
The Wirth Chair in Environmental and Community Development Policy



UNIVERSITY OF COLORADO AT DENVER & HEALTH SCIENCES CENTER

The Graduate School of Public Affairs

Electricity Generation, Renewable Energy and Environmental Considerations

By Laura Appelbaum and Peggy Cuciti

February 2003

Results of a Colorado Survey

**The Wirth Chair in Environmental and Community Development Policy
The Graduate School of Public Affairs
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Electricity Generation, Renewable Energy and Environmental Considerations Results of a Colorado Survey

Introduction

With the support of the Energy Foundation, The Wells Fargo Public Opinion Research Program of the Graduate School of Public Affairs, University of Colorado at Denver, undertook a survey to assess Coloradoans' knowledge and preferences concerning electricity generation and the fuels that may be used in the production process. The study builds on the work done by our companion program, The Wirth Chair in Environmental and Community Development Policy, to facilitate dialogue on sustainable development.

In conjunction with the Energy Foundation and several non-profit organizations in Colorado, the Wells Fargo Program designed a survey that addressed the following topics:

- Preferred fuel sources for electricity generation;
- Level of support for the Colorado state legislature requiring utility companies to generate more electricity from renewable sources;
- Willingness to pay for utilities to develop renewable energy;
- Values that should guide decisions on electricity generation and a comparison of different fuel sources relative to these values;
- Attitudes toward utilities and how electric power is generated;
- Perceptions of environmental problems.

The Wells Fargo Program completed a total of 602 telephone interviews with registered voters in Colorado between January 16 and February 5, 2003. The full survey text and frequencies are reported in Appendix 1. Research methodology is fully explained in Appendix 2.

The report primarily describes results for all respondents. Breakdowns on selected questions are reported by region, political party affiliation, gender, and age in Appendix 3. More information on group differences is available upon request.

Survey Results

Dealing with Increased Demand: Efficiency Preferred Over New Generation

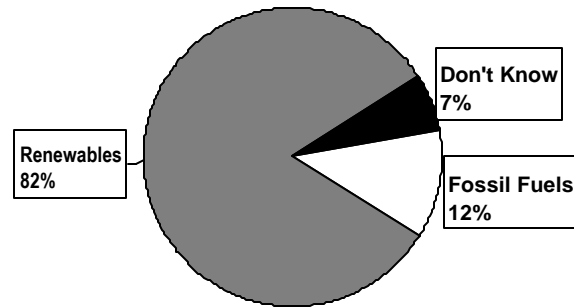
The survey began by asking respondents to give their views about how utilities should handle the increasing demand for electricity. When asked to choose between two approaches to meeting increased demand, 72% said that utilities should "reduce the need for more power by helping customers use energy more efficiently." Only 23% said that utilities should "generate additional electric power."

Preferred Sources for Generating Electricity: Support for Use of Renewables

Coloradoans care how their electricity is generated. Most (95%) disagreed with the statement, “It really makes no difference to me how my utility generates electricity,” with a majority (52%) saying they “strongly disagree.”

The survey shows a great deal of support for using renewable energy sources. When asked how utilities should generate additional electric power, fully 82% said they should focus on renewable sources such as wind, solar or hydropower. Only 12% want utilities to focus on fossil fuels such as coal or natural gas. This preference holds regardless of region, political party affiliation, age or gender. Data are shown in Appendix Table 3-1.

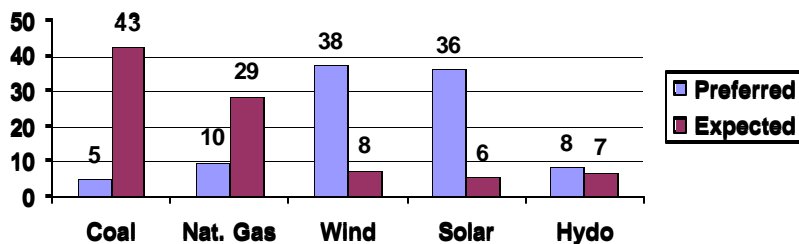
Figure 1: What Should Utilities Focus On?



Consistent with this response, when asked to choose the source they **most** would like to see developed in Colorado, 82% chose a renewable source. Specifically, 38% choose wind, 36% want solar, and 8% want hydropower. Ten percent (10%) would **most** like to see Colorado develop natural gas, and 5% prefer the use of coal. (See lighter bar in Figure 2.)

When asked which source they would **least** like to see Colorado develop, three-quarters (76%) select a fossil fuel: fully 67% say coal, and 9% say natural gas. Fourteen percent (14%) say they would **least** like Colorado to develop hydropower, and 4% each say wind and solar.

Figure 2. Fuel Source to be Developed: Preferences vs. Expectations

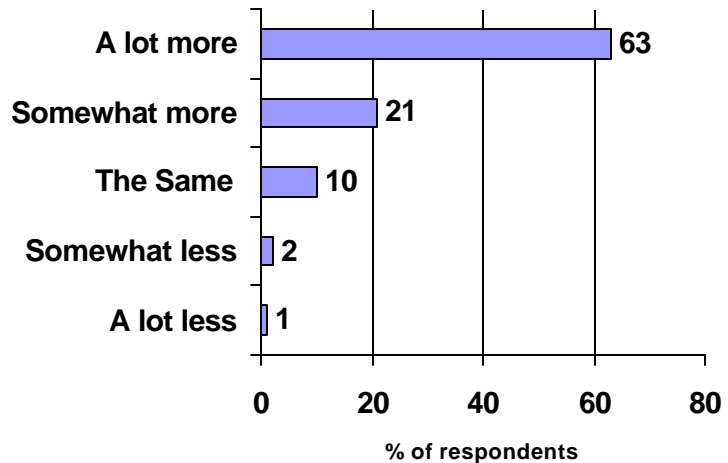


Despite their preference for renewable sources, Coloradoans think that their electric utility is **most** likely to use fossil fuel to generate additional electricity. Although it is their least preferred source, the greatest number -- 43% --

expect their electric utility to use coal to generate additional electricity. This suggests that the public has a fairly good understanding of existing power production practices. Twenty-nine percent (29%) think their electric utility is **most** likely to use natural gas. Only one in five think their electric utility is **most** likely to use a renewable source: wind (8%), hydropower (7%) or solar (6%). Expectations regarding fuel source use are contrasted with preferences in Figure 2.

After this first series of questions, respondents were told that “currently, 87% of Colorado’s electric power is produced using coal, and about 1% comes from renewable sources.” They then were asked: “Compared to what they are doing now, how much renewable energy should utilities in Colorado use?” Fully 84% of respondents say they want utilities in Colorado to use more renewable energy, with 63% saying they should use “a lot more” renewable energy, and 21%, “somewhat more.”

Figure 3. Amount of Renewable Energy Utilities Should Use



Coloradoans reject several of the arguments that have been used *against* the use of renewable energy sources.

- 75% disagree with the statement “It is too soon for utilities to invest in renewable energy because the technology is not proven.”
- 79% disagree with the statement “It is not worth developing renewable energy because it can’t provide enough power.”
- 68% reject the notion that “wind farms are ugly.”

A majority see side benefits from the use of wind power.

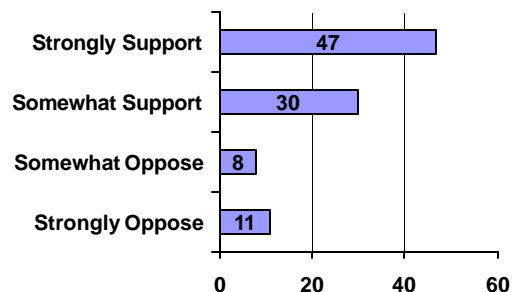
- 69% agree that “a new wind plant is better than a new coal plant for rural economic development.”
- 67% agree that “if utilities buy wind power from farmers, it will help farmers keep their land.”

Legislation Requiring Utilities to Use More Renewable Energy

The Colorado Legislature is considering proposals, similar to those adopted in several other states, to require utilities to use more renewable energy. A solid majority of respondents favor the state legislature requiring utilities to use more renewable energy. Sixty-two percent (62%) think it is a good idea compared to 30% who think it is a bad idea.

Asked to respond to one specific proposal, fully 78% said they would support the state legislature requiring the large utilities in Colorado to produce

Figure 4. State Legislation Requiring Large Utilities to Use Renewables



10% of their electricity from renewable sources within the next 10 years. Nearly half – 47% -- say they “strongly support” this measure, and an additional 30% “somewhat support” it. Only 19% express opposition: 11% “strongly oppose” the measure and 8% “somewhat oppose” it.

A majority supports legislative action in each of the groupings studied, whether based on region, party affiliation, age or gender. The data are shown in Appendix Table 3-3.

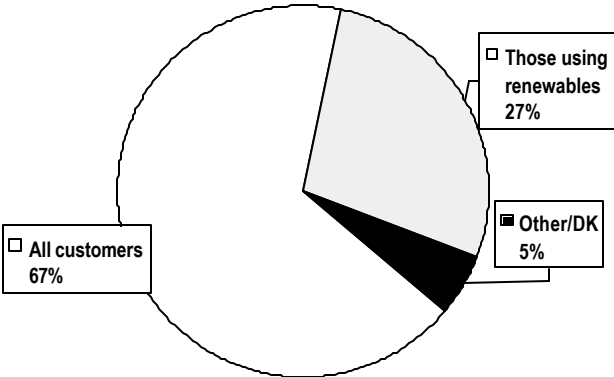
Support for legislative action may stem in part from a lack of trust in utilities. A significant minority express doubt regarding utilities and their decision processes. Forty-one percent (41%) disagree with the statement: “My utility makes good decisions on the selection and development of new power sources,” compared to 44% who express confidence. Similarly, 40% think their utility is “unlikely to use renewable energy even if it were cheaper than fossil fuels,” compared to 45% who trust utilities to be driven by price considerations.

Fully 72% agree, either strongly (35%) or somewhat (38%), that it is appropriate for state government to regulate utilities.

Cost of Producing More Renewable Energy

A majority of respondents believe any added cost of using renewables should be added to the rate base and charged to all consumers of electricity. Respondents were asked: “If utilities use renewable sources and electricity costs more, should the extra costs be charged to all customers through everybody’s utility rates, or should the extra costs be charged only to customers who choose renewable energy sources?” Two-thirds (67%) support spreading the cost of renewables across all customers. Twenty-seven percent (27%) would charge only customers who choose renewable energy sources. Regardless of region, party affiliation, gender or age, a majority agrees that any added costs should be added to the rate base. See Appendix Table 3-4.

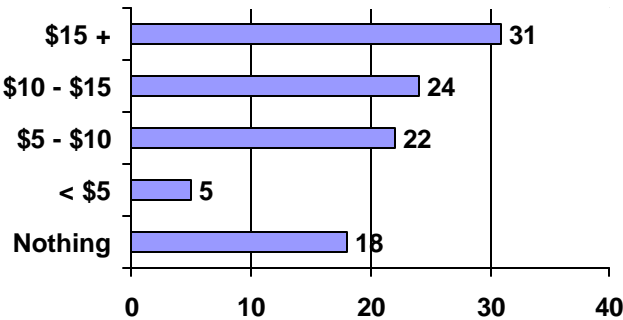
Figure 5: Who Should Pay If Utilities Use Renewable Sources & Electricity Costs More?



Willingness to Pay

Coloradoans are willing to pay more if electricity is generated with renewable sources. Respondents were told that a typical monthly electricity bill is about \$55. They then were asked how much more they would be willing to pay per month, in addition to their current electric bill, for their utility to

Figure 6. Extra Amount Willing to Pay Monthly for Renewables



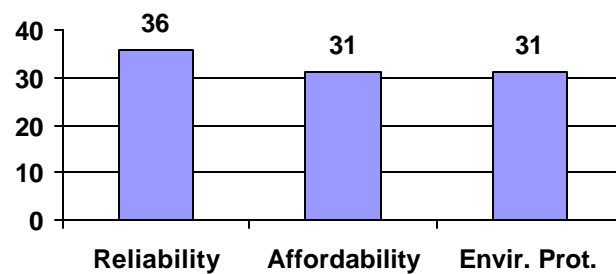
develop renewable energy. Respondents offered to pay, on average, approximately \$10 more per month. Only 18% said they wouldn't be willing to see their monthly bills increase at all, while more than four-fifths suggested an amount: almost one quarter were willing to pay between \$5 and \$10 per month; another quarter were willing to pay \$10 to \$15. About as many were willing to pay \$20 or more per month.

What Should be the Priority in Deciding How to Produce Electricity

The choice of fuel source might depend on what values are to be maximized in production.

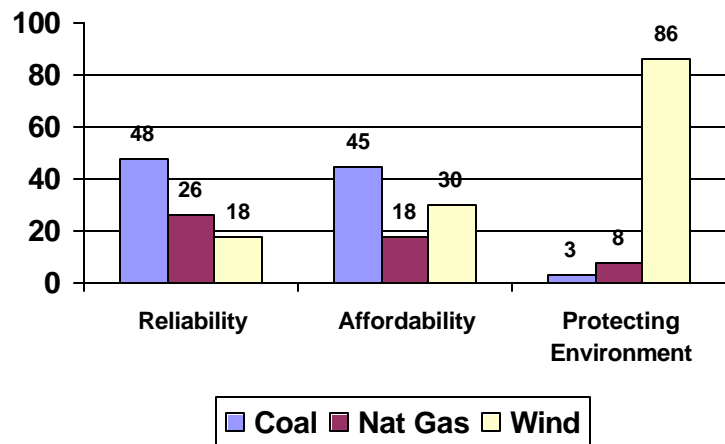
Hence the survey included questions on the value people place on different considerations, and which of the different fuel sources do best given these values. Specifically, respondents were asked to prioritize the following values: keeping electricity affordable, ensuring a reliable power supply and protecting the environment. All three are obviously important and opinion was divided on what constitutes the highest priority. Reliability is viewed as the top priority by more respondents, followed by affordability and environmental protection. Thirty-six percent (36%) say their first priority when choosing how to produce electricity is ensuring a reliable power supply. Thirty-one percent (31%) each say that keeping electricity affordable and protecting the environment is their first priority

Figure 7. Priority Re: Electricity Generation



Results for second priority are closer, with 34% choosing affordability, 32% picking environmental protection and 31%, reliability. When first and second priority are combined, overall, 67% select reliability, 65% cite affordability, and 62%, protecting the environment

Figure 8. Which fuel source is best for:

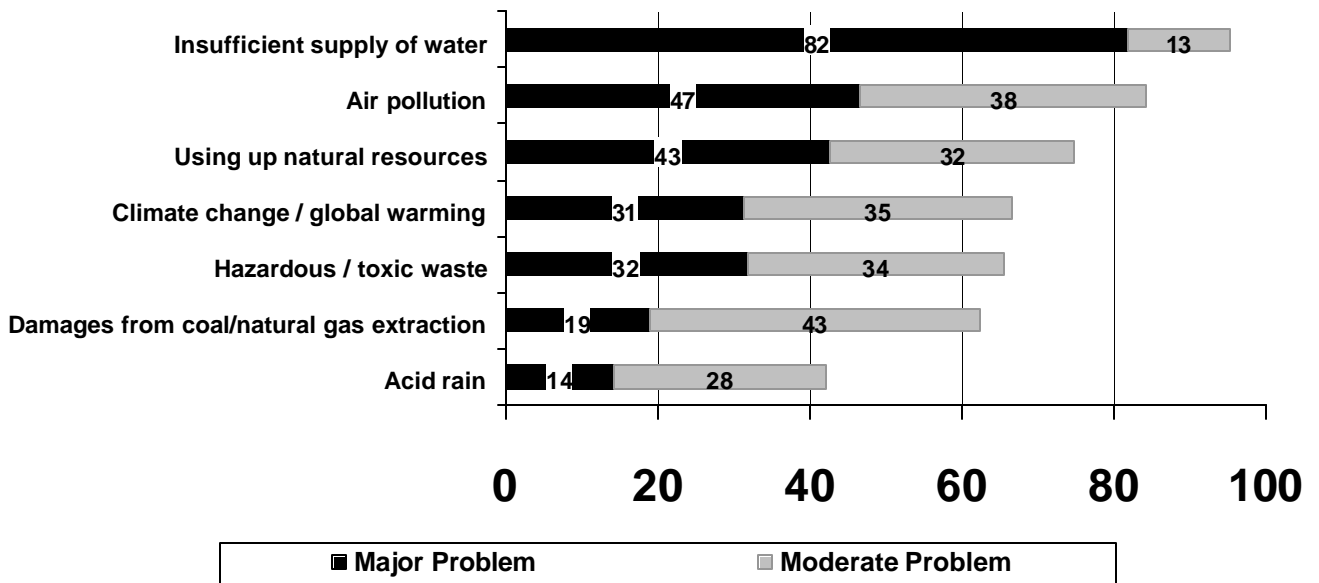


After these questions, respondents were asked which of three sources – coal, natural gas and wind – was **most** likely to meet each of the three priorities. Coal is most often seen as the fuel source that will keep electricity reliable and affordable, although opinion is somewhat divided. Almost everyone, however, believes that wind is the preferred choice if the goal is to protect the environment.

Perceived Environmental Problems

The last section of the survey asks respondents to assess various environmental issues and say whether each is a major problem, a moderate problem, a minor problem or not a problem in Colorado. The issues are listed below, ordered based on public perception of problem severity.

Figure 9: Scope of Environmental Problems in Colorado



Given the severe drought and the extensive coverage given to this situation, it is not surprising that insufficient water supply tops the list. Indeed, fully 82% of Coloradoans see it as a major problem and an additional 13% see it as a moderate problem.

Air pollution ranks second. It is perceived as a major problem by nearly half of respondents and as a moderate problem by an additional 38%. In all, fully 84% consider air pollution to be a major or moderate problem.

Three out of four respondents believe that using up natural resources is a major (43%) or moderate (32%) problem. A majority -- 62% -- perceive that damage that results from the extraction of coal and natural gas is a major or moderate problem, although only 19% say the problem is a major one.

With the exception of acid rain, a majority of respondents see all of the listed issues as either a major or moderate problem. This is true for all of the groupings analyzed: region, party affiliation, gender and age.

The Need for Pollution Control Equipment on Coal-Fired Generating Plants

Eight out of ten respondents agree that coal-fueled generating plants pollute the air, and even more want action taken to minimize this pollution:

- 92% agree that “New coal plants should be built with the best available technologies to reduce air pollution, even if it increases electricity bills”
- 95% agree that “existing coal plants without pollution controls should install pollution control equipment”

Conclusion

Coloradoans favor sustainable approaches when it comes to electricity. They would prefer to see greater efficiency in use rather than increased production. If new generating capacity is required, however, the public prefers utilities to use renewable energy sources, specifically wind and solar power. They care about the environment and seem to understand the links between the choice of fuel source and environmental problems. Coal, however, is still viewed as the source most likely to produce a reliable and affordable energy supply.

There is considerable support for legislative action requiring the large utilities in Colorado to produce 10% of their electricity from renewable sources within the next ten years. They believe costs should be spread among the total customer base, and indicate a willingness to pay more monthly to have utilities increase their use of renewable sources.

Appendix 1: Survey Instrument with Frequencies

Hello. My name is (first name) and I am calling from the University of Colorado at Denver. You have been selected to participate in a survey about energy and environmental issues in Colorado. Your responses will be kept confidential. Could you take a few minutes and assist in this survey? [If they ask, the survey will take less than ten minutes of their time.]

1. Colorado's demand for electricity is growing. Which of the following do you think electric utilities should do first? (*Read responses*)

1	Generate additional electric power OR	23.4%
2	Reduce the need for more power by helping customers use energy more efficiently	71.8%
9	Don't know (<i>Don't prompt</i>)	4.8%

2. When generating additional electric power, electric utilities can use fossil fuels such as coal or natural gas, or they can use renewable sources such as wind, solar or hydropower. Should utilities focus on fossil fuels, or should they focus on renewables?

1	Fossil fuels	11.6%
2	Renewables	82.0%
9	Don't know (<i>Don't prompt</i>)	6.5%

3. Utilities can generate additional electric power from several different sources. Which source would you MOST like to see developed in Colorado?

Read responses. Circle ONE response only.

1	Coal	4.8%
2	Natural gas	9.7%
3	Wind	37.5%
4	Solar	36.2%
5	Hydropower	8.4%
9	Don't know (<i>Don't prompt</i>)	3.4%

4. Which source would you LEAST like to see developed in Colorado?

Read responses. Circle ONE response only.

1	Coal	67.1%
2	Natural gas	8.5%
3	Wind	3.7%
4	Solar	3.8%
5	Hydropower	14.4%
9	Don't know (<i>Don't prompt</i>)	2.5%

5. And which source do you think your electric utility is MOST LIKELY TO USE to generate additional electricity?

Read responses if necessary. Circle ONE response only.

1	Coal	42.5%
2	Natural gas	28.5%
3	Wind	7.6%
4	Solar	5.5%
5	Hydropower	6.9%
9	Don't know (<i>Don't prompt</i>)	9.1%

6. Currently, 87% of Colorado's electric power is produced using coal, and about 1% comes from renewable sources. Compared to what they are doing now, how much renewable energy should utilities in Colorado use? Should they use (*Read responses*)

1	A lot less renewable energy	1.0%
2	Somewhat less renewable energy	1.6%
3	About the same amount of renewable energy as they use now	10.0%
4	Somewhat more renewable energy	21.1%
5	A lot more	62.6%
9	Don't know (<i>Don't prompt</i>)	3.8%

7. Do you think it would be a good idea or a bad idea for the Colorado State legislature to require utilities to use more renewable energy?

1	Good idea	62.0%
2	Bad idea	29.7%
9	Don't know (<i>Don't prompt</i>)	8.3%

8. Would you strongly support, somewhat support, somewhat oppose or strongly oppose the state legislature requiring the large utilities in Colorado to produce 10% of their electricity from renewable sources within the next ten years?

1	Strongly support	47.3%
2	Somewhat support	30.3%
3	Somewhat oppose	8.3%
4	Strongly oppose	10.9%
9	Don't know (<i>Don't prompt</i>)	3.1%

9. There are many factors to consider in choosing how to produce electricity. Please tell me which of the following is your **FIRST** priority?
Read responses and record FIRST priority by entering a "1" to the left of the response.
Then ask: Which is your **SECOND** priority? **Record SECOND priority by entering a "2" to the left of the response.**
ROTATE RESPONSES 1-3!

		FIRST	SECOND	1st OR 2nd
__ 1	Keeping electricity affordable	30.9%	34.0%	65.0%
__ 2	Ensuring a reliable power supply	36.0%	31.3%	67.4%
__ 3	Protecting the environment	30.7%	31.5%	62.3%

10. How would you compare coal, natural gas and wind sources on each of these factors? Would you say using coal, natural gas or wind to produce electricity is MOST LIKELY to				
	Coal	Natural Gas	Wind	Don't Know (Don't prompt)
a. Keep electricity affordable	44.9%	17.9%	29.7%	7.5%
b. Ensure a reliable power supply	47.5%	26.4%	18.1%	8.0%
c. Protect the environment	3.3%	8.0%	86.4%	2.4%

11. If utilities use renewable sources and electricity costs more, (**Read responses**)

1	Should the extra costs be charged to all customers through everybody's utility rates OR	67.3%
2	Should the extra costs be charged only to customers who choose renewable energy sources	27.4%
3	Utilities should not invest in renewable energy (Don't Prompt)	0.7%
9	Don't know (Don't prompt)	4.6%

12. Keeping in mind that a typical electric bill is about \$55 per month, about how much more would you be willing to pay per month, in addition to your current electric bill, for your utility to develop renewable energy?

Enter dollar amount OR circle other code

0	Nothing (Don't prompt)	17.5%
1	Less than \$1 dollar per month (Don't prompt)	
\$_____	Dollars per month (Enter dollar amount)	Median: \$10.00 per month Mean: \$11.63 per month
99	Not relevant to me because I don't pay my electric bill/I rent (Don't Prompt)	2.8%

13. For each of the following, please tell me if you strongly agree, somewhat agree, somewhat disagree or strongly disagree.					
	Strongly Agree	Some-what Agree	Some-what Disagree	Strongly Disagree	Don't Know (Don't Prompt)
a. It really makes no difference to me how my utility generates electricity	3.2%	10.1%	33.8%	52.0%	0.9%
b. My utility makes good decisions on the selection and development of new power sources	9.4%	35.0%	25.0%	16.0%	14.6%
c. My utility is unlikely to use renewable energy even if it were cheaper than fossil fuels like natural gas and coal	11.3%	28.7%	26.8%	17.7%	15.4%
d. It is NOT worth developing renewable energy because it can't provide enough power	4.0%	8.5%	26.2%	52.9%	8.5%
e. It is too soon for utilities to invest in renewable energy because the technology is not proven	5.0%	13.2%	29.5%	45.5%	6.8%
f. A new wind plant is better than a new coal plant for rural economic development	39.9%	29.4%	12.5%	8.1%	10.2%
g. If utilities buy wind power from farmers, it will help farmers keep their land	30.6%	36.5%	10.5%	6.4%	16.0%
h. Wind farms are ugly	7.8%	17.9%	33.9%	33.9%	6.6%
i. Since utilities are monopolies, it is appropriate for state government to regulate them	34.5%	37.6%	12.1%	12.1%	3.7%
j. Coal-fueled power plants pollute the air	50.0%	31.5%	9.3%	5.5%	3.7%
k. New coal plants should be built with the best available technologies to reduce air pollution, even if it increases electricity bills	59.9%	31.6%	2.8%	4.5%	1.2%
l. Existing coal plants without pollution controls should install pollution control equipment	71.5%	23.6%	2.8%	1.3%	0.8%

14. After thinking about the issue, would you strongly support, somewhat support, somewhat oppose or strongly oppose the state legislature requiring the large utilities in Colorado to produce 10% of their electricity from renewable sources within the next ten years?

1 Strongly support	49.3%
2 Somewhat support	28.9%
3 Somewhat oppose	9.0%
4 Strongly oppose	10.4%
9 Don't know (<i>Don't prompt</i>)	2.4%

15. Please answer one last question that relates to the environment. Would you say that each of the following is a major problem, a moderate problem, a minor problem or not a problem in Colorado?					
	Major Problem	Moderate Problem	Minor Problem	Not a Problem	DK (Don't Prompt)
a. Climate change or global warming	31.4%	35.3%	17.3%	13.5%	2.5%
b. Acid rain	14.2%	28.1%	30.5%	19.4%	7.8%
c. Air pollution	46.6%	37.7%	12.6%	2.2%	0.9%
d. Hazardous or toxic waste	31.8%	33.7%	24.9%	5.4%	4.3%
e. Damages that result from the extraction of coal and natural gas	19.0%	43.4%	23.7%	7.6%	6.3%
f. Insufficient supply of water	81.9%	13.4%	2.9%	1.6%	0.2%
g. Using up natural resources	42.8%	32.1%	16.1%	6.3%	2.6%

That completes our survey. Thank you for your help!

Note: The following demographics are taken from the voter registration file.

15. Gender

Male	46.4%
Female	53.6%

16. Party Affiliation

Democrat	29.4%
Republican	43.5%
Independent	27.0%

17. Age

Under 35	14.2%
35 – 49	33.9%
50 – 64	32.9%
65 plus	19.0%

18. Region*

1 Metro area	54.6%
2 Other Front Range	25.6%
3 Eastern Colorado	3.7%
1 Western Colorado	16.0%

*Frequencies shown are weighted based on region. Persons from Eastern Colorado were over-sampled so that we would have enough respondents in that region to look at data separately by region. The actual proportions in the sample from each region are as follows:

1 Metro area	46.2% (278 respondents)
2 Other Front Range	25.2% (152 respondents)
3 Eastern Colorado	12.1% (73 respondents)
4 Western Colorado	16.4% (99 respondents)

Appendix 2: Research Methodology

The Wells Fargo Program conducted a survey between January 16 and February 5, 2003 with a statewide sample of registered voters. Registered voters provide an excellent sampling frame for public opinion surveys because the group generally is more informed and interested in public issues. In total, 602 telephone interviews were completed, lasting approximately 8-10 minutes each.

Telephone interviews are used rather than mail surveys since they typically provide a quicker “turnaround” and a higher response rate than mail surveys. In addition, telephone interviews are a more effective technique for getting valid and reliable responses to complicated questions.

Telephone interviews were completed by University of Colorado at Denver staff and by VCR, a firm specializing in survey research. Interviewers were thoroughly trained in interviewing techniques and supervised throughout the surveying.

The telephone interviewers made every effort to maximize the proportion of completed calls. Calls were made during the day, on weekday evenings and on weekends in order to ensure that employed persons and persons with different schedules were reached. Interviewers made numerous attempts to contact each person on the list. This approach maximized the response rate and reduced the possibility of bias in the results.

We completed 602 interviews from a total list of 1941 names with valid phone numbers, for a completed response rate of 31%. Thirty-seven percent (37%) refused to participate, and 32% could not be reached despite numerous attempts. Everyone was called a minimum of six times on several different days. The margin of error for a survey of 602 is +/- 4.1%.

The sample was drawn from a list of registered voters with phone numbers in Colorado. The sample was stratified by region. Using random sampling techniques, additional names were drawn from Eastern Colorado to ensure that enough surveys would be completed there to reliably report separate results for each of four regions within the state. The actual proportions in the sample from each region are as follows:

- Metro area 46.2% (278 respondents)
- Other Front Range 25.2% (152 respondents)
- Eastern Colorado 12.1% (73 respondents)
- Western Colorado 16.4% (99 respondents)

When data are presented for the entire state, the data are weighted by region so that the sample distribution is proportional to the actual distribution by region in Colorado. This ensures that the results reported are representative of the state as a whole. When data are examined separately by region, the data are not weighted.

There is some evidence of response bias in the survey. Republicans are over-represented and Democrats and Unaffiliated voters are about equally under-represented. Seniors are over-

represented, while those under 35 are underrepresented. The response bias may result because energy was cited as the topic of the survey in the introduction. The effect of the response bias is to understate support for renewables and concern regarding environmental problems.

Appendix 3: Breakdowns by Group on Selected Questions

Table 3-1
Preferred Source for Electricity Generation: Fossil Fuels or Renewable Sources?

2. When generating additional electric power, electric utilities can use fossil fuels such as coal or natural gas, or they can use renewable sources such as wind, solar or hydro. Should utilities focus on fossil fuels or should they focus on renewables?

		Fossil Fuels	Renewable Sources	Don't know
PARTY	Democrat	6.2%	88.7%	5.1%
	Republican	17.2%	73.9%	8.9%
	Other	8.4%	87.6%	4.0%
GENDER	Female	6.7%	88.0%	5.3%
	Male	17.2%	75.0%	7.8%
REGION	Metro	10.1%	83.8%	6.1%
	Other Front Range	11.2%	83.6%	5.3%
	Eastern Colorado	12.3%	83.6%	4.1%
	Western Colorado	17.2%	72.7%	10.1%
AGE	Under 35	5.2%	89.8%	5.1%
	35-49	8.9%	87.3%	3.8%
	50-64	13.3%	80.2%	6.5%
	65 plus	18.4%	69.2%	12.4%

Table 3-2
Preferred Source for New Electricity Generation

3. Utilities can generate additional electric power from different sources. Which source would you most like to see developed in Colorado?

		Coal	Natural Gas	Wind	Solar	Hydro-power
PARTY	Democrat	4.1%	5.6%	37.2%	41.7%	10.0%
	Republican	5.9%	15.4%	35.9%	27.7%	9.8%
	Other	3.9%	5.0%	40.6%	44.0%	4.4%
GENDER	Female	3.6%	7.8%	37.1%	42.6%	5.9%
	Male	6.3%	11.9%	38.1%	28.9%	11.2%
REGION	Metro	3.2%	9.7%	35.6%	38.8%	8.6%
	Other Front Range	4.6%	10.5%	46.7%	29.6%	5.9%
	Eastern Colorado	2.7%	9.6%	68.5%	6.8%	9.6%
	Western Colorado	11.2%	8.2%	22.4%	44.9%	11.2%
AGE	Under 35	2.5%	7.6%	37.8%	41.3%	7.8%
	35-49	3.1%	6.6%	40.4%	37.8%	8.7%
	50-64	5.4%	11.5%	35.8%	36.4%	8.1%
	65 plus	8.8%	13.8%	35.2%	29.1%	8.9%

Table 3-3**Support or Oppose Renewable Source Portfolio Standard**

8. Would you strongly support, somewhat support, somewhat oppose or strongly oppose the state legislature requiring the large utilities in Colorado to produce 10% of their electricity from renewable sources within the next ten years?

		Support (strongly or somewhat)	Oppose (strongly or somewhat)	Don't Know
PARTY	Democrat	87.1%	10.6%	2.2%
	Republican	64.4%	31.2%	4.4%
	Other	88.6%	9.4%	2.0%
GENDER	Female	81.8%	15.4%	2.8%
	Male	72.9%	23.6%	3.5%
REGION	Metro	80.2%	16.5%	3.2%
	Other Front Range	75.0%	21.1%	3.9%
	Eastern Colorado	71.2%	23.3%	5.5%
	Western Colorado	74.7%	24.2%	1.0%
AGE	Under 35	85.9%	11.0%	3.1%
	35-49	80.4%	17.3%	2.3%
	50-64	74.9%	21.4%	3.7%
	65 plus	70.9%	25.2%	3.9%

Table 3-4**Cost of Using Renewables: Add to Rate Base?**

11. If utilities use renewable sources and electricity costs more, should the extra costs be charged to all customers through everybody's utility rates or should the extra costs be charged only to customers who choose renewable energy sources?

		Charge all customers	Charge those who choose
PARTY	Democrat	71.5%	23.4%
	Republican	60.3%	34.8%
	Other	74.6%	20.6%
GENDER	Female	62.5%	31.5%
	Male	73.4%	22.9%
REGION	Metro	67.8%	27.5%
	Other Front Range	67.8%	26.3%
	Eastern Colorado	61.6%	32.9%
	Western Colorado	67.7%	28.3%
AGE	Under 35	55.4%	44.6%
	35-49	73.0%	24.0%
	50-64	72.4%	22.4%
	65 plus	57.8%	30.4%

Table 3-5
Willingness to Pay for Renewables

12. Keeping in mind that a typical electric bill is about \$55 per month, about how much more would you be willing to pay per month, in addition to your current electric bill, for your utility to develop renewable energy? (Amounts mentioned by respondent coded into categories)

		0	less than \$5	\$5 thru \$9	\$10 thru \$14	\$15 thru \$19	\$20 or more
PARTY	Democrat	14.6%	3.3%	18.2%	25.3%	9.8%	28.8%
	Republican	22.2%	6.5%	22.9%	23.0%	5.5%	19.8%
	Other	13.2%	5.1%	25.3%	23.3%	7.0%	26.0%
GENDER	Female	13.6%	4.3%	24.6%	24.9%	7.0%	25.6%
	Male	22.1%	6.2%	19.4%	22.5%	7.4%	22.4%
REGION	Metro	16.9%	3.6%	24.1%	24.8%	7.2%	23.4%
	Other Front Range	15.8%	9.2%	21.1%	20.4%	8.6%	25.0%
	Eastern Colorado	23.3%	5.5%	15.1%	24.7%	6.8%	24.7%
	Western Colorado	21.2%	4.0%	19.2%	25.3%	5.1%	25.3%
AGE	Under 35	9.9%	1.1%	18.1%	20.3%	18.6%	32.0%
	35-49	10.4%	6.3%	20.7%	28.4%	7.8%	26.3%
	50-64	17.9%	4.8%	24.3%	23.8%	4.8%	24.3%
	65 plus	35.6%	7.0%	23.7%	17.3%	1.8%	14.6%

Table 3-6
Support for Pollution Control Technologies for Coal-Fired Power Plants

		The Problem Coal-fueled power plants pollute the air.	The Solution Build new coal plants with best available pollution control technology even if it increases costs	The Solution Install pollution control equipment on existing coal plants without pollution controls.
		<i>% Agree</i>	<i>% Agree</i>	<i>% Agree</i>
PARTY	Democrat	87.8%	90.7%	97.0%
	Republican	79.8%	93.7%	95.2%
	Other	88.9%	92.9%	95.8%
GENDER	Female	87.4%	93.8%	97.3%
	Male	81.4%	91.3%	94.3%
REGION	Metro	87.0%	94.2%	95.3%
	Other Front Range	84.7%	92.7%	98.0%
	Eastern Colorado	86.1%	90.1%	98.6%
	Western Colorado	76.0%	87.8%	93.8%
AGE	Under 35	95.9%	95.9%	97.2%
	35-49	86.2%	93.5%	96.3%
	50-64	80.6%	93.8%	96.7%
	65 plus	79.5%	86.4%	92.7%