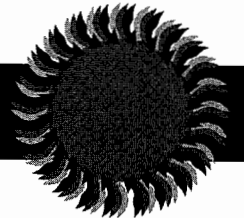


## TOPICAL ISSUES BRIEF



# Green Marketing in the Massachusetts Electric Company Retail Competition Pilot Program

Steven M. Rothstein, Environmental Futures, Inc.  
Jeffrey M. Fang, National Renewable Energy Laboratory



National Renewable Energy Laboratory  
A national laboratory of the  
U.S. Department of Energy

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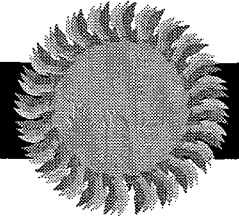
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Prepared for:

Office of Utility Technologies  
Energy Efficiency and Renewable Energy  
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# Contents

Abstract .....	v
Acknowledgments .....	vii
I. Introduction .....	1
II. Green Options .....	1
Development of Green Options .....	2
Evaluation of Green Option Proposals .....	2
Prices of Green Options .....	4
Green Verification Process .....	4
III. Green Marketing .....	5
Working Assets Green Power, Inc. ....	5
AllEnergy .....	6
Enova Energy .....	6
Northfield Mountain Energy .....	7
IV. Assessment .....	7
Generation Resource Mix .....	7
Other Components of the Green Option .....	8
Market Shares .....	8
Green Standards .....	8
Need for Consumer Education .....	9
Disclosure and Verification .....	9
Small-Business Customers .....	10
V. Conclusions and Observations .....	10
VI. Notes .....	12

## Tables

Table 1 - Green Options Menu in the MECo Pilot .....	3
Table 2 - Market Shares of Supplier Options .....	9



## Abstract

With electric industry restructuring initiatives being introduced on the state and federal levels, retail access pilot programs serve an important function for examining competitive market issues, as well as marketing strategies and customer reactions to different power supply options. The experience gained through these pilots provides important insights into future power market operations, including the market for green power.

The Massachusetts Electric Company's (MECo's) *Choice: New England* pilot for residential and small-business customers was a voluntary program developed primarily to test the billing and metering logistics that distribution companies will need in the competitive market. The pilot also offered a preview of program implementation and marketing under customer choice. It was the first retail competition pilot to explicitly include green power options in program design.

The MECo pilot's energy suppliers were selected through the issuance of a request for proposals (RFP). Respondents were asked to submit bids in one or more of three energy supply categories—*price*, *green*, and *other options*. These options were developed by the pilot administrator through internal meetings, discussions with state officials and other stakeholders, and a review of information from other similar pilots. For the green option, the pilot administrator did not establish a green standard. Instead, suppliers were allowed to submit offers that promoted environmental stewardship.

Eligible customers were drawn from four pilot cities: Lawrence, Lynn, Northampton, and Worcester. MECo and the pilot program administrator conducted outreach to customers in all four cities through a broad range of marketing and

consumer education strategies. In addition, suppliers conducted their own marketing efforts, including telemarketing, literature distribution, and issuance of enrollment ballots to customers. They differentiated themselves by offering varying energy prices, financial incentives, and assorted services. For example, most of the selected green options offered customers a degree of savings but were diverse in their generation profiles and other environmentally friendly actions. These included a portfolio of renewable sources, primarily conventional hydro; donations to Massachusetts environmental groups; rooftop photovoltaic system installation; retirement of air emissions credits; energy efficiency information, products, and services; and a raffle for an electric vehicle.

Customer response to the different green options varied depending on consumer values, environmental benefits offered by suppliers, and supplier marketing strategies. Only 3% of participating small-business customers selected a green option, whereas 31% of residential participants selected a green option. Small-business customers seemed to rank cost savings as the most compelling reason to participate in the pilot, whereas residential customers were more willing to pursue options that conformed to their beliefs or preferences. Residential customers selected a high percentage of power supply portfolios with more renewable source content, including at least 20% renewables and no nuclear. Though it represents only a fraction of the total retail-customer base, the pilot clearly demonstrates that, in a competitive situation, there is interest in a variety of energy supply options, including green options. The pilot results also suggest that supplier marketing, pricing, customer education, and appropriate disclosure guidelines will be instrumental in determining the future standing of green power offerings.



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# Green Marketing in the Massachusetts Electric Company Retail Competition Pilot Program

## I. Introduction

The Massachusetts Electric Company's (MECo's) ongoing pilot program, *Choice: New England*, had two components, one for large high-technology companies, the other for residential and small-business customers. The program had several objectives: (1) to allow the utility to test logistical and administrative details of retail choice, including metering and billing protocols for transitioning smoothly to competition on a statewide level; (2) to offer cost savings to customers; and (3) to allow suppliers to test aggregation, the capability to deliver power to end-use customers from various suppliers, and the New England Power Pool (NEPOOL) settlement process. In other words, the pilot served as a learning experience for MECo, its customers, and other players in the competitive marketplace, and created a means for customers to have a voice in the restructuring process.

The residential and small-business part of the MECo pilot was the only one of the first six retail competition pilot programs that explicitly included green options in its program design. It allowed customer choice for up to 10,000 residential and small-business customers, or up to 100 million kilowatt-hours (kWh) a year, split equally between residential customers and small-business customers. Customers in four cities were eligible to participate in the pilot program: Lawrence, Lynn, Northampton, and Worcester. The program period was from January through December 1997.

Energy suppliers for the program were selected by an independent administrator, Environmental Futures, Inc. (contracted by MECo), which issued a request for proposals (RFP). Six suppliers were selected to participate in the pilot. They were AllEnergy, Enova Energy, Northeast Utilities Wholesale (NUW), Northfield Mountain

Energy (NME), Wheeling Electric Power Company/Cinergy (WEPCo/Cinergy), and Working Assets Green Power, Inc. Of the six, AllEnergy, Enova, NME, and Working Assets offered green options.

This issues brief covers only the residential and small-business component of the pilot and focuses on green marketing.<sup>1</sup> It describes the design and marketing of green options and addresses several aspects in the process such as generation resource mix, other components of green options, market shares, green standards, need for consumer education, need for information disclosure and verification, and targeting commercial and industrial customers. It also presents conclusions and observations.

## II. Green Options

To offer consumers the broadest possible range of price and service choices, suppliers were requested to submit proposals that might include three service options for both residential and small-business customers: price, green, and other. The *price option* offered customers the lowest energy price. Suppliers were required to offer a base price and to indicate any additional charges or incentives affecting the price. The *green option* provided customers with environmentally beneficial energy choices. The *other option* offered value-added services, such as energy conservation services and donations to charitable organizations. The primary intent of the *other option* was to encourage innovation and broaden the spectrum of choices available to the customer. Variable-pricing proposals were included under this category. The following describes the development of the green options, evaluation of green option proposals, energy prices associated with green options, and verification of green option claims.

## Development of Green Options

Attempts to define “green” energy raise a host of questions, including consideration of a green hierarchy, i.e., ranking of various energy sources and services from the most to the least “green.”

Although renewable energy sources are clearly regarded as preferable to nonrenewables, many questions about the relative environmental benefits and market feasibility of different energy sources remain. For example, small- and large-scale hydro projects and pumped hydro facilities are generally not considered equal in terms of environmental impact. However, no uniform ranking system has been developed to characterize the greenness of different types of hydro power. The green energy concept is evolving rapidly as customers refine their opinions about green energy sources and suppliers position themselves to compete in a deregulated and environmentally aware market.

In the absence of a standard national green energy definition, the pilot administrator chose not to define green energy for the purpose of the pilot. For the green option, suppliers were invited to offer renewable energy sources, energy efficiency and demand-side management (DSM) programs, emission reduction guarantees, and donations to environmental/community groups, or other services geared toward protection of the environment. This approach recognized the limited time frame of the pilot and encouraged the broadest possible range of environmentally sensitive proposals, which would be evaluated in terms of the merits of the generation profiles and services offered and analyses of the validity of environmental claims. This approach also provided pilot participants with the opportunity to evaluate the relative benefits of the profiles and services offered by selected green suppliers. Rather than creating a green standard, the pilot allowed suppliers, through their proposals, and consumers, through their choices, to help refine the evolving definition of green options.

Suppliers proposing green options were required to indicate the generation profile, i.e., the percentage breakdown of fuel sources (coal, nuclear, hydro, and renewables) and the means for verifying these sources. The RFP also directed suppliers to describe how fuel portfolios might change under

various scenarios (e.g., peak demand periods or when regular sources were undergoing maintenance) and what fuel sources would be used for backup power supply. Except for contractual information, all generation portfolio material and additional benefits information were to be made available to customers.

## Evaluation of Green Option Proposals

Consistent with the conceptual descriptions of “green” presented in the RFP, criteria for evaluating proposals for the green options category included compliance with RFP requirements, validity of supplier information, environmental benefits, and prices. In evaluating the “greenness” of competing proposals, a two-tiered hierarchy was used. The generation portfolio was the first tier. Other environmentally friendly actions, including DSM, donations, and emission reductions were the second tier. Given the short time frame between issuance of the RFP and the beginning of the pilot (July 1996–January 1997), suppliers were unable to bring new renewable sources on line for the pilot. Suppliers were thus limited to offering access to existing renewable sources, either via direct, dedicated supply or through power purchase contracts. Proposals from power generators offering direct access to renewable sources were evaluated more favorably than proposals promising renewable power supply through contractual means. Power marketers' claims regarding renewable power supply were verified by examining the contractual terms.

Many green option proposals included one or more of the following: energy efficiency and DSM initiatives, donations to environmental groups, and emission reduction programs. Three of the seven chosen green options included minimal renewable source content, but were selected on the strength of their other environmental services and benefits.

There were eight proposals in the residential green category and four were selected. Similarly, there were eight proposals in the small-business green category and three were selected. Information on winning green suppliers is presented in Table 1.

**Table 1. Green Options Menu in the MECo Pilot**

Company	Base Price/kWh	Comparative Price/kWh	Generation Source	Generation Profile	Additional Benefits
<b>RESIDENTIAL GREEN OPTIONS</b>					
AllEnergy	Price Level: A. \$0.0301 B. \$0.0321 C. \$0.0341	Price Level: A. \$0.0301 B. \$0.0321 C. \$0.0341	New England Power Co.	Coal 38%, Gas 22%, Nuclear 14%, Oil 10%, Hydro 10%, Renewables 6%	Price level Tons of sulfur dioxide emissions eliminated per year per customer: No. of customers resulting in a PV panel system installed in pilot cities:
					A    B    C 1/5   1/3   1/2 230   145   100
Enova Energy	\$0.0250	\$0.0221	New England Supply	Nuclear 57.26%, Coal 20.85%, Oil 13.85%, Hydro 5.67%, Renewables 2.29%, Gas 0.07%	<ul style="list-style-type: none"> <li>· Energy/environmental survey &amp; "Earth Saver" kit</li> <li>· Quarterly usage reports and rewards</li> <li>· Matched donations to environmental projects</li> <li>· Raffle for electric vehicle</li> </ul>
Northfield Mountain Energy	\$0.0260	\$0.0200	Northeast Utilities System Hydroelectric Plants (backup supply may including all sources on Northeast Utilities System)	Hydro	<ul style="list-style-type: none"> <li>· \$30 free energy conservation products</li> <li>· Mail-in home energy survey</li> <li>· Donation to local community green projects</li> <li>· Donation to American Lung Association</li> </ul>
Working Assets Green Power, Inc	\$0.0335	\$0.0298	No coal, nuclear, or hydro-Quebec; purchased from New England Power Co. (backup supply may including all sources)	35%-50% Natural Gas, 30%-45% Hydro, 3%-10% Other Renewables (non-hydro and landfill gas), 0%-5% Oil	<ul style="list-style-type: none"> <li>· 1% of revenues donated to Massachusetts environmental groups</li> <li>· \$25 gift certificate for energy efficiency products after 6 months</li> </ul>
Average Price	\$0.0301	\$0.0280			
<b>SMALL BUSINESS GREEN OPTIONS</b>					
AllEnergy	Price Level: A. \$0.0301 B. \$0.0321 C. \$0.0341	Price Level: A. \$0.0301 B. \$0.0321 C. \$0.0341	New England Power Co.	Coal 38%, Gas 22%, Nuclear 14%, Oil 10%, Hydro 10%, Renewables 6%	Price Level Tons of sulfur dioxide emissions eliminated per year per customer: No. of customers resulting in a PV panel system installed in pilot cities:
					A    B    C 1/3   1/2   1 66   55   30
Enova Energy	\$0.0310	\$0.0230	New England Supply	Nuclear 57.26%, Coal 20.85%, Oil 13.85%, Hydro 5.67%, Renewables 2.29%, Gas 0.07%	<ul style="list-style-type: none"> <li>· Energy/environmental survey &amp; energy kit</li> <li>· Quarterly usage reports and rewards</li> <li>· Raffle for electric vehicle</li> <li>· Free business promotional services</li> </ul>
Northfield Mountain Energy	G1: \$0.0275 G2: \$0.0255	G1: \$0.0235 G2: \$0.0272	Northeast Utilities System Hydroelectric Plants (backup supply may including all sources on Northeast Utilities System)	Hydro	<ul style="list-style-type: none"> <li>· Advertising and plaque</li> <li>· Donation to local community green projects</li> <li>· Donation to American Lung Association</li> <li>· Cash rebate (\$0.0025/kWh) for energy efficiency</li> </ul>
Average Price	\$0.0301	\$0.0283			

Factors that distinguished the winning green proposals included competitive pricing; well-defined, comprehensive services; and valid generation profiles containing sufficiently high renewable-source content. Several proposals for the green option included a combination of these benefits, so the scope of services offered and substantiation of environmental benefits became particularly important evaluation criteria.

The primary reasons for rejecting green option proposals were high energy prices, operational limitations, and questionable nature of environmental claims. Because of the relatively short span between RFP issuance and the beginning of the pilot, two bidders offering new sources of renewable power were unable to guarantee that power could be brought reliably on line to the NEPOOL system in time for the January start date. These proposals were rejected.

### Prices of Green Options

Not all proposed green options included prices that would allow customers to save money through participation in the pilot. Because creating customer cost savings was one of MECo's fundamental goals in this pilot, and because the bids submitted in other options are quite price-competitive, green proposals that did not provide the potential for cost savings in terms of their base-price offering were rejected.<sup>2</sup> All of the selected options (price, green, and other) offered cost savings for the average customer when compared to existing MECo rates.

Base prices for the generation portion of the bill offered by the selected suppliers in the residential-green and small-business-green categories ranged from \$0.0250/kWh to \$0.0341/kWh, or \$0.0200/kWh to \$0.0341/kWh on an all-costs comparative basis (see Table 1). On average, base prices of green options presented to customers in the pilot program were \$0.0301/kWh, as compared to \$0.0280/kWh for other options and \$0.0256/kWh for price options.

Although green option prices generally promised less savings than bids for the price and other options, two winning suppliers offered prices

under the green option that would have been competitive in the price option category, on either the base-price or the comparative-price basis. Based on the limited scope of the pilot and its underlying goals, suppliers clearly recognized that price was an important component in designing a successful proposal and in attracting pilot participants. For this and other reasons (e.g., lack of supplier financial information), it is unclear whether supplier costs for the two low-priced green options were comparable to the costs of price and other options, or if artificially low prices were offered for the purpose of this pilot. However, it is worth noting that NME relies exclusively (100%) on existing hydro resources, the cost of which is generally lower than other generation sources.

### Green Verification Process

In developing a green verification process, the pilot program administrator was primarily interested in maintaining the integrity of the proposals submitted. Because of the use of an independent pilot administrator and an RFP screening process, the structure of the MECo pilot was better suited to holding marketers accountable for their green claims.

Suppliers offering benefits and services under green options were required to confirm the status of their programs in writing on a quarterly basis to verify that all of the benefits/donations occurred as promised. As mentioned above, these benefits ranged from donations to environmental groups to DSM efforts, including a raffle for an electric vehicle and the installation of photovoltaic (PV) panels in pilot cities. In the absence of a national standard for green power, verification of renewable source content was to be provided with a written statement of dedicated capacity and backup capacity, including reference to unit entitlements and/or power purchase contract terms and conditions.

The inclusion of hydro power as a renewable power source prompted investigation of specific information regarding the type of dedicated hydro sources, e.g., small-scale hydro, large hydro facilities, and pumped-storage hydro. NME claimed 100% hydro as the generation profile for their

residential and small-business green options, using various hydroelectric plants within the Northeast Utilities System. A condition for accepting these green options into the pilot was NME's verification specifying that no pumped-storage hydro plants would be dedicated to NME customers in this pilot program. Through conversations with NME officials and through the verification updates, the pilot administrator was able to confirm that the hydro facilities used were not pumped-storage hydro facilities.

Consistent with the pilot's intent to ensure that all green claims for the pilot were reviewed and verified, the pilot administrator reviewed contract language to verify the claim that "no coal, nuclear, nor Hydro-Quebec" generation would be used in providing power to pilot customers before accepting Working Assets' green power into the pilot as a green option.

### III. Green Marketing

The MECo pilot featured two distinct components in its marketing/outreach campaign. The first was a general promotional effort implemented by MECo and the pilot administrator. The second was the focused enrollment effort by the utility, the administrator, and the six participating power suppliers. The following discussion highlights the marketing of green options in the supplier marketing stage.<sup>3</sup>

The broad outline of "green" provided in the RFP resulted in a wide range of service offerings and marketing efforts by the four selected green option suppliers (see Table 1). The selected green options were distinguished from the other options by their valid, environmentally sensitive generation profiles or distinctive services, including energy efficiency programs, retirement of emission credits, and donations to environmental groups and projects. The "green" price range, generation profiles, and services varied considerably among suppliers. Comparative residential and small-business prices offered by Enova Energy and NME were among the most competitive in the pilot. NUW and Working Assets highlighted their generation profiles. In contrast, Enova and AllEnergy stressed the

environmental services of their offers such as retirement of emission credits, installation of PV panels in community buildings, and donations to environmental projects.

#### **Working Assets Green Power, Inc.**

With 33%–55% of the power in its generation profile from renewables (35%–50% natural gas, 0%–5% oil) and a commitment to donating 1% of its revenues from the pilot to Massachusetts environmental groups, Working Assets offered a unique definition of green. Its base price and comparative prices of \$0.0335 and \$0.0298 were higher than most of the other competitive green option prices (see Table 1), which created a need for aggressive marketing efforts. The lower comparative price was due to the inclusion of the \$25 bonus gift certificate for energy efficiency products after six months. Working Assets offered only a residential green option, whereas other green option suppliers offered both residential and small-business green options.

Through the MECo ballot, telemarketing, and direct-mail pieces, Working Assets marketed itself as a "nuclear-free, coal-free, and Hydro-Quebec-free" power source. This marketing theme aimed to capitalize on the public's concern regarding the potential environmental impacts of nuclear power and coal-fired generation, as well as the controversy surrounding the impacts of large-scale hydro development by Hydro-Quebec. It was also not inconsistent with the criteria adopted for this pilot. However, because no new renewable generation was involved and no net improvement to the environment in the short run was claimed, some had criticized Working Assets as marketing social responsibility without substance.<sup>4</sup>

Working Assets was the only pilot program supplier with an existing, albeit small, customer base, gained through its services as a long-distance phone service provider. Working Assets targeted its existing long-distance customers in marketing its green option and gave enrolled customers free ice cream or long-distance services. (Non-Working Assets long-distance customers were encouraged to sign up for this service as well.)<sup>5</sup>

Working Assets found success by concentrating telemarketing, direct mail, and other marketing efforts in the city of Northampton. This community is the most rural of the four pilot cities with a density of 850 people per square mile. It also has the largest percentage of registered voters (51%), the largest percentage of residents having a bachelor's degree or higher (28.8%), and the highest median annual household income, at \$31,097. While the other pilot cities have developed primarily from urban manufacturing and commercial centers, the city of Northampton is known for its surrounding natural and educational resources, institutional base (three hospitals and Smith College), and local commercial sector. The city is also known for its strong municipal programs in education, public safety, recreation, and energy conservation.<sup>6</sup>

### **AllEnergy**

AllEnergy's green option used a three-tiered pricing approach, allowing residential and small-business customers to support different levels of environmental services according to the energy price paid. For a price premium of either \$0.002 or \$0.004 per kWh, AllEnergy offered a greater per-customer commitment to retiring sulfur dioxide emissions credits and installing PV panels in pilot cities. The incremental environmental benefits were larger for small-business customers because of the higher per-customer average energy usage. Relative to NME and Working Assets, which offered portfolios with substantial renewables content, AllEnergy's generation profile contained only 6% renewable sources. AllEnergy's lowest price also exceeded the most competitive residential green offer (NME's \$0.0200 comparative price) by more than \$0.010 per kWh, or about 50%, and exceeded the most competitive small-business green prices by approximately 40%. In addition, although it appears that AllEnergy based its green option design on the recent trend in utility green pricing programs that allow various options to suit customers' preferences and ability to pay for different levels of green or renewable energy content, it is a relatively complex design compared with other green or price options.

Based in Waltham, Massachusetts, AllEnergy emphasized its local roots and commitment to the local environment in promoting its green and other options. A detailed brochure mailed selectively to potential pilot participants described a "Locally Committed ... Nationally Recognized ... Environmentally Responsible" company. Like Working Assets, AllEnergy focused its green marketing efforts in Northampton. AllEnergy also marketed at mini-expos during the enrollment period.

### **Enova Energy**

Like AllEnergy, Enova's generation profile for its green option included a low level of renewable-source content (approximately 8%). However, Enova's residential and small-business green prices were very competitive—at a comparative level of \$0.0221 and \$0.0230 per kWh, they were marginally higher than NME's comparative green prices, and among the most competitive prices in the pilot.

Enova distinguished itself by providing additional services. It provided customers with an array of environmental literature, such as conservation tips, a home environmental survey, a "Conserving Our World" calendar; an "Earth Saver" kit containing a reusable grocery bag, light switch decals, a refrigerator thermometer, and other items; and a camera allowing customers to document their environmental initiatives and qualify for additional rewards and services. Small-business customers were offered promotional services, and received a "A Clean Environment is My Business" decal. Enova also offered to match donations to local environmental projects, as much as \$12 per customer for the duration of the pilot with a maximum of \$20,000. Finally, Enova enticed residential and small-business green option customers with a raffle for an electric vehicle.

Enova used newspaper ads and direct mail to promote its green option. An ad displaying a smiling planet Earth and exhorting customers to "Choose Green" appeared in local papers. Based on authorized mailing information provided by MECo,

Enova distributed an “Energy Matters” brochure to a limited group of potential customers. In addition to information about the MECo pilot, the brochure featured an announcement about Enova’s recently opened local office and a directory of environmental information sources. Enova also mailed price/green options ballots, a brief question-and-answer document, and form letters to targeted potential residential and small-business customers.

### **Northfield Mountain Energy**

NME provided consumers with “3 great reasons to choose” their option: (1) Save Money, (2) Conserve Energy, and (3) Protect Your Environment. Because of its locally recognized brand name, NME’s marketing approach stressed its local roots and offered a diversity of benefits with the option. The base price offered to residential customers was a competitive \$0.0260/kWh, and its generation portfolio was 100% hydro power. NME’s option included additional environmentally oriented benefits to residential customers such as a free home energy survey to help identify conservation measures; an energy efficiency home products catalog; and free energy-saving products, including a showerhead, faucet flip aerator, and a refrigerator vacuum brush. Including the value of the additional services provided, the comparative price for the average NME residential customer was \$0.0200 per kWh, making it the lowest comparative price green option and second lowest comparative price offered to residential customers in the entire pilot.

In addition to the lowest green option base prices offered to small-business customers with G1 and G2 rate schedules,<sup>7</sup> \$0.0275 and \$0.0255 per kWh, respectively, the NME small-business green option offered possible additional savings of \$0.0025 per kWh. The option included a free lighting audit and energy-saving guidebook, complemented by a lighting retrofit kit offering energy efficiency lighting at competitive prices. The small businesses were also offered community recognition in the form of free advertising and a plaque publicizing their environmentally conscious electricity selection.

Rounding out the benefits offered under its green options, NME committed to donating a portion of its revenue to local environmental projects and to retiring sulfur dioxide (SO<sub>2</sub>) allowances on behalf of the American Lung Association for both residential and small-business customers.

NME sent its marketing brochure to interested pilot customers, placed print advertisements in local newspapers presenting the three great reasons to choose NME, and marketed its green options at area trade shows.

## **IV. Assessment**

Given the above descriptions, several aspects of green options and green marketing deserve further discussion. They involve generation resource mix, other components of green options, market shares, green standards, the need for consumer education and information disclosure and verification, and commercial and industrial customers.

### **Generation Resource Mix**

Because of the design of the pilot program, the generation resource mixes of the green option suppliers were shown clearly in the literature provided to the participants. However, resource mix information was not provided for the “price” and “other” options. As shown in Table 1, the share of renewable energy ranged from as low as 8% to 100%. NME and Working Assets had higher renewable energy content at 100% and 35%–55%, respectively. Renewable energy was primarily existing hydro resources. Except for potential installation of PV panels in community buildings from the AllEnergy green option, there was no addition of new renewable generation. To a large extent, this was due to the short timeframe between the RFP and the start of the pilot; there was simply not sufficient time to develop new renewable generation and bring it on line to supply customers who might sign up for the option. As mentioned above, two proposals involving new renewable generation were not accepted into the pilot for this

reason. Fossil fuels such as coal, gas, and oil, and nuclear fuel, were also included in the resource portfolios. Nuclear energy accounted for 57% for Enova Energy and 14% for AllEnergy. Enova, AllEnergy, and Working Assets had about one-third of their generation resources in fossil-fueled power plants.

### Other Components of the Green Option

In addition to renewable energy, the green options offered by suppliers in the generation resource mix included energy efficiency information, products, and services; retirement of SO<sub>2</sub> emission credits; installation of PV panels on community buildings; donations to environmental organizations, projects, and community groups; and other inducements such as a raffle for an electric vehicle. Although these components were environmentally friendly in some sense, except for the installation of PV panels at community buildings, there were no net additions to new renewables generation in the short term. Similarly, except for the installation of PV panels, there were no net improvements to the environment through the substitution of new renewable generation for existing power plants with high emission rates. Customers had mixed reactions to these other benefits or actions. Although attractive to some consumers, such benefits alone without the inclusion of a green portfolio may have resulted in some increased consumer skepticism regarding the actual environmental benefit of the specific option.

### Market Shares

Overall, 31% of residential participants selected green options, whereas only 3% of small-business participants chose green options. These results should be viewed with the following qualifications in mind. First, although the small-business portion of the pilot was fully subscribed, the residential customer portion was only 60% subscribed in terms of allocated loads. This latter result shows that the residential interest, trust, or awareness in the pilot may be limited and that those who did sign up may have been more motivated by green options. Second, because cost savings was the primary concern of businesses, a clear majority of small-business participants went with the most advantageous price options. In the residential

sector, cost savings was still the most important consideration, but concern about the environment became more prominent. As shown in Table 2, the largest three shares in the small-business sector are all price options: NUW—price, 70%; WEPCO/Cinergy—price, 17%; Enova—price, 9%. The NME green option is fourth with approximately 3%. Similarly, in the residential sector, price options occupy the number 1 and 2 spots: Enova—price, 43%; NUW—price, 21%. Working Assets green option and NME green option are number 3 and number 4 in market shares, at 16% and 10%, respectively. Third, as mentioned above, Working Assets successfully targeted the residential customers in Northampton. Because Working Assets did not offer a green option for small-business customers, the results would tend to bias toward the residential participation rate. Finally, a related aspect is that the green options for the small-business customers were not as intensively marketed as those for the residential customers.

The relative popularity of the Working Assets green option, the one with the most expensive residential green offerings, is a notable exception to the customer preference for low price. It also suggests that consumers are willing to pay a price premium for power they believe to be environmentally friendly. The AllEnergy green option, with its high comparative price and its relatively complex three-tiered options, was able to achieve only a 1% market share, compared to Working Assets' 16%.

### Green Standards

As noted above, the design of the MECo pilot did not set a green standard. This is related to the definition of the term “green,” which is being debated in Massachusetts and across the United States. For example, recent legislation proposed by the Massachusetts Joint Special Committee on Electric Industry Restructuring offered a standard for green power. In Section 8. B. (I), the legislation states “no generation company or supplier may advertise their power as “green” power, or any other term connoting an environmentally beneficial portfolio, unless such portfolio includes energy from renewable source in the amount of at least 20% and



**Table 2: Market Shares of Supplier Options**  
(%)

Supplier Options	Residential Customers	Small Businesses
Enova - Price	43	9
NUW - Price	21	70
Working Assets - Green	16	(a)
NME - Green	10	3
WEPCO/Cinergy - Price	3	17
Enova - Green	3	0
AllEnergy - Other	3	0
AllEnergy - Green	1	0
WEPCO/Cinergy-Other	0	0

(a) Working Assets did not offer a green option for small business customers.

does not include nuclear power.”<sup>8</sup> Based on such a standard, 87% of the customers in the MECo pilot selecting a green option selected an option that would qualify as green. It appears that Working Assets’ marketing played a significant role in this outcome. One customer indicated that a primary reason for selecting the firm was its proven history of commitment to the environment (through Working Assets’ Long Distance) and its developing commitment to renewable power. In addition, although no renewable standard was set in the pilot, customer selections of service providers show a strong leaning toward firms with relatively high renewables content in their generation portfolios, such as NME (100% high hydro) and Working Assets (30%–45% hydro and 3%–10% other renewables).

### Need for Consumer Education

The concepts of competition in the electric industry and the unbundling of bills can cause initial confusion to customers who have been purchasing bundled electricity from a regulated utility. A substantial portion of customers had never considered the environmental impact associated with the generation of electricity until presented with the choice of their electricity supplier. Many of the

customers who called the customer service line often asked the question: “Why would anyone select anything but the lowest price?” In addition, many callers did not understand the benefits offered by green options. They did not know the environmental consequences of electricity generation and had little familiarity with renewable energy. On the other hand, some customers asked more specific questions regarding the sources of generation or the companies’ environmental records. The environmentally aware customers were concerned with the quality of the green options. They wanted to know how the green portfolio would be verified, and also wanted their provider of renewable energy to have a consistent and complementary environmental record. In short, many consumers were environmentally unaware regarding power supply options, whereas some were environmentally educated. Thus, there is a need for consumer education to inform those who are not familiar with the nature of electric industry deregulation and the environmental benefits of renewable energy.

### Disclosure and Verification

In the MECo pilot, a booklet containing comparative information concerning the various offers and a card for participants to mark their

choice of suppliers ("the ballot") were made available to eligible customers.<sup>9</sup> The generation resource portfolios of suppliers offering green options were clearly shown, and the comparative prices of each option were computed by adding the values of all other incentives, bonuses, or penalties to the base prices. This made comparison easy. The ballot was extremely useful in satisfying the customers' need for information and providing answers to many of the often-asked questions. In other pilots and in full retail competition, it will be necessary to have similar tools for disclosing such relevant information to facilitate customer decision making. In addition, the information disclosed should be accurate and timely. Thus, there is also a need to somehow verify the accuracy of the information provided by the suppliers.

### **Small-Business Customers**

As noted above, most small-business customers participating in the pilot program went with the price option. Even those who went with green options selected NME, the utility with the least expensive green option and the option with the lowest comparative price for G2 customers. This suggests that, for small-business customers, the price factor will still play a role in customer selection of green options. Nevertheless, some of these customers felt strongly about selecting a green option. For example, Andrew Chambers, owner of the Pizza Factory in Northampton, selected NME. He described himself as "an old nuclear protester" and indicated that the pilot was a chance to get "a little bit of choice about where my electricity is generated." Despite paying more than he would with some other options, Mr. Chambers said, "You aren't talking about more than 20 dollars a month either way. For me it was a chance to make a statement."<sup>10</sup>

## **V. Conclusions and Observations**

The MECo retail access pilot program demonstrated that the pending restructuring of the U.S. electric power industry will transform the electric market through a more dynamic interaction of consumer demands and supplier marketing. It has shown that, with foresight, customers can be

provided with relevant information for making apples-to-apples comparisons among different service options offered by multiple providers.

As the first retail competition pilot program to involve green marketing explicitly in its program design, the MECo pilot also proved that a significant segment of electric customers place a value on environmental stewardship and, when given an option, will sign up for and even pay comparatively more for energy services derived from environmentally friendly sources.

Despite the limited scope and controlled structure of the pilot, some important insights were gained with respect to education, targeted marketing, information disclosure, verification of supplier claims, green power, and targeting of larger commercial and industrial customers.

- *Consumer education is necessary to enable customers to make informed choices.*

Under retail competition, all customers will be able to choose their electricity suppliers. To enable customers to make educated choices and realize the benefits of electric deregulation, they need to be educated on the nature of deregulation; its implications for individual consumers; how cost savings will be realized; who the suppliers are and what they are offering; as well as many other details. The education effort should also provide all customers with information on environmental impacts associated with electricity. Further, because many consumers lack an understanding of renewable energy, information on renewables would also be useful. In short, a smooth transition to a competitive electric market depends greatly on consumer education. Without effective educational efforts, many consumers will not understand the benefits of deregulation and will be reluctant to exercise their choice of service providers.

- *Targeted marketing can increase customer participation.*

Both MECo and the pilot program administrator conducted extensive marketing campaigns to promote general awareness of the pilot program.

In addition, service providers conducted intensive marketing efforts. Although the small-business portion of the pilot reached full enrollment, the residential portion was not fully subscribed. This suggests that greater marketing and education efforts need to be targeted toward residential customers. In part, as a result of targeted marketing by Working Assets and other suppliers, there was a higher level of consumer participation, specifically in the green options, among residents of Northampton, the wealthiest and most educated of the four pilot communities. This suggests that targeting education and marketing efforts at particular demographic groups or communities can increase pilot program participation. It also supports the notion that green customers and customers willing to choose an alternate supplier will come from wealthier, well-educated communities. These results suggest that a broad consumer education initiative is likely required if customer participation is to reach significant levels.

- *Information disclosure will help customers make decisions.*

Customer reaction to the pilot suggested that the MECo ballot, with its menu of options, was a useful consumer education and information disclosure tool. It provided basic, unbiased, and comparative information on each of the options. It allowed customers to make apples-to-apples comparisons among the various options offered by suppliers. As a result, customers in the MECo pilot had a good understanding of the choices they had to make.

When full retail competition is implemented, however, it may not be possible to prepare such a ballot. For this reason, a standard disclosure mechanism should be developed. As suggested by participating customers, disclosed information should include not only the generation resource portfolios and base and comparative prices, but also other environmental information, such as emission levels of different types of power plants and detailed generation profiles for all options, as well as important contract terms.

- *Verification of the disclosed information should be ongoing to ensure that it is accurate and true.*

Information disclosure is only valuable to the marketplace if it is accurate and verifiable. Questions from pilot customers indicated that some consumers are interested in how information provided by service providers can be tracked and verified. The limited nature of the pilot program allowed the pilot program administrator to verify the claims of service providers concerning generation portfolio and donations and to track them through contracts or receipts. However, in a larger retail market or under full retail competition, an approach that relies on paper trails may be inefficient and inaccurate. Whatever tracking methods are implemented, it is important to recognize that consumers are interested in this information and will want assurance that the verification procedures are accurate and credible.

- *The green power concept appeals to a diversity of customer interests.*

The MECo pilot did not define green power per se, but instead allowed service providers flexibility in the design of green power options. One result of this open-definition approach is that, although many think of green power as having significant renewable energy content, suppliers offered a number of non-renewables-based alternatives in their green service options, such as energy efficiency programs, retirement of emission credits, and donations to environmental groups. For energy efficiency programs, a kWh conserved provides the same emissions reduction benefit as a kWh generated by renewables. Energy efficiency services and programs not only reduce the need for electricity produced by fossil fuels but also save end users money on their electric bills. Retirement of emission credits will also reduce the total amount of emissions from power plants, and donations to environmental groups can advance many different environmental causes.

Nevertheless, questions arose concerning the open-definition approach to green power. Some

questioned the substance of some of the green-marketing approaches and themes. Others stressed the fact that no new renewable generation resulted from the green-power offerings. Where green power is broadly defined to include options other than renewable energy, the potential benefits of green marketing for renewables will not be as great as would be expected with a renewables-only definition. However, the diversity of green options offered by a broader definition may attract and serve to educate a larger market segment inclusive of not only stereotypical green customers, but also customers who might be interested in other environmentally friendly actions such as energy efficiency measures. Consequently, the broader definition of green may better serve to heighten environmental awareness and increase the diversity of customers interested in the green options with significant renewable content and energy conservation programs.

The MECO pilot demonstrated that the concept of green power appeals to a diversity of customer interests. Each green choice made in the pilot program contributed in some fashion to promoting environmental stewardship in either power generation or consumption.

- *Larger commercial and industrial customers should be targeted to increase the demand for green power.*

Although some level of residential participation in the future green market appears ensured, individual residential customers consume a relatively small amount of electricity. Efforts to educate and market green power to residential customers need to be complemented by initiatives and options that attract larger commercial and industrial customers.

## VI. Notes

1. For a detailed description of the residential and small-business pilot, see Environmental Futures, Inc.'s, *The Massachusetts Electric Company Choice, New England Pilot: A Focus on Green Marketing*, prepared for NREL, August 1997. Available at <http://www.eren.doe.gov/greenpower/>. For descriptions of the other part of the MECO pilot

program involving large high-technology companies, see Edison Electric Institute's *Retail Pilot Programs: the First Six*, Washington, D.C. 1997, Chapter 5, pp. 61-75. This latter source also provides details of the residential and small-business pilot that are not focused on in this brief or the Environmental Futures, Inc.'s report noted above.

2. Questions have been raised as to whether this criterion is in conflict with the common notion that consumers are willing to pay a price premium for renewable power, as exemplified by the many green-pricing programs being implemented by utilities. In other words, some customers may still be willing to pay the price premium even if it is higher than their existing rates if they can be sure that they are contributing to the development of new renewables generation. However, for the purpose of the MECO pilot, the utility wanted to ensure that there was potential customer cost savings involved. That was the reason for adopting the criterion.

3. For a discussion of the general awareness campaign and supplier marketing, see the report by Environmental Futures, Inc., cited in Note 1 above.

4. For a discussion on this point, as well as Working Assets' defense of its marketing approach, see Holt, E., and J.M. Fang, *The New Hampshire Retail Competition Pilot Program and the Role of Green Marketing*, NREL/TP-460-23446, November 1997.

5. The incentives of free ice cream or free long-distance services were added after the information ballot was prepared and, hence, were not included in the computation of the comparative price for Working Assets.

6. Executive Office of Communities and Development. *Northampton: Hampshire County, A Community Profile*. William Francis Galvin, Secretary of the Commonwealth; 1995. For a comparison of the demographic information concerning population, population density, percentages of registered voters and with bachelor's degree or higher, and median annual household income for the four pilot cities, see Environmental Futures, Inc., *op. cit.* Table 4.

7. The G1 rate schedule is for small commercial and industrial customers not exceeding 10,000 kWh per month or 200 kW of demand. The G2 rate schedule is for small commercial and industrial customers exceeding 10,000 kWh but not exceeding 200 kW of demand.

8. The Joint Committee on Electric Utility Restructuring of the Massachusetts Legislature. *An Act to Promote Competition in the Electric Utility Industry*. HR 1744, March 20, 1997.

9. Massachusetts Electric Company, *Be Among the First! Choose Your Electricity Supplier with Massachusetts Electric's Choice: New England Pilot, and Have the Opportunity to Save Money*. Participation Information. October, 1996.

10. Ackerman, Terry. "Hints of Future for Utilities," *Boston Globe*, January 9, 1997. p. D1.

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