Make Way for the Aggre-Gator:
Helping Pool Consumer Demand for Green Power in Massachusetts

Urban and Environmental Policy & Planning
Field Projects
Mass Energy Group
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EXECUTIVE SUMMARY

The electricity industry in Massachusetts was restructured in 1998, theoretically allowing and encouraging competition between power suppliers. However, a suppression of prices has discouraged power suppliers from investing in bringing their products to Massachusetts. This is particularly true for renewable energy, where premiums for bringing new "green" sources on-line stand out in marked contrast to the relatively low traditional power prices.

To combat the disincentive to power suppliers, Mass Energy, in conjunction with a number of partners, is attempting to develop an aggregation of consumers to buy green power. Their target population through which to establish an aggregation is environmentalists, those people who may already understand the linkage between renewable energy, reduction of fossil fuel emissions, and contribution to the fight against global warming.

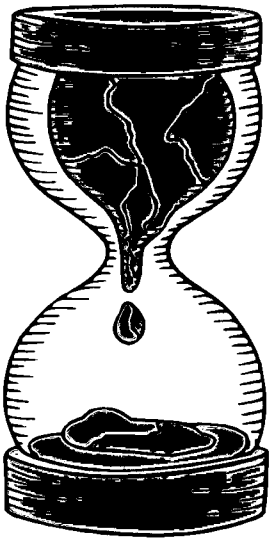
The goals of this project were twofold.

1) to use various survey methods to evaluate knowledge of and willingness to pay for green power amongst the targeted environmentally affiliated populations.

2) to develop a strategy for Mass Energy, based on the statistical market analysis, to enable them to attract a consumer aggregation for renewable energy.

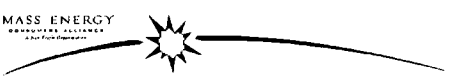
The following report illustrates the state of environmental consumer awareness of and interest in a green power product in Massachusetts. It does not purport to be a comprehensive analysis of all market segments, nor is it designed to be a technical document. It provides a firm background and suggestions on launching a green power aggregation plan in Massachusetts.

I. INTRODUCTION



PROJECT BACKGROUND

Since the restructuring of Massachusetts' electric industry in 1998, energy consumers have the option to choose their electricity supplier. With this newfound buyers' freedom should come the ability to choose energy supply, as, for example, one can choose long-distance service: from personal preference for price or other benefits, such as environmental attributes. At the moment, a residential renewable energy supply is not available in Massachusetts. Suppliers face both real and perceived barriers to start-up, including a currently lower price for electricity brought about by a one-time discount offering made by electric utilities to consumers at the time of restructuring, and a lack of consumer education to the benefits of renewable energy.



Massachusetts Energy Consumers Alliance (Mass Energy), formerly Boston Oil Consumers Alliance, is a non-profit organization bringing affordable energy to urban areas. The organization was founded in 1982 as an affordable home oil-buying group, and since then has expanded its mission to promote "green power" or renewable energy programs[1] that encompass goals of environmental sustainability.

The thrust of Mass Energy's green power projects to date has been their role as a reseller of ReGen. This product serves as a way to support the production of cleaner, renewable energy entering the New England electric grid. Called a "tag" in industry parlance, this means consumers are supporting the positive attributes of renewable

[1] Throughout this document the terms green power and renewable energy will be used interchangeably to refer to electricity generated from renewable sources that are available without limitation. Renewable resources include wind, solar, biomass, geothermal energy, and small-scale hydroelectric projects. Attention to the phrases "green power" and "renewable energy" in terms of consumer recognition and affinity will be discussed later.

energy. While definitely a step in the direction of increasing support for green power, the strength of the ReGen product has not met the goals of increasing consumer demand for renewable energy. Mass Energy thus began searching for a way to aggregate demand for green power and bring renewable energy to the New England grid.

PROJECT GOALS

> "We hope to introduce a "delivered" product – one that would enable consumers to direct their electricity supply dollars to clean power sources alone."
>
> –Mass Energy, 2001

Market analysis was completed through a combination of survey tools, focus groups, and research of other renewable energy market studies. These methods will be discussed in depth in Section II. These tools were designed to evaluate attitudes towards renewable energy amongst environmentalists in Massachusetts. This is based on the hypothesis that environmentally and socially-affiliated members of the population will be more likely to purchase renewable energy, including the premium currently associated with renewable sources. In tandem with assessing opinions and level of appreciation for renewable energy, the research also undertook to determine how aware this population was of their choices as energy consumers and how best to reach them with a renewable energy product.

Becoming an Aggregator

> **Aggregation**
> in the context of green power:
> Pooling individual consumer demand for energy from renewable sources to create a "block demand" that is large enough for energy suppliers to view seriously.

Mass Energy is working to develop an aggregation of consumer demand that will make it attractive for a green power supplier to offer a competitively-priced renewable power product that

would encourage people to choose green power over traditional fuels. They are looking to collaborate with other environmentally oriented non-profits to help encourage demand for green power. An aggregation, it is hoped, will provide enough of a demand to make purchasing green power a viable option for consumers and show the energy industry that serious demand for such power exists.

In October 2001 Mass Energy received a grant from the Massachusetts Renewable Energy Trust Fund (MRET) to develop an aggregation for green power aimed specifically at environmentally-minded consumers. To fulfill the goals of the grant, Mass Energy partnered with social and environmentally responsible organizations, businesses, and communities to develop a target population for the aggregation. Ideally, as a cost-efficient marketing strategy, the partners can also use their connection to their constituencies to communicate information on the green power product.

Partners

Boston Public Health Commission • Town of Brookline • City of Cambridge • City of Newton • Clean Water Action • Coalition on Environment and Jewish Life (COEJL) • Environmental League of Massachusetts (ELM) • Green Decade Coalition/Newton • Massachusetts Climate Action Network • Massachusetts Audubon Society • Massachusetts Public Interest Research Group • New Ecology, Inc. • Sierra Club of Massachusetts • Somerville Climate Action Network • Tufts Climate Initiative

SOCIAL MARKETING

The constructs of social marketing served as guidelines to help shape the recommendations for Mass Energy's aggregation program and marketing. The term "social marketing" describes an approach to planned social change (Kotler & Armstrong, 1971). The specific purpose of social marketing was more recently described as: "to influence the voluntary behavior of target audiences in order to improve their personal welfare and that of society" (Andreasen, 1995)

Three basic concepts make up a social marketing plan:

1) The product must be defined.

That is, what behaviors, activities or products are to be marketed?

2) A target audience must be clearly defined.

A successful marketing program targets those individuals who presently engage in a competing behavior.

3) A marketing strategy incorporates an analysis of the barriers to change and potential benefits to reward alternative behaviors.

In the corporate world lower prices, fashion trends, and other attributes of behavior are examples of commercial advertising's way of using the media to symbolically overcome barriers and shift consumer-purchasing preferences.

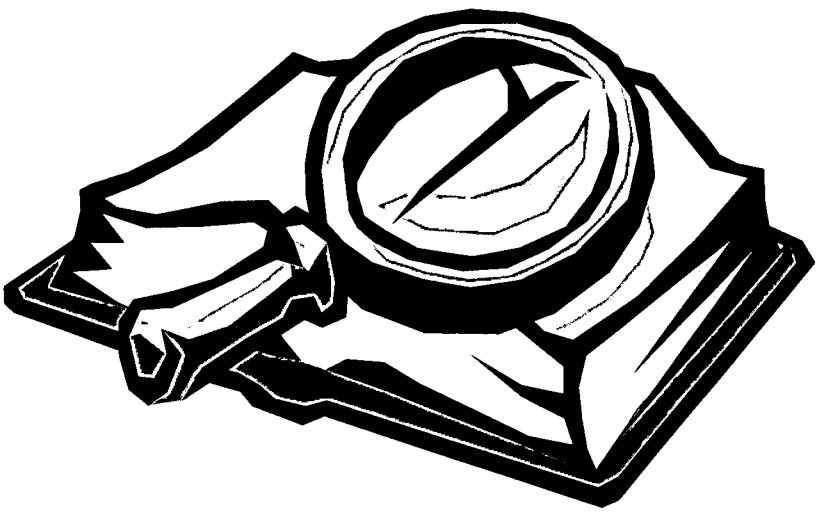
In general, social marketing can range between several extremes. Marketers, education professionals, and activists utilize social marketing approaches for an array of different purposes ranging from selling socially responsible products to encouraging behavioral changes. Not-for-profit organizations utilize social marketing techniques as tools to promote environmentally and socially oriented products to customers. The actualization of social marketing can be to develop marketing plans similar to private corporations as methods to advertise new technologies and advance environmentally sound consumer behavior, or can be implemented to encourage behavioral changes in society beyond consumption choices. (Mohr 2000)

The project with Mass Energy looks to help develop a plan for re-orienting consumer behavior towards purchasing green power, therefore an effective social marketing plan should be able to identify who, among the target audience, are likely to change their consumer behavior for an alternative behavior such as choosing renewable energy sources. A strategic marketing plan will also be necessary to fully assess all the best ways to become an aggregator of green power.

Social marketing research techniques represent the main mechanisms that can be implemented at various stages throughout the process to ensure a fully developed plan. Surveys, focus groups, and interviews can be conducted as effective methods to understand the target audience, product perceptions, buying behavior, and lifestyle choices.

Demographic research through such databases as the census also allows marketers to better group consumers into market segments. Developing market "segments" isolates broad sections that make up a market, adapts the seller's offer to more closely match the needs of one or more segments, and offers several benefits. For example, Mass Energy can market most efficiently by targeting its product and communication program toward only consumers that it can serve best and most proficiently.

II. METHODS



METHODOLOGICAL APPROACH

Efforts to evaluate consumer demand for green power have taken three major forms. The goal of the combined research methods was to assess and measure consumer demand for green power amongst environmentally-affiliated populations. [2] Mass Energy is attempting to reach these consumers based on the belief that this population is prone to make consumer decisions based on factors other than price, such as social or environmental benefits. This is the crux of a social marketing strategy.

In order to evaluate the target population and develop suggestions for shaping the marketing and communications regarding a green power product, a series of questions were posed.[3]

1. Are people knowledgeable about the options available to them since restructuring?
2. Is home energy an area that people think a great deal about?
3. What are the barriers to getting someone to switch suppliers?
4. How can aggregation efforts reach consumers?
5. How will organizational partners play a role in the aggregation of consumer demand?

Telephone survey

A telephone survey was conducted with membership lists supplied by Clean Water Action and the Environmental League of Massachusetts, two partners in Mass Energy's aggregation planning network. Each organization provided partial membership lists

[2] Environmental affiliation in these cases was determined by membership in or affiliation with an environmental organization.
[3] Not examined in depth here is the type of source used to generate renewable energy.

consisting of approximately 500 names, on a confidential basis to be used only for this research.

This telephone survey was based on a similar statewide survey conducted by Opinion Dynamics Corporation in conjunction with The Massachusetts Technology Collaborative, administrator of MRET and state policy force behind consumer aggregation. Mass Energy provided input into the Opinion Dynamics survey, but was interested in further exploring the themes of willingness to pay and consumer awareness within their specific target population. The new, shorter survey used in this project appears as Appendix B.

37 people were surveyed in this group[4], which although not a large sample, provided evidence of general trends which are discussed in Section III. Several limits to the data should be noted. Logistical constraints resulted in a smaller survey population than originally desired. Additionally, only a single attempt was made to contact a particular household. Further, the timing of the phone calls led to a disproportionate number of responses from retirees.

The telephone survey tool as used here proved to be slightly long and esoteric for some, problems that were addressed in the remaining methods. Aural comprehension and identification of the issues over the telephone could have been a barrier to more complex and thought-out answers to the survey questions. Further, it must be noted that a professional polling firm is more experienced at the nuances of surveying and drawing out responses from participants.

[4] 23 from Clean Water Action and 14 from ELM. We attempted to achieve a relatively equal number of completions amongst each group, but due to logistical constraints ended with unequal distributions in our sample.

Written Survey

The most comprehensive evaluative tool used was a written survey administered at the Toxics Action Center (TAC) conference on March 16, 2002. (The survey appears as Appendix C). Approximately 200 surveys were handed out, with roughly 100 completions.

TAC was chosen because its members are self identified environmentalists; however they are generally more focused on chemical releases and pollution prevention than energy issues. Thus conference participants provided an avenue to test the more general applicability of marketing to an environmentally-minded population.

The written survey built on themes of the telephone survey, but included additional questions to measure more detailed consumer and environmental behaviors. For example, it attempted to measure other "green" behaviors as indicators of potential willingness to switch to green power. The results of this survey are discussed in Section III.

Focus Group

In conjunction with the written survey, a focus group of nine participants and three facilitators was conducted during the lunch break at the TAC conference. A note requesting participants appeared at the bottom of the written survey and an announcement was made regarding the survey and the focus group during the opening remarks at the conference. As participants were self-selecting, a proper demographic cross-section was not fully represented.

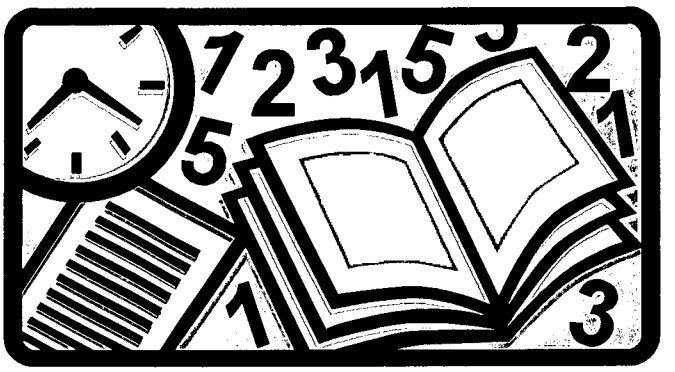
During the luncheon, the project team asked a series of questions to probe attitudes regarding renewable energy. The main ideas discussed were: affinity towards

the term green power vs. the term renewable energy; knowledge of restructuring in Massachusetts; feelings about the importance of the use of renewable sources; and willingness to pay a premium for renewable energy. Information gleaned from the focus group is summarized in Section III, and a complete transcript of the focus group proceedings appears as Appendix E.

RESEARCH

The quantitative portion of this study was supplemented by a research strategy. The strategy involved researching and evaluating marketing analyses of the green consumer, both in general and as defined by other socially-responsible behaviors. Research was also conducted of other statistical analyses of the market for renewable energy, paying the most attention to elements of willingness to pay. It looked briefly at other examples of aggregations and examined consumer education strategies. Information gained in this process was helpful in designing recommendations, as it heightened the awareness of the need for consumer education.

III. FINDINGS



THE GREEN CONSUMER

There is a mixed grouping of research that discusses the importance of demographic and knowledge-based factors in defining the green consumer. Peattie (2001) cites both academic and market research studies that indicate, "high levels of environmental consciousness are not necessarily reflected in purchasing behavior." This provides an opportunity to consider other barriers to change, which were discussed in depth in the focus group proceedings.

In contrast is Ottman's citing of research that has "corroborated that the most accurate predictor of willingness-to-pay a premium for renewable energy is not education or income, but membership in or contribution to environmental groups." (Ottman 1998:20) This finding is critical to Mass Energy's aggregation plan and was reinforced by responses from the written survey.[5]

The graph below compares views on supporting the increased use of renewable energy between the statewide Opinion Dynamics Survey, the written survey, and the telephone survey. Surprisingly the telephone survey of environmentalists has a smaller value for "strongly favor the increased use of renewable energy" than the general statewide survey. The small sample size is likely to account for this difference, though it may merit further investigation.

[5] In this section, results refer to the written survey sample, unless specifically referred to otherwise. Phone survey results are used here only in comparative discussion. The small size of the phone survey sample makes the results possibly misrepresentative. A few responses can skew the distribution due to the relative size to the whole. To avoid skewing the findings, this section focuses mainly on research, written survey, and focus group findings. However, a complete viewing of the phone survey data responses appears in Appendix D.

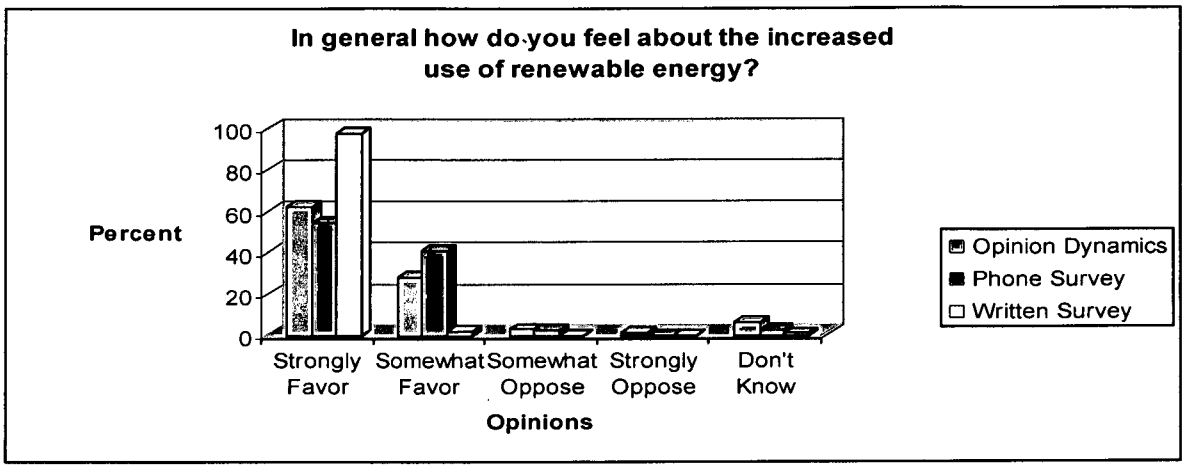


Figure 1

In order to gauge the "green" affiliation of the population, the survey participants were asked to self-evaluate their environmental concern. This data reflects a cognizance of environmental harm that may influence their consumer decisions. The results indicated a high level of environmental concern. The findings and recommendations that follow explore ways to translate that into consumer behavioral changes based on the foundations of social marketing.

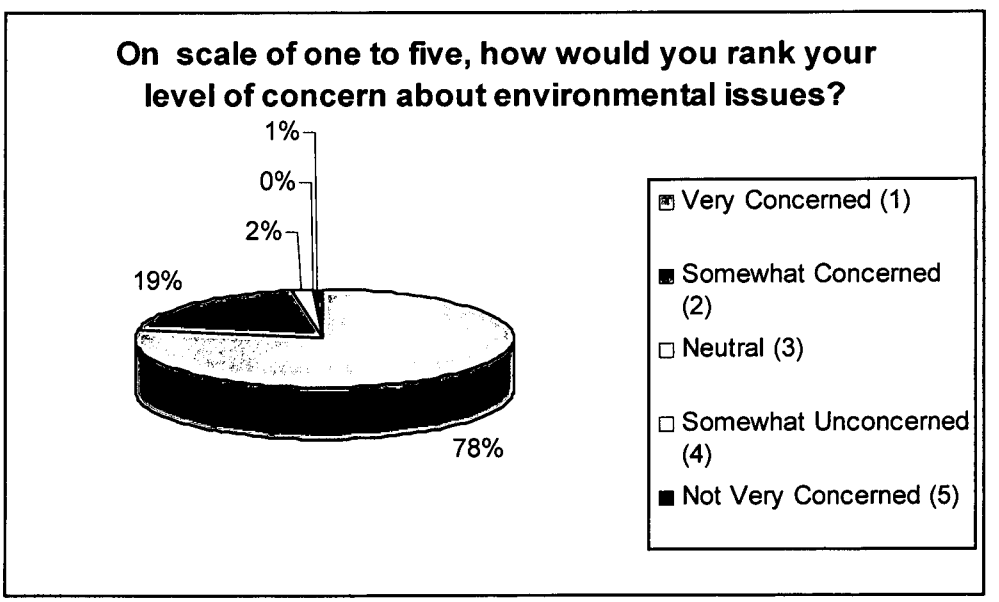


Figure 2

WILLINGNESS-TO-PAY

Under current market conditions, renewable energy supply requires most consumers to pay some type of premium for "green" supply. As a result, one of the key analyses involves studies of willingness to pay and ways this behavioral action can be encouraged through social marketing. A study in Pennsylvania comparing environmentalists and a group in the general population found that 84% of environmentalists were willing to pay more for renewables, while 68% of the general population would be willing to pay a premium. This same study also found that this willingness dropped off sharply once the premium exceeded 20% over normal pricing. (Energy Coordinating Agency, 1998)

In the research conducted for Mass Energy, 97.1% of the survey responses indicated they strongly favor the increased use of renewable energy. Of those who indicated they strongly favor the increased use of renewable energy, 72.38% said they would be willing to pay somewhat more each month if 100% of their power was generated from renewable sources; 3.81% said they would not be willing to pay more; and 19.05% were unsure.

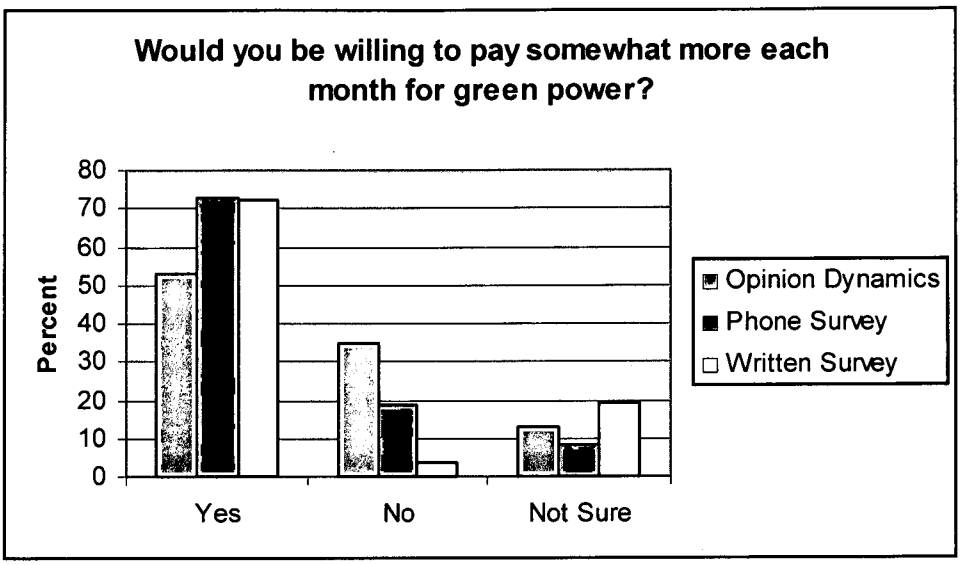


Figure 3

Survey respondents were asked about other environmentally-oriented consumer behaviors, and represented here are specifically those who purchased organic food and/or compact fluorescent light bulbs. Buying organic food involves both searching out a specialized supplier and payment of a green premium. This segment of the market might be pre-conditioned to switch suppliers and be willing to pay a premium for green power. Of 105 respondents, 57.14% regularly purchased organic food, slightly over half the sample population. Of this segment the chart below illustrates their willingness to pay more for green power and the dollar amount they would pay per month if 100% of their power were produced from renewable sources.

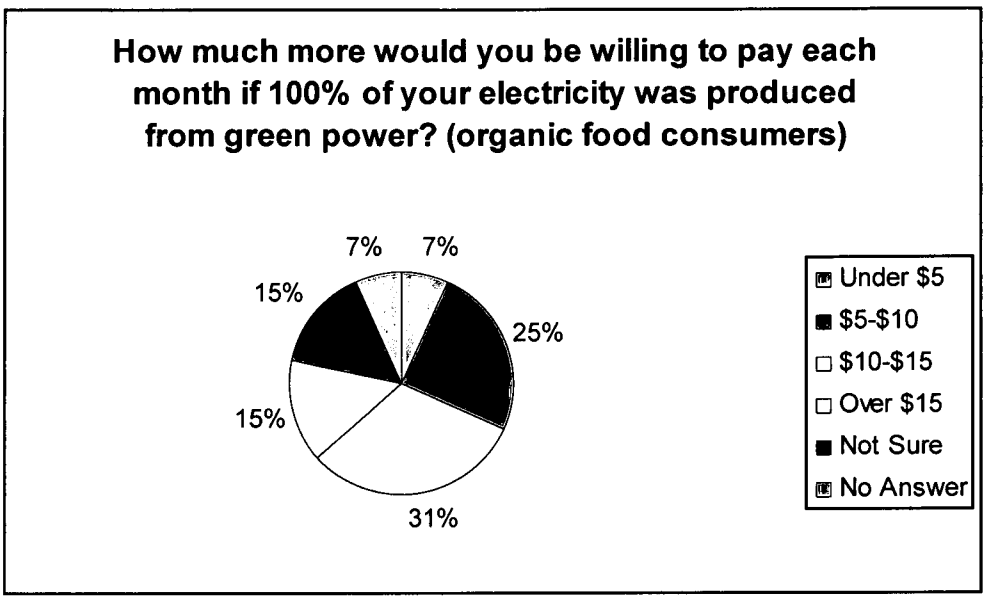


Figure 4

We conducted the same analysis for those respondents who indicated they had bought or installed compact fluorescent bulbs in the last 12 months. This behavior demonstrates a proactive approach to energy conservation in the home. Of the 105-person sample population, 53.3% had bought or installed compact fluorescent bulbs in the past year. Below is a breakdown of those in this segment who would be willing to pay more for green power and an indication of the dollar amount more per month.

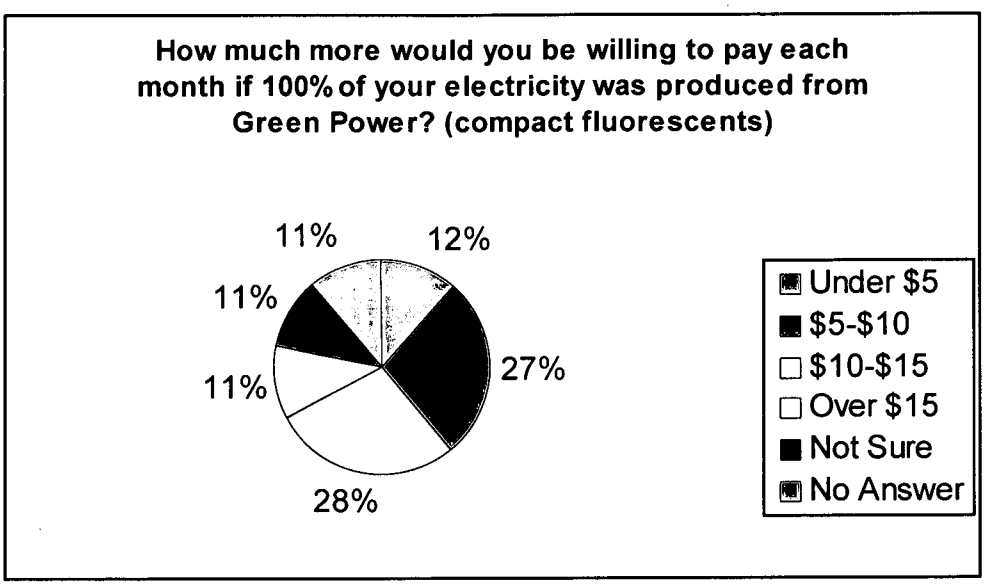


Figure 5

The data indicates those who purchase organic food are willing to pay higher premiums than the whole population. A National Renewable Energy Laboratory report on the growth of green power markets suggests these markets may relate because organic food provides not only private but public benefit. (NREL 2001).

Compact fluorescents, however, have less of a difference within the whole population. This may be explained by the investment associated with purchase of compact fluorescent bulbs. Though they require an initial outlay, this expense is returned to the consumer in energy cost savings. A return on the investment in a green power premium is not directly returned in the same manner

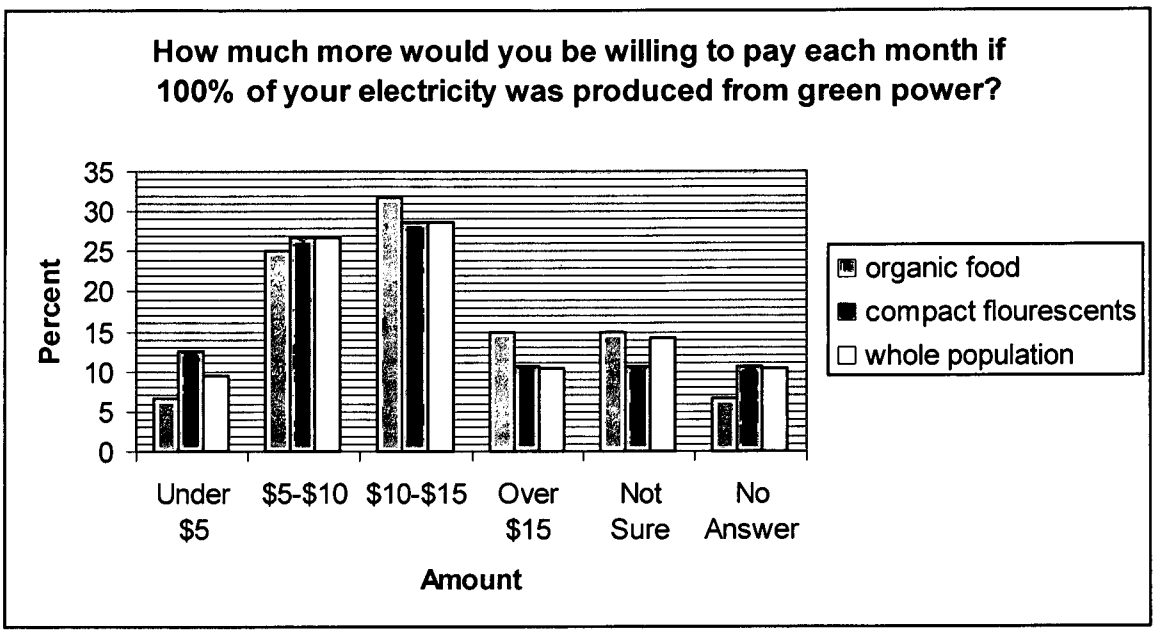
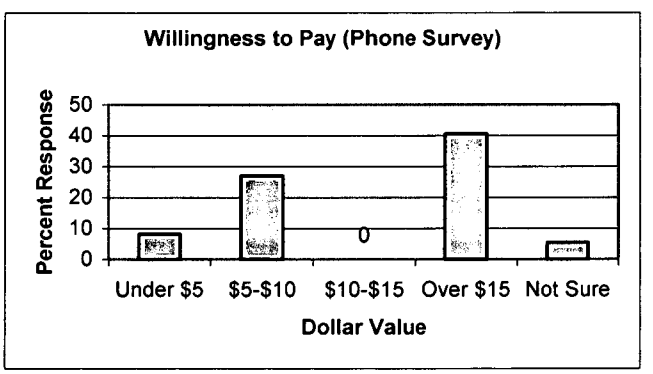


Figure 6

The Dynamics Behind Willingness to Pay

Though many similar studies have found consumers willing to pay a premium for green power, it has not yet translated into residential switching to green power products. The telephone survey, for example, found a higher level of willingness to pay, but also had a disproportionate number of retirees in the sample (35.14%). This may indicate a lack of correlation between willingness to pay and available income flexibility. Further, a focus only on willingness to pay ignores the more potent elements of consumer preferences to shape and market a renewable product. Translating this willingness into action requires a comprehensive understanding of the barriers to change.



Another point is Peattie's contention that:

> "Unfortunately marketing research aimed at tracking down the green consumer is reinforcing the prejudice against green products by regularly asking 'how much extra would you be willing to pay for greener products?'. This is not a neutral question and it contains a very powerful message promoting the image of the environment as an additional cost burden on business and consumers. It would perhaps be more appropriate to ask consumers 'do you want to buy products which are inexpensive because they damage the environment?'. (Peattie 2001: 190)

Research has linked consumers' willingness to pay with their confidence in the environmental benefits achieved through their purchasing behavior. However, it must not be assumed that all environmentalists have the same base level of knowledge on all issues. One of the goals of the in depth focus group was to gauge the differences amongst environmentalists.

The idea of linking knowledge with action is part of the reasoned action theory. This theory postulates that "people consider the consequences of alternative behaviors before engaging in them, and that they choose to perform behaviors they associate with desirable outcomes." (Bang et al. 2000: 453) Bang et al. conducted a comprehensive study entitled "Consumer Concern, Knowledge, Belief and Attitude toward Renewable Energy: An Application of the Reasoned Action Theory" where they investigate the aspects of this behavioral explanation to the purchase of renewable energy products. Their study was based on a sample of 2600 residential bill payers in a large southwestern city, using a mail survey. The study found:

> "A positive relationship between beliefs about salient consequences and attitudes toward paying more for renewable energy....Overall concern levels were quite high for consumers in this sample, whereas knowledge levels were relatively low. Interestingly it was found that consumer concern failed to translate into heightened knowledge about renewable energy. The study suggests that the consumer's environmental concern and beliefs about renewable energy to date are more emotionally-charged than fact- or knowledge-based."

This is an additional indication of the importance of consumer education as the basis of a marketing plan, a recommendation discussed further in Section IV. Ottman supports this idea. She found that social issues pass through three phases. In the first phase anxiety is high and activity is low. In the second phase people become more informed and activity overtakes anxiety. In the third phase activities become integrated into lifestyles. She contends green consumerism is in the second phase. "In order to move to phase 3, consumers will need greater access to credible, actionable information, technologies and infrastructures that make it easier for them to behave in an environmentally responsible way." (Ottman 1998:9)

Bang et al. also say

> "The findings of this study support the contention that the potential impact of consumers' environmental concern on their attitude toward *paying more* [emphasis added] for renewable energy may be limited and unstable. Compared to the very high overall levels of concern for the environment, respondents' overall willingness to pay more scores are moderate and their reported knowledge about renewable energy is somewhat low.....Marketing efforts aimed at strengthening consumers' beliefs, which are the building blocks for stronger and more stable attitudes, may be more effective at stimulating the behavior of purchasing renewable energy....Use of specific statistics that make current environmental problem more tangible immediate and personally relevant may be more effective at fortifying beliefs." (464-465)

This hits at the heart of one of the difficulties in marketing the social benefits of renewable energy: its intangibility and relative inaccessibility to the average consumer.

Bang et al. admit a limitation of their findings with regard to renewable energy purchasing is a lack of qualitative results and they recommend focus groups. This matches our experience that a fuller understanding of consumer knowledge with regard to such an intangible subject is best gained through small group discussions. This reinforces the importance of the focus group research method and suggests that they should be

conducted again after a product is launched to figure out what elements attracted those who purchased the product and those elements that deterred others.

FOCUS GROUPS

As mentioned previously, the focus group conducted in this study offered key insights and qualitative feedback as to how best to present a green power product. (A full transcript appears as Appendix E) Participants, by their own admission, responded well to the small group setting and recommended it be part of any future educational efforts about green power. Listed here are some key points made by participants:

- Split on familiarity with the term green power – all knew "renewable energy"
- All ascribe high value to renewable energy
- Most felt that the there is not real choice of power supply – theoretically there is, but not in reality and voiced frustration with this fact
- All would be willing to undertake the actual process of switching but not necessarily at an extra cost (split opinions)
- Some were not comfortable with the idea of landfill gas unless there could be a way to ensure that there were no toxic fumes coming out along with the methane and skepticism on whether it is a good source. Others felt 'green' was most important attribute
- Some expressed concern about whether power from renewable sources would be consistent and reliable

Use of focus groups in the future could investigate issues of timing, for example whether launching during peak use periods would be a substantial barrier to switching.

CONSUMER EDUCATION

Returning to attitudes gleaned in the written survey at TAC, one noticeable factor is the relatively high percentage of 'Not Sure' responses. This may correspond with

Bang et al.'s finding that concern did not necessarily equal education. It may also indicate, though not analyzed here, that people want more information about the sources and the supplier in order to make a decision. Again, more focus groups would be helpful to determine the background.

Another explanation of the unsure response may lie with the portion of the environmentally affiliated population that was not familiar with the elements of restructuring in Massachusetts. Thus the questions related to the purchase of a renewable energy product might be too abstract. When asked if they were aware of the option to choose a home electricity supplier, 34.29% were not aware of this option.

This may stem from the absence of a full and persistent consumer awareness campaign when consumer choice was launched in 1998. Other states had more comprehensive campaigns and have seen positive results. This unfortunately puts the onus on a small organization such as Mass Energy to not only attempt to aggregate demand and market a product to this composite of consumers, but first to educate consumers as to the basics of electric supply choice.

Based on data in California, New Jersey and Pennsylvania, it has been estimated that it costs between $1.60 and $2.26 per customer to educate a consumer about electric supply choice. (Johnson and Radford 2000) Combined these states spent $103 million on information programs to accompany changes to the electricity market in their respective states. The Pennsylvania Public Utility Commission, through a visible Electric Choice consumer education program was instrumental in establishing a baseline of consumer understanding of the new electric market. Television ads were widespread, including an ad where:

> "A new arrival in heaven is greeted by an aid who issues him a voucher for angel wings, his choir schedule and electric supplier. But, asks the man, doesn't he get to choose his own electric supplier? 'Where do you think you are' replies the heavenly bureaucrat, 'Pennsylvania.' (Johnson and Radford 2000)

The Commissioner of the Pennsylvania Public Utility Commission (PUC) contends states must use the tactics of corporate interests in presenting their information. Pennsylvania used a variety of ways to communicate the messages of consumer choice including mass media, direct mail, and community outreach. PUC Commissioner Brownell commented "People were getting these messages all of the time from a variety of sources. You had television... but then you had brochures in all the liquor stores and libraries, you had all the cabinet secretaries talking about it, you had all the community leaders talking about it, and then you had reinforcement in radio and in print and a direct mail campaign. So it was hard to escape getting messages." (Johnson and Radford 2000)

This campaign seems to have had results. As of September 1999, 94% of Pennsylvanians said they were aware of electric choice. As mentioned previously, only 63.81% of respondents in our survey of environmentalists in Massachusetts were aware of electric choice. Opinion Dynamics in their statewide survey found similarly a lack of knowledge regarding renewable sources. Though this apparent lack of awareness of energy choice is worrying, it is encouraging that the population seems ripe to receive information on the subject, and from a variety of sources. 88% indicated they would be interested in learning more about choosing and switching their supplier, while only 9% said they would not be interested.

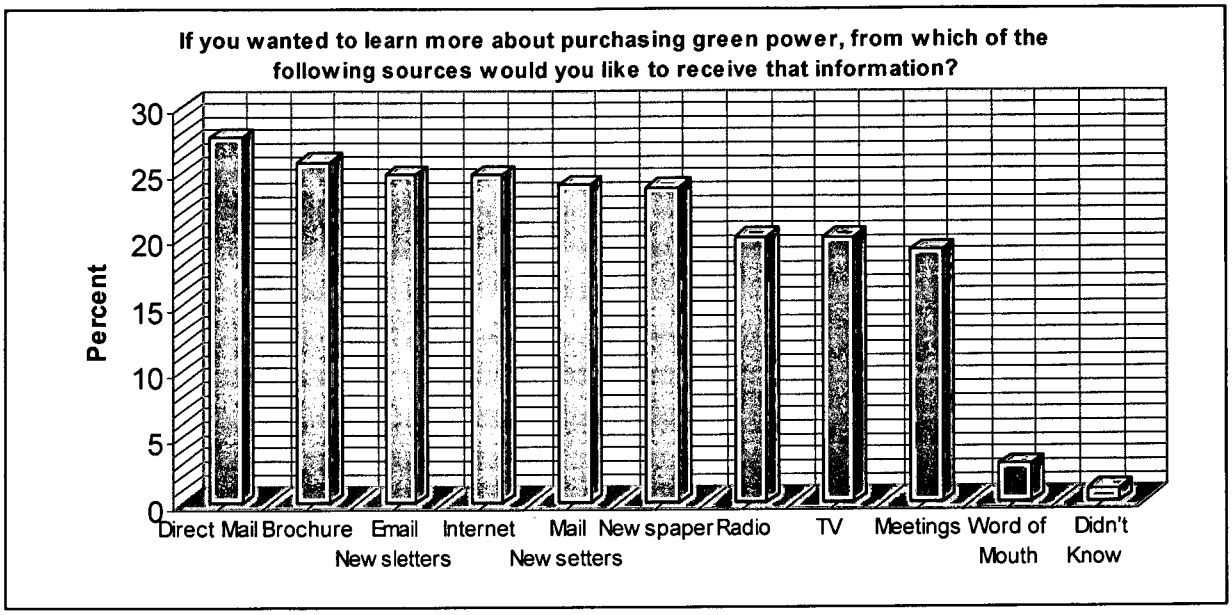


Figure 7

AGGREGATION

There are different types of aggregators, groups that pool consumer demand to create bulk buying power. Aggregations can be desirable to electricity suppliers because they reduce the costs of marketing to attract new consumers. Reduced marketing costs and a bulk unit of demand may result in lower purchasing prices for kilowatt hours.

Mass Energy's experience in organizing low-cost heating oil purchases positions them more concretely in the energy provider arena. As an organization with name familiarity, they avoid some of the barriers confronting new energy cooperatives or other "green" aggregators in launching a green power product. An internal investigation by Mass Energy to the historical name recognition and methods that have attracted members to their consumers' alliance will be instrumental in supplementing this marketing analysis and its recommendations.

SOAR Energy, the Solar and Renewable Energy Cooperative is an energy buying cooperative in Ohio that is launching an consumer aggregation program similar to the

goals of Mass Energy. Although market differences exist, particularly the shorter history since deregulation, SOAR is also targeting members of environmental and social organizations as more likely to be interested in purchasing green power. In SOAR's business plan they state their strategic positioning for success as the following:

> "1) Utilizing affinity marketing to reach consumers that are concerned about the environment and/or have an appreciation for the cooperative business structure
>
> 2) Minimizing its financial exposure to fluctuating wholesale electricity prices and offering additional goods and services including natural gas aggregation and energy efficiency products and service upgrades
>
> 3) Differentiating itself.... by emphasizing its core environmental and conservation goals and its not-for-profit status (Management Consulting Services, 2001 vi.)".

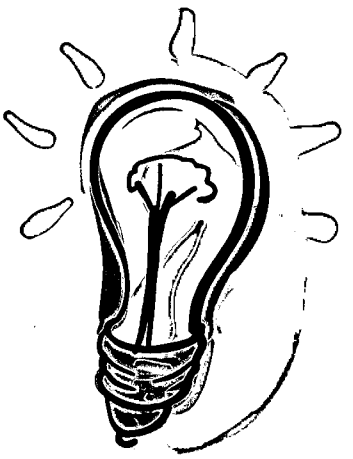
Mass Energy shares these core attributes. SOAR's business plan is based on identification of the social marketing principles. Similar to Mass Energy, their plan is to use partnerships with other environmental organizations to diversify and transmit their educational and marketing messages. It also involves building a customer base through natural gas cooperative sales and using this base to begin launching a green power product. Mass Energy also has a customer base from its home heating oil sales.

SOAR hopes to begin their power product sales in Spring 2002. They are using geographic segmentation to determine areas where demand might be high i.e. higher income areas, and areas where Green Party voting is higher. SOAR also plans to offer a variety of power products, from standard non-green power, to partial green power, to 100% green powers. It should be considered that if Mass Energy pursues similar diversification of products, offering a "brown" power product runs counter to brand identification with Mass Energy as a green supplier, something which contradicts social

marketing theory. Social marketing is based upon clear consumer ideological identification that might be moderated by multiple social and non-social messages.

If Mass Energy is not familiar with SOAR Energy, it is recommended that they contact the organization. If they are familiar with the organization, it is recommended that they consult them through the aggregation process to benefit from their "lessons learned" in an attempt to sharpen a marketing plan at a more minimal cost.

IV. SUGGESTIONS & CONCLUSIONS



EDUCATIONAL CAMPAIGN

This project examines ways to target a segmented market and match the customer's environmental interests with purchasing behavior. After conducting a variety of marketing research strategies it can be concluded that an awareness or product education campaign needs to be implemented as part of Mass Energy's marketing strategy. An education campaign serves to help target customers better understand the concept and benefits of the product. Usually the introduction of new products takes time and sales growth may be slow.

An education campaign should also focus on the abstract concept of green power and enhance customers' comprehension of the environmental benefits they create by switching to an alternative generating source. Although they may not directly receive green power; they do possess market power in a deregulated electric production market.

VALUE OF FOCUS GROUPS

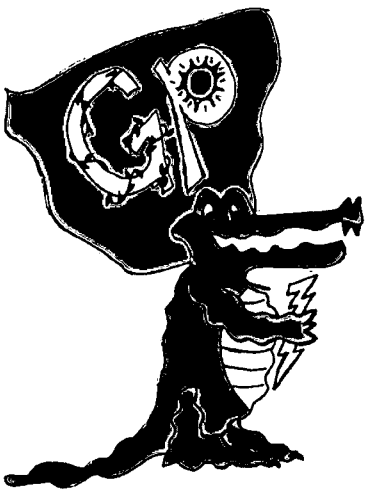
This project found that focus groups are an extremely effective method to examine the complex layers of decision-making with regard to purchase of renewable energy. They also serve as a significant consumer education method, as they promote dissemination and discussion of information. The focus group should be replicated in varying settings. Possibilities include schools, other environmentally-related conferences, corporate 'brown-bag' lunches, and town or community forums. An added benefit of focus groups is their relative cost-effectiveness in reaching different marketing segments.

DEVELOP A RECOGNIZABLE CONCEPT

An important tool in marketing the product is development of a recognizable concept. This reinforces the positive benefits of a particular action, and provides brand

recognition. It also acts as another tool to promote discussion of not only the product, but also the issues that are behind it. This project included development of a concept for Mass Energy to use in their marketing materials.

Make Way for Arnold the Aggre-Gator[6]



The Aggre-Gator™ is designed as a tool to appeal to consumers and attract their interest in what an aggregation is and what in particular it has to do with green power. The concept of the Aggre-Gator can be used in several different ways:

- to take away the technical feel of the word and concept "aggregator"
- as an ice-breaker or focal point in educational campaigns aimed at both children and adults
- as an icon that is representative of the project

Arnold the Aggre-Gator relies on symbolic imagery to convey the message of green power: 1) the lightning bolt he holds indicates "grabbing " consumer demand for renewable energy; 2) the superhero cape shows that he represents something exciting and important, 3) the cape is being blown about by the power of wind, a renewable source; 4) the letters on the cape GP stand for Green Power, with a sun at the center of the P and ivy wrapping around the G to illustrate a connection to nature; 5) and, of course, Arnold the Aggre-Gator is green and powerful, so he is essentially "the original green power." This

[6] This particular Arnold the Aggre-Gator has a copyright pending.

and other tag lines could be used in conjunction with the image to convey ideas and information about the green power aggregation.

Mass Energy had initially indicated they would focus first and primarily on a newsletter advertising campaign, due in part to financial constraints and also to the relative ease of access they have to their constituents and those of their partners through this method. The Aggre-Gator could be the symbol that is printed at the top or next to any advertising done about the green power aggregation project so people begin to associate the image with Mass Energy and their product. An additional benefit of the Aggre-Gator is its animal imagery links the product with the natural world. It also ensures the marketing strategy does not preclude others who may respond to the message, including those with young children, although they were not a significant portion of the survey sample.

Further marketing suggestions include developing a website, which can feature the Aggre-Gator describing Mass Energy's product, ways to join the aggregation, benefits thereof, and provide links to Mass Energy and its partners. Signage mentioning the website, www.aggre-gator.org (not yet claimed as of 4/29/02), can use the slogan 'Go to the Gator' with a link to the website. This builds on consumer curiosity. The suggestions for newsletter, website, etc., were taken from survey results which indicated respondents' preferences for receiving information about green power and green power aggregation.

CONCLUSION

This project attempted to quantify market demand for green power amongst environmentalists in Massachusetts. Upon finding the population receptive to product

messages, it used quantitative and qualitative data to develop a marketing concept for use by Mass Energy.

While this study and set of recommendations provide a strong starting point to market a green power product to an aggregated group of consumers, it can be supplemented by other activities. Continuing to work with MRET and other environmental organizations to remove or reduce regulatory barriers is also key. (This includes encouraging of consumer education campaigns with MRET funds, lobbying federal and state government for tax credits for bringing new renewable sources on-line or a credit for consumers). A strong promotional message in combination with reduction of external barriers to renewable energy choice will promote a successful consumer aggregation.

V. APPENDICES

APPENDIX A: REFERENCES

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APPENDIX B: TELEPHONE SURVEY

Hello, my name is _____and I'm a graduate student at Tufts University conducting a research project on energy issues. We're trying to find out how the people of this area feel about a number of issues facing them today. I'd like to ask you a few questions on a strictly confidential basis. At no time will anyone attempt to sell you anything—this is strictly a public opinion survey.

0a. First of all, are you 18 years of age or older?

1. Yes—**CONTINUE THE INTERVIEW**
2. No—**TERMINATE-DON'T COUNT**

==========

1. What do you think is the single most important *energy* issue facing Massachusetts today?

_____

2. Thinking about energy issues in particular, when I mention the term Green Power or Green Electricity, what *specifically* comes to mind?

_____

3. In fact, the term renewable energy, sometimes called Green Power or Green Electricity, refers to the use of solar power systems, wind turbines, and other technologies to produce electricity in an environmentally safe way. In general, do you strongly favor the increased use of renewable energy, somewhat favor it, somewhat oppose it, or strongly oppose the increased use of renewable energy?

1. Strongly favor
2. Somewhat favor
3. Somewhat oppose
4. Strongly oppose
5. (Don't know)

4. Specifically, why do you feel that way?

_____

I'm going to read you a list of organizations from which you might be able to buy Green Power. As I read each one, please tell me how likely you would be to purchase Green Power through that organization: very likely, somewhat likely, not very likely, not likely at all.

SCALE:
1. Very likely
2. Somewhat likely
3. Not very likely
4. Not likely at all
5. (Don't know)

5. A local credit union
6. Your current electric utility
7. A non-profit, community organization
8. A private for-profit energy company
9. A religious organization, such as a church, synagogue or other place of worship
10. Your city or town government
11. A non-profit environmental organization

I'm going to read you a series of statements that have been made by both supporters and opponents of increasing the use of wind, solar, and other renewable energy resources. As I read each statement, please tell me whether hearing it makes you more likely to *support* increasing the use of renewable energy, less likely to support its increased use, or whether it doesn't make any difference to you. **[ROTATE LIST]**

SCALE:
1. More likely to support increased use
2. Less likely to support increased use
3. No difference
4. (Don't believe statement)
5. (Don't know)

12. By developing renewable energy resources, we can reduce our reliance on fossil fuels -- like coal and oil -- that contribute to global warming.

13. Since Massachusetts is a world leader in renewable energy technology, we should be a world leader in its use because it will add local jobs and help our economy.

14. Currently, more than 80% of New England's electricity is produced by coal, oil, natural gas or nuclear power—renewable energy resources can help diversify the region's energy supply.

15. There's no practical way to determine whether the "green electricity" that consumers buy would actually find its way through the complex electric distribution system and be sent to their homes.

16. Fossil fuel power plants in the U.S. are responsible for emitting pollutants that cause asthma and other respiratory problems in humans.

17. With the exception of hydroelectric power, so-called renewable energy resources are significantly more expensive than traditional energy sources like natural gas, coal and oil.

18. Now that you've heard some additional statements on these issues, do you strongly favor the increased use of renewable energy, somewhat favor it, somewhat oppose it, or strongly oppose the increased use of renewable energy resources?
1. Strongly favor 2. Somewhat favor
3. Somewhat oppose 4. Strongly oppose 5. (Don't know)

Now we would like to discuss the energy use at your home as well as your energy preferences.

19. Do you own or rent your home?
1. Own 2. Rent 3. (Other) 4. (Refused)
19A. **[IF RENT TO Q.19]** Is heat included in your rent?
1. Yes 2. No 3. (Not Sure)

20. How do you heat your home?
1. (Oil) 2. (Natural Gas) 3. (Electricity)
4. (Not sure)

21. About how much is your average monthly electric bill?

_____

1. ($0-$49) 2. ($50-$99) 3. ($100-149)
4. ($150-199) 5. ($200-249) 6. ($250-$299))
7. (Over $300)

22. If you were to purchase Green Power or Green Electricity, please tell me which way you would prefer:
1. switching your electricity supplier (i.e. NSTAR or National Grid) to a green power supplier
2. continuing to purchasing power from your current electricity supplier (NSTAR or National Grid) while paying a separate bill to a different company to support green power
1. (Option 1) 2. (Option 2)

23. Would you be willing to pay somewhat more each month for Green Power?
1. Yes 2. No 3. (Not sure)

24. **[IF "YES" TO Q. 23]** How much more would you be willing to pay each month if **100%** of your electricity was produced from Green Power?
1. ($0.01-$4.99) 2. ($5-9.99) 3. ($10-14.99) 4. ($15 or more)
5. (Don't know)

25. **[IF "YES" TO Q. 23]** How much more would you be willing to pay each month if **50%** of your electricity was produced from Green Power]?
1. ($0.01-$4.99) 2. ($5-9.99) 3. ($10-14.99) 4. ($15 or more)
5. (Don't know)

26. **[IF "YES" TO Q. 23]** How much more would you be willing to pay each month if **10%** of your electricity was produced from Green Power]?
1. ($0.01-$4.99) 2. ($5-9.99) 3. ($10-14.99)4. ($15 or more)
5. (Don't know)

27. As far as you know, what is the largest energy resource used to generate electricity in Massachusetts today? [READ]

1. Coal	2. Oil	3. Nuclear
4. Natural gas	5. Wind	6. Solar
7. Hydro	8. Waste-to-energy	
9. (Other___)	10. (Don't know)	

28. If you had the complete ability to choose which energy resource would be used to generate the electricity coming into your home, what one would it be: [READ]

1. Coal	2. Oil	3. Nuclear
4. Natural gas	5. Wind	6. Solar
7. Hydro	8. Waste-to-energy	
9. (Other___)	10. (Don't know)	

29. And which one energy resource would you *not* want to be used to generate the electricity coming into your home? [READ]

1. Coal	2. Oil	3. Nuclear
4. Natural gas	5. Wind	6. Solar
7. Hydro	8. Waste-to-energy	
9. (Other___)	10. (Don't know)	

Now, I'd like to ask you some final questions for statistical purposes only.

30. **Gender: [OBSERVATION]:** 1. Female 2. Male

31. In which of the following ranges is your age? **[READ ALL BUT 7]**
1. 18-25 2. 26-35 3. 36-45
4. 46-55 5. 56-64 6. 65+ 7. (Refused)

32. If you wanted to learn more about purchasing green power, from what sources would you like to receive that information.?
1. (Television) 2. (Radio) 3. (Newspapers)
4. (Direct mail) 5. (Meetings) 6. (Brochure)
7. (Newsletter in the mail) 8. (Newsletter via e-mail)
9. (Internet) 10. (Other____) 11. (Don't know)

33. Where do you generally get your information on new products?
1. (Television) 2. (Radio) 3. (Newspapers)
4. (Direct mail) 5. (Meetings) 6. (Brochure)
7. (Newsletter in the mail) 8. (Newsletter via e-mail)
9. (Internet) 10. (Other____) 11. (Don't know)

34. Are you the person primarily responsible for paying your household's electric bill?
1. Yes 2. No 3. (Don't know/Refused)

35. Have you ever had an "energy audit" in your home?
1. Yes 2. No 3. (Don't know/Refused)

36. How many children under the age of 18 live in your household?
1. (None) 2. (1) 3. (2)
4. (3 or more) 5. (Refused)

37. What is your occupation?
1. (Professional—Doctor/Lawyer) 2. (Bus. executive-white collar)
3. (Retail—Store owner/Clerk) 4. .(Service—Restaurant/hotel/bank/office)
5. (Building/Devel./Constr./Arch.) 6. (Farmer, agriculture)
7. (Real Estate) 8. (Educator)
9. (Retired) 10. (Unemployed)
11. (At home) 12. (Town employees/Police/Fire)
13. (Student) 14. (Other_____)
15. (Refused)

38. Would you please tell me in which of the following categories I read is your total household income—that is, of everyone living in your household?

[READ ALL GROUPS EXCEPT RESPONSE 11]

1. $0-11,999	2. $12-14,999	3. $15-19,999
4. $20-24,999	5. $25-34,999	6. $35-49,999
7. $50-74,999	8. $75-99,999	
9. $100-124,999	10. Over $125,000	11. (Refused/Don't know)

That is the end of the survey. Thank you very much for your time.

APPENDIX C: WRITTEN SURVEY

Thank you for taking the time to complete this survey. Please be assured your answers will remain strictly confidential

I. GREEN POWER

1. When you read the term Green Power or Green Electricity, what *specifically* comes to mind?

_____

_____

2. Green Power or Green Electricity, is another term for renewable energy, meaning use of solar power systems, wind turbines, and other technologies to produce electricity in an environmentally safe way

In general, how do you feel about the increased use of renewable energy?

1	2	3	4	5
Strongly favor the increased use	*Somewhat favor the increased use*	*Somewhat oppose the increased use*	*Strongly oppose the increased use*	*Don't know*

3. On a scale of one to five, how would you rank your level of concern about environmental issues?

very very concerned		*neutral*		*not concerned*
1	2	3	4	5

4. Are you aware that presently you have the option to choose your home electricity supplier because the electricity industry in Massachusetts has been restructured?

☐Yes ☐No

5. Are you aware that a renewable energy product (paid for separately from your regular electric bill) is currently available in Massachusetts?

☐Yes ☐No

6. The electric industry in Massachusetts has been restructured since 1998 allowing consumers freedom to choose an electricity supplier. Power transmission and distribution to your home is still handled only by the traditional utilities (i.e. NSTAR, National Grid/Mass Electric).

If you were to purchase Green Power, please check which way you would prefer:

☐ switching your electricity supplier (i.e. NSTAR or Mass Electric) to a green power supplier (you could still receive just one bill)

☐ continuing to purchase power supply from your current electricity supplier while paying a separate company to support bringing more green power onto the electric grid (this would involve receiving two bills)

7. Are you interested in learning more about the process of choosing and switching your power supplier?

☐Yes ☐No

II. YOUR ENERGY USE AND CONSUMER PREFERENCES

8. Do you own or rent your home?

☐Own ☐Rent

If you rent your home is heat included in the rent?

☐Yes ☐No

9. How do you heat your home?

☐Oil ☐Natural Gas ☐Electricity ☐Not sure

10. About how much is your average monthly electric bill? _____

11. Would you be willing to pay somewhat more each month for green power? (If no, skip to Question 13)

☐Yes ☐No ☐Not sure

12. How much more would you be willing to pay each month if **100%** of your electricity was produced from Green Power?

☐$0.01-$4.99 ☐$5-$9.99 ☐$10-$14.99 ☐$15+
☐Not sure

13. If you wanted to learn more about purchasing green power, from which ONE of the following sources would you like to receive that information?

☐Television ☐Radio ☐Newspapers ☐ Direct Mail
☐Meetings ☐Brochure ☐Mail newsletter ☐ Email newsletter
☐Internet ☐Don't know ☐
Other_____

14. Where do you generally get your information on new products?

☐Television ☐Radio ☐Newspapers ☐ Direct Mail
☐Meetings ☐Brochure ☐Mail newsletter ☐ Email newsletter
☐Internet ☐Don't know ☐
Other_____

15. Have you ever had an energy audit in your home?

☐Yes ☐No ☐Not sure

16. Which of these consumer behaviors do you regularly engage in? (please check all that apply)

☐Buy organic food ☐Purchase recycled paper products
☐Purchase bottled water ☐Look for the recycled logo when shopping
☐Shop at farmer's markets

17. Which of these consumer behaviors have you performed in the past 12 months? (please check all that apply)

☐Considered the purchase of an electric or hybrid vehicle
☐Purchased light sensors ☐Bought or installed compact fluorescent bulbs
☐Bought an energy efficient appliance

18. Which of the following activities are part of your personal routine? (please check all that apply)

☐Carpooling ☐Turning off lights when leaving rooms
☐Recycling paper products at home ☐Using public transportation when possible
☐Recycling commingled containers at home (glass, aluminum, plastic)
☐Practicing water conservation methods (i.e. low-flow shower heads)
☐Using a reusable coffee mug ☐Lowering thermostat when away from home

III. STATISTICAL QUESTIONS

Please answer the following few questions for statistical purposes only

19. Please indicate your gender:
☐Female ☐Male

20. Do you live in Massachusetts?
☐Yes ☐No

21. Please check your age range:
☐18-25 ☐26-35 ☐36-45 ☐46-55
☐55-64 ☐Over 65

22. How many children under the age of 18 live in your household?
☐None ☐1 ☐2 ☐3 or more

23. Please indicate the range for your household income- that is of everyone living in your household:
☐$0-$11,999 ☐$12,000-$14,999 ☐$15,000-$19,999 ☐$20,000-$24,999
☐$25,000-$34,999 ☐$35,000-$49,999 ☐$50,000-$74,999 ☐$75,000-$99,999
☐$100,000-$124,999 ☐Over $125,000

Thank you again for your time in completing this survey. Your help is very valuable to our research. If you would like to participate in a focus group related to these topics during the lunch break, please make yourself known to the survey organizers.

APPENDIX D: DATA SUMMARY

Written Survey

Q2. Respondents were asked to indicate their feelings about increased use of renewable energy. *"Green Power or Green Electricity, is another term for renewable energy, meaning use of solar power systems, wind turbines, and other technologies to produce electricity in an environmentally safe way.* ***In general, how do you feel about the increased use of renewable energy?"***

97.14 %	strongly favored the increased use of renewable energy,
1.9 %	somewhat favored the increase of renewable energy, and
0.95 %	didn't know.
0.0 %	opposed the increased use of renewable energy.

Q3. Respondents were asked how would they rank their level of concern about environmental issues.

78.10 %	were very concerned about their environment
19.05 %	were somewhat concerned about their environment
1.90 %	showed a neutral concern for their environment, and
0.95 %	were not very concerned.

Q4. - Q6. Questions about renewable energy products.

Q4. Two thirds of the respondents were aware they had an option to choose their home electricity supplier.

63.81 %	answered Yes
34.29 %	answered they were not aware
1.9 %	did not answer.

Q5. A minority of the respondents knew of an energy alternative product that provides electricity from a renewable energy supply.

25.71 % said they were aware of a renewable energy product and
71.743 % were not aware.
2.86 did not answer.

Q6. Respondents were asked their preferences in regards to the actual billing and that company's relationship to the producer of renewable energy.

74.29 % responded by stating they would prefer switching their electricity supplier to a green power supplier where they would receive only one bill.

10.48 % stated they would prefer keeping their utility supplier and two bills: one from the current supplier and one from the green power supplier.

Q7. Respondents were asked whether they would be interested in learning more about the process of choosing and switching power supplier.

88.57 % said they would like more information
7.62 % said they would not
3.81 % did not answer

Q8.- Q10. asked the respondents more information about the heating of their home.

Q8.
60 % of the respondents own their home while
39.05 % rented.

Of the 39.05 % that rented their own home:
27% stated heat was included in the rent
73 % said it was not.

Q9. Respondents were asked in which manner did they heat their home.

37.14 % said they heated their home with oil,
40.95 % said with natural gas
6.67 % said with electricity
11.43 % stated they were not sure, while
2.86 % did not answer the question.
0.95 % actually used wood as the heat source.

Q10. Monthly electric bill

The people responding to the survey estimated their monthly electric bill was approximately $67 on average of all respondents with a standard deviation of $37 and a maximum of $200 to a low of $14.

Q11. "Willingness to Pay" extra for green power.

72.38 %	would be willing to pay somewhat more each month for green power.
3.81 %	said they would not
19.05 %	were not sure.
4.76 %	did not answer the question.

Q12.
Of the positive respondents who were willing to pay more each month for green power:

9.52 %	$0 to $5
26.67 %	$5 to $10
28.57 %	$10 to $15,
10.48 %	$15+
14.29 %	were not sure
10.48 %	did not answer the question.

Q13. Respondents were asked about the manner in which they would like to receive more information about green power.

25.71 % preferred to receive information by	Brochure,
27.62 % " " " " " "	Direct Mail,
24.76 % " " " " " "	Email newsletters,
19.05 % " " " " " "	attending meetings,
23.81 % " " " " " "	reading newspapers,
24.76 % " " " " " "	messages from the internet,
20.00 % " " " " " "	through radio announcements,
24.00 % " " " " " "	mail newsletters
20.00 % " " " " " "	television spots
00.95 % " " " " " "	didn't know
3.81 % " " " " " "	did not answer and
2.86 % " " " " " "	word of mouth.

Q14. Survey asked respondents how they *currently* get their information on new products. Respondents said:

13.33 % learned of new products through	brochures,
19.05 % " " " " " "	direct mailings,
10.48 % " " " " " "	email newsletters,
22.86 % " " " " " "	Internet messages,
14.29 % " " " " " "	attendance at meetings,
30.48 % " " " " " "	by reading newspapers,
25.96 % " " " " " "	radio messages,
11.43 % " " " " " "	newsletter mailings,
28.57 % " " " " " "	television spots,
7.31 % " " " " " "	word of mouth

10.48 % did not know, and 3.81% did not answer.

Q15. *"Have you ever had an energy audit in your home?"*

40.95 %	have
48.57 %	have not
6.67 %	were not sure.
3.81 %	did not answer the question.

Q16. & Q17.
Organic food purchasing and compact fluorescent bulb purchasing behavior was investigated as a possible verification of the respondents' willingness to pay more for green power:

60 %	of respondents purchase organic food
55 %	of the respondents have purchased fluorescent light bulbs in the last 12 months.

Q18.

All the respondents conduct a vast array of environmental activities as part of their daily routine. The majority of people taking the survey participate in at least 4 environmentally responsible actions as part of their every day lives. This ranges from using public transportation to lowering the thermostat when they are away from home.

Q19. Gender

69.52 %	female
28.57 %	male

Q20.

The survey's target population was Massachusetts' residents because of the focus on renewable energy products in Massachusetts. However, other states were also accepted due to commuters to the Massachusetts areas and because of their temporary residences in Massachusetts despite lack of permanent citizenship in the state.

93.3 %	were Massachusetts residents
4.76 %	were not.
1.90 %	did not answer.

Q21. Age distribution

20.00 % of the respondents were from the	18-25 age range
19.05 % " " " " "	26-35 age range
18.10 % " " " " "	36-45 " "
20.95 % " " " " "	46-55 " "
12.38 % " " " " "	55-64 " "
7.62 % " " " " "	65 and over age range
1.90 %	did not answer.

Q22.
Several questions were used in the written survey to maintain similarity with the phone survey that was also conducted. Basic demographic questions were used by "Opinion Dynamics" to correlate regional breakdowns. For example:

Respondents were asked *:" How many children under the age of 18 live in your household?"*

66.67 % of the respondents had no children under the age of 18 living in their household,
9.52 % " " " 1 child " " " " " ",
10.48 %" " " 2 children " " " " ",
6.67 % " " " 3 or more children" " " " ".
6.67 % did not answer.

Income levels, conversely, were important to correlate with "Willingness to Pay" and consumer behaviors.

5.71 % of the respondents indicated their household income ranged from $0- $11,999
7.62 % " " " " " " " "$12,000 - $14,999
2.86 % " " " " " " " "$15,000 - $19,999
1.90 % " " " " " " " " $20,000 - $24,999
5.71 % " " " " " " " " $25,000 - $34,999
9.52 % " " " " " " " " $35,000 - $49,999
14.29 %" " " " " " " " $50,000 - $74,999
21.90 %" " " " " " " " $75,000 - $99,999
8.57 % " " " " " " " " $100,000 - $124,000
3.81 % " " " " " " " " $over $125,000
18.10 % did not answer the question.

Phone Survey

Q1. Respondents to the phone survey were initially asked: "W*hat do think is the most important energy issue facing Massachusetts today?"*

Wide variety....

Q2. *"Thinking about energy issues in particular, when you hear the term Green Power or Green Electricity, what specifically comes to mind?"*

Most of the answers encompassed the idea of electricity cleanly produced in an in environmentally friendly way. **However, almost 19% of the respondents had no response to the term or no concept came to their mind in relation to the question.**

Q3. Support for the increased use of renewable energy in Massachusetts:

54.0 % of the respondents strongly favored the increase use of renewable energy.
40.5 % " " " somewhat favored " " " " "
2.7 % " " " somewhat opposed " " " " "
2.7 % " " " didn't know.

Q4. Why do you feel that way?
Most of the responses can be summarized as **viable alternatives to the future demands of energy because they pollute less and relieve the United States dependence on oil.**

Q5. - Q10. List of potential Green Power supply organizations respondents preferred as likely places to purchase Green Power.

	Very Likely	Somewhat Likely	Not Very Likely	Not at all	Didn't Know
Credit Union	2.7%	24.3%	8.11%	54%	10.8%
Electric Utility	43.24%	35.14%	0.0%	8.11%	13.5%
Community org (non-profit)	35.14%	27%	5.4%	16.22%	16.22%
Private for Profit	13.5%	37.8%	5.41%	29.7%	13.5%
Religious Org	5.41%	13.5%	10.8%	54%	16.22%
Gov't Provider	16.22%	43.2%	2.7%	16.22%	16.22%
Environmental org (non-profit)	43.2%	21.6%	2.7%	18.9%	13.5%

Respondents appear to very likely prefer electric utility companies and non-profit environmental organizations. The majority of respondents also prefer NOT to have religious organizations in the energy production or distribution business.

Q12 - Q18. Questions targeted at specific policies surrounding renewable energy policies.

Q12. *"By developing renewable energy resources, we can reduce our reliance on fossil fuels -- like coal and oil -- that contribute to global warming."*

86.5 %	were more likely to support the increased use of renewable energy
2.7 %	said they would be less likely to support
2.7 %	it made no difference
8.11 %	did not believe the statement.

Q13. *"Since Massachusetts is a world leader in renewable energy technology, we should be a world leader in its use because it will add local jobs and help our economy."*

70%	were more likely to support increasing the use of renewable energy
5.41 %	were less likely to support
13.5 %	it made no difference
2.7 %	didn't know

Q14. *"Currently, more than 80% of New England's electricity is produced by coal, oil, natural gas or nuclear power - renewable energy resources can help diversity the region's energy supply."*

81 %	were more likely to support increased use of renewable energy
5.41%	were less likely to support
8.11 %	it made no difference
2.7 %	did not answer the question

Q15. *"There's no practical way to determine whether the "green electricity" that consumers buy would actually find its way through the complex electric distribution system and be sent to their homes."*

8.11%	were more likely to support increased use of renewable energy
37.8 %	less likely to support increased use of renewable energy
29.7 %	it would make no difference
13.5 %	didn't believe the statement
10.8 %	didn't know

Respondents' comprehension of the way electricity is actually distributed to individual homes represents a key point towards understanding consumers. The results suggest respondents become less likely to support renewable energy when they do not receive direct benefits.

Q16. " *Fossil fuel power plants in the U.S. are responsible for emitting pollutants that cause asthma and other respiratory problems in humans."*

59.5 %	more likely to support increased use of renewable energy
16.22 %	were less likely,
16.22 %	it made no difference,
2.7 %	didn't believe the statement, and
2.7 %	didn't know.

Q17. *"With the exception of hydroelectric power, so-called renewable energy resources are significantly more expensive than traditional energy sources like natural gas, coal and oil."*

16.22 %	were more likely to support increased use of renewable energy
29.7 %	would be less likely
29.7 %	it would make no difference,
5.41 %	didn't believe the statement, and
18.9 %	didn't know

Q18. Support for increased use of renewable energy after respondents had a chance to hear the previous policy statements:

48.65 %	strongly favored increased use of renewable energy
46 %	somewhat favored " " " " "
2.7 %	somewhat opposed " " " " "
2.7 %	didn't know.

Q19. - Q21. Questions about home electricity use

Q19. Home ownership

83.8 %	owned their home
16.22 %	rented

Of the respondents who rented:

12.5 %	heat was included in the rent
25 %	heat was not included in the rent
16 %	did not answer the question

Q20. Method of home heating

40.5 %	heated with oil
54 %	natural gas
5.4 %	electricity

Q21. Average monthly electric bill breakdown

13.5 %	paid between $0 and $49,
43.2 %	" " $50 and $99,
16.22 %	" " $100 and $149,
8.11 %	" " $150 and $199,
2.7 %	" " $200 and $249,
8.11 %	" " $250 and $299,
5.4 %	" " $300+.
2.7 %	had no answer for the question.

Q22. Respondents were asked which option they preferred when purchasing "Green Power" - either switching electric suppliers or receiving two bills (one from the distribution agent and one from the supplier.)

48.65 %	chose to switch their electric supplier to a green power supplier
29.7 %	chose to keep their electric supplier and receive two bills
21.6 %	did not answer the question

Q23. *"Would you be willing to pay somewhat more each month for Green Power?"*

72.97 %	YES
18.9 %	NO
8.11 %	were not sure

Q24. - Q26. Asked the 72.97% "YES" respondents to evaluate their "Willingness to Pay" in comparison to the amount of renewable energy they would receive. The amount of renewable energy they would receive was broken down into three categories: 100%, 50% and 10%.

Q24. Willingness to pay more for renewable energy if Green Power constituted <u>100%</u> of the respondent's energy supply:

8.11 %	would pay $0.01 to $4.99 per month
27 %	" " " $5.00 to $9.99 per month
0 %	" " " $10.00 to $14.99 per month
40.54 %	" " " $15.00+ per month.
5.41 %	" didn't know

Q25. Willingness to pay more for renewable energy if Green Power constituted 50% of the respondent's energy supply:

8.11 %	would pay $0.01 to $4.99 per month
35.14 %	" $5.00 to $9.99 per month
10.81 %	" $10.00 to $14.99 per month
18.9 %	" $15.00+ per month
5.41 %	" didn't know
21.62 %	did not answer the question

Q26. Willingness to pay more for renewable energy if Green Power constituted 10% of the respondent's energy supply:

2.7%	would pay $0 per month
29.7 %	would pay $0.01 to $4.99 per month
16.22%	" " $5.00 to $9.99 per month
8.11 %	" " $10.00 to $14.99 per month
2.7 %	" " $15.00+ per month.
16.22%	didn't know
24.3 %	did not answer the question

Q27. Respondents were asked their knowledge about which natural resource supplied their electricity.

13.51 %	coal
2.7 %	coal, oil, and wind
16.22 %	oil
21.62 %	nuclear
29.7 %	natural gas
2.7 %	thought natural gas but were not sure
13.51 %	didn't know

Q28. Energy supply preferred as the generating source of electricity to the home:

2.7 %	chose coal
2.7 %	chose nuclear, natural gas, wind, solar, hydro, and waste-to-energy sources
21.62 %	chose natural gas production
29.73 %	chose wind
2.7 %	chose wind, solar, and hydroelectric
29.73 %	chose solar
2.7 %	chose solar, hydro, waste-to-energy, and other
2.7 %	chose another resource yet unknown
5.41 %	didn't know

Q29. Energy source NOT wanted as a potential source of electricity into the home:

43.24 %	coal
2.7 %	coal or oil
2.7 %	oil
45.95 %	nuclear
2.7 %	wind
2.7 %	any other type of energy source

Q30. - Q38. Demographic questions

Q30.

54.05 %	female
45.95 %	male

Q31. Age distribution

2.7 %	18-25
13.51 %	26-35
29.73 %	36-45
0 %	46-55
8.11 %	56-64
43.24 %	65 years of age and older
2.7 %	preferred not to answer

Q32. *"If you wanted to learn more about purchasing green power, from what sources would you like to receive that information?"*

24.32%	television spots
2.7 %	other sources of information
24.32 %	newspaper sources
21.62 %	direct mail
2.7 %	attendance at meetings
13.51 %	Internet mechanisms
2.7 %	a combination of sources
2.7 %	the green pages
5.41 %	didn't know

Q33. Asked respondents where do they get information about NEW products.

13.51 %	television
2.7 %	combination of television, radio, and newspaper information
21.62 %	newspapers
18.92 %	direct mailings
8.11 %	mailed newsletters
27.03 %	Internet
2.7 %	combination of sources
5.41 %	didn't know

Q34. Person responsible for paying their household's electric bill:

75.68 %	Individual respondent was
21.62	respondent was not
2.7 %	did not answer

Q35. Asked if the respondent ever had an energy audit performed in their home.

37.8 %	YES
51.35 %	NO.
10.81 %	did not know.

Q36. *"How many children under the age of 18 live in their household?"*

62.16 %	did not answer,
13.51 %	had no children under the age of 18 in their household,
10.81 %	had one child " " " " " " ",
8.11 %	had two children " " " " " " ",
5.41 %	refused to answer the question.

Q37. Occupation.

8.11 %	professional – Doctors or Lawyers
18.92 %	business executives or white-collar workers
2.7 %	worked in retail or were store owners/clerks
2.7 %	in the service industry (restaurant, hotel, bank, or office)
2.7 %	in the building, development, construction, or architecture fields
5.41 %	educators
35.14 %	retired
2.7 %	work at home individuals
2.7 %	students
10.81 %	other types of occupations not listed
5.51 %	preferred not to answer the question

Q38. Income distribution:

8.11 %	$12 – $14,999
2.7 %	$15 - $19,999
2.7 %	$20 - $24,999
5.41 %	$25 - $34,999
32.43 %	$35 - $49,999
18.92 %	$50 - $74,999
10.81 %	$75 - $99,999
13.51 %	over $125,000
5.41 %	preferred not to answer or did not know.

PHONE SURVEYS:

37.84 % ELM
62.16 % Clean Water Action

APPENDIX E: FOCUS GROUP TRANSCRIPT

Transcript of Focus Group conducted at the Toxics Action Center Conference
March 16, 2002[7]

C=Cyndi Veit
M=Mark Hengen
V=Victoria Gellis

W=woman (7), M=man (2)
All white
Both men over 40 (over 50?)
Woman 1-3 over 40
4-7 under 40 (under 30?)

C-intro to what we are doing, why we are using this focus group

V-, M- intros, goals

C- we want to get a sense of your understanding and thoughts on renewable energy

C-Does anyone here know anything about the restructuring of the electric industry in Massachusetts (Mass)?

W2- only the information I get from my bill.

C- What info did you get from your bill?

W2- just that it's been deregulated and we apparently, theoretically, we have a choice and every few months they send me a summary of the bill of what the sources are and what percentage of my electricity comes from you know non-union shops – and that kind of thing – there's a whole list of information…

C-Is it attached, written, printed at the bottom of the bill, or is it a separate insert?

W2- separate piece of paper

C-Ok, so it comes with the bill – anyone else?

M1- Well, I live in Concord where we have the municipal light system, the bill explicitly exempts municipal light systems from deregulation

C-really? So that doesn't affect you at all. Anyone else?
How many of you are familiar with the term "green power"?

[7] Please note: words or phrases in parentheses were not clear on the audio recording.

M-Yes & No? (7 yeses)

W4- I mean, reusable energy, just not green power necessarily, but the idea

W2-I'm just wondering why you use that instead of renewable energy?

C-Well, we're using it because, it started out – we had some previous research information that was just calling it green power and that just seemed a little more…user friendly, or more…

M-that's one of the things we're trying to find out, is that some people regard it as green power and some people may label it as renewable energy and one of the things we're trying is to play with that term in this survey and find out actually which may be the more familiar term or the term that promotes more switching towards that, so that's some of the…

W5- term-wise, I'm an environmental policy major at BU, and I've *never* heard that term used.

M-green power?

W2- Green power?!

W5- We don't use green power, it's all renewable energy, sustainable development, or this or that..

M-and that's an academic setting, that you talk about?

W5- mmm hmm, I mean, I can understand the words, but it's not really the most (intelligent?)

C-How many of you had never heard the term green power before this survey or this focus group? 7— but the two of you (M1 &W1) had heard the term green power..
M1- oh yes, we're debating it in Concord

W1- we just had a presentation by a fellow from the Dept. of Energy on a green power project that he is trying to encourage communities to participate in.

C-And he specifically referred to it, or his tag line was green power?

W1- green power.

M1-I'm on the light board, so I was one of the people that was being presented to…

C- How about the term renewable energy, then? Before this survey? Everyone had heard that term? (yes) Ok, we're going to go around the room on this one – basically, using a

scale, with 1 being low and 5 being high, what personal value do you ascribe to renewable energy? I guess we'll start with you… (W5)

W5-What exactly do you mean, personal value?

C-Level of importance in however you…

W5-I would say it was a 4 or 5 on a scale of 1 to 5.

C-Yeah, 5 is the highest and 1 is the lowest.

W5- Yeah.

W6 – 4

W7- 4 ½

W3 – I don't even know that I (ascribe a value…?)

M2- a 5 with *many* conditions…

C-ok

Uninvited woman who only came to get free lunch, sat way at the back and left early:
I didn't quite get the question…
C-What personal value do you ascribe to renewable energy, with 1 being the lowest, and 5 being the highest…

Uninvited participant: 5

W4-5

W2-4

W1-5

M1-4

C-we're going to hand out just a really brief informational hand out on electricity restructuring and supply, we'd like you to just take a couple minutes, read it all the way through, and we'll move on in a couple minutes, and from there we'll go with some more questions…

V-ok, do you have any questions about what you've just read?

W1- my understanding is that the sentence at the beginning of paragraph two is not the truth of the matter – that it says that people are allowed to choose but in fact they are not allowed to choose.

C- could you expand on that?

W1-in the last, the guy who led the last thing on energy, said the reality is you don't have a choice, even though you're supposed to have a choice, and somebody said they went to a website where you were supposed to be able to choose, and once they identify you as a residential customer, rather than a business customer, you don't have any..., they don't have anything to do with you..., so my understanding is that theoretically this is what was supposed to happen, but the reality is that is not what has happened..., is that correct or am I mistaken?

(All laugh)

V-that is correct – what's happened so far is, yes, you are allowed to choose, it does give you the freedom to make a choice, but in Mass most (residential) customers don't have a choice yet, other states which have gone through similar restructuring processes do tend to have more of a competitive choice for consumers..., part of what our research is is in conjunction with ideas of bringing renewable energy to Mass, the obstacles, interests, how people feel about restructuring, and so on and so forth.., but you are correct in that you don't really have a variety of choice right now...

C-any other questions on this, just basic run down...?

M-do other people have the same perceptions as that, or..., everybody have the same perceptions that legally you might have the choice, but in reality you don't have the choice?

M1- as I said before, legally, if you live in a town that has a municipal light plan, you don't have a choice, that's unfortunate, you're, the municipal light plan has a choice of who it tries to negotiate with to get your electricity, so in a sense it's almost acting like a cooperative for you, so it's a weird world...

V- I know you've answered this on the orange survey, but just for our purposes now, could we sort of have a show of hands of how many of you were familiar with this idea of choice in Mass from a theoretical perspective, that technically it exists? (6 --?)

M-and the other ones—you were uncertain or you didn't have any perceptions?

W5-I didn't know – I live in university housing, but I have started renting an apartment, and we are only billed for our gas, for what we use, everything else and heat is included, so...

V-now we wanted to pass around a sample electric bill, talk about that for a little bit...

(Laughter)

V-sorry?

W1- it's a high bill!

(All laugh)

W1-somebody isn't turning the lights off and they're leaving the room!

V-it's electric heat

W4- they heat with electricity

V-yeah, it's an electric heat bill…

M-We just wanted to get your attention…

(Laughter, more discussion on how high the bill is, etc.)

V- we wanted to ask you…

C-sorry?

M2-for heating with electricity here, this is a low bill…

W4- excellent

C-we'll note that

V-conservation!…, we wanted to, you can obviously, you can see how it's broken down, and we were wondering whether you generally look at the itemized break down on your bill…

W3-I've never looked at it…

C-How many have never looked at it? Have never looked at that breakdown, the itemized…,

M-just one? Have never seen it?

V-you'll notice now the two sections, one for transmission and distribution and the other for supply, theoretically, if you were to choose to switch your supplier, it would appear in that section where it says default service/fixed, it might say renewable energy company B, and the price for the kilowatt hours and that's how your bill would be broken down under restructuring…, looking at that issue of supplier, if you were considering, if you were to choose a supplier, sort of look at this as if the world were different right now than

it is, one whose supply came from 100% renewable sources, the onus would be on you to switch, and we were wondering, which of you, if that would be an obstacle, the fact that it's sort of up to you to make that step... not for you?

W1-no, no obstacle at all, no...

C-calling the company, making the point that you want to switch...?

W1-would not be a problem for me at all – I'd pick up the phone right away

W5- would it be the same cost, or would it be an extra cost for switching?

W1-she didn't ask about that, she didn't say...

(All laugh)

C-we'll get to that...

W1- the question is whether you would be willing to call somebody to switch...

M2- at an extra charge...

M- no no, we're not charging...

C-we'll get to that in a minute...

V-we're curious if you can think about power in the way you think about..., well, eliminating cost from long distance, for right now, but you know, you choose them..., primarily, you do choose based on cost, but you do make that choice and people do tend to switch their long distance company for varying reasons, what we're just asking is, are you comfortable with the idea of making that decision, calling the company, switching...is that an obstacle for you? (no's)

(laughter)

V-now we're going to talk about...

(laughter)

C-now we will get to the part that if green power were to cost more than power generated from conventional, non-renewable sources, would you be willing to pay more?

M2-absolutely not.

C-absolutely not, ok...

W1- I would be willing to pay more, because I think there is value there above and beyond what you are paying, that you know that you've lowered air pollution, that you've increased water quality, that you've preserved the planet for future generations, those things are priceless, and they're worth paying more for...

C-do you have a general idea of per month, what your electric bill now, how much more you would be willing to pay...?

W1- well, that was on the survey, and I had to think about that, my electric bill runs $40 a month, we're billed bi-monthly, and I'd be willing to pay up to 15 dollars more, per month, if I knew I was helping to save the Earth

C-in terms of not being willing ...oh, ok, go ahead...

M2- just to follow up on that, I agree with everything she said, except the paying more, if you want to replicate those benefits to as many people as possible, charging a higher price does exactly the opposite, you have then more people saying no, I don't want to pay extra money... if they made it competitive, and if you said to people, at the same price, would you change?, you would find the answer would be, I would think, 3 or 400 percent greater to say yes, I would change, rather than to say, it always has to be for a particular item, more money..., I mean we're looking at lighting, fluorescent lighting, fluorescent lighting is more fuel efficient, and the reason we see fluorescent lighting everywhere is that it's cheaper to light with fluorescents, that's the only reason this is in the building..., it saves us energy, it saves us pollution caused from the other end at the plant, but that's not why it's in the building..., so you have to mandate, and you have to push all of the companies that are supplying green power, of one kind or another, to make it economically competitive, and not go on the fact that oh, well, this is a new thing that your neighbor doesn't have, and you can say, well, I got the latest technology or I have the latest new gizmo, that is going to do XY or Z for me – they tried that with solar heating, and there were all these companies a few years ago, trying to sell everybody solar heating on the roof, and a few people bought into it, most of the people didn't, because when you look at what their savings would be, over a length of time, the 25 or 30 thousand dollars they wanted to charge you, it never came out on the balance sheet at the end, you would never end up paying for that system in your lifetime, so people just stopped buying it – it was a great idea, to do it, and saves energy, but they made it so expensive, that people just didn't buy it, they didn't buy into it...

W6-I just wanted to follow up on that – I was just in a discussion group about genetically modified food, and the discussion there was that, one woman was from a lower income area, and she was saying, yes, I know that organic foods are better for me, but realistically, I have kids to feed, for on $40 a week, I can't afford the organic food, and I think if this is going to be something, if green power is going to be something that's really far-reaching, that many Americans are taking part in, it has, it does realistically have to be competitive with the present power, or subsidized or something, so that not only, not only people who can afford the extra 15 dollars a month can contribute, can be a part of it,...

W7-I think too, that if you're going to charge more you also have to educate people and let them know the benefits of switching to this, like, you know, if they're going to, whether or not it's the same cost or not, and if it's equal cost, well, then why would they switch, you know, they need to know the benefits of switching, and I think if they had to pay maybe just an extra 5 dollars a month, but they knew all of the benefits, maybe more people would be willing to switch…

V-Did you have a comment?

W3-This is silly, it's probably a stupid question, but what makes it cost more? Is there a way to…

M2-well, why should it have to be…

M1-I think it costs more still because it hasn't gotten to large quantities…

W1-it's so little…

M1-and it's like if you built one automobile it'd cost an awful lot, but if you build a 100 thousand of automobiles, the price goes down…

M2- and the way to build and sell a 100 thousand automobiles, is what Henry Ford did, was find a way to do it, he invented the assembly line, and made it (for him)..
M1-well, I think there are people working on that, but I think that they're going to have to spend more money before they get there, they're getting there slowly…

M2- every company has to do research and development, to be able to do that, that's part of the cost of doing business…

M1-and you have to find somebody who's willing to give you the money to do it…

W4- and in today's climate, that doesn't, renewable energy is not necessarily what people that own oil companies want to contribute to…

W1-no, they want to go to the Arctic National Wildlife Refuge and get more oil…

W2- my comment for the rest of that issue, and of course, this would be a regulatory boondoggle, but the best way to drum up the money is to tax the non-renewable sources more, it gets back to – was it Clinton's BTU tax or I forget exactly who proposed that, the best idea that's ever come down the pike…

M-How would you usually…

M2-the prices are too cheap right now…

W2-absolutely, we don't pay the whole cost of what it takes to extract that fuel, to pollute the environment, to use it…

M-what if some of the costs actually were the administrative costs of someone who was promoting the renewable power, that was just they're covering the costs so they could do the billing or some of the administrative functions that they have, rather than actually an extra kilowatt hour...

W2- so what you're saying is that the cost for renewables for administrative would be more than it is currently for fossil fuels?

M-well, if they have to work with the general supplier now, there may be some administrative costs that they would have to work with the billing to cover those costs to people in their mailings and things like that...

M1- I think the problem with renewables right now is still the capital, the capital expenditure to get the, to make the equipment..., you know, if you have a solar panel, once it's there, it's not costing you much to run it, but it costs a lot of money in capital, initial capital expenditure to put it up there, and you haven't amortized that over the life of the solar panel, hopefully the cost of those things will come down, but it's happening very slowly...

M2-if they had made them competitive, and then had enough sold, so that they would have that money offered in the beginning, they cost so much people stopped buying them, because it just got out of hand, so it killed a great technology, by making it too expensive for people to buy...

V-I have a question, I know you said, some of you didn't really comment one way or the other on willingness to pay, I'm curious whether you might be willing to pay somewhat extra for green power, if over a short period of time, if you chose a supplier in the understanding that you were paying a premium now, but they were developing increased demand, and after a set amount of time your costs would go down, would that increase your willingness to pay, make no difference, would you need more information?

W5- there's no way they can guarantee that it would go down...

W7- no, they can't say you'll pay a lot now, but we promise you it's going to be cheaper in the future, that's kinda empty promises...

M2- you get a corporation to commit to X amount of time they will promise to have the technology that they're gonna use this extra money to research for, and that at that point their technology development money would be cut off, that they would lower their price..., I don't think you'd get any corporation to do that...

M1-you'd have to find a corporation who'll do what some people call (egressing) forward pricing, where they say ok, we're going to sell it for less than it costs us right now, because if we build up to this amount, then we're going to be making money, and it's hard to find a corporation that'll do that...

W3-it's like buying stock, you know the stock is worth something, but there is that....information (???)

M2-that's a whole other question altogether then, which is then ask us the question would we be willing to invest in those kinds of things, and I think the answer then would be yes...

C-did you have another comment?
W2- This gets back to another one of those great mysteries of my electrical bill, and that is when deregulation theoretically came about, I was told that I was going to be put on the, they called it the standard/default rate, for a few years until I had a choice, and the standard/default rate for a few years was going to be 10% less than it had been or something like that and it would automatically go back to where it was when I had a choice...now I have no idea what happened to that, you know, whether the rate just crept right back up where it was, or whether I'm still paying a lesser rate, but yeah, it gets back to the issue of, you can't ever guarantee a price in the future...

C-go ahead...

W5- the company, granted they couldn't guarantee, but some people might buy into that, and then if the price doesn't go down, then that consumer has the option of switching to something else at that point

M1-but what happens, they set the standard/default rate so low that nobody was willing to come in and compete with the....that's precisely what happened...

V-I was just going to say that the difference between default service on this bill and default service and standard offer is that standard offer means you were with them when restructuring came in and default means that you have moved into the area since then...

W2-because the standards are (?)

V-but the standard offers did get that lower price, which will be phased out over time, I'm not sure at what point you will lose that 10%, but you get..., and then there is a different rate for newer customers, is my understanding of the...(?) but I'm not 100%...

C- along the same lines of what would affect your support for green power, your willingness to pay for green power, even if you were to switch to a green supplier, say you had the choice and you chose to do it, the kilowatt hours, the number of kilowatt hours used by your home would be reflected in the green power that was brought to your local electric grid, but there's no way to guarantee that the actual green power/renewable energy has made its way through the grid to your home..., now, would knowing that affect your decisions...

M2-(???)
(laughter)

C-right, your lights would come up green

M-you two understand it..., for instance you may not understand that same aspect of electricity, I don't how that would affect how you feel about it...

W1-well, it's like bottled water, we're pouring it into a vat of tap water, and you drank it, thinking you were drinking the bottled water, but it's all then been mixed together...

M-would you have the same opinion?

W2-that would not influence my decision because I would hope that education, assuming the economics of it were balanced out, would convince more people to switch, and the more bottled water you pour in the tap water, the ratio, the better the ration gets all the time...

M-so you'd like to see it..., do you think people share the same misconception then, if they had more education about how they would...that pool aspect, you think more people would be willing to switch once they understood that?

W2-I mean, there's so many other factors at play...

M-I mean just, that one....

W2-if that were the only factor?

M-no, one of many, but if that should be included in the education or not...

W2-yes, yes, because I think the whole point here is to create informed customers...

C-and again, along those same lines, does knowing the source of your renewable energy matter, for example, solar and wind are pretty widely known, or most commonly known when you think of renewable energy, for Mass, actually, one of the largest sources would probably be landfill gas..., would knowing that your renewable energy was landfill gas not solar or wind make a difference in your support of green power or...

M2-it's not a good source...

C-ok, can you expand on that...

M2- we just closed a landfill in Scituate, and the amount of methane that is generated by our collection system, we have a brand new, very sophisticated collection system in place, is enough to light a torch that you can see for a good distance, (laughter), but not enough to power anything that would..., again for the town to invest in, that would be able to produce any kind of electricity, in other words to make an investment, and actually, after a while, in order to keep, after a few years, in order to keep that torch burning and burning off those gases, you actually have to add gas to it, so it becomes a losing proposition..., very expensive to take that kind of energy..., I really looked into

that, when we first closed our landfill and put that system in, because everybody, we were, a whole bunch of us, looking for ways to save money for the town, and hoping that we could generate some kind of power, even some kind of gas lighting for the adjoining golf course, and it just did not produce enough...

W4- I think, and this is just completely probably ignorant, just because I don't know anything about it, but if I had just heard that the electricity was coming from a landfill, my first concern and I just attended a thing on landfills earlier, what are the toxic fumes that are coming from it, or what other thing might be in the gas that granted it's not necessarily going to electricity, but how would that impact (???) air quality or that sort of thing...I think a lot of education would have to go along with that...

W1- I think she raised a very important point, I mean I had been thinking about landfills, and whether would it be a capped landfill, and I guess it would have to be capped, in order for you to be..., but we know that there's mercury and lead and all kinds of other toxins in these landfills, and how you could be sure that the methane that came out wasn't carrying any of these other toxins, I don't think you can really do that, unless there's some way to scrub methane...

M2- I would be very surprised if you ever get it to that, if a gas company, a natural gas company (????) they wouldn't I don't think, take the responsibility...I was thinking when you mentioned that, of a little mini-generating plant, at the site, which would generate electricity, and put electricity out over the grid, but I was assured by several engineers, that it just wouldn't generate enough...

W6-if it did, though, in our little ideal society, if I knew that there weren't toxic chemicals being released, and if it was possible to generate that electricity, yes, I would agree to have it, I would want my power to come from that...

M-from landfills, we're just talking about...

W6-yeah, yeah

V- if a green power supplier was being marketed, would you actively search out what percentage was coming from what source, or would you be happy, assuming the price was within...or not more, and so on, or is it not something...

M2- I think I would, in fact I think I would take it the next step and find out and I would assume this would be the case, that it wouldn't be a specific source, the same source all the time, I would assume the company would buy from whatever source was available, so that I think you would have to keep checking on it on a continual basis to see where they were buying it from, what renewable source they were using at a given time...

W5-honestly, I would like to check out to see what renewable source they have, but I don't have the time, ...I would kind of just trust that green power would be better than burning fossil fuels...

M-how many people actually feel that same way....would not eagerly search it out...ok...

C-as long as you saw that it was green power/renewable energy...

W2-I would assume that it's a little bit better than fossil fuels, yup...

V-ok, we're wondering what other obstacles might there be for you to switch...we've talked about price, it seems that source is maybe not as big of an obstacle, what are some other things you think about, which might keep you from switching, or maybe if you know people, you know, general attitudes you perceive...

W3-could you trust that this energy source would be there consistently or would there be fear that it might go down or reduce...and can you guarantee that that source would be there at all times? (????)

C-are you talking about brownouts or blackouts, or you'll have this source for 2 years, and then in two years you'll have to....

W3-for instance, if it's 15% of the energy you're getting, will you have to worry that it'll reduce to 8%, can you trust it'll be there for (????)

W1-well, if it's not part of the grid it doesn't matter...

M1-well, you'll still get power, it's just that you can't necessarily trust that the same percentage of that power will be coming from a green source...

W1-but your lights won't go off

M1-your lights won't go off, because that big pot, that big reservoir is still full, but in our municipal light plant, we are searching for green power sources, and it's not easy to find...

M2- and I would assume not consistent...

M1-well, we haven't found anybody yet who's willing to sign a contract that says we will supply you with green power..., except there's one, we get about 10% of our power from Niagara Falls right now, and I would argue that's as green as you can get...

W1-unless it's Hydro Quebec

M1-well, Hydro Quebec is less green because they built a dam and damaged the environment, but Niagara Falls is there, it's always been there, you haven't changed it, so you're generating power without it affecting the environment, but we can only get, the New York public power authority limits how much power they are willing to sell to Mass, they put a limit on it, only so many megawatts, and so it's hard to find still....

W5- I looked at renewable energy a little bit, I did a project, and I think some of the thing, like looking into say tidal power, if you look at the Bay of Fundy has 25 foot tides, and that seems like an incredible resource to take advantage of, but I also, am a whale head on a whale watch boat, and so one of my concerns, too, would be what is it doing to all the organisms in the say, it's the harbor that they're using, what impact is that tidal power plant going to have on organisms that are in the water, what effects could that have down the line, or, one of the things that I had looked into with, I tried to kind of look at both sides, of all these different renewable energy sources, and one of the things with wind power that struck me is the amount of predatory birds, like hawks and vultures, that sort of thing, that get killed because of this, because the wind power fields tend to provide a haven for mice, and then all these huge birds are getting killed by the things, so I mean that, you know, I'm not sure that I wouldn't do renewable energy because of that, but those are things that I would consider a little bit before making my decision…

C-anyone else, other obstacles that you can think of?

M2-solar panels, that just kind of sit there…

M1-supposedly they don't have any environmental problems like that…

M2-well, unless there's something in the manufacturing of them that…

M1-but that's the question we don't know yet

W1-and there are fuel cells which are about ready for more common use and they were used on the flight, the space flights, and the astronauts actually drank the water that was the by-product of the fuel cells, and then there's small scale hydo-electric, one of my friends' sons, started looking at dams on small water, I don't whether they're streams or rivers in Connecticut, and he's actually started some hydro-electric plants, small scale, and he's doing that in New Hampshire now, and we were just talking about you know, in Concord, we still have one dam that we know of, and whether that could become a source of some electricity for the town…

M2- there's a whole other world of people out there who say we can't dam up those streams…

W1-this is already dammed, these are already dammed,

M1-the dam is already there…

M2-they're already there?

W1-these are existing dams

M2-in Mass there are programs to get rid of those dams, and let the rivers flow free…there's one that we know of that … is it lead or PCBs, something that is involved with the generating plant that was within the dam, and they're having terrible, all kinds of

asbestos, so taking them down is almost as big an environmental hazard as leaving them there...

C-we're basically wrapping up....

V-has your opinion changed at all, since, through the discussion, coming in and having talked about this?

C-or having done the survey?

V-in terms of we asked earlier, sort of what value you ascribe to green power, does having this kind of discussion change your opinion, I know it's a short discussion...

M2-we were kind of hoping it's changed yours...

(laughter)

V-we're neutral

C-we don't have any opinions

W1-they are neutral parties

W4-I don't think it's changed the value that I would put on it, but I certainly have things that I'll look into now, like looking at my electric bill, to see what's on it, you know, that sort of thing

APPENDIX F: EDUCATIONAL HANDOUT AT FOCUS GROUP

What is electricity restructuring?

Electricity restructuring allows consumers the freedom to choose a power supplier. Traditionally, your electric company operated all aspects of your electric service: generation, transmission and distribution. Restructuring allows consumers to select a power supplier based on characteristics such as price or environmental attributes while distribution and transmission services continue to be handled by "distribution" companies such as NSTAR or National Grid.

Since 1998, Massachusetts electricity restructuring has allowed consumers to choose their supplier. Your distribution company will automatically function as your supplier unless you choose an alternative company. It is your distribution company that is responsible for maintaining local power lines and restoring your power during outages.

How are you billed for electricity?

Your electric bill is broken down into the following individual costs

- Generation or "supply" - the power that is generated to meet your electric needs. Power can be generated from resources such as oil, coal, gas, solar, wind, biomass etc. (The supply portion accounts for about 40% of the average household's total electric bill.)
- Transmission - the transport of electricity across high voltage transmission lines;
- Distribution - the transport of electricity across local lines and into your home;
- Customer charge - the fee you pay to receive service from your distribution company;
- Renewable energy and energy efficiency charges - fees that pay for programs to help you lower your electric bills and reduce the environmental impact of your energy use. (These charges amount to about fifty cents per month for the average household.)

What is meant by green power?

"Green power" is a synonym for renewable energy. It refers to electricity generated from renewable sources, that is sources that are available without limitation. Green power gets its name because of the small amount of environmental impact related to its generation. Renewable resources include energy generated from sources such as wind, solar energy, small hydroelectric projects, geothermal energy, and biomass. Examples you may be most familiar with include solar power cells and wind turbines.