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CONSUMER OPINIONS ABOUT GEOTHERMAL ENERGY

Presented to:

DPED Energy Division
June 1987

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QUARTERLY CONSUMER SURVEY

The results presented here are based on telephone interviews with Hawaii residents. All surveys were completed between May 21 and June 3, 1987, with telephone calling on weekdays and weekends. A total of 600 interviews were with Oahu residents, with an additional 100 from Kauai, 100 from Maui and 101 from the Big Island.

A number of energy related questions were asked, in order to measure resident attitudes about the possibility of an oil crisis, and the development of an undersea cable to transport geothermal energy from the Big Island to Oahu.

Results based on the entire sample of 901 respondents have an estimated margin of error of 3.3 percent. Larger margins are associated with the sub-samples, such as the 101 Big Island respondents (+/- 9.8 percent sampling error).

FINDINGS

In general, Hawaii's residents recognize the importance of oil to the State's energy needs. More than two out of five believed that oil is Hawaii's primary source of electricity, including 48 percent of the Big Island respondents. No other energy source was named by more than 10 percent of the sample, and more than three out of ten people did not have an opinion.

It is interesting that there are clear demographic differences on this question, with older, and more educated respondents being more likely to identify oil as the primary source. More than two out of three of those with graduate school experience named oil, compared to only 33 percent of those without any college experience.

There was a general perception that we will have an oil crisis in the next 10 to 15 years. More than 40 percent believed this to be 'very likely' and another 33 percent said it is somewhat likely. If the crisis does come, it is expected that Hawaii will be hit harder than the rest of the country. This belief was offered by more than 60 percent of the sample (72 percent of the Japanese respondents), while only 12 percent thought that Hawaii will not suffer as great a hardship as other states.

The respondents were told about the future possibility of sending electricity from the Big Island to Oahu and Maui, by undersea cable. Most people were not aware of any state or federal programs providing funds for the development of such a system. Overall, less than 40 percent said they were aware of the development programs, though almost half of the Big Island residents said that they were aware. Once again, the more educated (and higher income) respondents were more likely to be aware of the government funding for the project.

The reaction to the undersea cable is very favorable, with very few people expressing disfavor. Though 15 percent did not give an opinion, almost three out of four people were either somewhat or very favorable towards the idea. Big Island respondents were no different from others in

this regard, with 71 percent expressing a positive opinion. Ethnically, Caucasians were the most likely to favor an undersea cable (55% very favorable), while almost 20 percent of the Hawaiians (and part Hawaiians) were at least somewhat opposed. Once again, education is an important variable, as those with some graduate school were considerably more favorably disposed to the idea.

The complete results are presented in the accompanying tables, with overall figures, and those for different demographic characteristics.

Table 1

What Is Hawaii's Primary Source Of Electricity

	Overall Pct	County			
		Oahu Pct	Hawaii Pct	Maui Pct	Kauai Pct
Oil	42.2	41.2	48.5	52.0	32.0
Water	8.7	9.3	3.0	2.0	17.0
Solar	6.1	6.2	3.0	8.0	7.0
Other	4.1	2.7	5.0	8.0	8.0
Wind	4.0	3.7	5.0	8.0	1.0
Hawaiian Electric	1.7	2.0	1.0	0.0	2.0
Gas	1.6	1.7	1.0	2.0	1.0
Coal	.9	1.0	0.0	2.0	0.0
Nuclear energy	.2	.3	0.0	0.0	0.0
Don't know	30.6	32.0	33.7	18.0	32.0
Base	(901)	(600)	(101)	(100)	(100)

Table 2
Opinions About Oil Crisis In The Future

	Overall	County			
	Pct	Oahu	Hawaii	Maui	Kauai
		Pct	Pct	Pct	Pct
Likelihood Of Oil Crisis Next 10-15 Years?					
Very unlikely	8.1	8.8	5.0	8.0	7.0
Somewhat unlikely	12.4	12.5	10.9	14.0	12.0
Somewhat likely	32.9	32.5	34.7	31.0	35.0
Very likely	43.2	42.5	46.5	46.0	41.0
Don't know	3.4	3.7	3.0	1.0	5.0
Will Hawaii Suffer More In An Oil Crisis Than The Rest Of The Country?					
More	61.2	60.3	60.4	67.0	61.0
About the same	23.9	25.2	22.8	17.0	24.0
Less	11.8	11.3	11.9	13.0	13.0
Don't know	3.2	3.2	5.0	3.0	2.0
Base	(901)	(600)	(101)	(100)	(100)

Table 3

Awareness And Opinions Of Government Programs
To Build Undersea Cable To Send Geothermal
Electricity To Oahu From The Big Island

		County			
	Overall	Oahu	Hawaii	Maui	Kauai
	Pct	Pct	Pct	Pct	Pct
<hr/>					
Aware of Cable System					
Yes	39.1	38.2	49.5	40.0	33.0
No	60.9	61.8	50.5	60.0	67.0
Opinion of Cable System					
Very unfavorable	6.1	4.7	6.9	11.0	9.0
Somewhat unfavorable	5.5	4.2	12.9	6.0	6.0
Somewhat favorable	26.3	27.5	22.8	22.0	27.0
Very favorable	47.1	47.8	48.5	53.0	35.0
Don't know	15.0	15.8	8.9	8.0	23.0
Base	(901)	(600)	(101)	(100)	(100)

Table 4

What Is Hawaii's Primary Source Of Electricity

	Home Ownership		Years in Hawaii			
	Status		Years in Hawaii			Lifetime
	Own Pct	Rent Pct	Up to 5 years Pct	6 thru 20 Pct	Over 20/not Pct	
Gas	1.6	1.6	.6	3.7	1.2	1.1
Water	7.4	10.4	12.1	7.9	10.4	6.7
Wind	2.7	5.7	7.5	5.3	1.8	2.7
Coal	.2	1.8	2.9	1.6	0.0	0.0
Nuclear energy	0.0	.5	.6	.5	0.0	0.0
Oil	48.7	33.4	27.6	44.7	53.0	42.9
Solar	5.2	7.3	6.9	4.2	6.7	6.4
Other	4.5	3.6	4.6	5.3	1.2	4.6
Hawaiian Electric	2.3	.8	.6	2.1	1.8	1.9
Don't know	27.4	35.0	36.8	24.7	23.8	33.8
Base	(515)	(386)	(174)	(190)	(164)	(373)

Table 5
Opinions About Oil Crisis In The Future

	Home Ownership		Years in Hawaii			
	Status		Years in Hawaii			Lifetime
	Own	Rent	Up to	6 thru	Over	
Pct	Pct	5 years	20	20/not	Pct	
	Pct	Pct	Pct	Pct	Pct	Pct
Likelihood Of Oil Crisis Next 10-15 Years?						
Very unlikely	5.4	11.7	8.0	8.9	11.0	6.4
Somewhat unlikely	12.8	11.9	18.4	10.5	11.6	11.0
Somewhat likely	32.6	33.2	35.6	34.7	32.3	30.8
Very likely	45.0	40.7	37.4	44.7	39.6	46.6
Don't know	4.1	2.6	.6	1.1	5.5	5.1
Will Hawaii Suffer More In An Oil Crisis Than The Rest Of The Country?						
More	65.0	56.0	52.3	55.8	68.3	64.9
About the same	22.9	25.1	28.2	24.7	19.5	23.3
Less	8.5	16.1	18.4	16.3	9.1	7.5
Don't know	3.5	2.8	1.1	3.2	3.0	4.3
Base	(515)	(386)	(174)	(190)	(164)	(373)

Table 6

Awareness And Opinions Of Government
Programs To Build Undersea Cable To Send Geothermal
Electricity To Oahu From The Big Island

	Home Ownership		Years in Hawaii			
	Status		Years in Hawaii			Lifetime
	Own Pct	Rent Pct	Up to 5 years Pct	6 thru 20 Pct	Over 20/not Pct	
Aware of Cable System						
Yes	45.4	30.6	24.7	44.7	44.5	40.5
No	54.6	69.4	75.3	55.3	55.5	59.5
Opinion of Cable System						
Very unfavorable	6.4	5.7	4.0	7.4	4.3	7.2
Somewhat unfavorable	5.4	5.7	3.4	3.7	7.9	6.4
Somewhat favorable	25.6	27.2	28.2	27.4	21.3	27.1
Very favorable	48.7	44.8	48.9	47.9	52.4	43.4
Don't know	13.8	16.6	15.5	13.7	14.0	15.8
Base	(515)	(386)	(174)	(190)	(164)	(373)

Table 7
What Is Hawaii's Primary Source Of Electricity

	Ethnicity				
	Caucasian Pct	Filipino Pct	Hawaiian Pct	Japanese Pct	Other Pct
Hawaii's primary source of energy					
Gas	2.1	1.1	1.5	1.0	1.4
Water	8.5	9.9	12.1	6.0	9.2
Wind	5.8	2.2	3.8	1.5	4.9
Coal	1.8	0.0	0.0	0.0	1.4
Nuclear energy	.3	1.1	0.0	0.0	0.0
Oil	44.2	27.5	33.3	53.2	39.4
Solar	4.8	8.8	6.8	6.5	6.3
Other	4.8	2.2	3.8	4.5	3.5
Hawaiian Electric	1.2	4.4	1.5	1.5	1.4
Don't know	26.4	42.9	37.1	25.9	32.4
Base	(330)	(91)	(132)	(201)	(142)

Table 8
Opinions About Oil Crisis In The Future

	Ethnicity				
	Caucasian Pct	Filipino Pct	Hawaiian Pct	Japanese Pct	Other Pct
Likelihood Of Oil Crisis Next 10-15 Years?					
Very unlikely	5.5	12.1	9.8	8.0	10.6
Somewhat unlikely	13.0	14.3	11.4	11.9	12.0
Somewhat likely	32.4	45.1	29.5	31.8	31.0
Very likely	47.0	28.6	44.7	41.3	45.1
Don't know	2.1	0.0	4.5	7.0	1.4
Will Hawaii Suffer More In An Oil Crisis Than The Rest Of The Country?					
More	58.5	56.0	57.6	72.1	59.2
About the same	25.2	22.0	31.1	16.9	25.4
Less	14.8	17.6	9.1	7.0	9.9
Don't know	1.5	4.4	2.3	4.0	5.6
Base	(330)	(91)	(132)	(201)	(142)

Table 9

Awareness And Opinions Of Government Programs
To Build Undersea Cable To Send Geothermal Electricity
To Oahu From The Big Island

	Ethnicity				
	Caucasian Pct	Filipino Pct	Hawaiian Pct	Japanese Pct	Other Pct
Aware of Cable System					
Yes	37.6	40.7	39.4	41.3	39.4
No	62.4	59.3	60.6	58.7	60.6
Opinion of Cable System					
Very unfavorable	5.5	5.5	12.9	3.0	6.3
Somewhat unfavorable	3.9	6.6	6.8	6.0	6.3
Somewhat favorable	24.8	35.2	23.5	27.4	25.4
Very favorable	54.8	36.3	43.9	46.8	40.8
Don't know	10.9	16.5	12.9	16.9	21.1
Base	(330)	(91)	(132)	(201)	(142)

Table 10

What Is Hawaii's Primary Source Of Electricity

	Age				
	18 to 24 Pct	25 to 34 Pct	35 to 44 Pct	45 to 54 Pct	55 or older Pct
Hawaii's primary source of energy					
Gas	0.0	1.6	2.9	0.0	1.4
Water	6.3	11.4	8.8	9.1	5.9
Wind	8.9	3.3	5.5	1.8	2.3
Coal	1.3	1.6	.8	.9	0.0
Nuclear energy	0.0	.8	0.0	0.0	0.0
Oil	19.0	38.6	44.1	50.0	49.8
Solar	11.4	6.1	8.0	4.5	3.2
Other	6.3	2.8	5.9	3.6	3.2
Hawaiian Electric	0.0	2.0	1.3	2.7	1.4
Don't know	46.8	31.7	22.7	27.3	32.9
Base	(79)	(246)	(238)	(110)	(219)

Table 11
Opinions About Oil Crisis In The Future

	Age				
	18 to 24 Pct	25 to 34 Pct	35 to 44 Pct	45 to 54 Pct	55 or older Pct
Likelihood Of Oil Crisis Next 10-15 Years?					
Very unlikely	8.9	9.3	7.1	8.2	7.3
Somewhat unlikely	19.0	12.2	11.3	9.1	13.2
Somewhat likely	36.7	40.2	31.1	30.0	26.5
Very likely	34.2	37.0	47.9	52.7	43.8
Don't know	1.3	1.2	2.5	0.0	9.1
Will Hawaii Suffer More In An Oil Crisis Than The Rest Of The Country?					
More	48.1	61.8	59.7	68.2	63.9
About the same	38.0	21.5	25.2	18.2	22.4
Less	13.9	13.4	13.0	10.9	8.2
Don't know	0.0	3.3	2.1	2.7	5.5
Base	(79)	(246)	(238)	(110)	(219)

Table 12

Awareness And Opinions Of Government
Programs To Build Undersea Cable To Send Geothermal
Electricity To Oahu From The Big Island

	Age				
	18 to 24 Pct	25 to 34 Pct	35 to 44 Pct	45 to 54 Pct	55 or older Pct
Aware of Cable System					
Yes	20.3	32.5	41.6	42.7	47.9
No	79.7	67.5	58.4	57.3	52.1
Opinion of Cable System					
Very unfavorable	3.8	6.1	6.7	6.4	5.5
Somewhat unfavorable	5.1	7.7	5.0	.9	6.4
Somewhat favorable	34.2	27.6	28.2	23.6	21.9
Very favorable	41.8	42.7	45.8	51.8	52.5
Don't know	15.2	15.9	14.3	17.3	13.7
Base	(79)	(246)	(238)	(110)	(219)

Table 13

What Is Hawaii's Primary Source Of Electricity

	Education			
	Up to High School Pct	Some College Pct	College Graduate Pct	Graduate School Pct
Hawaii's primary source of energy				
Gas	.8	3.2	1.5	0.0
Water	9.6	9.2	6.1	8.1
Wind	4.3	4.4	3.5	2.7
Coal	.8	1.2	.5	1.4
Nuclear energy	.3	0.0	.5	0.0
Oil	32.6	40.0	53.5	68.9
Solar	7.5	7.2	3.5	2.7
Other	4.0	3.2	5.6	4.1
Hawaiian Electric	1.1	2.4	2.0	1.4
Don't know	39.0	29.2	23.2	10.8
Base	(374)	(250)	(198)	(14)

Table 14

Opinions About Oil Crisis In The Future

	Education			
	Up to High School Pct	Some College Pct	College Graduate Pct	Graduate School Pct
Likelihood Of Oil Crisis Next 10-15 Years?				
Very unlikely	9.9	8.0	4.0	9.5
Somewhat unlikely	13.1	13.6	11.6	8.1
Somewhat likely	27.0	32.8	43.4	36.5
Very likely	44.4	43.2	39.9	44.6
Don't know	5.6	2.4	1.0	1.4
Will Hawaii Suffer More In An Oil Crisis Than The Rest Of The Country?				
More	58.3	59.6	67.2	66.2
About the same	25.7	25.6	17.7	23.0
Less	11.0	12.8	12.6	10.8
Don't know	5.1	2.0	2.5	0.0
Base	(374)	(250)	(198)	(74)

Table 15

Awareness And Opinions Of Government
Programs To Build Undersea Cable To Send Geothermal
Electricity To Oahu From The Big Island

	Education			
	Up to High School Pct	Some College Pct	College Graduate Pct	Graduate School Pct
Aware of Cable System				
Yes	36.4	35.2	43.4	54.1
No	63.6	64.8	56.6	45.9
Opinion of Cable System				
Very unfavorable	6.4	9.6	3.0	1.4
Somewhat unfavorable	7.8	3.2	4.5	5.4
Somewhat favorable	24.3	28.8	27.3	27.0
Very favorable	46.0	41.2	51.5	59.5
Don't know	15.5	17.2	13.6	6.8
Base	(374)	(250)	(198)	(74)

Table 16

What Is Hawaii's Primary Source Of Electricity

	Income				
	Up to \$19,999 Pct	\$20,000- \$29,999 Pct	\$30,000- \$39,999 Pct	\$40,000- \$49,999 Pct	\$50,000 or More Pct
Hawaii's primary source of energy					
Gas	.8	4.0	.7	1.8	1.3
Water	11.2	9.1	4.3	9.0	7.1
Wind	5.4	6.3	4.3	1.8	1.9
Coal	1.7	.6	1.4	.9	0.0
Nuclear energy	0.0	1.1	0.0	0.0	0.0
Oil	28.6	37.1	47.9	51.4	58.7
Solar	8.3	5.1	7.1	6.3	5.2
Other	4.1	4.0	5.7	3.6	3.9
Hawaiian Electric	0.0	2.3	1.4	1.8	3.2
Don't know	39.8	30.3	27.1	23.4	18.7
Base	(241)	(175)	(140)	(111)	(155)

Table 17

Opinions About Oil Crisis In The Future

	Income				
	Up to \$19,999 Pct	\$20,000- \$29,999 Pct	\$30,000- \$39,999 Pct	\$40,000- \$49,999 Pct	\$50,000 or More Pct
Likelihood Of Oil Crisis Next 10-15 Years?					
Very unlikely	12.0	8.6	7.1	4.5	5.2
Somewhat unlikely	10.4	9.1	17.1	13.5	13.5
Somewhat likely	29.0	35.4	37.1	34.2	32.9
Very likely	43.6	44.0	37.9	46.8	45.2
Don't know	5.0	2.9	.7	.9	3.2
Will Hawaii Suffer More In An Oil Crisis Than The Rest Of The Country?					
More	55.2	61.7	59.3	64.0	69.7
About the same	26.6	20.0	27.1	22.5	18.1
Less	13.3	13.7	12.1	12.6	10.3
Don't know	5.0	4.6	1.4	.9	1.9
Base	(241)	(175)	(140)	(111)	(155)

Table 18

Awareness And Opinions Of Government
Programs To Build Undersea Cable To Send
Geothermal Electricity To Oahu From The Big Island

	Income				
	Up to \$19,999 Pct	\$20,000- \$29,999 Pct	\$30,000- \$39,999 Pct	\$40,000- \$49,999 Pct	\$50,000 or More Pct
Aware of Cable System					
Yes	30.7	42.9	42.9	41.4	45.2
No	69.3	57.1	57.1	58.6	54.8
Opinion of Cable System					
Very unfavorable	10.0	7.4	3.6	3.6	2.6
Somewhat unfavorable	7.1	5.7	5.7	9.0	1.3
Somewhat favorable	23.7	28.0	32.1	21.6	27.1
Very favorable	44.4	45.7	46.4	51.4	53.5
Don't know	14.9	13.1	12.1	14.4	15.5
Base	(241)	(175)	(140)	(111)	(155)

Table 19

What Is Hawaii's Primary Source Of Electricity

	Sex	
	Male Pct	Female Pct
Hawaii's primary source of energy		
Gas	1.1	2.0
Water	8.2	9.1
Wind	3.1	4.9
Coal	1.3	.4
Nuclear energy	.2	.2
Oil	55.1	29.3
Solar	4.7	7.5
Other	5.8	2.4
Hawaiian Electric	1.8	1.6
Don't know	18.7	42.6
Base	(450)	(451)

Table 20
Opinions About Oil Crisis In The Future

	Sex	
	Male Pct	Female Pc
Likelihood Of Oil Crisis Next 10-15 Years?		
Very unlikely	9.3	6.9
Somewhat unlikely	13.1	11.8
Somewhat likely	26.9	38.8
Very likely	49.1	37.3
Don't know	1.6	5.3
Will Hawaii Suffer More In An Oil Crisis Than The Rest Of The Country?		
More	63.8	58.5
About the same	22.9	24.8
Less	12.2	11.3
Don't know	1.1	5.3
Base	(450)	(451)

Table 21

Awareness And Opinions Of Government
Programs To Build Undersea Cable To Send Geothermal
Electricity To Oahu From The Big Island

	Sex	
	Male Pct	Female Pct
Aware of Cable System		
Yes	44.4	33.7
No	55.6	66.3
Opinion of Cable System		
Very unfavorable	5.8	6.4
Somewhat unfavorable	5.6	5.5
Somewhat favorable	24.2	28.4
Very favorable	56.4	37.7
Don't know	8.0	22.0
Base	(450)	(451)