des	sirable, how many per st	ate?)	
	ı		•

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Listed below are some of the actual or potential DOE initiatives

designed to speed the commercialization of hydrothermal energy within the

Rocky Mountain Basin & Range Region. We would value your opinion of

the desirability of these initiatives so that we can make sure that our

program is truly responsive to the Region's needs.

Initiatives
l. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirable
Comments:  A little small talk to explore possibilities can do no harm.
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableX_DesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
\$500,000.00/year in Arizona
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableX _DesirableGreat idea
Comments:  All federal/state money should result in information to all interested parties.
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

Lack information on particulars to judge.

reservoir conversion		develop better drill techniques, explorat		
Terri	ble ide <b>a</b>	Undesirable	Desirable	<u>x</u> Great ide
Comments:		e, prioritize.) ue to support Los	Alamos.	
6. Suppor	t for develo	pment of wellhead (5	-10MWe) generators.	
Terri	ble idea .	Undesirable	_X_Desirable	Great ide
Comments:		an spending money e knowledge is av		ems
7. Loan g	uaranty prog	ram.	÷	
Terri	ble idea	<u>X</u> Undesirable	Desirable	Great ide
Comments:				
Ei	ther issue	grants or let pe	ople stand on th	neir own.
8. Reserv	oir insuranc	e.		
Terri	ble idea	Undesirable	X Desirable	Great ide
Comments:	Only afte	r reservoir is pr	oven.	•
9. Tax tro	eatment equi	valent to fossil fue	ls.	
Terril	ble idea	XUndesirable	Desirable	Great idea
Comments:	Tax treat	ment should be or revenue	n finished goods	, i.e. on plan
10. Support	t of combine to provide c	d developer-utility ommon ground for neg	analysis of reservo otiations.	ir development
Terril	bl <b>e</b> idea	X Undesirable	Desirable	Great ide
	developmer	nould not be back: it of reservoir. • irms-length negoti	Once developer	200

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaX UndesirableDesirableGreat idea
Comments:
This is area where private companies should compete. Government agencies can develop methods but not enter into user loans and guarantees.
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableX_DesirableGreat idea
Comments:
Results should be made public.
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirable
Comments: (If desirable, how many per state?)
Depends upon methodone per method/state should be sufficient.
Name Euneal Darfield-figs
Ernest Garfield, Chairman

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# QUESTIONNAIRE

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and destinatives of these initiatives s	o that we can make sure that our
program is truly responsive to the Region	
Initiatives	
<ol> <li>Collective planning with industry, sentities, attempting to develop a region has the active support of all those involves.</li> </ol>	
(Check one)Terrible ideaUndesirable Comments:	Desirable Great idea
Comments:	
2. Industry-coupled, cost-shared drilli	ng to confirm new reservoirs.
Terrible ideaUndesirable	DesirableGreat idea
Comments: (If desirable, what size progr	ram would you recommend?)
<ol><li>Publication of data acquired under th generation of case studies of different t</li></ol>	JPES OF reservoirs.
Terrible ideaUndesirable	
Comments:	
4. 50 MWe demonstration plant at the Val	
Terrible ideaUndesirable	Desirable Great idea
Comments: (If desirable, how many and what olants would you recommend?)	at kind of additional demonstration
as many and as valuable ran.	, ** <sub>1</sub>

reservoir stimulation	o develop better drill on techniques, explorat :.	ion technology and	advanced
oTerrible idea	Undesirable (4	Desirable Desirable	Grea
Comments: (If desira	Undesirable (		
6. Support for deve	elopment of wellhead (5	-10MWe) generators.	
Terrible idea	Undesirable	Desirable	Grea
Comments:	, , , , , , , , , , , , , , , , , , ,		
7. Loan guaranty pr			
Terrible idea	Undesirable	Desirable	Grea
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8. Reservoir insura	nce.		
Terrible idea	Undesirable	Desirable	Grea
Comments:	Sign		
9. Tax treatment eq	uivalent to fossil fue	ls.	
Terrible idea	Undesirable	Desirable	Grea
Comments:			
	ned developer-utility common ground for neg		oir developm
economics to provide			
·	Undesirable	Desirable	Great

11. User assistance for dire guidance on resource potentia			itial	•
Terrible idea	Undesirable	Desirable	Great	idea
Comments:				
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12. State-coupled program fo moderate-temperature resource	r a state-by-state s for direct heat	e inventory of low applications.	w-and	
Terrible idea	Undesirable	Desirable	Great	idea
Comments:	,	1		
13. Further support of direc region.	t heat application	ns demonstrations	in the	
Terrible idea	Undesirable	Desirable	Great	idea
Comments: (If desirable, how $\frac{2}{3}$	many per state?)			
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r opinion of
e sure that our
other Federal tion plan that
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ew reservoirs.
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ecommend?)
oled Program and the pirs.
Great idea
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Initiatives
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

	Support of R&D to devervoir stimulation tecversion equipment.			
t) 	Terrible idea	Undesirable	Desirable	Great idea
Com	nments: (If desirable,	prioritize.)		
6.	Support for developme	nt of wellhead (5	5-10MWe) generators.	
	Terrible idea	Undesirable	Desirable	Great idea
Com	ments:			•
7.	Loan guaranty program	. Z Undesirable	Doginable	Const idea
Con	Terrible idea ments:	Unides (rab)e	Desirable	Great idea
8.	Reservoir insurance. Terrible idea	? い Undesirable	Desirable	Great idea
Con	ments:			
9.	Tax treatment equival		•	
		Undesirable	Desirable	Great idea
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	Support of combined d nomics to provide comm			r development
	Terrible idea	Undesirable	Desirable	Great ide
Com	ments:			•

ll. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.	
Terrible ideaUndesirableOesirableGreat	idea
Comments:	
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.	
	: idea
Comments:	
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13. Further support of direct heat applications demonstrations in the region.	
Terrible ideaUndesirableDesirableGreat	tidea
Comments: (If desirable, how many per state?)	
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MDHES Environmental Sciences Div.

Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, Idaho 83401

August 14, 1978

Benjamin Wake, Director Montana Dept. of Health & Environment Room 224, Cogswell Building Helena, MT 59601

Dear Mr. Wake:

The Division of Geothermal Energy recently mailed a copy of the Rocky Mountain Basin and Range Regional Hydrothermal Commercialization Plan to you for your information and use. The same document was distributed at the annual Geothermal Resources Council meeting held during July at Hilo, Hawaii. The questionnaire attached to this letter was used at Hilo to obtain input for continued participative planning of the DOE effort within the region. The responses to the questions were interesting and helpful. After reviewing these responses, we felt that a larger sample would provide additional information to develop an expanded basis for continued support or rejection of various components of the DOE-planned effort. The questionnaire relates to DOE involvement in accelerating the use of hydrothermal energy within the region. The questions are selected primarily from material contained in Section VI of the commercialization plan.

We would appreciate receiving your response to the thirteen questions on the attachment, and any other comments you may wish to make. If possible, we would like to receive your response by September 5, 1978. Please return questionnaires to Joe Hanny, EG&G Idaho, Inc., P.O. Box 1625, UPD, Idaho Falls, Idaho 83401.

Thank you very much for your cooperation and interest.

Sincerely,

Clayton Nichols

Assistant Director for Geothermal Energy

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Attachment: As stated

program is train responsible to the negron sinceast
<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
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3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableGreat idea
Comments:
•
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)  additional plants would be necessary as See thermal
a participation of the second

5. Support of R&D to creservoir stimulation conversion equipment.	develop better drill techniques, explorat			
ຽTerrible idea	Undesirable	Desirable	Great	idea
Comments: (If desirable 1. Epploration technology) 2. advanced comments 3. Reservoir stimm	degramment.	rilling		
•	oment of wellhead (5			
Terrible idea	Undesirable	Desirable	Great	idea
Comments:				
7. Loan guaranty programments:	undesirable	Desirable	Great	idea 
8. Reservoir insurance	e. Undesirable	Desirable	Great	idea
Comments:				
9. Tax treatment equivalent of the second of	valent to fossil fue Undesirable	lsDesirable	Great	idea
10. Support of combined economics to provide co	l developer-utility ommon ground for neg	analysis of reservo otiations.	ir developmen	t ·
Terrible idea	Undesirable	Desirable	Great	i dea
Comments:				

11. User assistance for guidance on resource po	or direct heat applic otential and surface		initial
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
12. State-coupled prog moderate-temperature re	gram for a state-by-s esources for direct h	tate inventory of leat applications.	low-and
Terrible idea	Undesirable	Desirable	Great idea
Comments:			<del></del>
13. Further support of region.	f direct heat applica	tions demonstration	ons in the
Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desirab)	e, how many per stat	e?)	
1 or 2 ( see que	_		
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o Listed below are some	of the actual or p	otential DOE initia	tives
designed to speed the	commercialization	of hydrothermal ene	rgy within the
Rocky Mountain Basin 8	Range Region. We	would value your o	pinion of
the desirability of th	ese initiatives so	that we can make s	ure that our
program is truly respo	nsive to the Regio	n's needs.	
	<u>Initiatives</u>		
<ol> <li>Collective planning entities, attempting that the active support</li> </ol>	o develop a region	al commercialization	
(Check one)Terrible idea	Undesirable	<u></u>	Great idea
Comments: Primarily	ochweational		
• ,		ng to confirm new r	
Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desirat	le, what size prog	ram would you recom	mend?)
1-3 lest	area jour state	•	
3. Publication of dat generation of case stu			
Terrible idea	Undesirable	Desirable	Great idea
Comments:	y to justify t	tre broken	
4. 50 MWe demonstrati	on plant at the Va	lles Caldera.	
Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desirate plants would you recomments)		hat kind of addition	nal demonstration

5. Support of R&D to c reservoir stimulation t conversion equipment.	ري) develop better dril echniques, explora	ling and completion tion technology and	technology, advanced
)	Undesirable	Desirable	j∕ Great idea
Comments: (If desirable	e, prioritize.)	<del></del>	
6. Support for develop  Terrible idea . Comments:	oment of wellhead ( Undesirable	5-10MWe) generators. Desirable	Great idea
<ol> <li>Loan guaranty progr Terrible idea</li> <li>Comments:</li> </ol>	ram. Undesirable	Desirable	Great idea
8. Reservoir insuranceTerrible idea Comments:	Undesirable	Desirable	Great idea
9. Tax treatment equiv Terrible idea Comments:	valent to fossil fue	Desirable	Great idea
). Support of combined economics to provide co	developer-utility	analysis of reservo gotiations.	ir development
			•

guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableGreat idea
comments: Only to acquire data for evaluation of new
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:    Great description   Comments   Comments
region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
Not after quidelier have been established by present or phases domonstration project

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	me and appear an		 :
O Listed below are some of the actual or potential DOE ini	tiatives		
designed to speed the commercialization of hydrothermal	energy withi	the the	<u></u>
Rocky Mountain Basin & Range Region. We would value you	r opinion of		•
the desirability of these initiatives so that we can mak	e sure that (	our	
program is truly responsive to the Region's needs.			
<u>Initiatives</u>			
1. Collective planning with industry, state, local and entities, attempting to develop a regional commercializa has the active support of all those involved.			
(Check one)Terrible ideaUndesirableDesirable	XGr	eat idea	a
Comments: Experience has shown that North Dakota's most programs are those in which industry, local municipalitie agencies serve key roles in both the planning, initiation stages.	s, and regula	atory	ıtal
2. Industry-coupled, cost-shared drilling to confirm ne	w reservoirs	•	
Terrible ideaUndesirableXDesirable	Gr	eat idea	3
Comments: (If desirable, what size program would you re A plan using the pilot project approach which seemed to b efficacious.			
3. Publication of data acquired under the Industry-Coup generation of case studies of different types of reservo	led Program dirs.	and the	
Terrible ideaUndesirableXDesirable	Gr	eat idea	3
Comments:			
4. 50 MWe demonstration plant at the Valles Caldera.			
Terrible ideaUndesirableXDesirable	Gre	eat idea	ì
Comments: (If desirable, how many and what kind of addiplants would you recommend?)	tional demons	stration	1

5. Support of R&D to do reservoir stimulation to conversion equipment.			
o Terrible idea	Undesirable	Desirable	X Great idea
Comments: (If desirable In most instances, Governmentechnology. It would appear much as possible during the	nt sponsored progr or wise to aid the	development of techi	of developing nology as
6. Support for develop	ment of wellhead (5	5-10MWe) generators.	
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
7. Loan guaranty progra	im.		
Terrible idea	Undesirable	<u>X</u> Desirable	Great idea
Comments:			
			`
8. Reservoir insurance.			
Terrible idea	Undesirable	χDesirable	Great idea
Comments:			
However, difficult to make	practicable.		
9. Tax treatment equiva	lent to fossil fue	ls.	
Terrible idea	Undesirable	<u>X</u> Desirable	Great idea
Comments:			
Certainly.			
<ol><li>Support of combined economics to provide com</li></ol>	developer-utility mon ground for neg	analysis of reservo otiations.	ir development
Terrible idea	Undesirable	Desirable	Great idea
Comments:			

guidance on resource			miciai	
Terrible idea	Undesirable	X Desirable	Great i	dea
Comments:	·			
12. State-coupled pro moderate-temperature p			low-and	
Terrible idea	Undesirable	X Desirable	Great id	dea
Comments:				
States should be priori  13. Further support oregion.	,	•	ons in the	
Terrible idea	Undesirable	X Desirable	Great i	dea
Comments: (If desirat	ole, how many per stat	ce?)		
More demonstrations in	higher prioritized st	ates.		
Name // John J. Delmo Legal Services	Te, Director	<del></del>		

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# QUESTIONNAIRE

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Listed below are some of the actual or potential DOE initiat	ives	<u> </u>	
Elaced perom are some or the actual or potential pot initial	, I.V.C.3-		1
		<u> </u>	<u> </u>

designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

## Initiatives

1117014017403
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>
(Check one)
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

con		develop better drilli techniques, explorati			
<i>v</i>	Terrible idea	Undesirable	Desirable	Great	i dea
Com	ments: (If desirable	e, prioritize.)			
			•		
6.	Support for develop	oment of wellhead (5-	10MWe) generators.		
	Terrible idea	Undesirable	Desirable	Great	idea
Com	ments:			<del></del>	
7.	Loan guaranty prog	ram.	·		
	Terrible idea	Undesirable	Desirable	Great i	dea
Com	ments:				
					``
8.	Reservoir insurance	e.			
	Terrible idea	Undesirable	Desirable	Great i	idea
Con	ments:				
9.	Tax treatment equiv	alent to fossil fuel	S.		
	Terrible idea	Undesirable	Desirable	Great	idea
Com	ments:				
10. ecor	Support of combined nomics to provide co	developer-utility a	nalysis of reservo tiations.	ir development	t
		Undesirable	Desirable	Great	i dea 🛚
Com	nents:	<del></del>		<del></del>	

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11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
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12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
Name John Hatch Chief Engineer Water Rights Division, ONRD Joe Foss Building Pierre, South Sakata 57501
Pierre, South Taketa 57501

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RECEIVED J. A. HANILY
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ehergy within the
ır opinion of
ke sure that our
other Federal ation plan that
e <u>×</u> Great idea
ew reservoirs.  Great idea ecommend?)
oled Program and the
e <u>×</u> Great idea

Listed below are some of the actual or potential DOE ini designed to speed the commercialization of hydrothermal Rocky Mountain Basin & Range Region. We would value you the desirability of these initiatives so that we can mak program is truly responsive to the Region's needs.

<u>Initiatives</u>
l. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirable ≪ Great idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirable Great idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)  Not Familiar with familiar or its purpose

		develop better drill techniques, explorat		
ij.	•	Undesirable	Desirable	
Con	nments: (If desirable Exploration technology Reservoir stimula Drilling + comple	e. prioritize.)		
6.		pment of wellhead (5	-10MWe) generators.	•
	Terrible idea	Undesirable	Desirable	Great idea
Сол	nments:			
7.	Loan guaranty prog	ram.		
	Terrible idea	Undesirable	Desirable	Great idea
Con	nments:			-
8.	Reservoir insuranc	e.		
	Terrible idea		Desirable	Great idea
Con	nments:			
9.	Tax treatment equi	valent to fossil fue	ls.	
	Terrible idea	Undesirable	Desirable	Great idea
Con	ments:			
10. eco		d developer-utility a ommon ground for neg		ir development
	Terrible idea	Undesirable	Desirable	XGreat idea
Con	mients:			

•

12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.	Terrible idea	Undesirable	DesirableX_Great
Terrible idea	Comments:	,	
Comments: Very important to development of low temperature reso may lisingle most important factor, with 11. ranking close second.  13. Further support of direct heat applications demonstrations in the region.			
13. Further support of direct heat applications demonstrations in the region.	Terrible idea	Undesirable	DesirableGreat
Terrible idea Undesirable Desirable X Great  Comments: (If desirable, how many per state?)  Look at resources quailable, and potential for stimula.	Comments: Very importungle may le single mo second.	faut to development ist important factor,	of low temporature res with 11. ranking clos
Comments: (If desirable, how many per state?) Look at resources quailable, and potential for stimula.		of direct heat applicati	ons demonstrations in the
Look at resources quailable, and potential for stimula.	region.		
	-	Undesirable	DesirableGreat
	Terrible idea  Comments: (If desirate  Look at resour	ole, how many per state?	\

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Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

program is truly responsive to the Region's needs.
<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirable
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirable ·
Comments: (If desirable, what size program would you recommend?)
As large as possible and examining as many different reservoirs as possible.
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirable
Comments:
Work should be as complete as possible incorporating all geologic, geophysical and engineering factors as possible.
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

					· · · · · · · · · · · · · · · · · · ·
rese conv	Support of R&D rvoir stimulati ersion equipmen	on techn	op better dril iques, explora	ling and completion tion technology and	technology,
ა ——	_Terrible idea		_Undesirable	<b>×</b> Desirable	Great idea
	ents: (If desir should be done	-		temperature sources	also.
6.	Support for dev	elopment	of wellhead (	5-10MWe) generators.	
	_Terrible idea	<u>×</u>	_Undesirable	Desirable	Great idea
Comm	ents:	•			
<b>.</b>	Loon guamantu n	maguam			
7.	Loan guaranty p				
<del></del>	_Terrible idea	<del></del> -	_Undesirable	_ <b>★</b> Desirable	Great idea
Comm	ents:				
8.	Reservoir insur	ance.			
	Terrible idea		Undesirable		Great idea
Conm	ents:		_		
9. <sup>-</sup>	Tax treatment e	quivalen	t to fossil fu	els.	
	_Terrible idea	*********	_Undesirable	Desirable	Great idea
Comme	ents:				
0. S	Support of comb omics to provid	ined dev e common	eloper-utility ground for ne	analysis of reservo	ir development
	_Terrible idea		_Undesirable	<b>X</b> _Desirable	Great idea
Comm	ents:				

ll. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirable
Comments: Demonstration should be visible to a large sector of the public. Each state should have a demonstration.
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirable Great idea
Comments: This program is an ongoing program to update and keep inventories current as more exploration and drilling is accomplished.
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableX Great idea
Comments: (If desirable, how many per state?)
Number per state depends on visibility. A very visible demonstration should satisfy the need. If they are not highly visible then it may take several.
Name Dennis J. Liedler
Nevada Bureau of Mines and Geology University of Nevada

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ຍ Listed below are	some of the actual or	potential DOE ini	tiative		
designed to speed	d the commercialization	of hydrothermal	energy	within-	the
	asin & Range Region. W				
the desirability	of these initiatives s	o that we can mak	ce sure	that ou	r .
program is truly	responsive to the Regi	on's needs.			
, ,	Initiatives				,
entities, attempt	lanning with industry, ting to develop a regio upport of all those inv	nal commercializa			
(Check one) Terrible ide	eaUndesirable	Desirable	·	(Grea	t idea
	lines the only reall followed to ack				
	eaUndesirable				t idea
Comments: (If de managed to drill-	esirable, what size pro	gram would you reall	commend	?) · la	afully
<ol><li>Publication of</li></ol>	of data acquired under se studies of different	the Industry-Coup	led Pro		
Terrible ide	eaUndesirable	Desirable	·	Grea	t idea
Comments:		, · .			
4. 50 MWe demons	stration plant at the V	alles Caldera.			
Terrible ide	eaUndesirable	Desirable	: <u> </u>	Grea	t idea
Comments: (If deplants would you	esirable, how many and recommend?)	what kind of addi	tional	demonst <i>Aval</i>	ration
plants would you down for	ture demonst	rations as-	studi	Ma	: van 6

rac	Support of R&D to	develop better dril	ling and completion	technology	
<u>د ي ا</u>	ervoir stimulation	techniques, explora	tion technology and	advanced	
COII	version equipment.		_2	-3	
:) 	Terrible idea	Undesirable	Desirable	Great	id
Com	nments: (If desirab	le, prioritize.)			
6.	Support for devel	opment of wellhead (	5-10MWe) generators.		
	Terrible idea	Undesirable	Desirable	Great	id
Com	nments:		·		
7.	Loan guaranty pro	gram.			
	Terrible idea	Undesirable	<u> X</u> Desirable	Great	id
Corr	ments. Ilas	Undesirable	ر سین		
8.	Reservoir insuran Terrible idea	ce. Undesirable	Desirable	Great	ء د
			<del></del>		ΙU
Con	ments:		•		
		ivalent to fossil fu	els.		
			uels. Desirable	Great	٠
9.	Tax treatment equ	ivalent to fossil fu		Great	٠
9.  Com	Tax treatment equTerrible idea ments: Support of combine	ivalent to fossil fu Undesirable	DesirableDesirable		id

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirable
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirable
Comments: funding and quidance available
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirable
Comments: (If desirable, how many per state?)  Lessondo on track record, if warrantelless
Name Dean A Manles
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Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

## <u>Initiatives</u>

entities,	attempting	g to develop a region ort of all those invo	al commercialization	
(Check one	e) ible idea	<b>✓</b> Undesirable	Desirable	Great idea
		•	videlines cesult in le elopmont of goothern	
	•		ng to confirm new re	
Terri	ible idea	Undesirable	Desirable	Great idea
	If impl		ram would you recomm	
		data acquired under t studies of different	he Industry-Coupled types of reservoirs.	Program and the
Terri	ible idea	Undesirable	<pre>Desirable</pre>	Great idea
Comments:	This mos	t be done. People on as to the omoun	ere not going to a febrisk involved.	isk capital unless
4. 50 MW	e demonstra	ation plant at the Va	lles Caldera.	
Terr	ible idea	Undesirable	✓ Desirable	Great idea

Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?) I would keep these demonstration plants very few in number. For the most part, private enterprise can do a better job than governmental agencies in developing business. A.

few examples by government to show the private sector the Pensibility

5. Support of R&D to develop better reservoir stimulation techniques, exp conversion equipment.		
Terrible ideaUndesirab	leDesirable	Great idea
Comments: (If desirable, prioritize.) #2 should suffice.		
6. Support for development of wellhe	ad (5-10MWe) generators	ŝ.
Terrible ideaUndesirab	leDesirable	Great idea
Comments:		
•		
7. Loan guaranty program.	÷	
V Terrible idea V Undesirab	leDesirable	Great idea
Comments: I see no reeson to goothermal devalopment	involve innocent	Joe Blow in
8. Reservoir insurance.	·	
Terrible ideaUndesirab	leDesirable	Great idea
Comments: Same as #7.		
9. Tax treatment equivalent to fossi	l fuels.	
Terrible ideaUndesirab	leDesirable	✓ Great idea
Comments: It a person or organis be rewarded for risk taking eith free of regulated prices.	istron is willing to l en through depletion	zke risks, he should allowance or
10. Support of combined developer-uti economics to provide common ground fo	lity analysis of reserv r negotiations.	oir development
Terrible ideaUndesirab	le <u> </u>	Great ide
Comments:		

ll. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
comments: This would add impetus to exploration at and development
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments: In most cases this is plready eccomplished.
$^{\circ}$ 13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)  # 11 Should Suffice.
Name Lower lakelon

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Listed below are some of the actual or potential DOE initiatives

designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

## Initiatives

<ol> <li>Collective planning entities, attempting to has the active support o</li> </ol>	develop a regiona	l commercialization	r Federal plan that	
(Check one) Terrible idea	_Undesirable	Desirable	Great	idea
Comments:	·			
2. Industry-coupled, co	st-shared drillin	g to confirm new re	eservoirs.	
Terrible idea 🗼	_Undesirable	Desirable	Great	idea
Comments: (If desirable  3. Publication of data generation of case studi	acquired under th	e Industry-Coupled	Program and	the
Terrible idea	Undesirable	Desirable	Great	idea
Comments:	-			
4. 50 MWe demonstration	plant at the Val	les Caldera.		
Terrible idea	_Undesirable	Desirable	Great	idea
Comments: (If desirable plants would you recompe	, how many and wh nd?) The first.	at kind of addition	ıal demonstra	ition

res	Support of R&D to deve ervoir stimulation tech version equipment.				
<b>ن</b>	Terrible idea	Undesirable	Desirable	Great	idea
Com	ments: (If desirable, p	rioritize.)	•		
6.	Support for developmen	t of wellhead (5-	10MWel generators.		
0.	•	Undesirable	Desirable	Great	idea
Com	ments:				7000
7.	Loan guaranty program.				
	_Terrible idea	Undesirable	Desirable	Great	idea
Com	ments:				
8.	Reservoir insurance.				
	Terrible idea	Undesirable	<pre>     Desirable </pre>	Great	idea
Com	ments:	•			
q	Tax treatment equivale	nt to fossil fuel	s c		
	· ·			Great	idea
Com	Terrible idea				raca
00					
	Support of combined de nomics to provide common			oir developmer	nt
	Terrible idea	_Undesirable	Desirable	Great	i de
Com	ments:		(		



Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, Idaho 83401

J. A. HARRY		<u> </u>	
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August 14, 1978. .....

Frank Mancini Associate Director, Energy Programs Room 502 Capital Tower 1700 W. Washington Phoenix, AZ 85007

Dear Mr. Mancini:

The Division of Geothermal Energy recently mailed a copy of the Rocky Mountain Basin and Range Regional Hydrothermal Commercialization Plan to you for your information and use. The same document was distributed at the annual Geothermal Resources Council meeting held during July at Hilo, Hawaii. The questionnaire attached to this letter was used at Hilo to obtain input for continued participative planning of the DOE effort within the region. The responses to the questions were interesting and helpful. After reviewing these responses, we felt that a larger sample would provide additional information to develop an expanded basis for continued support or rejection of various components of the DOE-planned effort. The questionnaire relates to DOE involvement in accelerating the use of hydrothermal energy within the region. The questions are selected primarily from material contained in Section VI of the commercialization plan.

We would appreciate receiving your response to the thirteen questions on the attachment, and any other comments you may wish to make. If possible, we would like to receive your response by September 5, 1978. Please return questionnaires to Joe Hanny, EG&G Idaho, Inc., P.O. Box 1625, UPD, Idaho Falls, Idaho 83401.

Thank you very much for your cooperation and interest.

Sincerely,

Clayton Nichols

Assistant Director for

Carter Michel

Geothermal Energy

Attachment: As stated

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

program is traing responsive to the Region's needs.
Initiatives
l. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirable Desirable Great idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
As large a program for exploratory drilling as Congress will allow.  3. Publication of data acquired under the Industry-Coupled Program and the
generation of case studies of different types of reservoirs.
Terrible ideaUndesirableGreat idea
Comments: M. here solame with a reluctione
of industry to allow certain date to be 4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

res	Support of R&D to servoir stimulation oversion equipment.	develop better drill techniques, explorat	ing and completion ion technology and	technology, advanced
ట	Terrible idea	Undesirable	<b>X</b> _Desirable	Great idea
Con Oxy	nonents: (If desirab location tech. ling and (grand to Support for devel	le, prioritize.) and abvanced ( muletion tech chiniques. opment of Wellhead (5	Conversion liquidades (3.) -10MWe) generators.	up, 12,) Reservoir
	Terrible idea	Undesirable	<b>∠</b> Desirable	Great idea
Con	nments:			
7.	Loan guaranty pro	gram. Undesirable	X Desirable	Great idea
Con	nments:	ondes it ab te		areat Tues
8.	Reservoir insuran		<b>X</b> Desirable	Contido
Con	Terrible idea	ondes it able	Destrable	Great idea
9.	•	ivalent to fossil fue		
<del></del>	Terrible idea	Undesirable	Desirable	Great idea
Com	ments:			
10. eco	onomics to provide o	ed developer-utility common ground for negUndesirable	otiations.	•

11. User assistance for direct heat application guidance on resource potential and surface of	
Terrible ideaUndesirable	
Comments:	
12. State-coupled program for a state-by-s moderate-temperature resources for direct he	
Terrible idea Undesirable	DesirableGreat idea
Comments: Descrable of the	le inventory longer
of exploratory dille	ng o
<ul> <li>13. Further support of direct heat applica region.</li> </ul>	
	Desirable Great idea
Comments: (If desirable, how many per state	
Indormation too	sparse 5
Information too make quantita	this Judgment.
Name Annual P	<u>un</u> esc

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### QUESTIONNAIRE

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Listed below are some of the actual or potential DOE initiatives

designed to speed the commercialization of hydrothermal energy within the

Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

Initiatives		
<ol> <li>Collective planning with industry, state, le entities, attempting to develop a regional comment has the active support of all those involved.</li> </ol>		
(Check one)Terrible ideaUndesirable	DesirableGreat	idea
Comments:		
2. Industry-coupled, cost-shared drilling to co	onfirm new reservoirs.	
Terrible ideaUndesirable	DesirableGreat	idea
Comments: (If desirable, what size program wou Industry is capable of drilling all the is a market potential for incentive 3. Publication of data acquired under the Industry		
generation of case studies of different types of		the
Terrible ideaUndesirableXI  Comments: Obviously, the ivore that is generally	DesirableGreat Known the better.	idea
4. 50 MWe demonstration plant at the Valles Ca	ldera.	
Terrible ideaUndesirable[	DesirableGreat	idea
Comments: (If desirable, how many and what kind plants would you recommend?)  If resource and market will support 501  it. If not don't waste the Money	d of additional demonstra Nowe plant lest industry	ation build

5. Support of R&D to develop better drilling and correservoir stimulation techniques, exploration techniques conversion equipment.	ology and advance	ed
Terrible ideaDe	sirable	_Great idea
Comments: (If desirable, prioritize.)  I don't think this type of government soff cost effective,	not is genera	· ll y <sub>.</sub>
6. Support for development of wellhead (5-10MWe) g	enerators.	
Terrible idea	sirable Hese casclo and Nove in	Great idea  Lovge
Terrible ideaUndesirable \Des Comments: Com he used as incentive for 146	sirable Latry to do	Great idea He job
8. Reservoir insurance.		
Terrible idea	sirable ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ? ?	Great idea  Lf So  sut;
9. Tax treatment equivalent to fossil fuels.		
Terrible ideaUndesirableDes Comments:Des	sirable	_Great idea
10. Support of combined developer-utility analysis of economics to provide common ground for negotiations.	of reservoir deve ·	lopment
Terrible idea Undesirable Des Comments: Negotiations for what, Federal	sirable leases,	Great ide

Great idea

Great idea

Great idea

the

One or the

11. User assistance fi guidance on resource p		ations to provide initial equipment needs.
Terrible idea  Comments: Rescurce	undestrable e povential ye	Desirable  5. Equipment?
12. State-coupled pro		tate inventory of low-and eat applications.
Terrible idea	Undesirable	Desirable
Comments:		
13. Further support oregion.	of direct heat applica	tions demonstrations in t
Tannible idea	Undosinable	Doginable

Name D. T. Mc Millon

Comments: (If desirable, how many per state?)

I think federal program should evaluate reserveir potential on public land, including drill holes in advance of basing if desirable for stimulating leasing interest. Grammers or insurance to case the burden of financing for paper developments night he an acceptable stimulus, It grathernal paper is to be useful it has to stong on its economic werits in competition with nuclear and coal power - 95 of Geysers - not be a federally supported industry. If perthernal power is not competitive with other sources of generation ce lo cerants it ?



Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments: You will probably never get complete agreement, but the variety of viewpoints represented should help prevent impossible state regulations duplication of certain programs, etc.
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible idea UndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)  Only in "wildcut areas" The program should be used to stimulate  deep holes in geologic settings previously untested.
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: It would inappropriate not to publish the results of
government supported research
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)
Don't know enough to truely evaluate this. I would profer reservoir insurance up to the copital cost of the plant.

		$(\overline{2})$	
5. Support of R&D to de reservoir stimulation to conversion equipment	ęchniques, explora		
Terrible idea	Undesirable	Desirable	Great ide
Comments: (If desirable	, prioritize.)	•	
6. Support for develop	ment of wellhead (	5-10MWe) generators.	
Terrible idea	Undesirable	Desirable	Great ide
comments: Particularly a	ec water.	unity 4 runal coop	systems , f
7. Loan guaranty progra	am.		
Terrible idea	Undesirable	Desirable	Great ide
8. Reservoir insurance. Terrible idea	Undesirable	Desirable	Great ide
Comments: This is propromy in terms	of gotting po	ospect of the hight wer on line.	enpera tue
9. Tax treatment equiva	alent to fossil fu	els.	
Terrible idea	Undesirable	Desirable	Great ide
Comments: While our	knowledge of de	plation rotes is st	ill pretty
primative, this type	se of tax treats	munt is needed to	promote
development of the			
	developer-utility	analysis of reservoir gotiations.	development
Terrible idea			
Comments: Pats govern	ant pursonal in co	omposition w/ consulta	-ts, and,
subject to lousints.	Work in this	area should be restr	icted to
a I lia or the ter	chnical data for	reservoir insuran	ca purposas

٠ 4

ll. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableGreat idea
Comments: Guidence is fine, but some policy should be developed for private sector and local governments as to how much assistance can be provided.
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
comments: Will probably yield as much long term volue (in terms of reduced fossil fuel consumption) as the high temperature program.
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)  #/state limit is not sansible; prefer limit (say 2) per type  of application + make sure that the demonstrations are in  different geologie, + geographic are as.
Name John SONDERELGER
MONTANA BUREAU OF MINES & GEOLUGY

# RECEIVED

AUG 2 1 1978

#### QUESTIONNAIRE

GEOTHERMAL ENERGY

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs

program is crain responsive to the negron's needs.
<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirable
comments: But probably mat practical, because wherever economics are get to change in an area, there will be these who will take advantage of the situation.  2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableX DesirableGreat idea
Comments: (If desirable, what size program would you recommend?)  Carry size to get something started.
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirable
Comments:
4. 50 MWe demonstration plant at the Valles Caldera. Can't comment
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.
Terrible ideaUndesirable
Comments: (If desirable, prioritize.)
6. Support for development of wellhead (5-10MWe) generators. (Can't comm
Terrible ideaUndesirableDesirableGreat idea
Comments:
7. Loan guaranty program.
Terrible ideaUndesirable
Comments:
8. Reservoir insurance. Don't benow what this is
•
Terrible ideaUndesirableDesirableGreat idea Comments:
Commencs
9. Tax treatment equivalent to fossil fuels.
Terrible ideaUndesirableX_DesirableGreat idea
Comments:
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10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.
Terrible ideaUndesirableGreat ide
Comments:

Comments:			
	program for a state-by e resources for direct		low-and
Terrible idea	Undesirable	<u> </u>	Gre
Comments: But 4	hus for no or como milling to l'investigators was	e involved	in the
inventories se	como willing to	do am work	to alta
basic data. All	linustigators was	nt to do Librar	y resed
13. Further supporregion.	t of direct heat appli	cations demonstratio	ns in the
Terrible idea	Undesirable	Desirable	Gre

Name DAN MILLER - STATE GEOLOGIST OF WYOMING

Clayton - We are receiving 4-6 inquiries/year from individuals on DOE grants who simply want to inventary published data. This isn't accomplishing anything.

What we need are longer term commitments to actually do some works digging up basic data.

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible idea Undesirable Desirable Great idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

5. Support of R&D to deverge reservoir stimulation tech				
conversion equipment. ປ Terrible idea	IIndocinah la	Desirable	Great	idos
		Destrable	ureat	ruea
Comments: (If desirable, p	prioritize.)			
			$\overline{}$	
6. Support for developmer	nt of wellhead (5	5-10MWe) generators.		
	Undesirable	Desirable	<i>⊘</i> Great	idea
Comments:				
Comments.				
	,			
7. Loan guaranty program.				
Terrible idea	Undesirable	Desirable	Great	idea
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8. Reservoir insurance.				
Terrible idea	Undesirable	Desirable	Great	idea
Comments:		·		
		•		
9. Tax treatment equivale	ent to fossil fue	els.		
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Comments: Tax from	atment to	hat is even	facci/	Fupl
MORE POVO	orapre Tra	n Mail glown	10.331/	7 40 6
<ol><li>Support of combined de economics to provide commo</li></ol>			r developmer	nt
Terrible idea	Undesirable	Desirable	Great	i de
Comments:	·	<del></del>		

Terrible idea	Undesirable	Desirable	Grea
Comments:		,	
12. State-coupled promoderate-temperature m	ogram for a state-by-s resources for direct h	tate inventory of loeat applications.	ow-and
Terrible idea	Undesirable	Desirable	Grea
Comments:			
Comments:  13. Further support oregion.	of direct heat applica	tions demonstrations	s in the
13. Further support o	of direct heat applica Undesirable	tions demonstrations	s in the
13. Further support oregion.	Undesirable	Desirable	
<pre>13. Further support of region.</pre>	Undesirable	Desirable	
<pre>13. Further support of region.</pre>	Undesirable	Desirable	

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AUG 6 1978; 1978

### QUESTIONNAIRE

Listed below are some of the actual or potential-DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

#### Initiatives

	Initiatives		
<ol> <li>Collective planning entities, attempting to has the active support of</li> </ol>	develop a regio	nal commercialization	
(Check one)Terrible idea	Undesirable	Desirable	✓_Great idea
Comments:			
2. Industry-coupled, co	ost-shared drill	ing to confirm new re	eservoirs.
Terrible idea	_Undesirable	Desirable	Great idea
Comments: (If desirable  3. Publication of data		•	
generation of case studi			
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
4. 50 MWe demonstration	i plant at the V	alles Caldera.	
Terrible idea	_Undesirable	Desirable	Great idea
Comments: (If desirable plants would you recomme	end?)	what kind of addition	nal demonstration

reserv	upport of R&D to deve voir stimulation tech rsion equipment.				
ຍ T	Terrible idea	Undesirable	Desirable	Great	idea
Commer	nts: (If desirable, p	rioritize.)	•		
6. Su	upport for developmen	t of wellhead (5-	10MWe) generators.		
1	Terrible idea	Undesirable	Desirable	Great	idea
Commer	nts:				
7. Lo	oan guaranty program.		·		
T	Terrible idea	Undesirable	Desirable	Great	idea
Commer	nts:				
8. Re	eservoir insurance.				
T	errible idea	Undesirable	Desirable	Great	idea
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	ıx treatment equivale		•		
T	errible idea	Undesirable	Desirable	Great	idea
Commen	ts:		. ·		
10. Su econom	apport of combined devoics to provide common	veloper-utility and ground for negot	nalysis of reservoi tiations.	r developmen	t
T	errible idea	_Undesirable	Desirable	Great	i de
Commen	nts·				

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
13. Further support of direct heat applications demonstrations in the region.
Comments: (If desirable, how many per state?) 5.
Name Rame EPA-III



OFFICE OF

## (Dil and Gas Conservation Commission

STATE OF ARIZONA

1645 WEST JEFFERSON, SUITE 420 PHOENIX, ARIZONA 85007 PHONE: (602) 271-5161

RECEIVED AUG 25 1973

BRANCH.

August 23, 1978

Ð

Mr. Clayton Nichols
Assistant Director for
Geothermal Energy
Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

Dear Mr. Nichols:

Attached is the completed questionnaire which you have requested.

If we can be of any further service, please advise.

Very truly yours

W. E. Allen

Director

Enforcement Section

WEA/vb

Enc.

Tisted below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

### Initiatives

<ol> <li>Collective planning with industry, entities, attempting to develop a region has the active support of all those inv</li> </ol>	nal commercialization	
(Check one)Undesirable	<u>X</u> Desirable	Great idea
Comments:		
2. Industry-coupled, cost-shared drill		
Terrible idea _XUndesirable	Desirable	Great idea
Comments: (If desirable, what size pro	gram would you recomm	nend?)
<ol><li>Publication of data acquired under generation of case studies of different</li></ol>	the Industry-Coupled types of reservoirs.	Program and the
Terrible ideaUndesirable	Desirable	Great idea
Comments: An industry-government	partnership is un	desirable.
	•	
4. 50 MWe demonstration plant at the V	alles Caldera.	
Terrible ideaUndesirable	<u>X</u> Desirable	Great idea
Comments: (If desirable, how many and plants would you recommend?)  Enough plants to utilize the full		
Enough plants to utilize the full meet market demand.	. potential of the	rieid - Or to

	imulation tec		ling and completion tion technology and	
vTerribl	e idea _	X Undesirable	Desirable	Great idea
minimized,	and proper		governmental respected, industrial industrial contractions and the second secon	
6. Support	for developm	ent of wellhead (!	5-10MWe) generators.	
Terribl	e idea	X_Undesirable	Desirable	Great idea
Comments:				•
7. Loan gua	ranty program	n.		
Terribl	e idea _	Undesirable	_XDesirable	Great idea
has comple		of his operati	nment loan, the beion - the same as	
8. Reservoi	r insurance.			
Terribl	e idea	Undesirable	Desirable	Great idea
Comments:				
				•
9. Tax trea	tment equiva	lent to fossil fue	els.	
Terribl	e idea	Undesirable	<u>X</u> Desirable	Great idea
Comments:				
•				
10. Support economics to	of combined of provide comm	developer-utility non ground for neg	analysis of reservo gotiations.	ir development
Terrible	e idea	X_Undesirable	Desirable	Great ide
Cammonte				,

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableXDesirableGreat idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableX _DesirableGreat idea
Comments:
·
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaX UndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
Name W. E. Allen
Director, Enforcement Section Arizona Oil & Gas Conservation
Commission



## State of New Mexico



GEOTHERMAL BHERGY BRANCH

RECEIVEDA

Commissioner of Public Lands

PHIL R. LUCERO

August 21, 1978

P. O. BOX 1148
SANTA FE, NEW MEXICO 87501

Mr. Clayton Nichols
Assistant Director for
Geothermal Energy
Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

Dear Mr. Nichols:

Per your letter of August 14, 1978, the following personal comments and answers are submitted for what they are worth and do not necessarily represent the present, past, or future thinking of the office of the Commissioner of Public Lands.

The questionnaire indicates that money has been taxed from the citizens for the government to use to subsidize energy. In this connection, it is noted that both state and federal governments have been taxing the various industries and using the money to give to universities and other such groups to make studies, demonstration plants, etc. It is submitted that this approach is entirely wrong.

From some of the research programs I have observed, money is simply being wasted and the energy problem is not being solved. The proper procedure is to harness greed and let it do the work. In this connection, all of the price controls on energy should be removed such as price controls on both new and old oil and gas, letting energy seek its level in the market place. The only control that should be kept should be an excess profits tax, which would have an impact on the oil and gas industry, wherein write-offs could be given for further development by industry in the hydrocarbon area with increased write-offs in development of other forms of energy such as geothermal. Further,

Mr. Clayton Nichols August 21, 1978 Page (2)

write-offs could be made for successful operations or in the alternative, some tax exemptions from those profits given. Once the hydrocarbons reach their price level in the market place it will be economical to develop the other forms such as geothermal.

At the current time, industry is unable to develop other forms of energy due in considerable part to regulations and controls relating to price and environment at all levels of government. These delays and controls add considerable expense to other forms of energy making them even less competitive with the regulated oil and gas.

In short, the price control and tax and dole out system is wrong and is not working. It will not work until controls are abolished and private industry is permitted to risk its own money and time and correspondingly reap the rewards when it is successful. Since Congress and the Administration persist in following this present system, the answers to the questions are submitted as a consolation.

Very truly yours,

WILLIAM O. JORDAN

General Counsel

WOJ:crk
Encl.

Listed below are some of the actual or potential DOE initiatives
designed to speed the commercialization of hydrothermal energy within the
Rocky Mountain Basin & Range Region. We would value your opinion of
the desirability of these initiatives so that we can make sure that our
program is truly responsive to the Region's needs.

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments:
·
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration/plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

reser		develop better drill techniques, explorat		
0	Terrible idea	Undesirable	Desirable	Great idea
Comme	ents: (If desirable	e, prioritize.)		
6. S	upport for develo	oment of wellhead (5	-10MWe) generators.	
	Terrible idea	Undesirable	Desirable	Great idea
Comme	ents:			
7. L	oan guaranty prog	ram.	/ .	
	Terrible idea	Undesirable	Desirable	Great idea
Comne	ents:	·		
8. R	eservoir insuranc	2.		
	Terrible idea	Undesirable	Desirable	Great idea ,
Conme	nts:			
9. T	ax treatment equi	valent to fossil fuel	ls.	
	Terrible idea	Undesirable	Desirable	Great idea
Comne			·	
10. S econo	upport of combined mics to provide co	d developer-utility a onmon ground for nego	analysis of réservo otiations.	ir development
	Terrible idea	Undesirable	Desirable	Great idea
Comme	nrs.			

of the distance of the direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat ide
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirable
Comments: (If desirable, how many per state?)
Name Julia Inches



#### **DIVISION OF STATE LANDS**

DEPARTMENT OF NATURAL RESOURCES

Room 411 Empire Building 231 East Fourth South Salt Lake\_Citv. Utah\_84111\_ (801) 533-5381 Scott M. Matheson

Gordon E. Harmston
Executive Director
Dept. of Natural Resources

William K. Dinehart
Director

August 24, 1978

RECEIVED

AUG 2 8 1978

GEOTHERMAL ENERGY

BRANCH

Mr. Clayton Nichols Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, ID 83401

Dear Mr. Nichols:

Enclosed please find the completed questionnaire dealing with the Rocky Mountain Basin and Range Regional hydrothermal energy development plan.

I trust this will be sufficient for your needs.

Yours very truly,

DONALD G. PRINCE ASSISTANT DIRECTOR

DGP/vbl

Enclosure

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>
(Check one)Terrible ideaUndesirableX_DesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)  The drilling should be left to private industry.
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableX DesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirable
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

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		nulation					d completion chnology and		
Ø	_Terrible	idea		_Undesirable	;   _	X	_Desirable	Great	idea
Com	ments: (If	desirabl	e, pr	ioritize.)					
6.	Support fo	or develo	pment	of wellhead	f (5-10	MWe.	) generators		
	Terrible	idea .		_Undesirable	· _	X	Desirable	Great	idea
Com	ments:	•							
7.	Loan guara	anty prog	ram.				÷		•
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Com	ments:								
8.	Reservoir	insuranc	e.						
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9.	Tax treatm	nent equi	valen	t to fossil	fuels.		•		
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10. eco	Support of nomics to p	f combine provide c	d deve ommon	eloper-utili ground for	ty ana negoti	lysi	is of reservo	oir developmer	it
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11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.					
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Comments:					
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.					
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Comments:					
13. Further support of direct heat applications demonstrations in the region.					
Terrible ideaUndesirableDesirableGreat idea	1				
Comments: (If desirable, how many per state?)					
Name Donald G. Prince Assit. Director					
Assit. Director  State of Utah					
Division of State Lands					
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AUG 2 8 1978

GEOTHERMAL ENERGY BRANCH

QUESTIONNAIRE

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AUG 16'78

WATER RESOURCES STATE ENGINEER COLO.

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

		<u>Initiativ</u>	es			
entitio	es, attemptir	nning with industry ng to develop a reg port of all those i	ional comme	cal and oth rcializatio	er Federal n plan that	
(Check	one) errible idea	Undesirable	_X_D	esirable	Great	idea
Commen	ts:					
						· . •
2. Ind	dustry-couple	ed, cost-shared dri	lling to co	nfirm new r	eservoirs.	
Te	errible idea	Undesirable	<u>X</u> Do	esirable	Great	idea
Commen	ts: (If desi	rable, what size p	rogram would	d you recom	mend?)	
3. Pul genera	blication of tion of case	data acquired unde studies of differe	r the Indus nt types of	try-Coupled reservoirs	Program and	the
Te	errible idea	Undesirable	<u>X</u> D	esirable	Great	idea
Comment	ts:					
4. 50	MWe demonstr	ation plant at the	Valles Cal	dera.		
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rese	Support of R&D to rvoir stimulation ersion equipment.	develop better drillin techniques, exploratio	g and completion n technology and	technology, advanced	
÷	_Terrible ide <b>a</b>	Undesirable	Desirable	X_Great	idea
Comm	ents: (If desirabl	e, prioritize.)	, ·		
6.	Support for develo	pment of wellhead (5-1	OMWe) generators.		
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7.	Loan guaranty prog	ram.			
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Comm	ents:				
8.	Reservoir insuranc	e.			
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Conim	ents:			·	
9.	Tax treatment equi	valent to fossil fuels			
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Comm	ents:				
10. s	Support of combine omics to provide c	d developer-utility and ommon ground for negot	alysis of reservo	oir developmen	t
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Commi	ents:				

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableX_DesirableGreat idea
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableX_DesirableGreat idea
Comments: (If desirable, how many per state?)
Name C. J. KUIPER

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

#### Initiatives

Initiatives
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the
generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

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5-10MWe) generators	
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Comments							. '
13. Fur	rther su	pport of di	rect heat appl	ications demo	nstration	ns in the	
Te	rrible i	dea	Undesirable	Desir	able	Great	idea
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Name (or	otional)	DAN	JD, CA	RDA,		·	
I am	associa	ted with a:	(Check o	ne)			
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	Utili	ty	·		•	13	
	Financ	cial Instit	ution			<b>*</b>	
$\angle$	State	Government			·		•
	Federa	al Governme	nt	v			•
	Other						•

COMPLETE

#### QUESTIONNAIRE

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>		
1. Collective planning with industry, state entities, attempting to develop a regional chas the active support of all those involved	ommercialization p	
(Check one) X Terrible ideaUndesirable	Desirable	Great idea
Comments:	• •	
2. Industry-coupled, cost-shared drilling t	o confirm new rese	rvoirs.
Terrible ideaUndesirable	Desirable:	
Comments: (If desirable, what size program	•	•
3. Publication of data acquired under the I generation of case studies of different type	ndustry-Coupled Pres of reservoirs.	ogram and the
Terrible ideaUndesirable	Desirable	XGreat idea
Comments:		
•		
4. 50 MWe demonstration plant at the Valles	Caldera.	
Terrible idea \( \sum_Undesirable \)_	Desirable	Great idea
Comments: (If desirable, how many and what plants would you recommend?)	kind of additional	demonstration

reservoir stimulation techniques, e conversion equipment.	exploration technology and advanced	
Terrible ideaUndesirab	oleDesirableGreat ide	a
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6. Support for development of well		
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7. Loan guaranty program.	$\checkmark$	
Terrible ideaUndesirab	oleDesirableGreat ide	a
Comments:		
8. Reservoir insurance.		
Terrible ideaUndesirab	oleDesirableGreat ide	a
Comments:		
· .		
9. Tax treatment equivalent to fos	•	
Terrible ideaUndesirab	oleDesirableGreat ide	a
Comments:		•
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<ol><li>Support of combined developer-u economics to provide common ground</li></ol>	tility analysis of reservoir development for negotiations.	
Terrible ideaUndesirab	oleDesirableGreat ide	a
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11. User assistance for direct heat appli guidance on resource potential and surface		initial
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Comments:		
12. State-coupled program for a state-by-	state inventory of	low-and
moderate-temperature resources for direct	heat applications.	•
Terrible ideaUndesirable	Desirable	Great idea
Comments:		
· •	•	
13. Further support of direct heat applic region.	ations demonstration	ns in the
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, how many per sta	te?)	
~ 10		
Name (optional) Stayley M. H	oward	
I am associated with a: (Check one	· .	
Developer		•
Utility		
Financial Institution		
State Government	***	
Federal Government	<b>47</b>	
Other		

STATE

#### QUESTIONNAIRE

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

program is truly responsive to the Region's needs.	
<u>Initiatives</u>	
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>	
(Check one)  Terrible ideaUndesirableX_DesirableGreat idea	l
Comments:	
•	
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.	
Terrible ideaUndesirableX_DesirableGreat idea	ŀ
Comments: (If desirable, what size program would you recommend?)  It would seem to me it would have to be a traction fercentage to enceunage industry - in some anears all 10070 federal as in routh Daketa.  3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.	\$ \$47.
Terrible ideaUndesirable	ι
Comments: This would be an invaluable advectional tool	,
4. 50 MWe demonstration plant at the Valles Caldera.	
Terrible ideaUndesirableGreat idea	ı
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)  This is annialrable educational demonstration.	

rese		develop better drill techniques, explorat		
ຍ 	_Terrible idea	Undesirable	∠ Desirable	Great idea
Com	nents: (If desirabl	e, prioritize.) unalogy in the	io area are	very alim.
6.	Support for develo	ppment of wellhead (5	-10MWe) generators.	
<del></del> -	_Terrible idea	Undesirable	Desirable	Great idea
Comr	ments:			
7.	Loan guaranty prog	ram.	•	
	_Terrible idea	Undesirable	Desirable	Great idea
Com	nents: certainle	y financing energy son	a tot son	me Land in been
8.	Reservoir insuranc	e.		
	_Terrible idea	Undesirable	<u> </u>	Great idea
Conin	ments:			
9.	Tax treatment equi	valent to fossil fue	ls.	
		Undesirable		
Comm	nents: centai	e got mi gen ged st benow	fold to the de	lax nologena,
10. econ	Support of combine omics to provide c	d developer-utility a ommon ground for nego	analysis of reservo otiations.	ir development
	_Terrible idea	Undesirable	Desirable	Great ide
Comm	nents:			

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible idea
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableGreat idea
comments: This also in a state like North Dakata is obsolutely recassary to drill degely and expensively to encourage Commencial Hodrotterm investigation.  13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableX_DesirableGreat idea
Comments: (If desirable, how many per state?)
essential to the Serogram.
Name John Corrod 8/21(78
8/21/78
North Dakota Energy Management and Conservation Office

North Dakota Energy Management and Conservation Office 1533 North 12th Street Bismarck, ND 58501 Phone: 701/224-2250

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

Initiatives
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
. 3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
comments: case studies can be helipful so that Eviling
C = C + C + C + C + C + C + C + C + C +
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)
DOE would be able to address this question better them this agency

S. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.	
Terrible ideaUndesirableDesirableGreat id	ea
Comments: (If desirable, prioritize.) He Sevubir Stimulation technique	
5. Support for development of wellhead (5-10MWe) generators.	
Terrible ideaUndesirableDesirableGreat id	ea
7. Loan guaranty program.	
Terrible ideaUndesirableDesirableGreat id	ea
Comments:	
3. Reservoir insurance.	
Terrible ideaUndesirableDesirableGreat id	ea
Comments:	
. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirableV_DesirableGreat id	ea
Comments:	
2. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.	
Terrible ideaUndesirableDesirableGreat id	e
`ammants:	14.75

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible idea Undesirable Desirable Great idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
·
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
-depends on potential and size of reservoirs
Name South Dalesta Dept of Env Protectisi

DEPARTMENT OF LANDS 23 1978

STATEHOUSE, BOISE, IDAHO 83720
GORDON C. TROMBLEY
DIRECTOR

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August 22, 1978

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STATE BOARD OF LAND COMMISSIONERS

JOHN V. EVANS
GOVERNOR AND PRESIDENT
PETE T. CENARRUSA
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WAYNE L. KIDWELL
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STATE AUDITOR
ROY TRUBY
SUPT OF PUBLIC INSTRUCTION

Mr. Joe Hanny EG&G Idaho, Inc. P.O. Box 1625, UPD Idaho Falls, Idaho 83401

Dear Mr. Hanny:

RE: Hydrothermal Energy Questionnaire

The referenced questionnaire sent to our Director by Mr. Clayton Nichols of the Idaho Operations Office of the Department of Energy has been directed to my attention for response. The topic concerns an evaluation of some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the basin and range region.

The Idaho Department of Lands serves as the administrative agency for the State Board of Land Commissioners. The responsibility of the Department as relates to geothermal resources is directed towards managing the geothermal resource leasing program on State mineral lands. The intent is to provide for the availability of State lands for geothermal resource potential, in consideration of minimum environmental standards established in the rules and regulations, and to insure the State receiving a fair market value for the rights for exclusive exploration and development of this resource. Following issuance of a lease, the Department has a minimal level of involvement in the management of any geothermal development thereon. Regulatory matters for geothermal resource energy development in Idaho are handled by the State Department of Water Resources.

We have reviewed thirteen initiatives placed on the questionnaire. In consideration of the Department's interest in geothermal resources, we believe we are not adequately informed to respond per your request. While we do have an interest in the success of this potential energy source, we believe those directly involved with the development and regulation are best suited to answer the inquiries.

Thank you for this opportunity to participate.

Sincerely yours,

ARTHUR D. ZIEROLD, Chief Bureau of Minerals

ADZ:sjb

\* \* Division of State Lands

State Land Office

State Land Use Planning Agency
(702) 885-4363

Ú



### RECEIVED Division of State Lands

Address Reply to ""
Division of State Lands "
201 S. Fall Street
Capitol Complex
Carson City, Nevada 89710

AUG 23 1978

**QEQUHERMAL** ENERGY

STATE OF NEVADA

BRANCH
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

Division of State Lands

August 18, 1978

	E I V A. HANN	
AUC	329 19	78
		:
Action	Info	FÃO :
	<del></del>	

Clayton Nichols Assistant Director for Geothermal Energy 550 Second Street Idaho Falls, Idaho 83401

Dear Mr. Nichols:

Upon examining your questionnaire (enclosed), it became apparent that our office has very little expertise relevant to the specific subject matter. For this reason, we are returning the questionnaire incomplete. I assume that you have been in contact with Nevada's Department of Energy. If not, it would be valuable for you to contact Mr. Noel Clark, Nevada Department of Energy, 1050 East William, Suite 405, Carson City, Nevada 89710.

I am sorry that we could not be of more assistance to you in this matter. If we can help you in the future, do not hesitate to contact us.

Very truly yours,

Fred Welden

State Land Use Planner

Fred Welden

FW/1c enclosure

ECEL / S	.; 
AUG 2.8 1978	•

Listed below are some of the actual or potential DOE initiatives		-
designed to speed the commercialization of hydrothermal energy wit	1 5	
Rocky Mountain Basin & Range Region. We would value your opinion	of	
the desirability of these initiatives so that we can make sure tha	it our	
program is truly responsive to the Region's needs.		

the desirability of these initiatives so that we can make sure that our
program is truly responsive to the Region's needs.
<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableOesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

reservoir stimulation to conversion equipment.	techniques, explor	ation technology and	advanced
Terrible idea	Undesirable	$\mathcal{X}_{ extsf{Desirable}}$	Great idea
Comment: (If desirable	e, prioritize.)		
6. Support for develop  Terrible idea  Comment:	oment of wellheadUndesirable	(5-10MWe) generatorsDesirable	. Great idea
7. Loan guaranty progr Terrible idea Comments:		Desirable	Great idea
8. Reservoir insuranceTerrible idea Comments:	Undesirable	Desirable	Great idea
9. Tax treatment equiv	Undesirable	uels.  Desirable  There	Great idea
O. Support of combined economics to provide co		y analysis of reservo	oir development
Terrible idea	Undesirable	Desirable	Great idea
Comments:			

		for direct heat app potential and surfa	lications to provide ce equipment needs.	initial	•
0	_Terrible idea	Undesirable	Desirable	Great	idea
Comm	ents:				
mode	rate-temperature		y-state inventory of theat applicationsDesirable		idea
regi	on.	of direct heat appl	ications demonstrationDesirable	ns in the	idea
Comm	ents: (If desira	able, how many per s	tate?)		
	(optional)				•
I		ith a: (Check o	ne)		
	Developer				•
	Utility				
	Financial i	nstitution			
	State Gover	rnment			
	Federal Gov	rernment			
	Other				

J. A. MACH
AUG 2 5 1978
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Action Info File
itiatives
energy within the
ur opinion of
ke sure that our
other Federal ation plan that
eGreat idea
-
ew reservoirs.
e <u>X</u> Great idea
ecommend?) 1984 is ambitious, t \$22 million/year
pled Program and the oirs.
e X Great idea
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eGreat idea

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Eisted below are some of the actual or potential DOE initial to the control of the actual or potential DOE initial control of the actual or potential control of the actual control of the actual or potential control of the actual or potential control of the actual or potential control of the actual cont	tiatives		
designed to speed the commercialization of hydrothermal	energy wit	hin the	
Rocky Mountain Basin & Range Region. We would value you	ır opinion	of	
the desirability of these initiatives so that we can make	ce sure tha	it our	
program is truly responsive to the Region's needs.			
Initiatives		•	
1. Collective planning with industry, state, local and entities, attempting to develop a regional commercializathas the active support of all those involved.	other Fede ition plan	ral that	
(Check one)Terrible ideaUndesirableX _Desirable	·	Great i	dea
Comments: As obviously necessary as Motherhood.			
2. Industry-coupled, cost-shared drilling to confirm ne	w reservoi	rs.	
Terrible ideaUndesirableDesirable	; <u>X</u>	Great i	dea
Comments: (If desirable, what size program would you re The stated goal of at least 400 wells, 2000 holes through but appropriate. The size of the program must be at least for DOE in order to achieve this goal.	1984 is am	bitious, on/year	•
3. Publication of data acquired under the Industry-Coup generation of case studies of different types of reservo	oled Progra Dirs.	am and t	he
Terrible ideaUndesirableDesirable	<u> </u>	_Great i	dea
Comments: Obvious necessity to follow above.			

Terrible idea X Undesirable Desirable Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?) What the program should attempt to do is to demonstrate new technology, not old. The need is to build and operate a commercial-size binary plant. (Even) The Mexicans have already demonstrated that a finished steam plant can be properly built and operated.

4. 50 MWe demonstration plant at the Valles Caldera.

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.	
Terrible ideaUndesirableX DesirableGrea	t idea
Comments: (If desirable, prioritize.) A prioritizing of the broad catage included is from top to bottomreservoir stimulation techniques, explorate technology, advanced conversion equipment, improved drilling and completion technology.	ion
6. Support for development of wellhead (5-10MWe) generators.	
Terrible ideaUndesirableXDesirableGrea	t idea
Comments: The market should also reach down to the 1 MWe level. This development can be of real significance to get early power-on-line.	
•	
7. Loan guaranty program.	
Terrible ideaUndesirableDesirableX Grea	t idea
Comments: It is pathetically organized and administered. No Washington is demonstrated, and DOE(SAN) is frustrated by indecision, buck-passing at quarters. Last week our second application was sent on to Washington with recommendation for approval by DOE(SAN), a full 314 days after having firs submitted the application.	: head- . a
8. Reservoir insurance.	
Terrible ideaUndesirableDesirableX Grea	t idea
Comments: Great idea, if obtainable.	
•	
9. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirableDesirableX Grea	t idea
Comments: And an absolute necessity if hydrothermal commercialization can have any hope of success. Number One priority of anything and everything!	
10. Support of combined developer-utility analysis of reservoir developm economics to provide common ground for negotiations.	ent
Terrible ideaX UndesirableDesirable Grea	t idea
Comments: Industry and utilities can handle it themselves, and government is less experienced and knowledgeable.	

ll. User assistance for direct heat applicat guidance on resource potential and surface ed	
Terrible ideaUndesirable	X Desirable Great idea
Comments:	
12. State-coupled program for a state-by-sta moderate-temperature resources for direct hea	
Terrible ideaX_Undesirable	DesirableGreat idea
Comments: Low priority relative to other mean and how much further do you want to go than wh	
13. Further support of direct heat application.	ions demonstrations in the
Terrible ideaUndesirable	X Desirable Great idea
Comments: (If desirable, how many per state?	?) Maybe a half-dozen per state.
Name	REPUBLIC CEROTHERMAL, INC.  DR. 2. 1. "EILL" EMITH  VICTATIBETY - EXTERNION  11823 E. SLAUSON (AVE., SUITE, 1) (219)  SANTA FE SPRINGS, CA. 80370 (243-883)

8/1.7/78

AUG 2 1 1978

## GEGTHERMAL ENERGY BRANCH

#### QUESTIONNAIRE

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

	program is truly responsive to the Region	's needs.	
	Initiatives		
	1. Collective planning with industry, stentities, attempting to develop a regiona has the active support of all those involved	l commercialization plan	
	(Check one)	Desirable	Great idea
	Comments: Communism		
,			
	2. Industry-coupled, cost-shared drilling		
	Terrible ideaUndesirable	Desirable	Great idea
	Comments: (If desirable, what size programments: Every reservoir should be	am would you recommend?)  e95 tudied  b) results desimina	ted
, <i>L</i>	3 Publication of data acquired under the Industry-Coupled Program and the		
Not	Terrible ideaUndesirable	Desirable	Great idea
Not oy Gov	Comments:		
	4. 50 MWe demonstration plant at the Val	les Caldera.	
	Terrible ideaUndesirable	<pre>Desirable</pre>	Great idea
	Comments: (If desirable, how many and who plants would you recommend?)  Not New te Chhology.	at kind of additional dem	onstration

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.	
Terrible ideaUndesirable	ea
Comments: (If desirable, prioritize.) Unluevsities cannot do this research	
6. Support for development of wellhead (5-10MWe) generators.	
Terrible ideaUndesirableDesirableGreat id	ea
7. Loan guaranty program.	
Terrible ideaUndesirableDesirableGreat id	ea
8. Reservoir insurance.  XTerrible idea Undesirable Desirable Great id  Comments: Another blood sucker	ea
9. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirableDesirableGreat id	ea
Comments: one change will get geothermal off the Line.	
10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.	
	e
Comments: This is a marketplace, economic decision which should be exo-government.	

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirable $X$ _DesirableGreat idea
comments: If hon-university, good
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)  Porportional to number of congressmen
Name David Butler.
To solve power-generation problems:
change too treatment
la solve direct-use problems, get
To solve direct-use problems: get scientists and engineers out of problem -
they are to expensive. You must by your geothermal heater at the local department
or hardware store if it is going to sell.

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ς E C J. A.	E 1 / HALAI	-/-
AUG	3 0 1979	3 '
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Action		
iatives		
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Listed below are some of the actual or potential DOE init designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableX DesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
X Terrible idea Undesirable Desirable Great idea
Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
X Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible idea X Undesirable Desirable Great idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

	#3	#5	#4	#1	4
5.	Support of R&D to servoir Stimulation	develop better drill techniques explorat	ing and completion technology an	n technology, d advanced #	a.
Col	nversion equipment				<b>SC</b>
	Terrible idea	Undesirable	Desirable	XGreat	idea
Coi	mments: (If desirabl	e, prioritize.)			
6.	Support for develo	pment of wellhead (5	5-10MWe) generator	s.	
<del></del>	Terrible idea	Undesirable	XDesirable	Great	idea
Cor	nments:				
7.	Loan guaranty prog	ram.			
	Terrible idea	Undesirable	X Desirable	Great	idea
Cor	nments:				
8.	Reservoir insuranc	e. To insure against	what?		
	Terrible idea	Undesirable	Desirable	Great	idea
Cor	nments:				
9.	Tax treatment equi	valent to fossil fue	els.		
	Terrible idea	Undesirable	Desirable	X_Great	idea
10.	Support of combine	35% depletion allowar  d developer-utility	analysis of reser	voir developmen	t
eco	·	ommon ground for neg		,	
	Terrible idea	Undesirable	XDesirable	Great	idea 🦣
Con	ments:				

	User assistance for direct heat applications to provide initial uidance on resource potential and surface equipment needs.	
<del>2,</del>		dea
Co	onuments:	
	State-coupled program for a state-by-state inventory of low-and oderate-temperature resources for direct heat applications.	
	Terrible ideaUndesirable	iea
Co	omments:	
	3. Further support of direct heat applications demonstrations in the gion.	
	Terrible idea X UndesirableDesirableGreat id	dea
Со	mments: (If desirable, how many per state?)  Depletion allowance of 35% should take care of this.	
Na	me $\frac{1}{12}$ . $\frac{1}{12}$ . $\frac{1}{12}$ . $\frac{1}{12}$ .	
	W. A. Glass, President	
	Big Chief Drilling Company	



AHR 3 1 1978

GEOTHERMAL ENERGY BRANCH

Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, Idaho 83401

August 14, 1978

Leo Ray Fish Breeders of Idaho Route B, Box 198 Buhl, ID 83316

Dear Mr. Ray:

The Division of Geothermal Energy recently mailed a copy of the Rocky Mountain Basin and Range Regional Hydrothermal Commercialization Plan to you for your information and use. The same document was distributed at the annual Geothermal Resources Council meeting held during July at Hilo, Hawaii. The questionnaire attached to this letter was used at Hilo to obtain input for continued participative planning of the DOE effort within the region. The responses to the questions were interesting and helpful. After reviewing these responses, we felt that a larger sample would provide additional information to develop an expanded basis for continued support or rejection of various components of the DOE-planned effort. The questionnaire relates to DOE involvement in accelerating the use of hydrothermal energy within the region. The questions are selected primarily from material contained in Section VI of the commercialization plan.

We would appreciate receiving your response to the thirteen questions on the attachment, and any other comments you may wish to make. If possible, we would like to receive your response by September 5, 1978. Please return questionnaires to Joe Hanny, EG&G Idaho, Inc., P.O. Box 1625, UPD, Idaho Falls, Idaho 83401.

Thank you very much for your cooperation and interest.

Sincerely,

Clayton Nichols Assistant Director for

Clyta nichols

Geothermal Energy

Attachment: As stated

AUG 3 1 1978

GEDTHERMAL ENERGY BRANCH

#### QUESTIONNAIRE

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

program is truly responsive to the Region's needs.
Initiatives
l. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableX_DesirableGreat idea
Comments: (If desirable, what size program would you recommend?) $Work$ $w(76 SiN=0 bosiness)$
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

5. Support of R&D to reservoir stimulation conversion equipment.	develop better drilling techniques, exploration	g and completion n technology and	technology, advanced
o Terrible idea	Undesirable	<u></u> ∑_Desirable	Great idea
Comments: (If desirab	le, prioritize.)		
6. Support for develo	ipment of wellhead (5-10	OMWe) generators	
Terrible idea	Undesirable	Desirable	✓ Great idea
Comments:			<del>-/</del>
7. Loan guaranty prog			
	Undesirable	Desirable	Great idea
Comments: 5BA	+ existing Ag	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	zude This
Educate Th	em rether	Than bui	Il = new
gentramina			
8. Reservoir insuranc	ce.		
XTerrible idea	Undesirable	Desirable	Great idea
Comments: 90 70 Toly the reick	on Chetroce	buginess m	they will
9. Tax treatment equi	ivalent to fossil fuels		
Terrible idea	Undesirable	<u> </u>	Great idea
Comments:			
			•
10. Support of combine economics to provide of	ed developer-utility and common ground for negot	alysis of reserv	oir development
Terrible idea	Undesirable		Great ide
Comments:		•	

,• ·	
	11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
	<u>n</u> Terrible ideaUndesirable
	Comments:
	12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
	Terrible ideaUndesirableDesirable $\swarrow$ Great idea
	Comments: This is needed to get small business
	13. Further support of direct heat applications demonstrations in the region.
•	Terrible ideaUndesirableK_DesirableGreat idea
	Comments: (If desirable, how many per state?)
,	Name Lea E Ray
	<i></i>



O

July 13, 1978

J. A. Hanney EG&G IDAHO, INC. P. O. Box 1625 Idaho Falls, ID 83401

RE: Draft Regional Hydrothermal Development Plan

Dear Mr. Hanney:

I have reviewed the draft of the above referenced plan and have no suggestions or recommendations to make. I think it is an excellent start.

officered,

MELVIN D. ALSAGER

Director, Environmental and Energy Affairs

MDA/ac

	E I V A. HANN	
JUI	L 1819	78
Action	Info	File
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### RECEIVED AUG 25 1978

#### QUESTIONNAIRE

GEOTHERMAL ENERGY BRANCH

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

#### Initiatives

Initiatives
l. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
·
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

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7.	Loan guaranty prog	gram.			
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	Reservoir insuranc	ce. Undesirable	Desirable	Great	i
8. Con	Reservoir insurand Terrible idea ments:	<u>Undesirable</u>		Great	i
8. Con	Reservoir insuranceTerrible idea nments: Tax treatment equi	Undesirable	ıs.		
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11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.	
Terrible ideaUndesirableGreat idea	
Comments:	
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.	
Terrible ideaUndesirableDesirableGreat idea	
Comments:	
13. Further support of direct heat applications demonstrations in the region. Terrible ideaUndesirableDesirableGreat idea	
Terrible ideaUndesirableDesirableGreat idea	
Comments: (If desirable, how many per state?)	
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Name Aulon Colsager	

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Listed below are some of the actual or potential DOE init	1		i
designed to speed the commercialization of hydrothermal en	nergy_wit	hi <del>n-th</del>	e
Rocky Mountain Basin & Range Region. We would value your	opinion	of	
the desirability of these initiatives so that we can make	sure tha	it our	•
program is truly responsive to the Region's needs.	1		
<u>Initiatives</u>			
1. Collective planning with industry, state, local and of entities, attempting to develop a regional commercializat has the active support of all those involved.			
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Comments:			
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2. Industry-coupled, cost-shared drilling to confirm new	reservoi	rs.	
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Comments: (If desirable, what size program would you rec	•		
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3. Publication of data acquired under the Industry-Couple generation of case studies of different types of reservoi	ed Progra		
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Comments:			
4. 50 MWe demonstration plant at the Valles Caldera.			
Terrible ideaUndesirableDesirable	<del></del>	_Great	idea
Comments: (If desirable, how many and what kind of addit	ional dem	nonstra	tion

5. Support of R&D to develop better drilling and or reservoir stimulation techniques, exploration techniques conversion equipment.	
Terrible ideaUndesirableDe	esirableGreat idea
Comments: (If desirable, prioritize.)  1. ADVANCED CONVERSION  2. EYPLO. TELH  3. RESERVOIR STIM	BETTER DRILLING
6. Support for development of wellhead (5-10MWe) of	
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Comments:	
7. Loan guaranty program.	
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8. Reservoir insurance.	
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9. Tax treatment equivalent to fossil fuels.	
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Comments:	
10. Support of combined developer-utility analysis economics to provide common ground for negotiations	of reservoir development
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11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
13. Further support of direct heat applications demonstrations in the region.
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Comments: (If desirable, how many per state?)
MORE DESIRABLE BY APPLICATION OR INDUSTRY, PERHAPS 2-3 PER REGION PER INDUSTRY,
TERMINS 2-3 PER REGION PER INDUSTRY,
Name John Aust

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QUESTIONNAIRE

GEOTHERMAL ENERGY BRANCH

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

Initiatives 1. <u>Collective</u> planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved. (Check one) Terrible idea \_\_\_\_\_Undesirable \_\_\_\_\_Desirable \_\_\_\_\_Great idea comments: It collective means joint mortings like that at SLC, then the idea is not good. If it means your staff will contact separately and discuss concorns with all in area who might get involved in gethermal then the idea is great so in mertings and large committee meetings are a waste of everyone's fine. 2. Industry-coupled, cost-shared drilling to confirm new reservoirs. ✓ Great idea Terrible idea Undesirable Desirable Comments: (If desirable, what size program would you recommend?) Should be the major part of your program, but should include all types of wells and all types of developers - not just the major drilling the 1500 to 2500 m leeles Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs. Terrible idea \_\_\_\_Undesirable \_\_\_\_Desirable \_\_\_\_Great idea Comments: . 4. 50 MWe demonstration plant at the Valles Caldera. Desirable Great idea Terrible idea Undesirable Comments: (If desirable, how many and what kind of additional demonstration

plants would you recommend?) You ought to push "the technology on the next ones. Either dual purposes low temp. steam, or binary

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	5. Support of R&D to reservoir stimulation conversion equipment.		ing and completion te ion technology and ad	
	o Terrible idea	Undesirable	✓ Desirable	Great idea
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	6. Support for develop		•	
	Terrible idea		_	Great idea
	lease basis at	a bolerable price	ie for the lease	emporary
	7. Loan guaranty prog	ram.		
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	Comments: Something d the bankers, and developers. The re	lifterent is need lis used (generally dependent) and superior intoller	ed. The GLGP pr ly) only in despera erable.	etion by
	8. Reservoir insurance	e.		
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	9. Tax treatment equiv	valent to fossil fue	ls.	
	Terrible idea	Undesirable	Desirable	✓ Great idea
	comments: or even	more favorable lernative energ	treatment it y	ou are trying
	10. Support of combined economics to provide co			development
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	Comments: None of s	the government preting)	's business, in g	general, Chales

11. User assistance for o guidance on resource poter	• •	•	tial
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comments: There are en professioned services new that the industrial	igineering firm of this type by has makin	s quite capable s e. There should be ed	f providing no govy, inc
12. State-coupled program moderate-temperature resonant			y-and
Terrible idea	Undesirable	Desirable	Great idea
Comments: Low Key do	irect heat applica	tions demonstrations	in the
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Comments: (If desirable, The program should against undue risk, projects, ————————————————————————————————————	how many ner stat	e?)	

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	QUESTIONNAIRE		yan
o Listed below are son	ne of the actual or po	tential DOE initi	atives
designed to speed th	e commercialization o	f hydrothermal en	ergy within the
Rocky Mountain Basir	& Range Region. We	would value your	opinion of
the desirability of	these initiatives so	that we can make	sure that our
program is truly res	ponsive to the Region	's needs.	
	<u>Initiatives</u>		
entities, attempting	ning with industry, st g to develop a regiona ort of all those invol	l commercializati	her Federal on plan that
(Check one)Terrible idea	Undesirable	Desirable	Great idea
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2. Industry-coupled	l, cost-shared drillin	g to confirm new	reservoirs.
Terrible idea	Undesirable	Desirable	Great idea
founds like I don't hus  3. Publication of a	rable, what size programmed a grand called, white was fellowed under the studies of different to	Tales Ef ma inquillenous e Industry-Couple	lustry burset, the lo aunuli. ed Program and the
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D'unts would you rec	rable, how many and who commend?) Gavit	ing components	onal demonstration 4 COUCEPTS YOUTHER

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(3)		develop better drilling techniques, exploration	•	<b>Q</b>
	Terrible idea	Undesirable	Desirable	Great idea
	Comments: (If desirab	le, prioritize.)	· ·	
	6. Support for development	opment of wellhead (5-10	OMWe) generators.	
	Terrible idea	Undesirable	Desirable	∠ Great idea
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bu f	it is desirable ouls	a going for t	ngest.	1 29 22 1 1 1 1 1 1 1
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	Terrible idea	Undesirable	Desirable	Great idea
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	be degirable part	of provous only	If It works	, le, it resonate
	9. Tax treatment equ	valent to fossil fuels.		
				Great idea
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	THIS OVERUA DE	aniques 14 geogr	uy ger svenin	our live gulady
	10. Support of combine economics to provide of	ed developer-utility and common ground for negot	alysis of reservoir iations.	^ development
e Maria	Terrible idea	Undesirable	Desirable	Great idea
4.4	Comments: \$ V1/4k	any idea to try of	o resolve the	utility's lack of
PHOPERIX	comments: De Miluk We could donce in no to unlargetond sty	esorvoles is worth	errogalug of	this time, this
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11. User assistance for guidance on resource pote			itial
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Comments:			
12. State-coupled progra moderate-temperature reso			w-and
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(to clocyriasi)  13. Further support of	I would visualize	ert And Shot	rigg a relatively
region.			low priority;
errible idea _	Undesirable	Desirable	Great idea
Comments: (If desirable,	how many per state?)		

Jose - I still feel your agrowh should be last as a frost peterun of ille & projects rather than the ville I the third in one few selects out it is still too early to they to septembly partie which illes will be wort successful. I think you should place you englass on those , but, do a little work as developing any select that comes along, I think you should base on you stip someone who can please your illess or following up on new ideas something the week and will be with any developing when it is not the ideas start gets min on the season of their sport after woulth yet will the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the ideas start gets min on the season of the se

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Listed below are some of the actual or potential DOE init designed to speed the commercialization of hydrothermal en Rocky Mountain Basin & Range Region. We would value your the desirability of these initiatives so that we can make program is truly responsive to the Region's needs.

#### Initiatives

en t	ities, attempt	ing to	with industry, develop a regi f all those in	onal co	ommercializati			
(Ch	eck one) Terrible ide	a	_Undesirable	>	✓ Desirable		_Great	idea
Com	ments:							
2.	Industry-coup	led, co	st-shared dril	ling to	o confirm new	reservo	irs.	
	Terrible ide	a	_Undesirable		X_Desirable		Great	idea
3.	Publication o	f data	, what size pr acquired under es of differen	the Ir	ndustry-Couple	d Progra	am and	the
	Terrible ide	a	_Undesirable		Desirable	X	_Great	idea
Com	ments:						·	
4.	50 MWe demons	tration	plant at the	Valles	Caldera.	,		
	Terrible ide	a	_Undesirable		∠Desirable		_Great	idea
		sirable	, how many and					

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5. Support of R&D to creservoir stimulation conversion equipment.	develop better <u>drill</u> techniques, <u>explorat</u>	ing and completion ion technology and	technology, advanced	
Terrible idea	Undesirable	) Desirable	Great	idea
Comments: (If desirable	e, prioritize.)			
6. Support for develop	oment of wellhead (5	-10MWe) generators.		
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7. Loan guaranty prog	ram.			
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10. Support of combined economics to provide co	d developer-utility ommon ground for neg		ir developmer	nt
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Il. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableX_DesirableGreat idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableX Great idea
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirable
Comments: (If desirable, how many per state?)
Name L. J. Patrick Maffler

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#### QUESTIONNAIRE

GEOTHERMAL ENERGY BRANCH

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

program to orally response to the majority and the
<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableV_DesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)  # 3,000,000 per yr
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

COL	Support of R&D to deservoir stimulation to version equipment.	evelop better drill echniques, explorat	ling and completion tion technology and	technology, advanced	
φ 	Terrible idea	Undesirable	<u> Desirable</u>	Great	i dea
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6.	Support for developm	ment of wellhead (5	5-10MWe) generators.		
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8.	Reservoir insurance.				
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9.	Tax treatment equiva	lent to fossil fue	els.	•	
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11. User assistance fo guidance on resource po			initial	
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designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

#### <u>Initiatives</u>

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. Industry-coupled, cost-shared drilling to confirm new reservoirs.	
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Comments: (If desirable, what size program would you recommend?)	
3. Publication of data acquired under the Industry-Coupled Program and generation of case studies of different types of reservoirs.	
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Comments: (If desirable, how many and what kind of additional demonstration

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50 MWe demonstration plant at the Valles Caldera.

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5. Support of R&D to develop better drilling and compreservoir stimulation technologonversion equipment.	letion technology, gy and advanced	
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Comments: (If desirable, prioritize.)		
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	13. Further support of direct heat applications demonstrations in the region.	
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Listed below are some of the actual or potential DOE initiatives

designed to speed the commercialization of hydrothermal energy within the

Rocky Mountain Basin & Range Region. We would value your opinion of

the desirability of these initiatives so that we can make sure that our

program is truly responsive to the Region's needs.

program is truly res	ponsive to the Regio	on's needs.	
	<u>Initiatives</u>		
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(Check one)Terrible idea _	Undesirable	Desirable	Great idea
Comments:		·	
2. Industry-coupled,			
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Terrible idea _	Undesirable	Desirable	Great idea
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4. 50 MWe demonstrat	ion plant at the Va	lles Caldera.	
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5. Support of R&D to develop better drilling and completion technology,

ents: (If desira	Undesirable able, prioritize.) elopment of wellheadUndesirable	(5-10MWe) generators.		
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<i>મુલજા</i> ?	comments: We alla ber of not spa maxiled, 13. Further support of	eady know in the contraction of the contract heat applications of the contraction of the	where a ga many of the	ed f
	region.	arreet near approact	ons demonstrations in	, the
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des	igned to speed the commercialization of hydrothermal energy within the
Roc	ky Mountain Basin & Range Region. We would value your opinion of
the	desirability of these initiatives so that we can make sure that our
pro	gram is truly responsive to the Region's needs.
	<u>Initiatives</u>
ent	Collective planning with industry, state, local and other Federal ities, attempting to develop a regional commercialization plan that the active support of all those involved.
(Ch	eck one)Terrible ideaUndesirableDesirableGreat idea
Com	ments:
2.	Industry-coupled, cost-shared drilling to confirm new reservoirs.
	Terrible ideaUndesirableDesirableGreat idea
6E0 NOT TWO 1	ments: (If desirable, what size program would you recommend?)  THERMAL RESERVOIRS ARE SO INDIVIDUAL AND UNIONE THAT  POSSIBLE TO CIVE A MAXIMUM FIGURE. SAGGIST A MINIMUM OF  PER GEOLOGIC PROVINCE EC. RIO GRANDE, BASIN AND RAWLE, CASCADES, SACTON SEAS,  Publication of data acquired under the Industry-Coupled Program and the eration of case studies of different types of reservoirs.
	Terrible ideaUndesirableDesirableGreat idea
Com	ments:
4.	50 MWe demonstration plant at the Valles Caldera.
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pla HIG	ments: (If desirable, how many and what kind of additional demonstration nts would you recommend?)  H SALINITY RESERVOIR
	LE FLASH SYSTEIN EN RESERVOIR OF 200°C-220°C

	tion techniqu		ng and completion on technology and	
Terrible ide	ea <u>U</u> r	ndesirable	<u> Desirable</u>	Great idea
Comments: (If des 1. ADVANCES 2. RESERVOIR 3. DRILLING 4. EXPLORAGE 6. Support for co	CONVERSION STIMULATION COMPLETION - MOTE	ON ON ETION ETHIS IS CO	overso Partia 10MWe) generators	LY IN 2 and 3 overleaf
Terrible ide	ea <u> </u>	ndesirable	✓ Desirable	Great idea
1. PRODUCE SIN Z. MAXIMISE PRO	ALL RESER DUCTION OF FACILITY F	RVOIRS N EDGE OF	TENTIAL AS LARGE RESE CONFIRMATION	
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OF EL	ELTRICITY	IS THE R	ACLES TO TH ISK ASSOCIATE RESERVAIR	HE BUYER EP WITH
8. Reservoir ins	urance.	•		
Terrible ide	a Ur	idesirable	Desirable	Great idea
Comments: AS Fo	R 7 AB0	vC		
9. Tax treatment	equivalent t	o fossil fuels	· 5•	
Terrible ide	aUn	desirable	Desirable	Great idea
Comments: WILL	SPEED (	GOM MERCIA	LIZATION	
10. Support of co	mbined develo ide common gr	per-utility ar cound for negot	nalysis of reservo tiations.	oir development
Terrible ide	aUn	desirable	<u></u> Desirable	Great idea
Comments:				IRN; COMRACT
				177 MAXIMISES

POWER PLANT DESIGN FOR ELECTRICITY GENERATION.

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Terrible idea	Undesirable	Desirable	Great
Comments:			
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12. State-coupled pro moderate-temperature r			-and
Township date	Undosinable	/ Doginahlo	Cwast
lerrible idea	ondestrable	Destrable	Great
Comments:	ondestrable	Desirable	Great
	ondestrable	Destrable	grea
	ondestrable	bestrable	urea
Comments:  13. Further support o region.	f direct heat applic		in the
Comments:  13. Further support o region.	f direct heat application for the direct heat application of t	ations demonstrations✓_Desirable	in the
Comments:  13. Further support o region. Terrible idea	f direct heat application Undesirable le, how many per sta	ations demonstrations	in the Great
Comments:  13. Further support o region. Terrible idea  Comments: (If desirab	f direct heat application Undesirable le, how many per sta ATE NOT IMPORT	ations demonstrations	in the Great
Comments:  13. Further support o region. Terrible idea  Comments: (If desirab  NUMBER PER ST	f direct heat application Undesirable le, how many per sta ATE NOT IMPORTA	ations demonstrations	in the Great

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initiat	i-v <del>es</del>		
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your op	inion	of	
make sur	re tha	t our	
and other			
lization	plan	that	
able		Great	idea
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able		Great	idea
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Coupled   ervoirs.	-rogra /	m and	uie
able		_Great	idea
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able		Great	
addition	al dem	onstr	ation

Listed below are some of the actual or potential DOE designed to speed the commercialization of hydrotherm Rocky Mountain Basin & Range Region. We would value the desirability of these initiatives so that we can program is truly responsive to the Region's needs

p. 15 12 2	sponsive to the kegi	on a needs.	
	<u>Initiatives</u>		
entities, attempting	ning with industry, g to develop a regio ort of all those inv	state, local and other nal commercialization olved.	Federal plan that
(Check one)Terrible idea	Undesirable	Desirable	Great idea
Comments: Ton	illy prem	-a-time	
2. Industry-couple	d, cost-shared drill	ing to confirm new res	ervoirs.
Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desi	rable, what size pro	gram would you recomme	nd?)
generation of case		the Industry-Coupled P types of reservoirs. Desirable	rogram and the Great idea
Comments:			
	ation plant at the V	/	
Terrible idea	Undesirable	Desirable	Great idea
plants would you re	commend?)	what kind of additional Zank, Sigl	Flace +
Binay	et 3%	, 375	40006

conversion equipment.	develop better dril techniques, explora		
ຍ Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desirab			
Dill-	or comple	tion - last	cuality-
selution	is erf.		
6. Support for devel		<i>,</i> -	
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
7			
7. Loan guaranty pro	-		
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Comments: evil	serve to	attact (	reservir @
Comments: EVIII	a Mar	leun det	t corts
8. Reservoir insuran		/	
Tanaikla idaa	Undocinable	/ Dand	
rerrible loea	undes trable	v_besirable	Great idea
Comments:	undes trable		Great idea
Terrible idea  Comments: See  See	es. Cue		Great idea
9. Tax treatment equ	ivalent to fossil fue	els.	/
9. Tax treatment equTerrible idea	ivalent to fossil fue	els. Desirable	Great idea
9. Tax treatment equTerrible idea	ivalent to fossil fue	els. Desirable	Great idea
9. Tax treatment equTerrible idea	ivalent to fossil fue	els. Desirable	Great idea
9. Tax treatment equ  Terrible idea  Comments: acult  acette	ivalent to fossil fueUndesirableLa ce &Le_D	Desirable	Great idea
9. Tax treatment equ  Terrible idea  Comments: acult  acta	ivalent to fossil fue Undesirable Lesting  partial lesting  ga elloting  ed developer-utility	Desirable  Desirable  Consument  Consument  Analysis of reservor	Great idea  - also 1
9. Tax treatment equ  Terrible idea  Comments: accell  accell  10. Support of combin economics to provide  Terrible idea	ivalent to fossil fue Undesirable Undesirable Undesirable  ed developer-utility common ground for neg	Desirable  Desirable  analysis of reservorgotiations.	Great idea  - alac 1  ir development
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guidance on	e idea	/ Undesirable	Desirable	Great ide
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Comments:	Will	evelue.	- power	genewof
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	oupled prog	gram for a state-by-s esources for direct h	tate inventory of	•
Terribl	e idea	Undesirable	Desirable	Great idea
Comments:				
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		·		
13 Funthan	support of	f direct heat applica	tions demonstratio	ns in the
13. Further region.	support o	f direct heat applica	itions demonstratio	ons in the
		f direct heat applica	tions demonstratio Desirable	ons in the Great ide
region. Terriblo	e idea		Desirable	
region. Terriblo	e idea	Undesirable	Desirable	
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region. Terriblo	e idea	Undesirable	Desirable	
region. Terriblo	e idea	Undesirable	Desirable	

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QUESTI	ANNC	IRE
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Listed below are some of the actual or potential DOE initiatives

designed to speed the commercialization of hydrothermal energy within the

Rocky Mountain Basin & Range Region. We would value your opinion of
the desirability of these initiatives so that we can make sure that our

program is truly responsive to the Region's needs.

the desirability of these initiatives so i	that we can make sure	that our
program is truly responsive to the Region	's needs.	
Initiatives		
<ol> <li>Collective planning with industry, steentities, attempting to develop a regiona has the active support of all those involved.</li> </ol>	l commercialization p	
(Check one)Terrible ideaUndesirable	Desirable	Great idea
Comments:	,	,
		,
2. Industry-coupled, cost-shared drilling	g to confirm new rese	rvoirs.
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, what size progra		
3. Publication of data acquired under the generation of case studies of different to		ogram and the
Terrible ideaUndesirable	Desirable	Great idea
Comments:		
4. 50 MWe demonstration plant at the Val	les Caldera.	
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, how many and what plants would you recommend?)	•	demonstration

5. Support of R&D to develop better dri reservoir stimulation techniques, explor conversion equipment.	ation technology and	advanced
Terrible ideaUndesirable	Desirable	Great idea
Comment: (If desirable, prioritize.)		
6. Support for development of wellhead	(5-10MWe) generators.	
6. Support for development of wellhead  Terrible ideaUndesirable	Desirable	Great idea
Comment:		· .
7. Loan guaranty program.		
Terrible ideaUndesirable	Desirable	Great idea
Comments:		
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O December incurred		
8. Reservoir insurance.		
Terrible idea	Desirable	Great idea
Comments:		
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9. Tax treatment equivalent to fossil f		
Terrible ideaUndesirable	Desirable	Great idea
Conments:		,
O. Support of combined developer-utility economics to provide common ground for n	egotiations.	•
Terrible ideaUndesirable	Desirable	Great idea
Comments:	-	

o.

guidance on resource	potential and surfac			•
Terrible idea	Undesirable	Desirable	Great	idea
Comments:		•		
				•
moderate-temperature	rogram for a state-by resources for direct	heat applications.		
Terrible idea	Undesirable	Desirable	Great	idea
Comments:	•		•	
regionTerrible idea Comments: (If desir	of direct heat appli Undesirable able, how many per st	Desirable ate?)		idea
Name (optional)				•
I am associated w	ith a: (Check on	e)		
Utility				
Financial	Institution			
State Gove	rnment			•
Federal Go	vernment			

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	J. A. HANNY							
	Ä	IJG	3	Û	13	7.9		

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

#### Initiatives

1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved. (Check one) Terrible idea 📈 Undesirable Desirable comments: I am in favor of input data from interested particle liet feel meetings with two many proupe results in too diverse opinions to be cof much value in developing a universal plan. 2. Industry-coupled, cost-shared drilling to confirm new reservoirs. Terrible idea Undesirable ✓ Desirable Great idea Comments: (If desirable, what size program would you recommend?) Exploratory programs in at least 1-6 areas similar to the Battle mt. RFP in ravada would be idea Eventually lack of good "prospects" will limit the program 3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs. ✓ Desirable ✓ Great idea Terrible idea Undesirable Comments: of helicine it's a good program since most oil of gas Cos do not intend to develope hugh staffs of people in geothermal - beeping up with opother operation and technology through this program is very said. 4. 50 MWe demonstration plant at the Valles Caldera. Desirable Terrible idea Undesirable Great idea Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?) any type of plant that committive locure sample for electrification generation being systeme) Even small in the sample of 10-20 MWC. Soon many of we tend to think only in terms of the Heyers

5. Support of R&D to de reservoir stimulation to conversion equipment.			
Terrible idea	Undesirable	✓ Desirable	Great idea
Comments: (If desirable,	K- E	planation decknows servain Stimulition inling & Complete Drawed Consecu	to according the
6. Support for developm	ment of wellhead (5	-10MWe) generators.	
Terrible idea	Undesirable	Desirable	Great idea
comments: I believe not some of flea as costly as	ils an exice. would ge	let thought a 2D probaby end we realing plants.	p almost
7. Loan guaranty progra	im.	÷	
Terrible idea	2/Undesirable	Desirable	Great idea
Comments: Am storry some projects the a project gaing society should 8. Reservoir insurance.	to be so n y small Coi on the other be made of ef seeces	on-comital he to would be hand I below any organistion	I halp ze with conly
Terrible idea	Undesirable	Desirable	Great idea
Conments: che cases Ascen a posterte Accen proven a result be a good  9. Tax treatment equiva	of environmental gentlements  noticen of I thought she ilent to fossil fue	to problems of account and mistalla to most related to the profite yet	which shat a that los foul, to non got to projection
rerrible idea	undes trable		L- Great idea
Comments: This is a la de absolutely new 120 - Itany alin	on extremely a servery in it	ingrailant step to fiture if	grathernot is a noust
	developer-utility	analysis of reservoir	
Terrible idea	Undesirable	Desirable	Great ide
Comments: Africa is a tractility Commensus	a difficult of and the stand of manufactured with the standards	existen; to an extension of Con & story	Ly State, , would alwayse.

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Server & Particularly the results of the project
and a long rangel.
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
to evaluate the type resources. another step would be to out for intustry pertigration
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?) any project which has ment and enough potential described when some depopole again, the funding again, should be the field
Name Cologs of Shared

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QUESTIONNAIRE	Action Info File
$\ensuremath{\mathfrak{d}}$ Listed below are some of the actual or potential DOE	initiatives
designed to speed the commercialization of hydrotherm	nal energy within the
Rocky Mountain Basin & Range Region. We would value	your opinion of
the desirability of these initiatives so that we can	make sure that our
program is truly responsive to the Region's needs.	
Initiatives	
<ol> <li>Collective planning with industry, state, local a entities, attempting to develop a regional commercial has the active support of all those involved.</li> </ol>	
(Check one)Terrible ideaUndesirableX_Desira	ableGreat idea
Comments:	
2. Industry-coupled, cost-shared drilling to confirm Terrible ideaUndesirableX_Desiration	
Comments: (If desirable, what size program would you	u recommend?)
50/50 Cost sharing	
3. Publication of data acquired under the Industry-Ogeneration of case studies of different types of rese	
Terrible ideaUndesirableX Desira	ableGreat idea
Comments:	
4. 50 MWe demonstration plant at the Valles Caldera.	
Terrible ideaUndesirableX_Desira	
Comments: (If desirable, how many and what kind of a plants would you recommend?)	

R E C E I V E D J. A. HANNY

	Terrible idea	Undesirable	X_Desirable	Great id
Com	ments: (If desirable	e, prioritize.)		
6.	Support for develo	pment of wellhead (	5-10MWe) generators.	
	Terrible idea	Undesirable	X_Desirable	Great id
Com	ments:			•
		C - plantair	1 congration faci	lities
7.			ul generation faci	
	Terrible idea	Undesirable	X_Desirable	Great ide
Com	ments:			
8.	Reservoir insurance	e.		
8.	·		Desirable	Great ide
	Terrible idea	Undesirable	Desirable ~reservoir insuron	
Con	Terrible idea	Undesirable definition of	-	
Con	Terrible idea ments: I need a	Undesirable definition of	-	
Com	Terrible idea ments: I need a	Undesirable - definition of L.	reservoir insuron	
Com	Terrible idea  ments: I need a  ble to respond  Tax treatment equiv	Undesirabledefinition of l, valent to fossil fue	reservoir insuron	ce" to be
Com	Terrible idea  ments: I need a  ble to respond  Tax treatment equiv	Undesirabledefinition of l, valent to fossil fue	reservoir insuran	ce" to be
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Com	Terrible idea  ments: I need a  ble to respond  Tax treatment equiv  Terrible idea  ments:	Undesirabledefinition of  L.  valent to fossil fueUndesirable	reservoir insuran	ce" to be
Comi	Terrible idea  ments: I need a  ble to respond  Tax treatment equiv  Terrible idea  ments:  Support of combined	UndesirableUndesirableundesirableUndesirable d developer-utility	els.  ** Desirable  analysis of reservoi	ce" to be_ Great ide
Comi	Terrible idea  ments: I need a  ble to respond  Tax treatment equiv  Terrible idea  ments:  Support of combined  nomics to provide com-	UndesirableUndesirable  valent to fossil fueUndesirable  d developer-utility common ground for neg	els.  ** Desirable  analysis of reservoi	Great id

Terrible idea	Undesirable	Desirable	Grea
Comments:		·	
	ogram for a state-by-s resources for direct h		w-and
Terrible idea /	∠ Undesirable	Desirable	Grea
Comments: I under	istand this has a	lready been done	•
	of direct heat applica	ations demonstrations	in the
region.	•		
regionTerrible idea	of direct heat application of direct heat application of direct heat application of the direc	× Desirable	
regionTerrible idea Comments: (If desira	Undesirable ble, how many per sta	<u>×</u> Desirable	
regionTerrible idea Comments: (If desira	Undesirable ble, how many per sta	<u>×</u> Desirable	
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Union Geothermal Division

Union Oil Company of California Union Oil Center, Box 7600, Los Angeles, California 90051 Telephone (213) 486-6260

RECEIVED

union

AUG 3 0 1978

GEOTHERMAL ENERGY BRANCH

Carel Otte

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August 25, 1978

Mr. Clayton Nichols
Assistant Director for
Geothermal Energy
Department of Energy
Idaho Operations Office
550 Second Street
Idaho Falls, Idaho 83401

Dear Mr. Nichols:

Pursuant to your letter of August 14, I have the pleasure of returning the questionnaire. I hope it is of some use to you.

CO/jh encl. Carel Otte

Yours truly,

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

program is truly responsive to the Region	's needs.	
Initiatives	•	
1. Collective planning with industry, standard entities, attempting to develop a regional has the active support of all those involves.	l commercialization	
(Check one)Terrible ideaUndesirable	Desirable	Great idea
Comments:		
,		
2. Industry-coupled, cost-shared drilling	g to confirm new r	eservoirs.
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, what size progra	am would you recom	mend?)
<ol> <li>Publication of data acquired under the generation of case studies of different ty</li> </ol>	e Industry-Coupled ypes of reservoirs	Program and the
Terrible ideaUndesirable	Desirable	Great idea
Comments:		
4. 50 MWe demonstration plant at the Val	les Caldera.	
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, how many and who plants would you recommend?)  One add Final plants		

• •	1	2		
	o			
	reservoir stimulation conversion equipmen	to develop better dril on techniques, explora t.		
	Terrible idea	Undesirable	Desirable	Great idea
	Explose.	able, prioritize.)  + Reservois Sti  + Reservois Sti  + Reservois Sti  - R	m n	oder. Thigh
	Terrible idea	Undesirable	Desirable	Great idea
		Tem bloss no Lo la persu	I have his aded of the	e segnancia fearablely.
	7. Loan guaranty pr	-		,
	Terrible idea	A	Desirable	Great idea
·.	Comments: Need devel	vailable of	inplified a	hai. only
	8. Reservoir insura	ince.		
	Terrible idea	Undesirable	Desirable	Great idea
	Comments:	give uti	Cuties mon	e confidence
	9. Tax treatment eq	uivalent to fossil fue	els.	
	Terrible idea	Undesirable	Desirable	Great idea
G		all other end developer-utility common ground for neg		timelate esses would lives. ir development
	Terrible idea	Undesirable	Desirable	Great ide
	Comments:	., Out no	great uses	

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
13. Further support of direct heat applications demonstrations in the
region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
Name Orl Otte Union Cil Company of Colf

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

Initiatives
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableXDesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?) Reservoir conformation is much more costly and difficult than in typical oil or gas reservoir testing. Some method of providing of helping producers get information is a priority need.
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirable $\chi$ _DesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?) Binary system should be demonstrated.

5. Support of R&D to develop better dr reservoir stimulation techniques, explo conversion equipment.	oration technology and adv	anced
Terrible ideaUndesirable		Great idea
Comment: (If desirable, prioritize.) I share except in specific areas w	industry should handle there market is small:	e large
6. Support for development of wellhead	(5-10MWe) generators.	
Terrible ideaUndesirable	Desirable	Great idea
Comment:	·	
	· ·	
7. Loan guaranty program.		
Terrible ideaUndesirable	Desirable	Great idea
Terrible idea Undesirable  Comments: It scares me but is not	method of dovelo	opms incentives
•	·	
8. Reservoir insurance.		
Terrible ideaUndesirable	Desirable	Great idea
Comments: I feel this will be di Eases, this may get conservative u	flicult to administer tilities into act.	. On individue
	•	
9. Tax treatment equivalent to fossil		
Terrible ideaUndesirable	Desirable	Great idea
Comments:	٠.	
O. Support of combined developer-utili economics to provide common ground for	ty analysis of reservoir negotiations.	development
Terrible idea $X$ Undesirable	Desirable	Great idea
Comments:		

	3		. ,	<u>,                                    </u>
	9		•	
	11. User assistance for direct heat applicating guidance on resource potential and surface equ			
	Terrible ideaUndesirable	Desirable	(	Great idea
	Comments: Develop information and make	information	0 101/01	ble
		,		
	•			
٠	12. State-coupled program for a state-by-state moderate-temperature resources for direct heat	•		ď
	Terrible ideaUndesirable	<u>X</u> Desirable	0	Great idea
	Methods of utilization should be publication.  13. Further support of direct heat application region.	<b>,</b>		۸.
	region.			
	Terrible ideaUndesirable	Desirable	<u> </u>	Great idea
	Terrible ideaUndesirable Comments: (If desirable, how many per state?)	•	<u>· (</u>	Great idea
		•	<u>· · ·</u> ·	Great idea
		•		Great idea
	Comments: (If desirable, how many per state?)			
	Comments: (If desirable, how many per state?)  Name (optional) Bill Thomas	Energy	Analys	ts Inc
	Comments: (If desirable, how many per state?)  Name (optional)  I am associated with a: (Check one)	Energy 1215 U	Analys Jestheim	ts Inc er Dr.
	Name (optional)  I am associated with a: (Check one)	Energy 1215 U	Analys Jestheim	ts Inc
	Name (optional)  I am associated with a: (Check one)  X Developer  Utility  Financial Institution	Energy 1215 U	Analys Jestheim	ts Inc er Dr.
	Name (optional)  I am associated with a: (Check one)  X Developer  Utility  Financial Institution  State Government	Energy 1215 U	Analys Jestheim	ts Inc er Dr.
	Name (optional)  I am associated with a: (Check one)  X Developer  Utility  Financial Institution  State Government  Federal Government	Energy 1215 U	Analys Jestheim	ts Inc er Dr.
	Name (optional)  I am associated with a: (Check one)  X Developer  Utility  Financial Institution  State Government	Energy 1215 U	Analys Jestheim	ts Inc er Dr.
	Name (optional)  I am associated with a: (Check one)  X Developer  Utility  Financial Institution  State Government  Federal Government	Energy 1215 U	Analys Jestheim	ts Inc er Dr.
	Name (optional)  I am associated with a: (Check one)  X Developer  Utility  Financial Institution  State Government  Federal Government	Energy 1215 U	Analys Jestheim	ts Inc er Dr.
	Name (optional)  I am associated with a: (Check one)  X Developer  Utility  Financial Institution  State Government  Federal Government	Energy 1215 U	Analys Jestheim	ts Inc er Dr.
	Name (optional)  I am associated with a: (Check one)  X Developer  Utility  Financial Institution  State Government  Federal Government	Energy 1215 U	Analys Jestheim	ts Inc er Dr.

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#### Initiatives

Initiatives
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableGreat idea
comments: Noed to bull - explais a locate
comments: Noed to Bull-explore a locate resource before planning.
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)  3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)  There to fine

reservoir stimulation conversion equipment.	n techniques, explora		advanced
	Undesirable .	_/ Desirable	Great idea
Comment: (If desirat	ole, prioritize.)	·	· ·
·			
6. Support for devel	opment of wellhead (	[5-10MWe) generators.	. •
Terrible idea	Undesirable	Desirable	Great idea
Conment:			
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7. Loan guaranty pro	ogram.	,	
Terrible idea	Undesirable	Desirable	Great idea
Comments: Series	es of res	luci n	surance of 1 15 Ton 1/ I elec. cui
	reduces	De 6-1 con	ets ton
3. Reservoir insurar	nce. ul-line to	reduction	./ J elec. coi
Terrible idea	Undesirable	Desirable	Great idea
Comments: No-L	necles		٠.
	ivalent to fossil fu		
Terrible idea	Undesirable	Desirable	Great idea
Comments: Ulase	elitely me	cerson /	Great idea
). Support of combireconomics to provide	ed developer-utility common ground for ne	analysis of reservo	oir development
Terrible idea	Undesirable	Desirable	Great idea
Comments: uh			

	Terrible ideaUndesirableDesirableGreat idea
	comments: Usually a love part of occasel project costs.
	12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
	Terrible ideaUndesirableDesirableGreat idea
	comments: Too localized & suseptible for regional- area politics
	regional area politica
	13. Further support of direct heat applications demonstrations in the region.
	Terrible ideaUndesirableDesirable :Great idea
	Comments: (If desirable, how many per state?)
	The market will appear in local
	area very
Î	Name (optional) / Our reall
	I am associated with a: (Check one)
	Developer
	Utility
	Financial Institution
	State Government
	Federal Government Elucofron En vucumenta
\	Otheracedonc
	absolutely essential for categorieal summeregation of responses.
•	summeregation of responses.

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

# Initiatives

	•	•
1. Collective planning with industry, sta entities, attempting to develop a regional has the active support of all those involv	commercialization	`Federal plan that
(Check one)Terrible ideaUndesirable	Desirable	Great idea
Comments:		<u>.</u> .
	• .	
2. Industry-coupled, cost-shared drilling	to confirm new res	servoirs.
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, what size progra		
3. Publication of data acquired under the generation of case studies of different ty		Program and the
Terrible ideaUndesirable	Desirable	Great idea
Comments:		
		•
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4. 50 MWe demonstration plant at the Vall	•	
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, how many and wha plants would you recommend?)	t kind of additiona	ıl demonstration

Comments:	•	
Terrible idea 'Undesirable \	Desirable	Great idea
O. Support of combined developer-utilit economics to provide common ground for n		oir development
		·
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Terrible idea ·Undesirable	Desirable	Great idea
9. Tax treatment equivalent to fossil f	uels.	
Comments:	*	
Terrible ideaUndesirable	Desirable	Great idea
8. Reservoir insurance.		
Comments:		
Terrible ideaUndesirable	Desirable	Great idea
7. Loan guaranty program.	Danimak I.	Parket Company
7 Lean guarantu nyanam	• 1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
·		
Comment:		
Terrible ideaUndesirable	Desirable	Great idea
6. Support for development of wellhead	(5-10MWe) generators	
Comment: (If desirable, prioritize.)		
Terrible ideaUndesirable	Desirable	Great idea
conversion equipment.		
5. Support of R&D to develop better dri reservoir stimulation techniques, explor		

11. User assistance f guidance on resource p		lications to provide ce equipment needs.		
Terrible idea	Undesirable	Desirable	Great	idea
Comments:				
12. State-coupled promoderate-temperature r	•	•		
Terrible idea _	Undesirable	Desirable	Great	idea
Comments:				•
13. Further support o	of direct heat appli	ications demonstrat	ions in the	
Terrible idea _	Undesirable	Desirable	Great	idea
Stort	no. plants	veraced +	to ju	stoles
I am associated wit	h a: (Check or	ne)	buil	M.
Developer		•	1000	
Utility		. •	Coat	Plants
Financial In	stitution			•
State Govern	ment			
Federal Gove	rnment	× V		•
Other				

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

### Initiatives

	Tillelacives	•	
<ol> <li>Collective planning a entities, attempting to has the active support or</li> </ol>	develop a regiona	l commercialization p	
(Check one)Terrible idea	Undesirable	X Desirable	Great idea
Comments:			
2. Industry-coupled, co	st-shared drilling	g to confirm new rese	rvoirs.
Terrible idea	Undesirable		Great idea
Comments: (If desirable at least 5 no	, -	<del>-</del>	•
3. Publication of data generation of case studion			ogram and the
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
4. 50 MWe demonstration	plant at the Vall	les Caldera.	
Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desirable plants would you recommen	, how many and whand?)	at kind of additional	demonstration

5. Support of R&D to develop better drilling and reservoir stimulation techniques, exploration techniques.	
Terrible ideaUndesirable[	DesirableGreat idea
Comment: (If desirable, prioritize.)	
	N
6. Support for development of wellhead (5-10MWe)	
Terrible ideaUndesirableI	DesirableGreat idea
Comment:	
	,
7. Loan guáranty program.	•
Terrible ideaUndesirable	Dosinablo Great idea
Comments: Not adoquete as structe	and .
	•
8. Reservoir insurance.	
Terrible ideaUndesirable $\sim$	DesirableGreat idea
Conments:	
	x = x
9. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirable[	Desirable $X$ Great idea
Comments:	
1	
<ol> <li>Support of combined developer-utility analysis economics to provide common ground for negotiation</li> </ol>	
Terrible ideaUndesirable	DesirableGreat idea
Commonto	

	User assistance fo lance on resounce po				e initial	
<u>s.</u>	_Terrible idea	Undesirable	<u> </u>	Desirable	Great	idea
Солії	ments:					
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	State-coupled prog raté-temperature re					
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Comm	nents:				•	
13. regi	Further support of on.	f direct heat appl	ications	demonstrat	ions in the	
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Name	(optional)				•	
I	am associated with	na: (Check o	ne.)			
	Developer					
	Utility					
	Financial Ins	stitution				
	State Governm	ment				
	Federal Gover	nment			(	
	Other	•			,	

ONA 04400





RECEIVED

SEP 1 1 1978

Department of Energy Bonneville Power Administration P.O. Box 3621 Portland, Oregon 97208

GEOTHERMAL ENERGY BRANCH

OFFICE OF THE ADMINISTRATOR

in reply refer to:

PRT

SEP 7 1978

Mr. Joe Hanny EG&G Idaho, Inc. P.O. Box 1625, UPD Idaho Falls, Idaho 83401

Dear Mr. Hanny:

The enclosed answers to your questionnaire are in response to an August 14, 1978, request by Mr. Clayton Nichols of the DOE-Idaho Operations Office. The questionnaire is associated with the Regional Hydrothermal Commercialization Plan--Rocky Mountain Basin and Range Region of July 14, 1978, by the DOE-IF and your company.

We have a few comments about the Plan. These comments are related to our marketing area which includes primarily Oregon, Washington, Idaho, and western Montana. Small portions of California, Nevada, Utah, and Wyoming are also in our service area.

BPA is firmly committed to the development of alternative and renewable resources, including geothermal. We are ready to assist in these developments to the extent that we can. Under our present authorization, this is limited primarily to assisting in the marketing of the electrical energy, transmission, and, subject to operating limitations, providing service such as storage and loadshaping. We are participating with the Idaho Falls DOE office in the Raft River Geothermal Project and have offered our assistance in the marketing of the energy, transmission over the Federal System, design, equipment loans, etc. If the regional power purchase legislation now before Congress passes, BPA could have increased authority and involvement in the project.

Your Plan is a necessary survey of geothermal generation potential, but some of the contents might be a detriment to other alternative or renewable resources being investigated in the Pacific Northwest, including wind, solar, biomass, and cogeneration. The overly optimistic statements in your Plan as to costs and potential installations may lead the layman to believe that geothermal is the primary alternative. following comments relate to the Introduction portion of the Plan:

Letter to Mr. Joe Hanny, Subject: Questionnaire Regarding Actual or Potential Initiatives Designed to Speed Commercialization of Hydrothermal Energy

- 1. The creation of the Rocky Mountain Basin Range Region is not consistent with the regional structure established for the Federal Geothermal Energy Program. Region 3 of the Federal Geothermal Energy Program is consistent with the BPA marketing area. This difference in regions is confusing, especially since DOE is involved in both programs.
  - 2. Under the paragraph on high-grade reservoirs, the sentence, "These systems can provide cost-competitive electrical power under current economic and technical conditions" is suspect. This sentence should probably be qualified since we know of no proof for this statement. On the contrary, most reports we have reviewed have speculative costs.
  - 3. Under the paragraph on medium-to-high grade reservoirs, the sentence, ". . . may be expected to be found that could provide cost competitive electrical power with improved technology and rising fossil fuel costs" needs reexamination. This sentence also appears to be too positive considering the speculative nature of reservoir prospecting.
  - 4. Table I shows 1000 MW of implied high-grade resources in Idaho. The method of presentation in the table implies that the values are firm, whereas we believe they are based on estimates.

We appreciate the opportunity to review this document. When a similar report evaluating the area including Oregon and Washington is available, we would appreciate receiving a copy for review.

Sincerely,

a Chininis trator

Enclosure: Questionnaire

cc:
Jack Salisbury, DOE - Washington, D.C.

LClayton Nichols, DOE - Idaho Falls, Idaho

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

	program to citary responsite to one negron s needs.
	<u>Initiatives</u>
	1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
	(Check one)Terrible ideaUndesirableDesirableX Great idea
	Comments:
	2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
	Terrible ideaUndesirableXDesirableGreat idea
	Comments: (If desirable, what size program would you recommend?)  Large enough to determine magnitude and duration of each potential reservoi
	3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
	Terrible ideaUndesirableXDesirableGreat idea
	Comments:
	4. 50 MWe demonstration plant at the Valles Caldera.
ı	Terrible ideaUndesirableXDesirableGreat idea
	Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

Terrible	idea	Undesirable	X Desirable	Great ide
Comments: (If	desirable	e, prioritize.)		
		·		
6. Support fo	or develop	oment of wellhead (5	-10MWe) generators.	
Terrible	idea	Undesirable	X Desirable	Great ide
Comments:	·	•	• .	
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		·		•
7. Loan guara	anty progr	am.		•
Terrible	idea	Undesirable	X _Desirable	Great ide
Comments:			•	
8. Reservoir	insurance		v	
Terrible	idea	Undesirable	X _Desirable	Great ide
Comments:			•	
). Tax treatr	nont oquiv	valent to fossil fun	1	
	•	alent to fossil fue	•	
Terrible	idea	Undesirable	χ_Desirable	Great ide
Comments:				
	•			
). Support of economics to p	f combined provide co	developer-utility on mon ground for neg	analysis of reservo	ir development

Undesirable	<u>X</u> Desirable	Great i
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ı for a state-by-s ırces for direct h	tate inventory of l leat applications.	ow-and
Undesirable	Desirable	X Great i
	XDesirable	Great i
how many per stat	e?)	
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inistrator	·	
	rces for direct hUndesirable rect heat applicaUndesirable	rect heat applications demonstration

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

program to the specific and the specific
<u>Initiatives</u>
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>
(Check one)
Comments: LOCALIZED NATURE OF RESOURCES
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)
THIS DOES NOTHING TO FURTHER KNOWLEDGE

IT USES CONVENTIONAL

5. Support of R&D to develop better drilling and completion technolog reservoir stimulation techniques, exploration technology and advanced conversion equipment.	зу.,
Terrible ideaUndesirableDesirableGr	reat idea
Comments: (If desirable, prioritize.)	
6. Support for development of wellhead (5-10MWe) generators.	
Terrible ideaUndesirableDesirableG	reat idea
Comments:	
DOESN'T DISPLACE CAPACITY OF	
COAL, OIL, OR NUCLEAR	
7. Loan guaranty program.	
Terrible ideaUndesirableOesirableGr	reat idea
Comments:  UTILITIES CAN'T USE IT.	
8. Reservoir insurance.	
Terrible ideaUndesirableGr	reat idea
Comments:	
BUT TOO LATE	
9. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirableDesirableGr	reat idea
Comments:	
NEEDS MORE TAX INCENTIVE	
10. Support of combined developer-utility analysis of reservoir developer-utility anal	opment
Terrible ideaUndesirableGr	reat ide
Comments:	

ll. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
Name VAL A FINLAYSON



# Netti oaketa

# STATE WATER BEAMISSION

**300 east boulevard 701-224-27**50

September 5, 1978

Mr. Joe Hanny
EG&G Idaho, Inc.
P. O. Box 1625
UPD
Idaho Falls, Idaho 83401

Dear Mr. Hanny:

bismorek 52503

north-dakota

We are returning the questionnaire related to the Hydrothermal Commercialization Plan. Members of my staff working with Dave Larson reviewed the Plan and answered portions of the questionnaire which they felt appropriate with the information available.

The entire undertaking sounds extremely interesting and should provide great potential in some areas of the Nation.

We sincerely hope that your planning will produce the desired results.

Sincerely yours,

Vern Fahy State Engineer

VF:sl

Encl.

Listed below are some of the actual or potential DOE initiatives

designed to speed the commercialization of hydrothermal energy within the
Rocky Mountain Basin & Range Region. We would value your opinion of
the desirability of these initiatives so that we can make sure that our
program is truly responsive to the Region's needs.

			Initiatives		
enti	ties, at	ttempting t		state, local and other nal commercialization olved.	
(Che	ck one) _Terribl	le idea	Undesirable	Desirable	Great idea
Comn	ments:				
2.	Industry	/-coupled,	cost-shared drill	ing to confirm new r	eservoirs.
	_Terribl	le idea	Undesirable	Desirable	Great idea
Comm	ments: (	(If desirab	le, what size pro	gram would you recom	mend?)
				the Industry-Coupled types of reservoirs	
	_Terrib	le idea	Undesirable	Desirable	Great idea
Comn	nents:				
4.	50 MWe d	demonstrati	on plant at the V	alles Caldera.	
	_Terrib	le idea	Undesirable	Desirable	Great idea
Com	nents: (	(If desirab	le, how many and	what kind of additio	nal demonstration

plants would you recommend?)

Com	ments:							•
·····	Terrible	idea		_Undesirab	1e	Desirable	Great	i de a
10. eco	Support of pnomics to p					lysis of reservations.	oir developme	nt
			•					
Com	ments:						,	
	Terrible	idea		_Undesirab	le _	Desirable	Great	idea
9.	Tax treatm	·						
Com	ments:							
	Terrible	idea	·	_Undesirab	1e _	Desirable	Great	idea
8.	Reservoir	insurand	ce.					
Con	nments:		٠					
	Terrible	idea		_Undesirab	1e _	Desirable	Great	idea
7.	Loan guara	anty pro	gram.					
Con	mments:							
	Terrible	idea	<del></del>	_Undesirab	1e _	Desirable	Great	idea
6.			•		·	MWe) generators		
Com	mments: (If	desirabl	le, pr	ioritize.)		•		
<u></u>				Undesirab		Desirable	Great	idea
con	nversion equ							
res	ervoir stin	nulation	develo techni	op better ques, exp	drilling loration	and completion technology and	technology, ladvanced	

ll. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
Name DADE LARSOD

Pisted below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirablex DesirableGreat idea
Comments: It is always a good policy to have the combination of industry state, local and Federal agencies aware of any development or exploration being done in the state or in any region. Primarily, because manytimes Federally sponsored projects do not make local agencies aware of what they are doing: Federal Projects should be subject to the same requirements as: Industry.  2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableX _DesirableGreat idea
Comments: (If desirable, what size program would you recommend?)  At this time, it is very difficult for any electric utility, as a part of industry, to want or desire to go into their own exploration or share in exploration for any new reservoirs because the electric utilities is a conservative and do not deal in risk money and stay primarily with conventional fuels.  3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirable x Great idea
Comments:
A SO Wile demonstration minutes the Waller Co. 1
4. 50 MWe demonstration plant at the Valles Caldera.
x Terrible idea Undesirable Desirable Great idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?) The 50 MWe demonstration plant at Valles Caldera

for the Rocky Mountain Basin and Rage Region may be a good idea. However, I think that the projected plan for the Valles Caldera should be changed to a binary demonstration plant instead of a straight flash-steam demonstration

plant.

	version equipment.	i techniques, explorat	ton technology and	advanced
ರ	Terrible idea	Undesirable	Desirable	XGreat
Com	wnents: (If desirat	ole, prioritize.)		
6.	Support for devel	opment of wellhead (5	-10MWe) generators.	
	Terrible idea	Undesirable	Desirable	xGreat
the dev per	re are plants that elop (5-10 MWe ger	vellhead generator or a exist in oil industraters) that would for a pabilities of the well gram.	ies and other resea it on the wellhead	rch groups to
	Terrible idea '	XUndesirable	Desirable	Great
Com	ments: The Loan Gu	aranty program hasn't	worked wery well.	In fact, I d
see int	any stimulation be the Geothermal.	by the Federal Governm	ent through the Loa	n Guaranty Pr
see	any stimulation be the Geothermal.  Reservoir insuran	oy the Federal Governm	ent through the Loa	n Guaranty Pr
see int	any stimulation be the Geothermal.	by the Federal Governm	ent through the Loa	n Guaranty Pr
8.	any stimulation be the Geothermal.  Reservoir insuran  Terrible idea  ments: I think the far as electric ut	oy the Federal Governm	Desirable oirs could be a vit, when we know more	x Great
8. Conwas	any stimulation ho the Geothermal.  Reservoir insuran  Terrible idea  ments: I think that far as electric ut ervoir, later on,	ce.  Undesirable  it insurance on reservillities are concerned	Desirableoirs could be a vit , when we know more be necessary.	x Great
8. Conwas	any stimulation ho the Geothermal.  Reservoir insuran  Terrible idea  ments: I think that far as electric ut ervoir, later on,	ce.  Undesirable  it insurance on reservilities are concerned the insurance may not	Desirableoirs could be a vit , when we know more be necessary.	x Great

Terrible idea	Undesirable	x	_Desirable		Great	idea
Comments:			:			٠
12. State-coupled programoderate-temperature reson	n for a state-by-s urces for direct h	tate i neat ap	nventory of	low-an	d	
Terrible idea	Undesirable	x	_Desirable		Great	i dea
Comments:						
	•					
			<i>.</i>			
13. Further support of diregion.	rect heat applica	itions	demonstratio	ns in	the	
Terrible idea	Undesirable	x	_Desirable		Great	idea
Comments: (If desirable,	how many per stat	:e?)		•		
•	•		ž			
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# ARIZONA

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### PUBLIC SERVICE COMPANY

P. O. BOX 21666 . PHOENIX, ARIZONA-85036-

August 24, 1978

RECEIVED J. A. HARNY

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AUG 6 1978

Action	Info	File :
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	•	

Mr. Joe Hanny EG&G Idaho Inc. P. O. Box 1625, UPD Idaho Falls, ID 83401

Dear Mr. Hanny:

Attached is the completed geothermal questionnaire required by Clayton Nichols. If you have any questions on my comments, let me know.

Very truly yours,

bul co

Harold Bell

Research Programs

CC

attachment

cc: M. L. Brown

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

program is truly respons	sive to the Region	's needs.	
	<u>Initiatives</u>		
1. Collective planning entities, attempting to has the active support of	develop a regiona	l commercialization	Federal plan that
(Check one)Terrible idea	Undesirable	_xDesirable	Great idea
Comments: Dialogue she from local, state or utility industry dec	r federal entit	ies may have litt	ever, input le impact on
2. Industry-coupled, co	ost-shared drillin	g to confirm new res	ervoirs.
Terrible ideax	Undesirable	Desirable	Great idea
Comments: (If desirable This would be a litted desirable for resources before we	tle value to ut rce companies.	ilities. It may We do need to fi	be more
3. Publication of data generation of case studi	acquired under the es of different t	e Industry-Coupled P ypes of reservoirs.	rogram and the
Terrible idea	_Undesirable	Desirable	xGreat idea
Comments: Comparative be useful.	e data on vario	us types of reser	cvoirs will
4. 50 MWe demonstration	plant at the Val	les Caldera.	
Terrible idea	_Undesirable	Desirable	Great idea
Comments: (If desirable plants would you recomme	, how many and whand?)	at kind of additiona	l demonstration
Flash steam technol and in New Zealand.	ogy has been sh A commercial	own commercial at demonstration (50	Cerro Prieto MW) is really

needed on the binary cycle.

e

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.
Terrible ideaUndesirableDesirable X Great idea
Comments: (If desirable, prioritize.)
These problem areas need support for solving. Highest to lowest priority: Advanced conversion, drilling and completion, reservoir stimulation, exploration technology.
6. Support for development of wellhead (5-10MWe) generators.
Terrible ideaUndesirable X_DesirableGreat idea
Comments:
Connecting wells with electric wire rather than steam lines may make sense with some reservoirs.
7. Loan guaranty program.
Terrible ideaUndesirableDesirableX Great idea
Comments: Will make utility industry financing easier to obtain.
8. Reservoir insurance
Terrible idea
Comments: The resource companies will determine resource potential as a normal course of business.
9. Tax treatment equivalent to fossil fuels.
Terrible ideaUndesirableDesirable
Comments:
Equal justice under law should be fundamental.
10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.
Terrible idea
Comments:  It would appear to have minimal utility interest.

## RECEIVED

AUG 2 1:1978

### QUESTIONNAIRE

GEOTHERMAL! ENERGY:

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

the desirability of these initiatives so that we can make sure that our						
program is truly responsive to the Region's needs.						
<u>Initiatives</u>						
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.						
(Check one)Terrible ideaUndesirableDesirableGreat idea						
Comments: ESSENTIAL						
<ol> <li>Industry-coupled, cost-shared drilling to confirm new reservoirs.</li> </ol>						
Terrible ideaUndesirableDesirableGreat idea						
Comments: (If desirable, what size program would you recommend?)  VERY LITTLE COMMERCIAL CAPACITY WELL DATA AVAILABLE  WE ARE HOPING THAT THE ASSESSMENT PRDA WILL BEGIN  TO CHANGE THAT.  3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.						
Terrible ideaUndesirableDesirableGreat idea						
Comments:						
4. 50 MWe demonstration plant at the Valles Caldera.						
Terrible ideaUndesirableDesirableGreat idea						
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)  IF THERE WAS REALLY A NEED FOR A DEMO-PLANT, THEN SURELY THE NEED FOR A BINARY PLANT DEMO WOULD, YIELDED						

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment. Desirable Terrible idea Undesirable Comments: (If desirable, prioritize.) 6. Support for development of wellhead (5-10MWe) generators. Desirable Terrible idea Undesirable Comments: VERY UNDESTRABLE TO ALLOW OR ENOURAGE THE DEVELOPERS TO GET TOO MUCH DOWN HOLE INVESTMENT BEFORE AGREEMEN WITH UTILITIES ARE REACHED - SMALL UNITS MAY PROVIDE A MEANS FOR GENERATING REVENUE BURING LONG TERM PER FLOW TEST 7. Loan guaranty program. Desirable Undesirable Terrible idea Great idea Comments: 8. Reservoir insurance. Terrible idea Undesirable Desirable Comments: AN ABSOLUTE MUST TO ACHIEVE EARLY COMMERCIAL DEVELOPMENT BY MODERATE SIZED UTILITIES. PERHAPS LIMITED TO COVER CAPITAL EXPOSURE ON FIRST UNIT PER FICILD FOR THE FIRST 10->15 VEARS: - IMPORTANT (300 AW-1985???) 9. Tax treatment equivalent to fossil fuels. ✓ Desirable Terrible idea Undesirable Comments: ALL FRONT-BUD BENEFITS MUST BE STEUCTURED SUCH THAT THEY WILL BE PASSED ON TO THE END-USER. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.

Undesirable

Terrible idea

Comments:

Desirable

Great ide

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible idea Undesirable Desirable Great idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments: A FAIR AMOUNT OF INFO AVAILABLE NOW - INVENTOR DON'T TEND TO PROVIDE GOOD PRACTICAL DATA THAT IS REQUIRED FOR DEVELOPMENT.
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)  AT LEAST ENOUGH TO ENABLE PRACTICAL EXPOSURE  FROM MATOR POPULATIONS CONTERS.
Name R. J. Rielands - SIBREA PACIFIC POWER CO. BOX 10100
REND, NEV. 89510

POURTH STREET AND STEWART AVENUE PO. BOX 230 · LAS VEGAS, NEVADA · 89151

August 22, 1978

Ø

Mr. Joe Hanny EG&G Idaho, Inc. P.O. Box 1625, UPD Idaho Falis, Idaho 83401

Re: Rocky Mountain Basin and Range Regional Hydrothermal Commercialization Plan

Dear Mr. Hanny:

We are returning a completed questionnaire concerning the above Department of Energy effort.

Should you need additional information, do not hesitate to contact our office.

Sincerely,

John W. Arlidge

Manager, Special Projects

/jb

Enclosure

Pisted below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one) Terrible idea x Undesirable Desirable Great idea
Comments: Institutional problems have been the major impediment to development, not planning.
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
Question is unclear. What is "Industry-coupled"?
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)
50 MW <sub>e</sub> demonstration plants are needed to demonstrate technology for use of high salinity or "low-temperature" fluids so that utilities will be willing

to fully develop the geothermal potential in the Southwest. We understand

(cont'd next page)

that the 50 MW Valles Caldera plant will operate on good quality geothermal fluids and will not demonstrate any technology not already commercially available. Under such circumstances, it is hard to call the Valles Caldera plant a demonstration project. . . . Support of R&D to develop better drilling and completion technology. reservoir stimulation techniques, exploration technology and advanced conversion equipment. Undesirable Terrible idea X Desirable Great idea Comments: (If desirable, prioritize.) 1) Reservoir mechanics 2) Conversion equipment Support for development of wellhead (5-10MWe) generators. Undesirable Desirable X Terrible idea Great idea Comments: Loan guaranty program. x Terrible idea Undesirable Desirable Great idea Comments: Reservoir insurance. Terrible idea Undesirable X Desirable Great idea Comments: Can be used until reservoir mechanics are developed to point where reservoir life prediction is at an acceptable level of risk. 9. Tax treatment equivalent to fossil fuels. Terrible idea Undesirable Desirable x Great idea Comments: 10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations. X Terrible idea Undesirable Desirable Great idea Comments:

Terrible ideaUndesirableDesirableGreat ideaComments:
COMPRESS TO STATE OF THE PROPERTY OF THE PROPE
Question unclear. "User assistance".
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
Question unclear.
13. Further support of direct heat applications demonstrations in the region.
Name  John W. Arlidge

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J. A.	HANNY	1
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tisted below are some of the actual or potential DOE init designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

	Initiatives
ė	. Collective planning with industry, state, local and other Federal ntities, attempting to develop a regional commercialization plan that as the active support of all those involved.
(	Check one)Terrible ideaUndesirableGreat idea
C	omments:
.2	. Industry-coupled, cost-shared drilling to confirm new reservoirs.
	Terrible idea <u>Undesirable</u> <u>X</u> Desirable <u>Great idea</u>
.3	probability of Confirmation as usable reservoirs.  Publication of data acquired under the Industry-Coupled Program and the eneration of case studies of different types of reservoirs.
- C	Terrible ideaUndesirable Great idea  omments: Mannaro Ry
	. 50 MWe demonstration plant at the Valles Caldera.
	Terrible idea Undesirable Restably Desirable Great idea
Cı	omments: (If desirable, how many and what kind of additional demonstration
andop	lants would you recommend?) what is the projected cost? Can the plant be cented in an environmentally acceptable way? This count be determed part state ment has been pregented which considers both normal
sin son	port state ment has been pregented which considers both normal

5. Support of R&D to reservoir stimulation conversion equipment.	develop better drill techniques, explorat	ing and completion in technology and a	technology, advanced
v Terrible idea	Undesirable /	Ossibly Desirable	Great idea
Comments: (If desirable projected expendence research pro	e, prioritize.) who letine? It is fort	I are the specific	needs what a public to
6. Support for develo	pment of wellhead (5	-10MWe) generators.	
Terrible idea	Undesirable	Desirable	Great idea
Comments: for lawe	a temperature,	recover's?	
7. Loan guaranty prog			
Terrible idea  Comments: What is to	Undestrable /2	ge <u>silly</u> Destrable general guar	Great idea
8. Reservoir insuranc	e.		
Terrible idea	Undesirable /	Possilly Desirable	Great idea
Terrible idea Comments: What is to	to expected cost	og such in	Surame ?
9. Tax treatment equiv	valent to fossil fuel	ls.	
Terrible idea	Undesirable	Desirable	Great idea
Comments: This is	ver under Do	E Central	
10. Support of combined economics to provide co	d developer-utility a ommon ground for nego	inalysis of reservoi itiations.	r dévelopment

11. User assistance for guidance on resource po	stential and surface e	equipment needs.	
Terrible idea	Undesirable	<u> </u>	Great idea
Comments:			•
			,
12. State-coupled pro moderate-temperature r			ow-and
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
_			
13. Further support oregion.	f direct heat applicat	tions demonstration	s in the
Terrible idea	Undesirable /	Pertally Desirable	Great idea
Comments: (If desirab	Ne, how many per state	27) what is the	engelist cost p
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Tentral cetilization	in the state as	eleption by	The Common loca
tentent estilization identified germa	us and direct	heat regimes	ments,
// a	1 A		
Name Hane Vo			
Receivat	Vice Resident	_	1
anerica	assorting	· University	Women
	Y	/	
1425 8.	16 th Street 8		

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QUESTIONNAIRE	Actign in fin
o Listed below are some of the actual or potential DOE initi	atives-
designed to speed the commercialization of hydrothermal er	nergy within the
Rocky Mountain Basin & Range Region. We would value your	opinion of
the desirability of these initiatives so that we can make	sure that our
program is truly responsive to the Region's needs.	
Initiatives	•
1. Collective planning with industry, state, local and of entities, attempting to develop a regional commercializations the active support of all those involved.	ther Federal on plan that
(Check one)	
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Terrible ideaUndesirableDesirable  Comments:  rued for auternative energy	pources.
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	reservoirsGreat idea
Terrible ideaUndesirableDesirable  Comments:  recol for auternative every  2. Industry-coupled, cost-shared drilling to confirm new  Terrible ideaUndesirableDesirable	reservoirsGreat idea
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	reservoirs. Great idea  ommend?)  sluor  d Program and the
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Terrible ideaUndesirableDesirable  Comments:  recol for auternative energy  2. Industry-coupled, cost-shared drilling to confirm new	reservoirs.  Great idea  mmend?)  sluint  d Program and the
Terrible idea	reservoirs.  Great idea  mmend?)  sluint  d Program and the
Terrible ideaUndesirableDesirable  Comments:  recol for auternative energy  2. Industry-coupled, cost-shared drilling to confirm new	reservoirs.  Great idea  mmend?)  sluint  d Program and the

reser conve		ulation tech		illing and completi ration technology a		
	Terrible	idea	Undesirable	Desirable	:Great	idea
Comme	nts: (If	desirable, p	rioritize.)	1. Equip 2. Exp) 3. Dull & Comp 4. Res. Stimu	L L	
				(5-10MWe) generate	ors.	
	Terrible	idea	Undesirable	Desirable	great	idea
Comme	nts:				,	
7. L	oan guara	nty program.				
	Terrible	idea	Undesirable	Desirable	Great	idea
Comme	nts:					
8. R	eservoir	insurance.	Į.			
	Terrible	i dea	Undesirable	Desirable	Great	idea
Conme	nts:					
9. T	ax treatm	ent equivale	nt to fossil	fuels.		
· — — — — — — — — — — — — — — — — — — —	Terrible	i dea	Undesirable	Desirable	great	idea
Comme	nts:			•		
			veloper-utili n ground for i	ty analysis of rese negotiations.	ervoir developmen	nt
-	Terrible	idea	Undesirable	Desirable	eGreat	i d
Comne	nts:					

o.

<ol> <li>User assistance for guidance on resource pote</li> </ol>			nitial
o Terriblé idea _	Undesirable	Desirable	Great idea
Comments:			•
1		,	
12. State-coupled programoderate-temperature reso			ow~and
Terrible idea	Undesirable	Besirable	Great idea
Comments:			
13. Further support of cregion.			
Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desirable,	how many per state	e?) as applica	tion.
	nley	<del></del>	

# GEOTHERMAL ENERGY CORPORATION RECEIVED

39 Broadway NEW YORK, N. Y. 10006

SEP 1 1 1078

GEOTHERMAL EN 17 GY-

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September 7, 1978

Mr. Clayton Nichols Assistant Director for Geothermal Energy Department of Energy Idaho Operations Office 550 Second Street Idaho Falls, Idaho 83401

Dear Clay:

I appreciate this opportunity to express my opinions with regard to this questionnaire to you directly. I have tried to be both frank and constructive but sometimes it is difficult to sound satisfied with one-location industry when so many more sites should be on their way to development. It's a big subject and I should be pleased to help you further in any way I can as regards the commercialization process.

Very truly yours,

Paul Rodzianko President

PR:md enc.

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

#### <u>Initiatives</u>

1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.	
(Check one)Terrible ideaUndesirableDesirableGreat idea	
Comments: I believe strongly that the economics of geothermal energy can be demonstrated and supported by adequate tax incentives and financing programs alone. In that case, active management participation on the part of government would not be a necessity and private sector industry would be able to advance rapidly towards the implementation of this energy P. Industry-coupled, cost-shared drilling to confirm new reservoirs.	е
Terrible idea	
Comments: (If desirable, what size program would you recommend?) I believe that the is an adequate capital base to drill new reservoirs. The problem of raising funds for drill new reservoirs would not be a problem if the road to cash flow ie.; from the wellhead to the busbar were better charted. In addition, fax incentives were fully implemented, the whole 3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.	ing e
4. 50 MWe demonstration plant at the Valles Caldera.  X Terrible ideaUndesirableDesirableGreat idea  Comments: (If desirable, how many and what kind of additional demonstration	economically
	omic
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)	ally via

see attached sheet

process would become economically viable and development dollars would follow.

con	Support of R&D to dervoir stimulation to version equipment.	evelop better drilli echniques, explorati	ng and completion on technology and	techno advanc	logy, ed
	Terrible idea	Undesirable	Desirable	_X_	_Great idea
rese	ments: (If desirable arch and development on and development on a structure and the industry	efforts to which the Fe	deral government ca	n contr	ibute to most
6.	Support for develop	ment of wellhead (5-	10MWe) generators.		
	Terrible idea	Undesirable	Desirable	X	_Great idea
say l gove back	ments: We're in the fo am favorably prejudic rnment can be best use up provisions or active	eed in my answer here eful in supporting this ely cooperating with pr	. I do have some str kind of development	rong ide	eas as to how n providing
7.	Loan guaranty progr	am.			
	Terrible idea	Undesirable	Desirable	_X_	_Great idea
8.	Reservoir insurance Terrible idea	Undesirable	Desirable		Great idea
X	•				_Great idea
geoth confl plant	ments: Basically, the learmal should need. I icting program which ic.  Tax treatment equiv	'm against introducing is what happened in the	another layer of ove e area of loan guaran	rhead a	and another
		Undesirable		х	Great idea
Com	nents: And only fair.	,			_dreat ldea
10.		developer-utility a nmon ground for nego	nalysis of reservoi	ir dev∈	elopm <b>ent</b>
	Terrible idea	Undesirable	Desirable	<u>x</u>	Great ide
Com	ments:				

. see attached

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible idea <u>X</u> Undesirable <u>Desirable</u> <u>Great idea</u>
Comments: I feel that the route to commercialization which this question in essence addresses
can be mapped out just as effectively by private sector as well as by the Federal government
I think the reason for this and other questions of this type in various federal questionnaires
are basically because the geothermal industry has not helped itself as strongly as it could in
developing and implementing commercialization plans and strategies. 12. State-coupled program for a state-by-state inventory of low-and
moderate-temperature resources for direct heat applications.
Terrible ideaX_UndesirableDesirableGreat idea
Comments: I think we are getting ahead of ourselves with inventorying if we haven't figured out how we are going to use the resource. The inventory will follow if the incentives are there to develop these kind of resources - and not at taxpayer's expense.
13. Further support of direct heat applications demonstrations in the region.
Terrible idea <u>X</u> Undesirable <u>Desirable</u> Great idea
Comments: (If desirable, how many per state?) One can lead a horse to water but one can't make it drink. My answer is basically as in #12 above.
Name Vaulkody du
Paul Rodziarlo

#4 Comments: Action on Valles Caldera demonstration plant has already slowed other possible projects within the Public Service of New Mexico service area by virtue of their concentration on this project alone. I think also there will be very little carry-over to other reservoirs and there may well end up being an actual delay on the overall geothermal industry waiting for a "wait and see" result of the Valles Caldera project. I would recommend strongly no further demonstration plants. I'm quite saddened by the fact that although the initial resource was discovered over a decade ago it takes this kind of massive government support to get the project started. The industry has lacked an emphasis on commercialization by bootstrapping from internal sources and this is part of the problem.

#10 Comments: I think it is a great idea - on the other hand this kind of activity is already taking place between a variety of reservoir developers and utility companies so I think the role for the Federal government should be limited here to that of an

honest broker or intermediary.

Sand to - Clayfor Michels

Department of Energy

Idaho Operations Office

550 Secondour Sitman

Idaho Falls Idaho

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GEOTHERMAL ENERGY
BRANCH

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

#### Initiatives

(Check one) ★ Terrible idea			
Comments: Central  1.8 effectively	planned econ	comic ventures dual initiative s	ystem. The four
ntities listed one for the producting do 2. Industry-coupled,	in reality m	say bundred en	ities when each
2. Industry-coupled,	cost-shared drilli	ng to confirm new res	ervoirs.
		Desirable	
	<del></del>	77	
Comments: (If desirated of the Size of the	ole, what size program shows the state of different under the state of dif	ram would you recomme  ond encourage  the program  the Industry-Coupled P types of reservoirs. Desirable	nd?)  auploration  auploration  auploration  auploration  auploration  Great idea
Comments: (If desirate of the size of the	ole, what size program shows as - A+ this to a cquired under the udies of different under the control of the co	ram would you recomme  ond encourage  include the program  the Industry-Coupled P types of reservoirs.	nd?)  exploration  is parchis  rogram and the  Great idea  Herete us
Comments: (If desirate of the size of the	ole, what size program shows as - A+ this to a acquired under the udies of different under the chively interest on blically su	ram would you recomme on a encourage of the program to the program to the program to the industry-Coupled P types of reservoirs.	nd?)  exploration  is parchis  rest all gentlement  rogram and the  K Great idea  He rate us  should be
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Comments: (If desirate of the Size of geographic end of the Size o	ole, what size program shows as - A+ this to a acquired under the udies of different under the chively interest on blically su	ram would you recomme on a encourage of the program to the program to the program to the industry-Coupled P types of reservoirs.	nd?)  exploration  is parchis  rogram and the  Great idea  He rate our  should be

increase their confidence in using gooth.

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	5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.
	Terrible ideaUndesirableGreat idea
	Comments: (If desirable, prioritize.) The following order is the priority of I see it. DDriling and completion techniques, (2) Advanced conversion techniques ment
	6. Support for development of wellhead (5-10MWe) generators.
	generators are now being used or are under construction
sirea	in action. Edan guaranty program. The a trip crowned the world and study the
	Terrible idea
	8. Reservoir insurance.
	Terrible ideaUndesirableDesirableGreat idea
	to accomplish in negotisting the development of a geothermal project is to assure.
	9. Tax treatment equivalent to fossil fuels.
	Terrible ideaUndesirableDesirable Great idea
	Comments: To compete with existing finels hydrotherms/ Bestleinel systems should have the same fax trestment The increased use of gastlemas would increase the name of tax paying resource development projects.  10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.
	10. Support of combined development economics to provide common ground for negotiations.
	Terrible ideaUndesirableGreat idea
	Comments: Obvious

. . .

ll. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible idea Undesirable Desirable Great idea
comments: Usually site specifit requirements
comments: Usually site specifit requirements regeire more than local Knowledge
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
1. sted reviewed etc- additional studies  2. Eunthon support of direct host applications described
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableX_DesirableGreat idea
Comments: (If desirable, how many per state?) This depands upon the state, their industry, and the location of the geofhern of secretarilation. California Carolled 1984   405, Neveda Zar 3 Organia Name Dob friends _ 2003, and others
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AUG 2 8 1978

### QUESTIONNAIRE

GEOTHERMAL ENERGY
BRANCH

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

program is truly responsive to the Regio	on's needs.	
Initiatives		
<ol> <li>Collective planning with industry, sentities, attempting to develop a region has the active support of all those involves.</li> </ol>	nal commercialization	er Federal n plan that
(Check one)Terrible ideaUndesirable	Desirable	Great idea
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		·
2. Industry-coupled, cost-shared drilli		4
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Comments: (If desirable, what size programmend a fourth recommend a fourthing e.g. Govt) have will demonstrate the fourthing of case studies of different	rogium of dr buildings un exsibility to pr the Industry-Coupled types of reservoirs	illing to benefit iversities scrools enderelopers.  Program and the
Terrible_ideaUndesirable	Desirable	Great idea
Comments:		
4. 50 MWe demonstration plant at the Va	illes Caldera.	,
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, how many and we plants would you recommend?)  Little widestry pick, we a		

rese	Support of R&D to dervoir stimulation to ersion equipment.	echniques, explorat	ion technology and	advanced
: 	_Terrible idea	Undesirable	Desirable	Great idea
Comn	ments: (If desirable	e, prioritize.)		
6.	Support for develop	oment of wellhead (5	i-10MWe) generators.	
	Terrible idea	Undesirable	Desirable	Great idea
Com	ments:			
7.	Loan guaranty progr Terrible idea	ram. Undesirable	Desirable	
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Comn	nents:			
	•		•	
8.	Reservoir insurance	· ·		
	_Terrible idea	<u>Undesirable</u>	Desirable	Great idea
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9.	Tax treatment equiv		. /	
	_Terrible idea	Undesirable	Desirable	Great idea
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lO. econ	Support of combined omics to provide co	developer-utility mmon ground for neg	analysis of reservo otiations.	ir development
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Comments:			
	gram for a state-by-sta esources for direct hea		'ow-and
Terrible idea	Undesirable	Desirable	Great
Comments:			
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13. Further support o region.	f direct heat applicat	ions demonstration	s in the
Terrible idea	Undesirable	Desirable	Great
	le, how many per state	?)	
	le, how many per state	?)	
	le, how many per state	?)	
Comments: (If desirab	Chaticach		3 C E ,

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AUG 2 8 1978

#### QUESTIONNAIRE

GEOTHERMAL ENERGY BRANCH

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, 5
<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableX _DesirableGreat ide
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible idea Undesirable Desirable Great ide
Comments: (If desirable, what size program would you recommend?) Risks are high for exploration drilling. Program would be difficult to administer with DOE support.
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat ide
Comments: Because of the competitive nature of most leases, industry will be reluctant to share data acquired.
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableX Great ide
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)
Small scale demonstrations (5-10 MWe) of advanced technologies, either total flow or lower temperature binary cycle.

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	ND to develop better dration techniques, explonent.		
Terrible ide	eaUndesirable	<u>x</u> Desirable	Great idea
Comments: (If des	sirable, prioritize.)		
	development of wellhead		
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7. Loan guaranty	y program.		
Terrible ide	ea <u> </u>	<u>X</u> Desirable	Great idea
Comments:			
8. Reservoir ins	surance.		
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9. Tax treatment	t equivalent to fossil	fuels.	
Terrible ide	ea <u>x</u> Undesirable	Desirable	Great idea
	reatment superior to fos iment in geothermal inst		ccelerate
	ombined developer-utilit vide common ground for m		ir development
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Comments:			•

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Terrible ideaUndesirableDesirableGreat idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirable
Comments: (If desirable, how many per state?)
One per state
Name Jack D. Mady

Western Interstate Energy Board/WII

\*2500 Stapleton Plaza, 3333 Quebec, Denver, CO 80207 • 303/837-5851 FTS 327-5851

August 30, 1978

O Mr. Joe Hanny EG&G Idaho, Inc. P.O. Box 1625, UPD

Idaho Falls, ID 83401

Filo

Dear Mr. Hanny:

Enclosed is your questionnaire regarding actual and potential initiatives by the Department of Energy to accelerate the commercialization of hydrothermal energy in the Rocky Mountain Basin and Range Region. We have completed this questionnaire as you requested.

In considering the various DOE initiatives, I contacted several states in the basin and range region, including Arizona, Utah, Nevada, and New Mexico to elicit their response to the general thrust of the questionnaire. As you can tell from my answers, we feel the states are most interested in the development of geothermal energy and are anxious to participate in this developmental effort.

We have also received a copy of the Rocky Mountain Basin and Range Regional Hydrothermal Commercialization Plan which I have examined. It is a most informative document and I think will be very useful to us. I am glad to hear that this plan will be periodically updated so that it will retain its usefulness.

We appreciate the opportunity to participate in your activities to promote geothermal energy and look forward to a continuing interchange.

MF/skb

Enclosure

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
l. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one) .  Terrible ideaUndesirableDesirable X Great idea
Comments: Funding should be based on a minimum amount to be shared equally among states with any geothermal resources, and then a larger amount over and above that base to be distributed among states with larger resources. Planning should be done with the full participation and concurrence of the states.
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableX_DesirableGreat idea
Comments: (If desirable, what size program would you recommend?) Large enough to stimulate industry interest in and commitment to an on-going drilling program, which would continue without further federal support.
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableX_DesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableX_DesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?) Both electrical generation and direct-heat application demonstrations should be built in various states to the degree

necessary to stimulate private exploitation of this resource.

5. Support of R&D to de reservoir stimulation te conversion equipment.			
) Terrible idea	Undesirable	Desirable	X_Great idea
Comments: (If desirable,	prioritize.)		
All appear to be equally	important.		
6. Support for developm	nent of wellhead (5	-10MWe) generators.	
Terrible idea	Undesirable	<u>x</u> Desirable	Great idea
Comments:			
<ol><li>Loan guaranty progra</li></ol>	m.		
Terrible idea	Undesirable	Desirable	<u>X</u> Great idea
Comments:			
8. Reservoir insurance.			
Terrible idea	Undesirable	<u>X</u> Desirable	Great idea
Comments:			
9. Tax treatment equi <b>va</b>	lent to fossil fue	ls.	
Terrible idea	Undesirable	XDesirable	Great idea
Comments: Any severance common denominator such qually taxed, dependent  O. Support of combined economics to provide com	tax program should as BTU content, so on the amount of end developer-utility	d base energy resou that each resource nergy it produces. analysis of reservo	rces on a would be
Terrible idea	-		Great ide
Comments:			

guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirablex Great idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirablex Great idea
Comments: Participants could include state energy extension services or other state outreach programs concerned with the dissemination of energy information.
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableX_DesirableGreat idea
Comments: (If desirable, how many per state?)
Name Mary Fackelman Western Interstate Energy Board/WINB

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Listed below are some of the actual or potential DOE initiatives
designed to speed the commercialization of hydrothermal energy within the
Rocky Mountain Basin & Range Region. We would value your opinion of
the desirability of these initiatives so that we can make sure that our
program is truly responsive to the Region's needs.
<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs. Terrible idea Undesirable Great idea Comments: (If desirable, what size program would you recommend?)
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

Terrible idea	Undesirable	Desirable	✓ Great idea
Comments: (If desirab	le, prioritize.)		
5. Support for develo	opment of wellhead (	5-10MWe) generators.	
Terrible idea	Undesirable	Desirable	Great idea
omments:			
. Loan guaranty pro			
Terrible idea	Undesirable	Desirable	Great idea
omments: Design geothern	the program - a clevelypment.	for small-scale	, directure
. Reservoir insuran	ce.		
Terrible idea	Undesirable	Desirable	Great idea
onments: Questing before deing rate be and rate be.  Tax treatment equi	while, Examine this methodory on this methodory Resource may be ivalent to fossil full	other approaches of of reducing ri- ench + Phologon or be modified to re els.	sk. Ut.1. ty of smanditures due utility compo
Terrible idea	Undesirable	Desirable	Great idea
Terrible idea  onuments: Do Not of  Also, app  explose  lru con:	be simplistic in 14 this principle ing of fuel cents to ital, high fuel co	to directure iar business deci	situation (e.g.,
. Support of combine	ed developer-utility common ground for ne	analysis of reservo	
•			

Terrible idea	Undesirable	Desirable	Great
Comments:			
		•	•
12. State-coupled prog moderate-temperature re			low-and /
Terrible idea	Undesirable	Desirable	Great
Comments:			
Comments:			
Comments:			
	f direct heat applica	ations demonstration	ns in the
Comments:  13. Further support of region.	f direct heat applica	ations demonstration	ns in the
13. Further support of region.	f direct heat applica	•	
<pre>13. Further support of regionTerrible idea</pre>	Undesirable	Desirable	Great
<pre>13. Further support of regionTerrible idea</pre>	Undesirable	Desirable	Great
<pre>13. Further support of regionTerrible idea</pre>	Undesirable	Desirable	Great
<pre>13. Further support of regionTerrible idea</pre>	Undesirable	Desirable	Great
13. Further support of region. Terrible idea  Comments: (If desirable important to ample to ampl	Undesirable	Desirable	Great

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#### QUESTIONNAIRE

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

#### Initiatives

	<u>Initiatives</u>		
<ol> <li>Collective planning wit entities, attempting to dev has the active support of a</li> </ol>	elop a regional d	commercialization plan	ral that
		Desirable	
Comments: 5 uggest one app	top promiting	procedu instear	12
2. Industry-coupled, cost-	shared drilling t	o confirm new reservoi	rs.
Terrible ideal	Indesirable _	✓ Desirable	_Great idea
Comments: (If desirable, we should drilly.)  3. Publication of data acceptance of case studies	Proyron _ 1	ndustry-Coupled Progra	
Terrible ideal	Indesirable _	Desirable	_Great idea
Comments:			
4. ₿Ô MWe demonstration pl	ant at the Valles	Caldera.	
Terrible ideal	Indesirable _	√ Desirable	_Great idea
Comments: (If desirable, hplants would you recommend?	ow many and what Plum	kind of additional dem	onstration Q')

	n techniques, explora	ition technology and a	
	Undesirable	Desirable	Great idea
Comment: (If desira	ble, prioritize.)		
6. Support for deve	lopment of wellhead (	5-10MWe) generators.	
Terrible idea	Undesirable	Desirable	Great idea
Comment:			
7. Loan guaranty pr	ogram.		
V Terrible idea	Undesirable	Desirable	Great idea
Comments: Ser	permitty / liv	Desirable vnormaled fro	Homa
8. Reservoir insura	nce.		
	Undesirable	Desirable	Great idea
Comments:			
9. Tax treatment eq	uivalent to fossil fu	els.	•
Terrible idea	Undesirable	Desirable	Great idea
Comments: _ Mar	L more anal	Desirable  Pin hore— 6-	epol
	ned developer-utility common ground for ne	analysis of reservoingotiations.	o development
Terrible idea	Undesirable	Desirable	Great idea
Comments:			

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
v Terrible idea Undesirable Desirable Great idea
comments: Donnes are good - then throw doors upo
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
Name (optional) P.B. Chrynolling
I am associated with a: (Check one)
Developer
Utility
Financial Institution
State Government
Federal Government
V Other # (

16681 Louis Vende Missian Nivija y Can

### QUESTIONNAIRE

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments:
<ol> <li>Industry-coupled, cost-shared drilling to confirm new reservoirs.</li> </ol>
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)  Need to use existing reservoir
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)
Consider smaller plants (5 mw)

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.
Terrible ideaUndesirableDesirableGreat idea
Converien Equipment — and method  Ob composion of different types
6. Support for development of wellhead (5-10MWe) generators.
Terrible idea Undesirable Desirable Great idea
Comment:
7. Loan guaranty program.
Terrible ideaDesirableGreat idea
Comments:
8. Reservoir insurance.
Comments:
9. Tax treatment equivalent to fossil fuels.
Terrible ideaUndesirableDesirableGreat idea
Comments:
O. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.
Terrible ideaUndesirableDesirableGreat idea
Conments:

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guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat ide
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat ide
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
Name (optional) ROCON SPRANK(6
I am associated with a: (Check one)
Developer
Utility
Financial Institution
State Government
Federal Government
X Other WACHINERY MAG

Disted below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u> .					
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>					
(Check one)Terrible ideaUndesirableDesirableGreat idea					
Comments:					
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.					
Terrible ideaUndesirableBesirableGreat idea					
Comments: (If desirable, what size program would you recommend?)					
•					
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.					
Terrible ideaUndesirableDesirableGreat idea					
Comments:					
4. 50 MWe demonstration plant at the Valles Caldera. ?					
Terrible ideaUndesirableDesirableGreat idea					
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)					

reservoir stimulation tec conversion equipment.			
•	Undesirable	Desirable	
Comment: (If desirable,	prioritize.)		
6. Support for developme	ent of wellhead (	5-10MWe) generators.	
Terrible idea	Undesirable	Desirable	✓ Great idea
Comment:			
7. Loan guaranty program	n.		
Terrible idea	Undesirable	Desirable	Great idea
Comments:	•		
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8. Reservoir insurance.			
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
9. Tax treatment equival	lent to fossil fu	nels.	
Terrible idea	_Undesirable	Desirable	Great idea
Comments:			
10. Support of combined of economics to provide comm			ir development
Terrible idea	Undesirable	Desirable	Great idea
Comments			

<u>. :)</u>	Terrible ideaUndesirableDesirableO
Con	ments:
	State-coupled program for a state-by-state inventory of low-and erate-temperature resources for direct heat applications.
	Terrible ideaUndesirableDesirableG
Con	ments:
	Terrible ideaUndesirableDesirableG
Com	ments: (If desirable, how many per state?)
Nam	e (optional) <u>Lebrace Spranber</u>
	e (optional) Lebrace Spranke
	e (optional) <u>Lebrace Spracher</u> I am associated with a: (Check one)
	e (optional) <u>Lurure Spraulu</u> I am associated with a: (Check one) Developer
	e (optional)  Lunca Sprache  I am associated with a: (Check one)  Developer  Utility
	e (optional)  Lucia Spracture  I am associated with a: (Check one)  Developer  Utility  Financial Institution

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

### Initiatives

<u></u>			
<ol> <li>Collective planning with in entities, attempting to develop has the active support of all</li> </ol>	a regional o	commercialization ;	
(Check one)Terrible ideaUndes	sirable _	Desirable	Great idea
Comments: DOMETIMES T	HA LONE BRIGHT	e voice in t	-
2. Industry-coupled, cost-shar	red drilling t	to confirm new rese	ervoirs.
Terrible ideaUndes	sirable .	<u> </u>	Great idea
Comments: (If desirable, what	size program	would you recommen	nd?)
3. Publication of data acquire generation of case studies of c			rogram and the
Terrible ideaUndes	sirable	Desirable	Great idea
Comments:			
4. 50 MWe demonstration plant	at the Valles	Caldera.	
Terrible ideaUndes	sirable	∆ Desirable	Great idea
Comments: (If desirable, how makes a plants would you recommend?)	nany and what	kind of additional	demonstration

5. Support of R&D to reservoir stimulation conversion equipment.	n techniques, explora	ling and completion ation technology and	technology, advanced
<del></del>	Undesirable	Desirable	Great idea
Comment: (If desirat	ile, prioritize.)		
6. Support for devel	opment of wellhead (	5-10MWe) generators	•
Terrible idea	Undesirable	Desirable	Great idea
Comment:			
7. Loan guaranty pro	gram.		
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
8. Reservoir insuran	ice.		
Terrible idea	Undesirable	Desirable	Great idea
Comments: I BEUE HAVE TO BE 30: WITH T & P	ETHAT THE STAU A FACILL FLOW DRAWD	THERMAL CHA TY FOR AT LE OWN. THEREFO	RACTERISTICS BAST 30 YEARS OBE BUILD HYBR
9. Tax treatment equ	ivalent to fossil fu	els.	
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
10. Support of combin economics to provide			oir development
Terrible idea	Undesirable	Desirable	Great idea
Comments:			• 1

<u> 63</u>	_Terrible idea _	Undesirable	Desirable	Grea
Comm	ents:		,	
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,				
			by-state inventory of ct heat applications.	low-and
	_Terrible idea _	Undesirable	Desirable	Grea
	ents: .			
13. regio		of direct heat appl	lications demonstratio	ns in the
regio	J11.			
		Undesirable	Desirable	Great
	_Terrible idea	Undesirable	<del></del>	Grea
	_Terrible idea		<del></del>	Grea
	_Terrible idea		<del></del>	Grea
Comme	_Terrible idea	ole, how many per s	state?)	Grea
Comme	_Terrible ideaents: (If desirab	nle, how many per s	state?)	Grea
Comme	Terrible idea ents: (If desirab  (optional)  am associated wit	ole, how many per s	state?)	Grea
Comme	_Terrible ideaents: (If desirab	nle, how many per s	state?)	Grea
Comme	Terrible idea ents: (If desirab  (optional)  am associated wit	nle, how many per s	state?)	Grea
Comme	Terrible idea ents: (If desirab  (optional)  am associated wit  Developer	the, how many per so	state?)	Grea
Comme	Terrible idea ents: (If desirab  (optional)  am associated wit Developer Utility	the, how many per some sole, how many per sole.  Check of the stitution	state?)	Great

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

#### Initiatives

•			•
<ol> <li>Collective planning with entities, attempting to deve- has the active support of all</li> </ol>	lop a regiona	l commercialization p	
(Check one)Terrible ideaUnd	desirable	Desirable	Great idea
Comments: This is not	new bu	t it 10 vital	
2. Industry-coupled, cost-sh	nared drilling	g to confirm new rese	ervoirs.
Terrible ideaUno	desirable	$_{ imes}$ Desirable:	Great idea
Only long evough  3. Publication of data acquigeneration of case studies of	to get a	ectivity under Industry-Coupled Pr	rway
Terrible ideaUnd	desirable	Desirable	Great idea
4. 50 MWe demonstration plan		es Caldera	
X Terrible ideaUnc	•	•	Great idea
Comments: (If desirable, how plants would you recommend?)  The demonstration or a woodevat	v many and wha	it kind of additional I have been	demonstration .

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.
Terrible ideaUndesirableDesirableX_Great idea
Comment: (If desirable, prioritize.) Only On drilling, Veseruoir
Mimulation and advanced conversion apripulat
6. Support for development of wellhead (5-10MWe) generators.
comment: These cere low in cost and com. be cofforded by the utility or operator
7. Loan guaranty program.
Terrible ideaUndesirableX_DesirableGreat idea
comments: very emulserson but this way bo the and
8. Reservoir insurance.
Terrible ideaUndesirableDesirableGreat idea
comments: Only Cou the first one or two plants
9. Tax treatment equivalent to fossil fuels.
Terrible ideaUndesirableDesirableGreat idea
comments: Super - Virtue - without this we will
comments: Super - Virtuel - without this we will never got boothornel onelorway
10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.
Terrible ideaUndesirable
Comments: This would help it it came to part idea

11. User assistance f guidance on resource p			nitial
Terrible idea	Undesirable	Desirable	Great idea
Comments: In the	initial sta	iges only	
12. State-coupled promoderate-temperature r		y-state inventory of l t heat applications.	ow-and
Terrible idea _	Undesirable	Desirable	Great idea
comments: to cos	the to be u	vernmental cogo	governue mices to c
13. Further support oregion.	of direct heat appl	ications demonstration	s in the
Terrible idea	Undesirable	$_{igstyle  imes_{igstyle}}$ Desirable	Great idea
Comments: (If desirate Only on prog		tate?) ICLUE Great Po	stential
Name (optional)			
I am associated wit	h a: (Check o	ne)	
Developer			,
Utility			
Financial In	stitution		
State Govern	ment		•
Federal Gove	rnment	•	• .
$\underline{\hspace{1cm}}$ Other			•

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirable
comments: If DOE is not presented as the "experts" in the field. It should be a true cooperative effort.
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
Driving shorted concentrate in clear where there is no indication that private industry may go wheal + drile. DOE should concentrate on the higher risk areas, 3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

prospets. Demonstrations should occur in a the

5. Support of R&D to develop better dril reservoir stimulation techniques, explora conversion equipment.		
Terrible ideaUndesirable	Desirable	Great idea
Comment: (If desirable, prioritize.)  Conantrate on these areas who development at his time.	(	
6. Support for development of wellhead (	5-10MWe) generators	
Terrible ideaUndesirable	Desirable	Great idea
Comment:		
		·
	·	٠.
7. Loan guaranty program.		
Terrible ideaUndesirable	Desirable	Great idea
Comments:		•
8. Reservoir insurance.		
Terrible ideaUndesirable	Desirable	Great idea
Comments:  I don't see how it can be don	e reasonably	ditheret a
1st here knowledge about metald	und reservoirs	than its known
り. Tax treatment equivalent to fossil fu	els.	
Terrible ideaUndesirable '	Desirable	Great idea
Comments:		
10. Support of combined developer-utility economics to provide common ground for ne		oir development
Terrible ideaUndesirable	Desirable	Great idea
Comments:		•

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
If they're applicable to that region or are not duplication of projects already underway.
together to the projects toward wheeling,
Name (optional)
I am associated with a: (Check one)
Developer
Utility
Financial Institution
State Government
Federal Government
Other

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)  Initial investigation of new resources only.  3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)  Dannos of different technologies was be useful.

5. Support of R&D to develop bett reservoir stimulation techniques, conversion equipment.				
Terrible ideaUndesira	ble	Desirable	Great	idea
Comment: (If desirable, prioritized in Stimula 2 D&CT		3 Corversión 4. Explora	ore More	
-6. Support for development of wel	1head (5-10	MWe) generator	s <sup>.</sup> .	
Terrible ideaUndesira	ble	Desirable	Great	idea <sup>.</sup>
Comment:				
7. Loan guaranty program.				·
Terrible ideaUndesira	ble <u></u>	Desirable	Great	idea
Comments:				
		-		
8. Reservoir insurance.				`.
Terrible ideaUndesira	ble <u>V</u>	Desirable	Great	idea
Comments: -				
9. Tax treatment equivalent to fo	ssil fuels.		•	•
Terrible ideaUndesira	ble	Desirable	Great	idea
Comments: To complete de de	1 conola	at faccil	finta C	<del>-</del>
deserves similar tax tr	exturat	·	jueis, 4	/
			;	
<ol><li>Support of combined developer- economics to provide common ground</li></ol>			voir developmer	nt
Terrible ideaUndesira	ble	Desirable	<b>⊌</b> Great i	dea
Comments:				

11. User assistance for direct heat guidance on resource potential and s	
Terrible ideaUndesirable	eDesirableGreat idea
Comments:	
•	
12. State-coupled program for a sta- moderate-temperature resources for d	
Terrible ideaUndesirable	eGreat idea
Comments:	
12 Funthan augment of direct heat	analiantions domanaturations in the
13. Further support of direct heat a region.	apprications demonstrations in the
Terrible ideaUndesirable	eDesirableGreat idea
Comments: (If desirable, how many personal sufficient to promote	er state?)  non-subadized direct heat
projects	LAM Division
Name (optional) Jim Butz	Denver Research lustitute
I am associated with a: (Chec	ck one) P.O. Box 10127
Developer	Denver @ 80208
Utility	1
Financial Institution	
State Government	
Federal Government	
Other Non-profit K	esearch Institute

Initiativ	res
<ol> <li>Collective planning with industry entities, attempting to develop a reg has the active support of all those</li> </ol>	gional commercialization plan that
(Check one) . Terrible ideaUndesirable	Desirable Great idea
Comments:	
•	
2. Industry-coupled, cost-shared dr	lling to confirm new reservoirs.
Terrible ideaUndesirable	DesirableGreat idea
3. Publication of data acquired unde	pains my your pre-proposal conf s, cost-share, etc. er the Industry-Coupled Program and the
generation of case studies of different different dea Undesirable Comments: Isa't it regulare	
4. 50 MWe demonstration plant at the	47
Comments: (If desirable, how many arplants would you recommend?)	nd what kind of additional demonstration

Comments:			
Terrible idea	Undesirable	Desirable	Great idea
	ned developer-utility common ground for ne		ir development
Comments:	ditto		
Terrible idea	Undesirable	Desirable	Great idea
9. Tax treatment eq	uivalent to fossil fu	uels.	
Comments: No ga	od data base f	en mo.	
Terrible idea	Undesirable	Desirable	Great idea
8. Reservoir insura	nce.		
Comments: 600 S	ted on incent	ives,	
<del></del>	Undesirable	•	Great idea
7. Loan guaranty pr			
<b></b>			
Comment:	•		
Terrible idea	Undesirable	Desirable	Great idea
, , ,	lopment of wellhead (		
Difficult	ble, prioritize.) For me of prov	. topc -all are	neoded.
			•
o Terrible idea	Undesirable	Desirable	Great idea
5. Support of R&D treservoir stimulation conversion equipment	n techniques, explora	lling and completion ation technology and	technology, advanced

11. User assistance for direct heat applications on resource potential and surface		initial
o Terrible ideaUndesirable	Desirable	Great idea
Comments:		
12. State-coupled program for a state-by-smoderate-temperature resources for direct h		low-and
Terrible ideaUndesirable	Desirable	Great idea
Comments:		
13. Further support of direct heat applicategion.	tions demonstratio	ons in the
Terrible ideaUndesirable	Desirable	Great idea
Comments: (If desirable, how many per stat	:e?)	
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Name (optional)		,
Name (optional)  I am associated with a: (Check one)		
I am associated with a: (Check one)		,
I am associated with a: (Check one)Developer		
I am associated with a: (Check one)DeveloperUtility		
I am associated with a: (Check one) Developer Utility Financial Institution		
I am associated with a: (Check one) DeveloperUtilityFinancial InstitutionState Government		
I am associated with a: (Check one) Developer Utility Financial Institution State Government  Federal Government		
I am associated with a: (Check one) Developer Utility Financial Institution State Government  Federal Government		

Rolph E. Williams (303)753-2001 Denver Research Inst. Union of Denver, Denver, Co suzar

•	Initiatives		
1. Collective planning we entities, attempting to do has the active support of	evelop a regiona	l commercialization pl	
(Check one)  A Terrible idea	Undesirable	Desirable	Great idea
Comments:		•	
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2. Industry-coupled, cos	t-shared drillin	g to confirm new reserv	voirs.
Terrible idea	Undesirable	Desirable:	Great idea
Comments: (If desirable,  Montal days are  see cost staring  benefit and from  3. Publication of data ageneration of case studies	well which the company	1. would in me (5) only unless ie Industry-Coupled Pro	Afrondy to
Terrible idea	Undesirable	Desirable	Great idea
Comments: Could be			
4. 50 MWe demonstration	plant at the Val	les Caldera.	
Terrible idea	_Undesirable	Desirable	Great idea
	1?) Ledemons l	at kind of additional of	109

5. Support of R&D to develop better drilling and completion technol reservoir stimulation techniques, exploration technology and advance conversion equipment.	ed
Terrible ideaUndesirableDesirableG	
Comment: (If desirable, prioritize.) Nead to among	1.2-
unsolicitated proposals in this area.	
6. Support for development of wellhead (5-10MWe) generators.	
Terrible ideaUndesirableDesirableG	reat idea
Comment: Prefer INN mile that can be	modulid
7. Loan guaranty program.	
Terrible ideaUndesirableDesirableG	
Comments: After acceptance of short form up then a separate department of DCE should finance and prepare full blown regilients. Small businesses. 8. Reservoir insurance.	on for
Terrible ideaUndesirableG	reat idea
Comments:	•
	· .
9. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirableG	reat idea
Comments: Deplotion is truly not applicable	e so that
some forms of multiple of of cost of interfered of should be developed	
10. Support of combined developer utility analysis of reservoir deve economics to provide common ground for negotiations.	lopment
Terrible ideaUndesirableDesirableG	reat idea
Comments: see or whiting	

guidance on resource potential and surface	
Terrible ideaUndesirable	DesirableGreat idea
Comments: Best that oursis	
•	industry gundance and
the quality of work pe	- 4
12. State-coupled program for a state-by moderate-temperature resources for direct	
Terrible ideaUndesirable	DesirableGreat idea
Comments:	
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13. Further support of direct heat application.	ications demonstrations in the
	DesirableGreat idea
Comments: (If desirable, how many per st	tate?) Morit rather Hiar
politics	
	/ _ · · · · · · · · · · ·
Name (optional) ALBORT 1. Hoe	
I am associated with a: (Check or	ıe)
Developer	
Utility	
Financial Institution	
State Government	
Federal Government	
Other	

Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableGreat idea
comments: Mard to include consultants involved in
Energy RD including Goothermal
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?) Like Nuclear Energy - Fed. Gout. Needs to K. Take a head Re in devalopment And Tax Inentives
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible idea Undesirable Desirable $X$ Great idea
Terrible idea Undesirable Desirable X Great idea  Comments: Govt Punded work-inolading PATENTS - Should belong to the People-
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableX_Great idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

(OSHA, EPA) and pormit granting Agencia

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.	
Terrible ideaUndesirableDesirableX Great idea	
Terrible idea Undesirable Desirable X Great idea  Comment: (If desirable, prioritize.) Good Should Support RD/D that  Will head to jobs in the privat Scotor.	٠
6. Support for development of wellhead (5-10MWe) generators.	•
Terrible ideaUndesirableDesirableGreat idea	
Comment: Sama as 5	
7. Loan guaranty program.	
Terrible ideaUndesirableDesirableGreat idea	
Comments: 30 5	
8. Reservoir insurance.	
Terrible idea Undesirable Desirable Great idea	
Terrible idea Undesirable Desirable Great idea  Comments: Dopletin allowances Should be elaminated in all areas	
Comments: Depret M. Comments	
9. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirableDesirableGreat idea	
comments: ALL taxes are evalually paid by people. Compani	es/
comments: Alt taxes are eventually paid by people. Companicopporations, Gootemployees are bosissely pipelines from private individual enterprine to the Goot budgets.	uli
10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.	
Terrible ideaUndesirableDesirableGreat idea	
Comments	

<pre>11. User assistance f guidance on resource p</pre>			
Terrible idea		Desirable	Great idea
Comments: Sans on 5		· · ·	
			•
12. State-coupled pro moderate-temperature r	resources for direct h	eat applications.	,
Terrible idea _	Undesirable	Desirable	Great idea
Comments: Same as 5	i		•
	ļ		
<ol><li>Further support o region.</li></ol>	of direct heat applica	tions demonstration	ons in the
Terrible idea	Undesirable	Desirable	Great idea
Terrible ideaComments: (If desirab	<u>.</u>	•	
	<u>.</u>	•	
	<u>.</u>	•	
Comments: (If desirab	ole, how many per stat	e?) Same as 5-	
Comments: (If desirab	<u>.</u>	e?) Same as 5-	
Comments: (If desirab	ole, how many per stat	e?) Same as 5-	
Comments: (If desirab  Name (optional)  I am associated wit	ole, how many per stat	e?) Same as 5-	
Comments: (If desirab  Name (optional)  I am associated wit Developer	h a: (Check one)	e?) Same as 5-	
Name (optional)  I am associated wit  Developer  Utility	h a: (Check one)	e?) Same as 5-	
Name (optional)  I am associated wit  Developer  Utility  Financial In	h a: (Check one) stitution ment	e?) Same as 5-	

	<u>Initiatives</u>	•	,
<ol> <li>Collective planning wentities, attempting to chas the active support of</li> </ol>	levelop a regional	l commercialization p	
(Check one)Terrible idea	Undesirable	Desirable	Great idea
Comments:	, 1		
2. Industry-coupled, cos	st-shared drilling	j to confirm new rese	ervoirs.
Terrible idea	_Undesirable	Desirable.	Great idea
Comments: (If desirable,  Probably would  incentives w  3. Publication of data a	dut need	if adequa	te tax
generation of case studie			· / · · ·
Terrible idea	Undesirable	Desirable	Great idea
Comments:			
4. 50 MWe demonstration	plant at the Vall	les Caldera.	
Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desirable, plants would you recomment Probably heed - Low temp - High Length	id?)		l demonstration

5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.	
Terrible ideaUndesirableDesirableGreat ide	a
Comment: (If desirable, prioritize.)	
6. Support for development of wellhead (5-10MWe) generators.	
Terrible ideaUndesirableDesirableGreat ide	a ·
comment: O, K., but 50 MWe vieno plants are	
comment: O, K, but 50 MWe vieno plants are replied to convince itilities. S. 10 MWe units are surfaced communities on T. Loan guaranty program.	D
Terrible ideaUndesirableDesirableGreat ide	
Comments:	
8. Reservoir insurance.	
Terrible ideaUndesirableDesirableGreat idea	a
comments: Probably not needed if proper tax in: envires are provided	
9. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirableDesirableGreat idea	a
Comments: Most needed	
10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.	
Terrible ideaUndesirableDesirableGreat idea	
- I'd like to they	9
- 1'd /, KP to thy	

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11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
10 Ctata paumled more few a state by state inventory of law and
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments: Greatly heeded
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
Name (optional) J. W. Haukin
I am associated with a: (Check one) Bechtel National, Inc
Developer P.O. Box 3965
Utility The Francisco, CA 94/19
Financial Institution
State Government
Federal Government
Vother Engineering - Construction

	<u>Initiatives</u>	•	
<ol> <li>Collective planning entities, attempting to has the active support</li> </ol>	develop a region	al commercialization p	
(Check one)Terrible idea	Undesirable	Desirable	Great idea
Comments:	·		
	1		
2. Industry-coupled, co		-	
Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desirable Desirable)	e, what size prog	ram would you recommen  Loc Masic Co  he Industry-Coupled Pr	d?) reality
<del>-</del>	1	Desirable	Great idea
Comments:	! ! ! :		·
4. 50 MWe demonstration	n plant at the Va	lles Caldera.	
Terrible idea	Undesirable	Desirable	Great idea
Comments: (If desirable plants would you recommend that you're the comments of	e, how many and we and?)	hat kind of additional with 5 hould loc	demonstration 2 hourne

<ol> <li>Support of R&amp;D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced</li> </ol>	
conversion equipment.	
Terrible ideaUndesirableGreat id	ea
Comment: (If desirable, prioritize.)	
6. Support for development of wellhead (5-10MWe) generators.	
Terrible ideaUndesirableGreat id	ea <sup>.</sup>
Comment:	
•	
7. Loan guaranty program.	
Terrible ideaUndesirableDesirableGreat id	ea
Comments:	
8. Reservoir insurance.	
Terrible ideaUndesirableDesirableGreat id	ea
·	Cu
Comments:	
9. Tax treatment equivalent to fossil fuels.	
Terrible ideaUndesirableDesirableGreat id	
	e <b>a</b>
Comments:	
10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.	•
Terrible ideaUndesirableDesirable Great ide	ea
Comments:	-

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11. User assistance for direct heat application guidance on resource potential and surface equi			
n_Terrible idea	Desirable	Great	idea
Comments:	<del></del> 		
Commerces			
12. State-coupled program for a state-by-state moderate-temperature resources for direct heat		low-and	
Terrible ideaUndesirable	Desirable	Great	idea
Comments:		•	
			•
13. Further support of direct heat application region.			idea
Name (optional)			
I am associated with a: (Check one)	,		
Developer			
Utility			
Financial Institution			
State Government	·		
Federal Government			
X Other			

#### COASTAL STATES ENERGY COMPANY

1354 East 3300 South Suite 303 Salt Lake City, Utah 84106

AUG 2 3 1978				
Action	Info = (801) 4	Filo 6-1-91-3		
-				

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August 18, 1978

Joe Hanny EG&G Idaho, Inc. P.O. Box 1625 Idaho Falls, Idaho 83401

Dear Mr. Hanny:

Due to the fact that our company is not now actively pursuing geothermal energy sources, I do not feel qualified in answering your questionnaire.

The intentions of the Department of Energy are greatly appreciated however.

Sincerely yours,

Carol Linda Cox

Coastal States Energy Co.

Enclosure

AUG 2 1 1978

GÉOTHÉRMAL ÉNERGY

#### QUESTIONNAIRE

program is truly responsive to the Region's needs.
<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments:
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)  A 3 Michin to A 5 Michin per you
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
•
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)
lance temp leigher palinita,
Lawer James Leigher Palanitas

5.	Support of R&D t	o develop better dril	ling and completion	technology,	
	version equipment	n techniques, explora	tion technology and	advanced	
Ð	Terrible idea	Undesirable	Desirable	Great	idea
Com	ments: (If desira	ble, prioritize.)			
	ad n	eccessary			
6.	Support for deve	lopment of wellhead (	5-10MWe) generators.		
	Terrible idea	Undesirable	Desirable	Great	idea
Com	ments:				
7.	Loan guaranty pr	ogram.			
	Terrible idea	Undesirable	Desirable	Great	idea
Com	ments:		***************************************	Warning and Street Prince	,
8.	Reservoir insura	nce.			
	Terrible idea	Undesirable	Desirable	Great	idea
Com	ments:	Don't Unam			
9.	Tax treatment equ	uivalent to fossil fu	els.		
	Terrible idea	Undesirable	Desirable	Great	idea
Com	ments:				
10. eco	Support of combine nomics to provide	ned developer-utility common ground for ne	analysis of reservo gotiations.	oir developmer	nt
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Com	ments:				•

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
Terrible ideaUndesirableDesirableGreat idea
Comments:
12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments: Ifator should fake the lead and not
Comments: Ifato should fake the lead and nut topcart too much on DOE assistance.
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)  Depends on State land perhaps one or two
Name Manua Goldstei:

·		CELV A. HANN	
	AU	62819	78
QUESTIONNAIRE			
Q0E3 / 20/11/1/E	Action	Info	FE:
ບ Listed below are some of the actual or potential DOE init	iatives		
designed to speed the commercialization of hydrothermal e	ne <del>rgy wi</del>	<del>thin t</del> h	e
Rocky Mountain Basin & Range Region. We would value your	opinion	of	lant radio save and radio
the desirability of these initiatives so that we can make	sure th	at our	
program is truly responsive to the Region's needs.			
Initiatives			
1. Collective planning with industry, state, local and o entities, attempting to develop a regional commercializat has the active support of all those involved.	ther Fed ion plan	eral that	
(Check one)Terrible ideaUndesirableDesirable		_Great	ide <b>a</b>
Comments:			
<ol> <li>Industry-coupled, cost-shared drilling to confirm new</li> </ol>	reservo	irs.	
Terrible ideaUndesirableX_Desirable		_Great	idea
Comments: (If desirable, what size program would you reco	ommend?)		
At least 5 sites encompassing reso	ance A	ypes	
3. Publication of data acquired under the Industry-Couple generation of case studies of different types of reservoir	ed Progr rs.	am and	the
Terrible ideaUndesirable		_Great	idea
Comments:			
4. 50 MWe demonstration plant at the Valles Caldera.		_	
Terrible ideaUndesirableX_Desirable			
comments: (If desirable, how many and what kind of additional plants would you recommend?)  (Bradys, Beowawe, Lovelock)  Type resource; one in Sedimentary basin	ional de . & Raua -type	monstra ge fau (e.g. Ca.1	tion et zone- rson Sink)
λ	<i>J</i> .	•	

QUESTIONNAIRE	· ·					
	Action	Info	FR			
ט Listed below are some of the actual or potential DOE init	iatives					
designed to speed the commercialization of hydrothermal e	ne <del>rgy wi</del>	<del>thin th</del>	e			
Rocky Mountain Basin & Range Region. We would value your	opinion	of	<u>.</u>			
the desirability of these initiatives so that we can make	sure th	at our				
program is truly responsive to the Region's needs.						
Initiatives						
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.						
(Check one)Terrible ideaUndesirableDesirable		_Great	idea			
Comments:						
<ol> <li>Industry-coupled, cost-shared drilling to confirm new</li> </ol>	reservo	irs.				
Terrible ideaUndesirable $X$ _Desirable		_Great	idea			
Comments: (If desirable, what size program would you recommend?)  At least 5 sixes encompassing resource types						
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.						
Terrible ideaUndesirableDesirable		_Great	idea			
Comments:						
4. 50 MWe demonstration plant at the Valles Caldera.						
Terrible ideaUndesirableX_Desirable	<del></del>	_Great	idea			
Comments: (If desirable has many and that hind of additional and the control of t						

	5. Support of R&D to develop better drilling and completion technology,
3)(	reservoir stimulation techniques (exploration technology) and advanced conversion equipment.)
(4)	3
	Terrible ideaUndesirableXDesirableGreat idea
	Comments: (If desirable, prioritize.) But this is a national necessity.
	6. Support for development of wellhead (5-10MWe) generators.
	Terrible idea
~	comments: Determine if these are cost-effective in comparison to
	7. Loan guaranty program.
	Terrible ideaUndesirableGreat, idea
•	comments: But appears to have limited a captance
	8. Reservoir insurance need move explanation to properly answer
	Terrible ideaUndesirableDesirableGreat idea
	Comments:
	9. Tax treatment equivalent to fossil fuels. Terrible ideaUndesirableDesirableGreat idea
	Comments:
	Commercs:
1	0. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.
	Comments:

11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs. \_\_\_Terrible idea \_\_\_\_Undesirable \_\_\_\_Desirable \_\_\_\_Great idea comments: It this means support rencourage direct utilization of moderate to low temperature resources, I think it's a great idea. 12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications. Terrible idea Undesirable Desirable 💢 Great idea Comments: 13. Further support of direct heat applications demonstrations in the region. Terrible idea Undesirable Desirable Comments: (If desirable, how many per state?) Depends on population, population distribution, and distribution and nature of the resource. Name Harold Wollenberg

SEP 1 1 1978

## GEOTHERMAL :ENERGY BRANCH

### QUESTIONNAIRE

the desirability of these initiatives so that we can make sure that our					
program is truly responsive to the Region's needs.					
<u>Initiatives</u>					
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.					
(Check one)Terrible ideaUndesirableDesirableGreat idea					
Comments:					
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.  Terrible ideaUndesirableDesirable Great idea					
Comments: (If desirable, what size program would you recommend?)					
3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.					
Terrible ideaUndesirableDesirableGreat idea					
Comments:					
4. 50 MWe demonstration plant at the Valles Caldera.					
Terrible ideaUndesirableDesirableGreat idea					
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)					

	Terrible ideaUndesirableDesirableGreat id	dea
	Comments: (If desirable, prioritize.) SHOULD BE SUPPORTED M BY INDUSTRY THAN FEDERAL  (IF SUPPORT MEANS DOLLAR	IOR Fu
	6. Support for development of wellhead (5-10MWe) generators.	.0
	Terrible ideaUndesirableDesirableGreat id	dea
	Comments:	
>	7. Loan guaranty program.	
	Terrible ideaUndesirableDesirable Great id	dea
	Comments:	
	8. Reservoir insurance.	
	Terrible ideaUndesirableDesirableGreat id	dea
	Comments:	
	9. Tax treatment equivalent to fossil fuels.	
	Terrible ideaUndesirableDesirableGreat id	dea
	Comments:	
ı	10. Support of combined developer-utility analysis of reservoir development economics to provide common ground for negotiations.	
	Terrible idea Undesirable Desirable Great id	de

11. User assistance for <u>direct heat applications</u> to provide initial guidance on resource potential and <u>surface equipment</u> needs.
Terrible dea Undesirable Desirable Great idea
Comments: THIS ACTIVITY TO REALLY BECOME SUCCESSFUL  IT WILL HAVE TO COME FROM THE GRASS ROOTS
IT WILL HAVE TO COME FROM THE GRASS ROOTS
16 COMMUNITIES INDUSTRY, ETC.  12. State-coupled program for a state-by-state inventory of low-and moderate-temperature resources for direct heat applications.
Terrible ideaUndesirableDesirableGreat idea
Comments:
·
13. Further support of direct heat applications demonstrations in the region.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many per state?)
1-2 JUST TO SHOW IT WORKS AND TO
DOCUMENT RESULTS - PROBLEMS SOLUTIONS ETC
Name Joseph Dig
Lovry for delay-d
was on vacation during
august

#### UNITED STATES DEPARTMENT OF AGRICULTURE

#### SOIL CONSERVATION SERVICE

West Technical Service Center, 511 NW Broadway, Rm, 510, Portland, OR 97209

September 1, 1978

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Mr. Joe Hanny EG&G Idaho, Inc. P.O. Box 1625 UPD Building Idaho Falls, Idaho 83401

Dear Mr. Hanny:

We have completed a few items on the questionnaire transmitted with your letter of August 14, 1978, and these relate to our support for initiatives that may lead to useable supplies of energy from geothermal sources.

In June we commented on the rough draft of the Rocky Mountain Basin and Range Regional Hydrothermal Commercialization Plan and have no further comment at this time.

D. M. Robertson, Acting Kenneth L Williams

Director

Attachment

cc:

S. H. Fuchs, Head, Conservation Technology Staff, WTSC Frank Reckendorf, Environmental Resource Specialist, WTSC



FEDERAL

### QUESTIONNAIRE

O

program is truly responsive to the Region's needs.
<u>Initiatives</u>
l. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)Terrible ideaUndesirableDesirableX Great idea
Comments: If commercialization is to occur it must be in concert with industry and other Government agencies.
2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
Terrible ideaUndesirableXDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
Twenty wells per year at \$1 million per well on 50/50 shared basis, or \$10 million per year DOE contribution. Need to establish balance between drilling and other confirmation techniques — if there are any.  3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableX DesirableGreat idea
Comments: Early release of raw data more important during confirmatory reservoir work.
4. 50 NWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableXDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)  If desirable if the source to support such a demo. plant exists. Lets wait to see what the first one does.

**\*** :.

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s				
	mulation tech		ling and completion tion technology and	
oTerrible	ide <b>a</b>	Undesirable	Desirable	X _Great idea
Comments: (If We'll never r drill for it,	ealize the re	prioritize.) esource potential and convert it.	until we know how t	o look for it,
6. Support f	or developme	nt of wellhead (	5-10MWe) generators.	
Terrible	idea ·	Undesirable	X Desirable	Great idea
Comments:	No Comment			÷ ;
7. Loan guar	anty program			:
Terrible	idea	Undesirable	Desirable	Great idea
Comments:	No. Cor	ment.		· · · · · · · · · · · · · · · · · · ·
8. Reservoir	insurance.			
Terrible	idea	Undesirable	X Desirable	Great idea
Comments: M	 May be only w	ay to get signifi	icant utility company	
9. Tax treat	ment equival	ent to fossil fu	els.	
Terrible	e idea	Undesirable	X Desirable	Great idea
Comments:				
	,			
10. Support o	f combined deprovide comme	eveloper-utility on ground for ne	analysis of reservo	ir development
Terrible	idea	Undesirable	Desirable	X Great idea
C	No.	Comment.		•

•		•		•
				t
s		•		· ,
			cations to provide equipment needs.	e initial
Terrible	idea	Undesirable	X Desirable	Great idea
Comments:	No Comment.	•		·
•				
			state inventory o heat applications	
Terrible	idea	Undesirable	X Desirable	Great idea
Comments:	No Comment.	-		· ·
		,		•
	•			•
13. Further s region.	support of dir	ect heat applic	ations demonstrat	ions in the
Terrible	idea	Undesirable	X Desirable	Great idea
Comments: (If	f desirable, h	ow many per sta	te?)	;
No	Comment.			
	11/1			
Name Name	Stillace			
J. B. C	gtter, Dir., E	ngrg. & Energy	Appl. Div.	

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# UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE

POST OFFICE BOX 1306
ALBUQUERQUE, NEW MEXICO 87103

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August 31, 1978

Mr. Joe Hanny EG&G Idaho, Inc. P. O. Box 1625, UPD Idaho Falls, Idaho 83401

Dear Mr. Hanny:

Your questionnaire relative to DOE involvement in accelerating the use of hydrothermal energy within the Rocky Mountain Basin and Range Region is enclosed. We do not have a complete knowledge of all existing and proposed hydrothermal activity within the region and, therefore, may not have adequately answered some of the questions. However, we hope that our response will be of some help to you.

Thank you for the opportunity to comment.

Sincerely yours,

Acting Regional Director

Enclosure



Listed below are some of the actual or potential DOE initiatives

designed to speed the commercialization of hydrothermal energy within the

Rocky Mountain Basin & Range Region. We would value your opinion of

the desirability of these initiatives so that we can make sure that our

program is truly responsive to the Region's needs.

<u>Initiatives</u>
<ol> <li>Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.</li> </ol>
(Check one)Terrible ideaUndesirableDesirableGreat idea
Comments::
<ol> <li>Industry-coupled, cost-shared drilling to confirm new reservoirs.</li> </ol>
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, what size program would you recommend?)
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SUCH AS SIZE OF EXPLORATION ACTIVITY, ORILLING COSTS, ETC. PERHAPS 15-20 HOLES PER EXPLORATION  3. Publication of data acquired under the Industry-Coupled Program and the generation of case studies of different types of reservoirs.
Terrible ideaUndesirableDesirableGreat idea
Comments: WOULD BE EXTREMELY USEFUL
4. 50 MWe demonstration plant at the Valles Caldera.
Terrible ideaUndesirableDesirableGreat idea
Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

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N	ame ARTHUR	M. KINSKY		



## United States Department of the Interior

#### BUREAU OF RECLAMATION LOWER COLORADO REGIONAL OFFICE P.O. BOX 427 BOULDER CITY, NEVADA 89005

IN REPLY REFER TO: © LC-724 120.3

AUG 23 1978

Mr. Joe Hanny EG&G Idaĥo, Inc. P.O. Box 1978 UPD Idaho Falls, Idaho 83401

Dear Mr. Hanny:

In response to a letter dated August 14, 1978, from Dr. Clayton Nichols to Mr. Dean Johanson of my staff, we are enclosing a completed questionnaire regarding the Department of Energy's initiatives to speed geothermal development.

Sincerely,

Robert A. McCullough Regional Planning Officer

Robert A. R. Culland

Enclosure



Listed below are some of the actual or potential DOE initiatives designed to speed the commercialization of hydrothermal energy within the Rocky Mountain Basin & Range Region. We would value your opinion of the desirability of these initiatives so that we can make sure that our program is truly responsive to the Region's needs.

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#### Initiatives

<u>Initiatives</u>
1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
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2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
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generation of case studies of different types of reservoirs.
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4. 50 MWe demonstration plant at the Valles Caldera.
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5. Support of R&D to d reservoir stimulation t conversion equipment.			
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6. Support for develop	ment of wellhead (	5-10MWe) generators	
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9. Tax treatment equiv	alent to fossil fue	els.	
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1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
(Check one)

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4. 50 MWe demonstration plant at the Valles Caldera.

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Comments: (If desirable, how many and what kind of additional demonstration plants would you recommend?)

5. Support of R&D to develop better dr reservoir stimulation techniques, exploconversion equipment.		
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6. Support for development of wellhead	(5-10MWe) generators	. ,
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11. User assistance for direct heat applications of guidance on resource potential and surface equipmen	to provide initial needs.	•
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#### QUESTIONNAIRE

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1. Collective planning with industry, state, local and other Federal entities, attempting to develop a regional commercialization plan that has the active support of all those involved.
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2. Industry-coupled, cost-shared drilling to confirm new reservoirs.
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4. 50 MWe demonstration plant at the Valles Caldera.
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### QUESTIONNAIRE

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	<u>Initiatives</u>	·	
<ol> <li>Collective planning entities, attempting has the active suppor</li> </ol>	to develop a region	tate, local and other al commercialization lved.	
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5. Support of R&D to develop better drilling and completion technology, reservoir stimulation techniques, exploration technology and advanced conversion equipment.	
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	11. User assistance for direct heat applications to provide initial guidance on resource potential and surface equipment needs.
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