Monitoring and Evaluation of the Connecticut Clean Energy Fund: Annual Report on Program Goal 3 (2009)

FINAL REPORT

Submitted to:
Connecticut Clean Energy Fund

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Executive Summary

Since the CTCleanEnergyOptions Program launched in April 2005, programs under Program Goal 3 (Renewable Energy Demand and Sustainability) have helped encourage and increase clean energy purchasing throughout Connecticut, especially through the Connecticut Clean Energy Communities Program. During 2009, communities that have made the Connecticut Clean Energy Community pledge (CCEC pledge) have accounted for nearly all signup and points growth during 2009 (85% of all signup growth and 83% of all points growth). Signups increased moderately during 2009 (2,239 signups), and points increased by 6,531. However, he 2009 annual increase in signups, 2,239, is the lowest annual increase since the inception of the CTCleanEnergyOptions (CCEO) and is significantly less than the average annual increase in signups experienced between 2005 and 2008 (5,221). Total kWh of clean energy consumption during 2009 was equal to 59% of the goal of achieving a 3% voluntary clean energy same time period from 2008.

This annual report provides feedback on the monitoring and evaluation of the Connecticut Clean Energy Fund's (CCEF) progress under Program Goal Three: Renewable Energy and Sustainability. According to CCEF's current Comprehensive Plan,[1] Program Goal Three has the following strategic objective:

> *The Connecticut Clean Energy Fund will increase the demand for clean energy by creating model, sustainable communities*

The two key programs targeted at meeting CCEF's strategic objective under Program Goal Three are the Clean Energy Communities (CEC) program and the Community Innovations Grants (CIG) program. The CEC program includes a key program goal of attaining 3% of Connecticut's electricity consumption from voluntary purchases of clean energy resources by the end 2010.

CCEF engages in several key activities to meet these objectives:

- Marketing and outreach to help raise awareness of the availability and benefits of clean energy and CCEF programming[2]
- Program management to help communities enroll in the CEC and CIG programs and distribute clean energy system rewards such as solar electric (or photovoltaic (PV)) and solar hot water (or thermal) systems
- Incentives in the form of clean energy systems and Community Innovations Grants
- Training of Clean Energy Task Forces for communities enrolled in the Communities program

[1] FY 2009 – FY 2010 Comprehensive Plan. Submitted by The Connecticut Clean Energy Fund Board of Directors. Docket No. 08-04-07. June 6, 2008. http://www.ctcleanenergy.com/AboutCCEF/CCEFComprehensivePlan/tabid/355/Default.aspx

[2] In addition to CCEF sponsored marketing and outreach, the CTCleanEnergyOptions suppliers are required to include bill inserts that are included in customer electric bills. In general, bill inserts are sent out twice a year. In addition, the CTCleanEnergyOptions suppliers have conducted direct mail marketing campaigns, offered cash incentives to towns that purchase clean energy, conducted grass roots outreach, provided marketing materials and assistance to towns. At least one of the suppliers has also provided a referral fee to individuals who introduce a friend to the CTCleanEnergyOptions program. In addition, the utilities, CL&P and UI, provide information on the CTCleanEnergyOptions program on their Web sites.

The key indicators tracked and evaluated for this report include:

- Municipal participation in CCEF programs and other municipal commitments required for qualification as a Connecticut Clean Energy Community (CCEC)[3]
- Points earned by municipalities through enrollments to the CTCleanEnergyOptions program (CCEO), clean energy systems installed and clean energy purchases made by C&I customers
- Municipal household participation rates in the CCEO program
- Electricity purchased through the CCEO program and RECs
- Environmental benefits of clean energy purchases
- Motivations and barriers to clean energy purchases by institutional and C&I REC purchases
- Motivations and barriers to clean energy purchases according to CCEF workshop participants
- Media analysis of CCEF programs

Voluntary Market Purchasing

Points Indicators

Overall Points

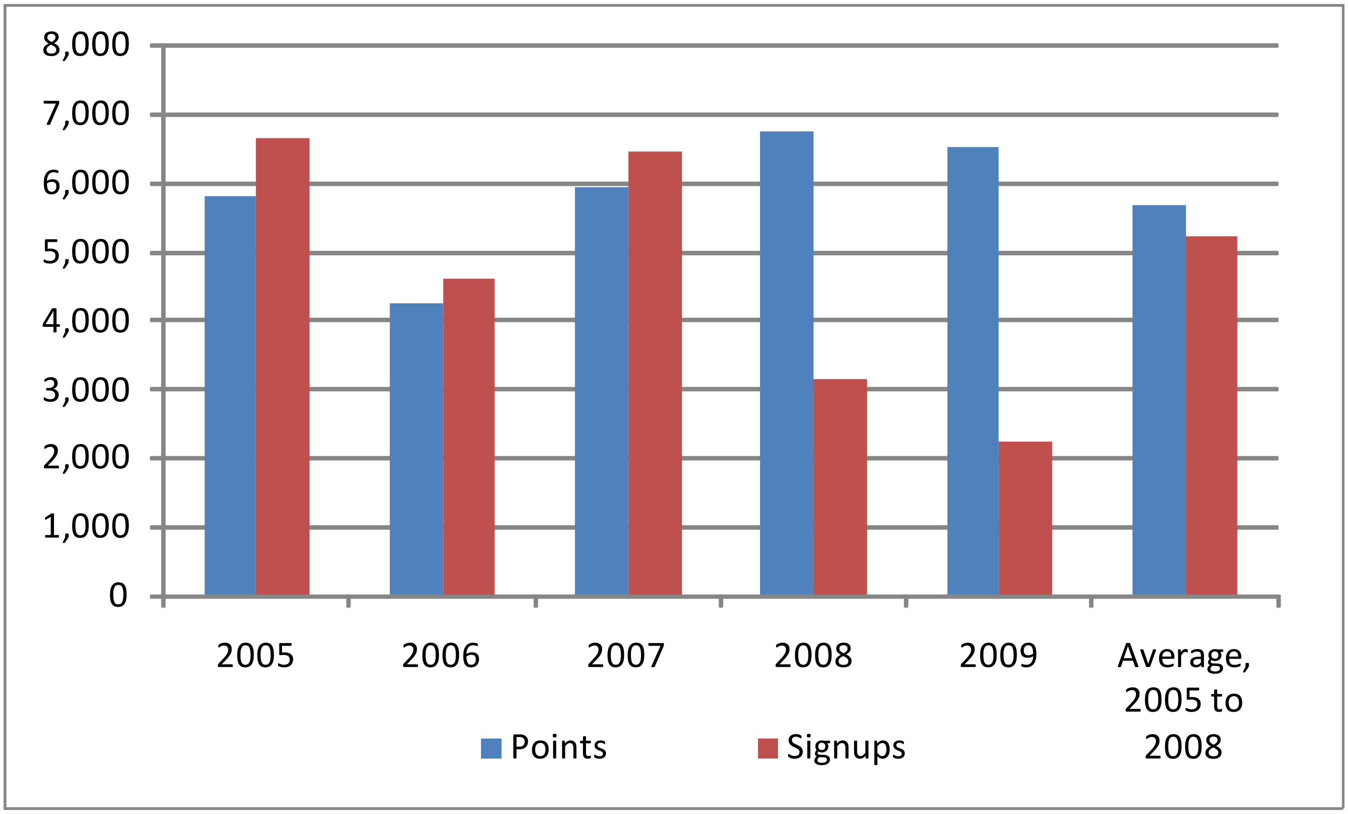
During 2009, total signups increased moderately and total points increased significantly. Signups increased by 2,239 (11% increase) and points increased by 6,531 (29% increase). The disparity in increase in signups and points is due to points rewarded for clean energy systems (1,592 additional points) and points rewarded for C&I clean energy purchases (2,700 additional points).[4]

The 2009 annual increase in signups, 2,239, is the lowest annual increase since the inception of the CCEO and is significantly less than the average annual increase in signups experienced between 2005 and 2008 (5,221) (Figure 1). The rate of signup growth was relatively low during the first two quarters of 2009 (351 during Q1 and 413 during Q2) but increased during the last two quarters of 2009 (711 during Q3 and 764 during Q4). However, neither the spring nor the fall bill inserts resulted in the same surge in signups that has been observed after nearly all previous bill inserts. The lower rate of signup growth during 2009 is likely due primarily to the economic downturn[5] and the presence of competitive

[3] Other requirements for qualification as a CEC include committing to the EPA's Community Energy Challenge and fulfilling municipal clean energy purchase requirements.
[4] Changes to the Clean Energy Communities program took effect November 1, 2008, modifying the way in which Clean Energy Communities (CEC) can accumulate points. All signups to the CTCleanEnergyOptions program now count as point, regardless as to whether the signup is a 50% or 100% customer. Additional points are now rewarded for clean energy systems installed in CECs and for clean energy purchases made by C&I customers.
http://www.ctcleanenergy.com/YourCommunity/CTCleanEnergyCommunities/Communities/tabid/82/Default.aspx
[5] Bird, Lori, Claire Kreycik and Barry Friedman. 2009. Green Power Marketing in the United States: A Status Report (2008 Data). National Renewable Energy Laboratory, Technical Report NREL/TP-6A2-46851. Golden, CO.
www.nrel.gov/docs/fy09osti/46581.pdf

suppliers offering alternative clean energy products, such as Viridian Energy[6] and ConEdison Solutions.[7] For example, nearly all clean energy programs experienced decreasing rates of growth in 2008 and 2009, with the deteriorating economy identified by many as a likely source of the decline. In fact, four of the top ten clean energy programs **lost** enrollments in 2008 and 2009,[8]

Figure 1: Annual Change in Points and Signups, 2005 to 2009



CCEF Community Based Programs and Points

While the rate of signup growth declined during 2009, CCEF's community-based programs continue to show higher rates of clean energy purchasing in participating than nonparticipating communities. For example, municipalities that have made the Connecticut Clean Energy Community pledge (CCEC pledge) accounted for nearly all new signups in 2009 (85%) and increased, on average, by 60 points during 2009, compared to 11 for nonparticipating municipalities (Figure 2). As of December 31, 2009, CCECs and CCEC pledge municipalities accounted for 84% of all signups and 83% of all points (Figure 3).

[6] http://www.viridian.com/Viridian/Custom/CUST077/PersonalPages/rp_ct.aspx
[7] http://conedisonsolutions.com/connecticut_green_power.html
[8] See Lori, Claire Kreycik and Barry Friedman. 2009. Green Power Marketing in the United States: A Status Report (2008 Data). National Renewable Energy Laboratory, Technical Report NREL/TP-6A2-46851. Golden, CO. www.nrel.gov/docs/fy09osti/46581.pdf and NREL's list of top 10 utility green pricing programs: http://apps3.eere.energy.gov/greenpower/markets/pricing.shtml?page=3

Figure 2: Municipal Average Annual Change in Points and Signups by CCEF Program Participation, 2009

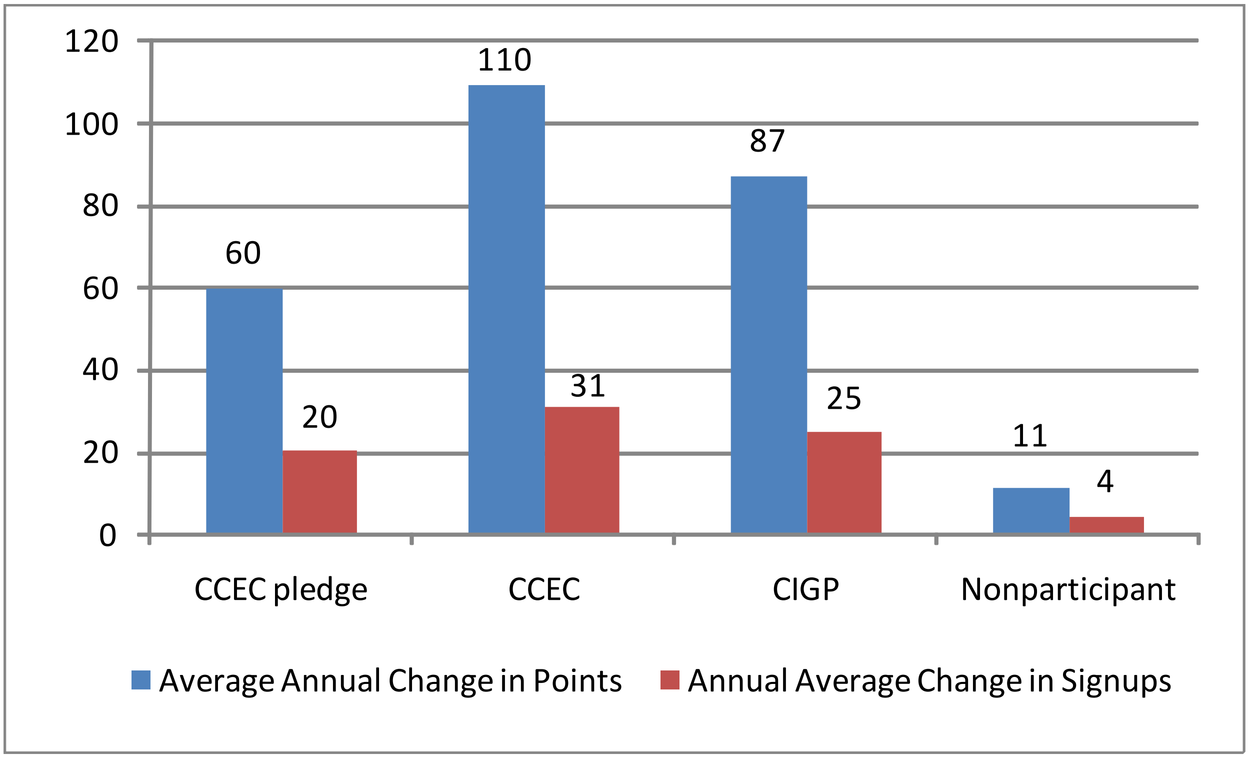
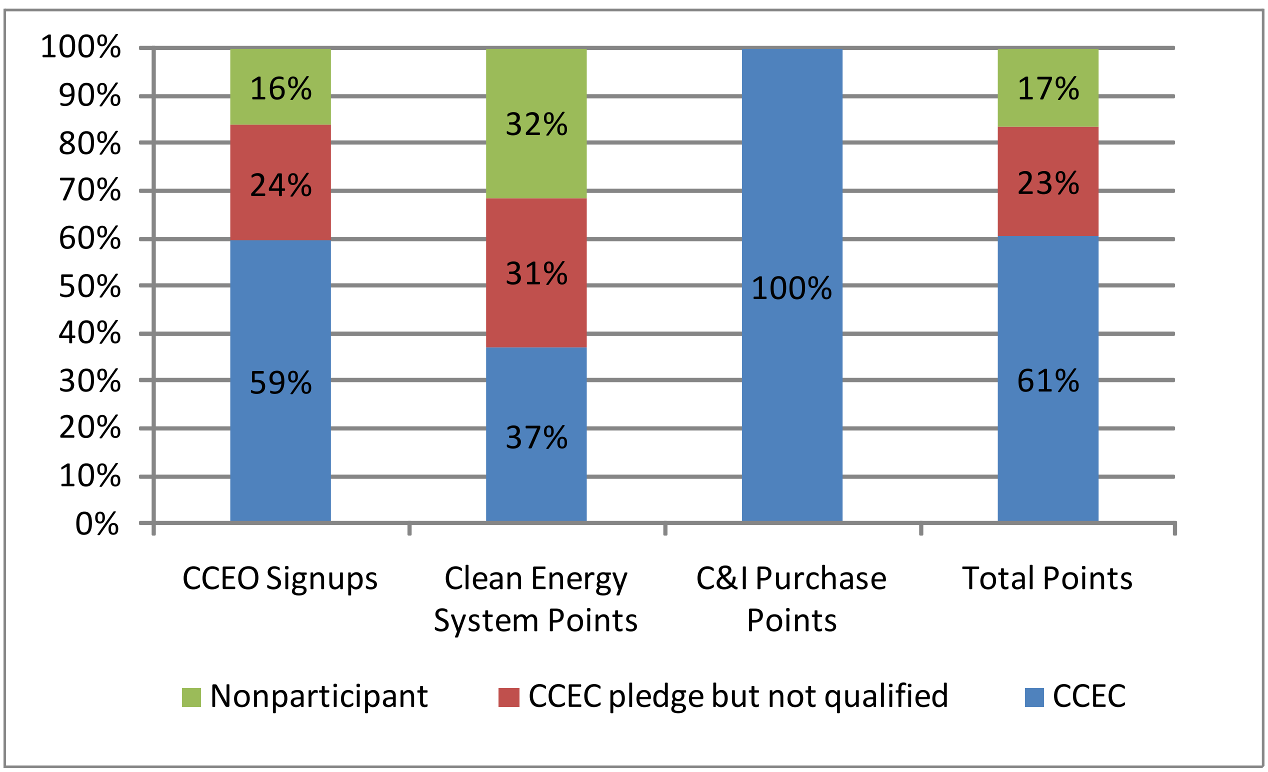


Figure 3: Percentage of Points and Signups Accounted for by CCEF Program Participation, December 31, 2009



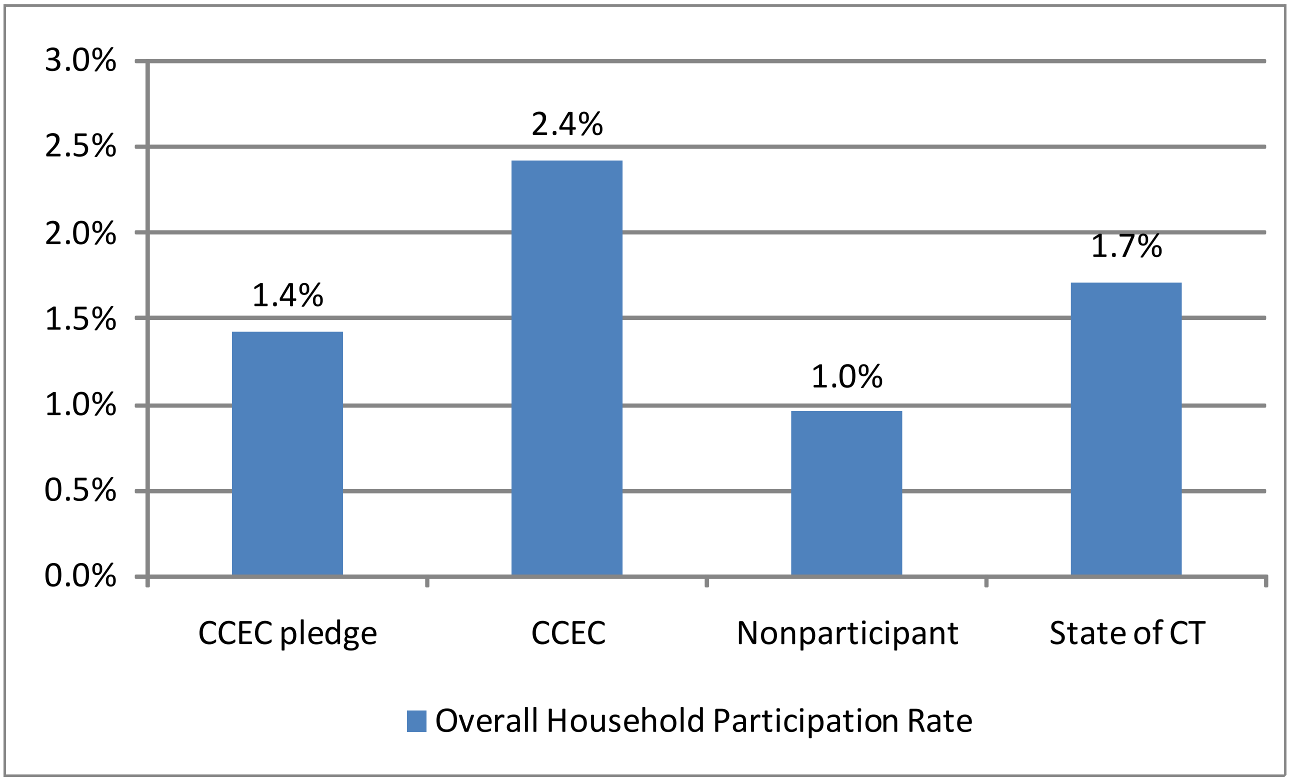
Top 20 Connecticut Municipalities in Total Points

The top 20 municipalities in total points account for a disproportionate amount of signups and total points, and they are predominantly participating communities, 19 of which are CCEC pledge communities, 17 are CCECs and 12 have received Community Innovation Grants. The top municipality in total points is Stamford at 1,998, followed by New Haven at 1,280 and West Hartford at 1,173 (all three are CCECs). Overall, the top 20 (of 166) municipalities in points represent 44%, 42%, 100%, 28% and 47% of residential, commercial, C&I clean energy purchase, clean energy system and total points, respectively.

Household Penetration Indicators

Statewide, 1.7% of households are enrolled in the CCEO program, while participation rates are substantially higher in CCECs. Overall, 2.4% of all households in CCECs are enrolled in the CCEO program while 1.4% of all households in CCEC pledge communities that have not qualified as CCECs and 1.0% of all households in nonparticipating communities are enrolled in the CCEO program (Figure 4). Statewide household participation rate of 1.7% compare favorably with participation rates of 'competitive' utility green pricing programs found in other states.[9]

Figure 4: Overall Household Participation Rates in the CCEO, by CCEF Program Participation, December 31, 2009



Top 20 Connecticut Municipalities in Household Penetration

The top 20 municipalities in household penetration are predominantly participating communities, 18 of which are CCEC pledge communities, 15 are CCECs and 15 have received Community Innovation Grants. The top municipalities in household penetration at the end of Q4 2009 are Cornwall (32.2%), followed by Canaan (18.0%) and Bethany (15.8%); all are CCEC pledge communities.

Community-Level Participation and Clean Energy Systems Qualifications

Participation in CCEF's community-based programs continued to increase during 2009 as six municipalities pledged to become CCECs, three communities qualified as Connecticut Clean Energy

[9] See Bird, Lori, Claire Kreycik and Barry Friedman. 2009. Green Power Marketing in the United States: A Status Report (2008 Data). National Renewable Energy Laboratory, Technical Report NREL/TP-6A2-46851. Golden, CO. *www.nrel.gov/docs/fy09osti/46581.pdf*

Communities and 15 municipalities received Community Innovation Grants,[10] bringing the totals to 94 campaign participants, 42 CCECs and 51 grants recipients, respectively.[11] During 2009, participating communities qualified for 39 kW of earned clean energy systems.

Interviews with REC Purchasers

NMR interviewed six REC purchasers in December of 2009, including representatives from two schools and four private firms. Five of the six respondents purchased a total of 93,878,667 kWh of RECs to offset electricity usage for the 2009 calendar year.[12] All respondents made REC purchases for the 2008 calendar year and all are very likely to make REC purchases in 2010.[13]

The most commonly reported reasons for making REC purchases were for the environmental benefits of purchasing RECs or in order to demonstrate their commitment to the environment and clean energy projects to the public, while one respondent made the REC purchase in order to help the company's community obtain CCEF-funded solar panels.

It appears that CCEF is having some influence on REC purchase decisions. Four of the six REC purchasers were aware of the CCEF before they first purchased RECs, while three were at influenced is some way by CCEF. Two respondents reported that CCEFs programs influenced their decision to purchase RECs and one reported that they would not have purchased RECs without the CCEF.

Respondents identified cost, the need to educate management of the company, and lack of knowledge of RECs as the key barriers or obstacles to purchasing RECs.

The three respondents who were aware of the CCEO program each chose RECs over the CCEO for a different reason: because of cost, because the firm needed to offset electricity usage nationwide (and felt purchasing RECs was the easiest way to do so), and because the firm began purchasing RECs before the CCEO began.

Respondents suggested that CCEF could help overcome the barriers to purchasing clean energy in several ways: increased marketing and educational efforts to increase awareness of clean energy and RECs, holding educational forums, and organizing associations for green companies to learn about RECs and clean energy as well as network with other green companies.

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[10] Communities that have taken the CCEC pledge are eligible to receive a Community Innovation Grant. The grants are used to support local clean energy awareness and education projects. As of November 1, 2008, Grants have been reduced from $5,000 to $4,000 (towns that have already received a grant are eligible for a $2,000 grant).

[11] From April 2007 through October 31, 2008 the eligibility requirements for Connecticut Clean Energy Communities (CCEC) program required a community to make a municipal clean energy purchase in addition to the previous requirements of joining the 20% by 2010 Campaign and meeting a threshold number of signups. As of November 1, 2008, communities must meet additional requirements, including making minimum clean energy purchases and committing to the U.S. Environmental Protection Agency's Community Energy Challenge. Municipalities can qualify as a Connecticut Clean Energy Community in several ways, but most commonly by having at least 100 signups to the CTCleanEnergyOptions Program http://www.ctcleanenergy.com/Portals/0/Program%20Modification%20Notice%207_31_08

[12] One respondent purchased 50,000,000 kWh during 2009, but the RECs were applied to electricity usage from July 2007 to June 2008

[13] Respondents were asked to rate the likelihood of making REC purchases in 2010 on zero to 10 scale, with zero meaning "not at all likely" and 10 meaning "extremely likely." All respondents rated their likelihood as 7.5 or higher.

Regional Training Workshop Surveys

Twenty-two attendees of CCEF's regional training workshops responded to surveys that covered a range of topics concerning CCEF and clean energy.

Respondents were most likely to identify friends, family, neighbors and colleagues as an extremely effective way to increase awareness of the CCEO program (17 of 22 respondents), followed by information booths, local projects (funded by CIGP) and speaking with members of local Clean Energy Task Forces. When asked to identify the single most effective way to increase awareness of the CCEO program, respondents identified personal contacts (6 respondents), media, and outreach at forums, fairs or other events.

Respondents were asked to identify the major barriers or obstacles to raising awareness of the CCEO program. The most frequently identified barrier was cost (seven respondents), followed by people being busy and the poor economy.

Respondents were asked to rate factors that may affect someone's decision to enroll in the CCEO program on a scale from -5 to +5, where -5 means the factor has strong negative effect on the decision to purchase, 0 means the factor has no effect, and +5 means the factor has a strong positive effect. The factors with the strongest positive effect were helping to protect the environment, helping support energy independence, helping develop new technologies and new jobs, helping prevent global warming, and helping support the development of more clean energy. Several factors were identified as having a negative effect on enrolling in the CCEO, including [lack of] awareness of the CCEO, obtaining information about the CCEO, the enrollment process, and most importantly, the current price of the CCEO.

When asked why residents in their community enroll in the CCEO, respondents were most likely to identify energy independence, general environmental benefits, global warming or climate change, and supporting renewable energy.

Overall, nine respondents experienced barriers when enrolling in the CCEO program, with seven respondents identifying the enrollment process (five respondents identified the enrollment process in general, while two other respondents identified specific aspects of the enrollment process) and four identifying the cost as the barrier.

In addition, respondents were asked if a series of four potential obstacles to enrolling in the CCEO Program were barriers to residents of their home communities. Cost was identified as the most common barrier, followed by lack of trust or understanding of clean energy products

When asked to identify ways to overcome barriers to enrolling in the CCEO program, respondents most commonly identified outreach and person to person discussions. While respondents most suggested that CCEF could help through increased marketing, advertising and education efforts

Respondents from nine of 13 municipalities reported they are making a municipal clean energy purchase, four are not and four do not know

Community Innovation Grants Reports

NMR reviewed 47 CIGP reports from 30 municipalities that were submitted for activities that took place during 2009. In terms of project goals, 32 of the 47 reports indicated that increasing signups was a primary goal, followed by raising community awareness (31 reports) and educating students (20 reports). Fourteen of the 47 reports documented press coverage of CIGP supported activities, including coverage in the Hartford Courant, The Cromwell Chronicle, the Easton Courier and Essex Events. Eleven reports documented 364 signups generated by CIGP supported activities. Some of the more successful activities that appeared to increase public awareness and signups included participating in multiple events rather than single events, hosting public forums on clean energy and the environment, incorporating student environmental groups, hosting information booths and tables at public events, and incorporating CFL handouts. Finally, a number of CIGP reports were either incomplete or provided minimal amounts of information about the CIGP supported activities.

Energy Consumption.

During 2009 the average monthly kWh consumption was 51,367,271 kWh, while cumulative annual kWh consumption was 616,407,252 kWh.[14] Annual kWh consumption during 2009 was 115% higher than 2008 and is equal to 59% of the goal of achieving a 3% voluntary clean energy market by the end of 2010.

Of the 616,407,252 kWh of cumulative annual kWh consumption, 197,485,734 kWh are attributed to enrollments to the CCEO while the remaining 418,921,518 kWh are attributed to bilateral RECs purchases made by municipalities, the state of Connecticut universities and businesses based in Connecticut. Over one-half (57%) of the RECs purchased in 2009 were purchased by commercial and industrial customers, followed by the State of Connecticut, which was responsible for over a quarter of all RECs purchased in 2009, and municipalities (14%).

Environmental Benefits.

In terms of environmental benefits, the 616,407,252 kWh of annual clean energy consumption are estimated to be equivalent to 219,017 tons of CO_2 and 54,188 MTCE produced by 31,433 tons of coal, 15,991 barrels of oil, 2,342,838 mcf of natural gas and 3,289,524 pounds of Uranium ore.[15] The 616,407,252 are equivalent to removing 43,006 cars from the road for a year or 5,094,595 tree seedlings grown for 10 years.

[14] Monthly kWh consumption includes gross kWh consumption from the CCEO and gross bilateral RECs purchases, but excludes RECs from on-site distributed generation (DG). Gross bilateral RECs data was provided by the following REC suppliers: Sterling Planet, Community Energy, 3Degrees, Renewable Choice Energy, Carbon Solutions Group, by REC contracts and correspondences from town officials provided by Bob Wall of CCEF. REC purchases do not include RECs reported by the EPA Green Power Partnership website (http://www.epa.gov/grnpower/) but not verified by a REC supplier, r REC contract, or correspondence from a town official with the exception of RECs purchased by the state of Connecticut, which were confirmed by Bob Wall of CCEF. Gross bilateral RECs data was provided as total annual MWh. For this report, it was assumed that gross bilateral RECs were consumed in equal monthly installments. For example, a purchase of 120 MWh of RECs is estimated to equal 10 MWh per month.

[15] Environmental benefits analysis assumes equivalent generation from only non-polluting renewable sources - e.g. solar, wind, hydro, but the analysis does not include fuel cell, land fill gas or other sources that generate emissions Environmental benefits calculations also assume that the 167,747,103 kWh of electricity would have been generated in the NEPOOL territory in the absence of the CTCleanEnergyOptions Program.

Media Activity on Clean Energy

Beginning in Q3 2009, media coverage of CCEF and associated programs under Program Goal Three were tracked through "Google Alerts." Due to the revision to the data collection process, article levels beginning in the third quarter (Q3) of 2009 are not strictly comparable to previous quarters.

Article volume between Q3 and Q4 2009 rose each month, though coverage was lower when compared to 2007. The decline in program coverage articles from 2007 is likely attributable to the modified data collection methods, modification in key words searched and discontinuation of press clipping service (and corresponding lack of access to articles that do not appear on-line), which began in Q3 2009.

The increased coverage of CCEF programs during Q4 2009, particularly the Supply Side programs, provided an avenue for awareness in Q4. The number of Supply Side articles increased by 94% between Q3 and Q4 2009 and Supply Side articles were the most commonly covered program goal in Q3 and Q4 2009 whereas Market Development articles were the most commonly covered program goal in Q3 and Q4 of 2007. Market Development articles also increased slightly between Q3 and Q4 2009.

Additionally, the connection between CCEF programs and the environmental benefits message continued to grow. In both Q3 and Q4, the environmental benefits message was the most frequently communicated message. Overall, messaging appeared in 80% of articles during Q3 and Q4 of 2009. The mention of program Web sites increased between Q3 and Q4 2009, from 12 in Q3 to 34 in Q4, including six articles that mentioned two different program Web sites. Negative coverage was minimal in Q4 2009, with only two articles focusing on the temporary shutdown of the Small Solar PV Rebate Program.

Program Recommendations

After reviewing the literature on voluntary clean energy programs, the NMR team has developed the following recommendations for the implementation and design of Program Goal 3 (Renewable Energy Demand and Sustainability):

- **Encourage communities and businesses to use "clean energy challenges" to increase program participation.** A number of clean energy programs and communities have successfully used "clean energy challenges" to increase participation.[16] Typically, communities agree to purchase, or increase their purchase, of clean energy if a target of customer enrollment is reached. Challenges could easily include similar pledges from businesses, perhaps tying clean energy purchase pledges to kWh thresholds.
- **Increase outreach to businesses and other potential REC customers.** Interviews with REC customers suggest that a major barrier to purchasing RECs is the lack of knowledge on the part of management. Outreach by CCEF and perhaps by Clean Energy Task Forces and Grants Recipients could help overcome this barrier and increase REC purchases by Connecticut based business and organizations. CCEF could consider hosting an educational form about RECs for Connecticut-based businesses and institutions.

[16] See Bird, Lori, Claire Kreycik and Barry Friedman. 2008. Green Power Marketing in the United States: A Status Report (11th Edition). National Renewable Energy Laboratory, Technical Report NREL/TP-6A2-44094. Golden, CO. *www.nrel.gov/docs/fy09osti/44094.pdf*

- **Help organize associations of 'green' businesses.** During interviews with REC customers, several suggested establishing an association of 'green' businesses in order to help create enthusiasm and interest, share ideas and increase awareness in the business community.
- **Increase person to person recruitment of CCEO subscribers.** Participants in CCEF's regional training workshops identified personal contacts as a key way to increase awareness of clean energy and the CCEO. CCEF could consider establishing goals for clean energy task forces or grants recipients to personally inform a minimum number of people (i.e., five) about the CCEO.
- **Continue and to the extent possible, increase coordination with efficiency programs.** Participants in CCEF's regional training workshops identified cost as a key barrier to enrollment to the CCEO. Increasing coordination with Energy Conservation Management Board (ECMB) programs could help off-set the costs of CCEO enrollment. Perhaps CCEF could expand on current coordination efforts with the ECMB (CCEF currently coordinates with ECMB with the On-Site Renewable Generation Program and residential rebate program).
- **Using social media.** CCEF should consider using social media, such as a blog, Facebook page and Twitter account. These social media could prove to be an effective method of increasing awareness of clean energy and CCEF's programming in Connecticut. Social media could also prove to be an effective means of organizing activities and clean energy advocates throughout the state and across multiple communities simultaneously.[17]
- **Update 20% by 2010 campaign.** Consider establishing a new clean energy goal for participating communities. This will help communities retain their interest and enthusiasm for the program. A revised clean energy goal of 25% or 30% clean energy by 2012 seems reasonable as they are achievable increases within the three year time period.
- **Require progress towards the EPA Community Energy Challenge program goals.** In addition to requiring communities to commit to the EPA Community Energy Challenge, require that participating make progress toward the Challenge, including benchmarking energy performance of municipal buildings, developing a plan to meet the goal of reducing energy use by 10% and progress toward meeting the energy reduction goal (perhaps setting targets or rewards at the 5% reduction and 10% reduction levels).
- **Recognize clean energy purchases made through competitive suppliers.** If competitive suppliers offer clean energy (such as ConEdison Solution's "Connecticut Green Power Program"), CCEF could recognize and award points toward CCEF program rewards. Because the clean energy options available through competitive suppliers are not directly comparable to the CCEO in their mix of clean energy supply, CCEF may want to award points in a similar way in which points are awarded for REC purchases.
- **Improve reporting by Community Innovation Grants Program (CIGP) recipients.** A number of CIGP reports submitted for activities that took place in 2009 were either incomplete

[17] During 2010 CCEF established a coordinated social media presence with the start of a blog, Facebook page and Twitter account

or offered few details on CIGP supported activities. CCEF should stress the importance of the CIGP reports to current CIGP recipients.

- **Provide examples of successful CIGP activities.** In order to help current CIGP recipients, CCEF could provide examples of successful CIGP activities. Examples of some of the more successful activities that appeared to increase public awareness and signups during 2009 included participating in multiple events rather than single events, hosting public forums on clean energy and the environment, incorporating student environmental groups, hosting information booths and tables at public events, and incorporating CFL handouts.

1 Renewable Energy Demand and Sustainability[18]

[18] CCEF has a goal of achieving a 3% voluntary clean energy market by the end of 2010.

1.1 Community Participation Summary

Participation in CCEF's community-based programs continued to increase during 2009 as six municipalities made the Connecticut Clean Energy Community (CCEC) pledge, three communities qualified as Connecticut Clean Energy Communities and 15 municipalities received Community Innovation Grants, bringing the totals to 94 campaign participants, 41 CCECs and 51 grants recipients, respectively (Table 1-1). During 2009, participating communities qualified for 39 kW of earned clean energy systems.

Table 1-1: Community-Level Participation[19]

Municipality	Clean Energy Community Pledge Date[20]	Clean Energy Community Qual. Date[21]	Clean Energy Innov. Grant Date[22]	100 Sign-ups Quals.	1 GWh Quals.	10% Household Quals.	100 Sign-ups School District	Leadership Rewards	Achievement Rewards	Total Clean Energy Systems
Ashford	Apr-09		May-09	0	0	0	0	0	0	0
Avon	Jun-08	Oct-08		1	0	0	0	0	0	1
Berlin	Jul-07			0	0	0	0	0	0	0
Bethany	Aug-05	Nov-06	Aug-06	4	0	0	1.33	6	5	16.3
Bethlehem	Dec-09			0	0	0	0	0	0	0
Bloomfield	Jan-07	Oct-08	Feb-07	1	0	0	0	0	0	1
Branford	Mar-06	Apr-06	Jun-07	8	0	0	0	0	1	9
Bridgeport	Jan-08	Jan-08		2	0	0	0	0	0	2
Burlington	Feb-07			0	0	0	0	0	0	0
Canaan	May-09			0	0	0	0	0	0	0
Canton	Apr-05	Nov-06	Feb-07	2	0	0	0	0	1	3
Chaplin	Dec-07			0	0	0	0	0	0	0
Cheshire	Aug-05	Nov-06	Jan-07	5	0	0	0	0	1	6
Chester	May-06		Nov-06	0	0	0	0	0	0	0
Clinton	Dec-07			0	0	0	0	0	0	0
Colchester	May-07		Apr-09	0	0	0	0	0	0	0

[19] Municipality commitment dates to the Clean Energy Communities program and dates that Community Innovation Grants are issued to municipalities are provided by Bob Wall of CCEF on a monthly basis. Clean Energy Qualification dates and PV qualifications are based upon calculations made by NMR that are reviewed and approved by Bob Wall of CCEF.

[20] Connecticut is subdivided into eight counties and 169 municipalities. Of the 169 municipalities, ratepayers in 166 municipalities are eligible to participate in the CTCleanEnergyOptions Program. The three excluded municipalities are Norwich, Bozrah, and Wallingford.

[21] Municipalities can qualify as a Connecticut Clean Energy Community in several ways, but most commonly by having at least 100 signups to the CTCleanEnergyOptions Program.

[22] Communities that have committed to the Clean Energy Communities program and the EPA Community Energy Challenge are eligible to receive a Community Innovation Grant. The grants are used to support local clean energy awareness and education projects. As of November 1, 2008, Grants have been reduced from $5,000 to $4,000 (towns that have already received a grant are eligible for a $2,000 grant) and the commitment to the EPA Community Energy Challenge in addition to the Clean Energy Communities program was also added as a requirement.. Through December 2009, one community, Bethany, has received a second grant while all other grant recipients have received a single grant.

Municipality	Clean Energy Community Pledge Date[20]	Clean Energy Community Qual. Date[21]	Clean Energy Innov. Grant Date[22]	100 Sign-ups Quals.	1 GWh Quals.	10% Household Quals.	100 Sign-ups School District	Leadership Rewards	Achievement Rewards	Total Clean Energy Systems
Cornwall	Feb-07	Jan-08	Sep-07	0	0	3	0	5	1	9
Coventry	Feb-08	Apr-08	May-09	1	0	0	0	0	0	1
Cromwell	Mar-07		Jun-07	0	0	0	0	0	0	0
Danbury	Jun-07			0	0	0	0	0	0	0
Durham	Feb-08		Apr-09	0	0	0	0	0	0	0
East Haddam	Dec-08			0	0	0	0	0	0	0
East Hampton	Jun-08			0	0	0	0	0	0	0
East Hartford	Apr-08			0	0	0	0	0	0	0
East Haven	Jan-08		May-09	0	0	0	0	0	0	0
East Lyme	Jun-08			0	0	0	0	0	0	0
Easton	Apr-06	Apr-08	Jun-07	3	0	0	0	0	2	5
Enfield	Oct-07			0	0	0	0	0	0	0
Essex	Feb-06	Jun-07	Oct-06	1	0	0	0	0	1	2
Fairfield	Feb-05	Nov-05	Aug-06	14	0	0	0	0	1	15
Farmington	May-09		Sep-09	0	0	0	0	0	0	0
Glastonbury	Jan-06	Jan-06		5	0	0	0	0	1	6
Granby	Nov-07			0	0	0	0	0	0	0
Greenwich	Mar-08	Dec-09		5	0	0	0	0	0	5
Haddam	Sep-08			0	0	0	0	0	0	0
Hamden	Jul-05	Oct-05	Sep-06	10	0	0	0	0	0	10
Hartford	Feb-06	Feb-06	Feb-07	2	8	0	0	0	0	10
Harwinton	Apr-06		Nov-06	0	0	0	0	0	0	0
Kent	Jun-08		Mar-09	0	0	0	0	0	0	0
Killingworth	Nov-09			0	0	0	0	0	0	0
Lebanon	Jul-07		Apr-09	0	0	0	0	0	0	0
Madison	Jul-07	Sep-07		3	0	0	0	0	1	4
Manchester	Apr-07	Apr-07		4	0	0	0	0	0	4
Mansfield	Jul-05	Feb-06	Sep-06	4	0	0	0	0	2	6
Meriden	Aug-06		Nov-06	0	0	0	0	0	0	0
Middlefield	Oct-06		Jan-07	0	0	0	0	0	0	0
Middletown	May-05	Jun-05	Jul-06	4	1	0	0	0	0	5
Milford	Jan-05	Jan-06	Sep-06	7	0	0	0	0	0	7
New Britain	Feb-05	Dec-07	Feb-08	1	0	0	0	0	0	1
New Hartford	Sep-08			0	0	0	0	0	0	0
New Haven	Feb-04	Jun-05		21	0	0	0	2	0	23
New London	May-07			0	0	0	0	0	0	0
Newington	Mar-07		Oct-07	0	0	0	0	0	0	0
Newtown	Nov-06	Nov-06		3	2	0	0	0	0	5
Norfolk	Aug-06	Jan-07	Sep-06	0	0	1	0	4	0	5

Municipality	Clean Energy Community Pledge Date[20]	Clean Energy Community Qual. Date[21]	Clean Energy Innov. Grant Date[22]	100 Sign-ups Quals.	1 GWh Quals.	10% Household Quals.	100 Sign-ups School District	Leadership Rewards	Achievement Rewards	Total Clean Energy Systems
North Canaan	Apr-08			0	0	0	0	0	0	0
North Haven	Feb-07	Aug-09	Jun-07	3	0	0	0	0	0	3
North Stonington	Dec-07			0	0	0	0	0	0	0
Norwalk	Mar-08			0	0	0	0	0	0	0
Old Lyme	Apr-07			0	0	0	0	0	0	0
Old Saybrook	Sep-07			0	0	0	0	0	0	0
Orange	May-05	Nov-09	Apr-08	0	0	0	1.33	0	0	1.3
Plainville	May-06		Feb-07	0	0	0	0	0	0	0
Pomfret	Sep-08			0	0	0	0	0	0	0
Portland	Nov-04	Jun-06	Jun-06	3	0	0	0	2	2	7
Putnam	Jul-08			0	0	0	0	0	0	0
Redding	Jun-07	Nov-07	Apr-09	2	0	0	0	0	1	3
Ridgefield	Feb-07	Aug-07	Sep-07	9	4	0	0	0	2	15
Rocky Hill	May-07	Oct-08		1	0	0	0	0	0	1
Salisbury	Dec-06	Sep-08	Feb-07	1	0	0	0	0	1	2
Sharon	May-09			0	0	0	0	0	0	0
Sherman	Apr-08			0	0	0	0	0	0	0
Simsbury	Mar-08		Sep-09	0	0	0	0	0	0	0
South Windsor	Oct-07			0	0	0	0	0	0	0
Southington	Dec-06		May-09	0	0	0	0	0	0	0
Stamford	Apr-05	Nov-05	Dec-06	7	15	0	0	0	0	22
Stonington	Jun-08			0	0	0	0	0	0	0
Stratford	Mar-07	Jan-08		3	0	0	0	0	0	3
Torrington	Dec-06		Apr-07	0	0	0	0	0	0	0
Trumbull	Jun-05		Sep-06	0	0	0	0	0	0	0
Vernon	Aug-07			0	0	0	0	0	0	0
Warren	Sep-08			0	0	0	0	0	0	0
Washington	Aug-07			0	0	0	0	0	0	0
West Hartford	Jan-05	Jun-05	Oct-06	11	0	0	0	2	1	14
West Haven	Jun-08			0	0	0	0	0	0	0
Weston	May-07	Nov-07	May-09	3	0	0	0	0	1	4
Westport	Mar-05	Jan-07	Dec-06	7	0	0	0	0	1	8
Wethersfield	Apr-06	Nov-06	Nov-06	2	0	0	0	0	0	2
Wilton	Dec-07	May-08	Dec-09	4	0	0	0	0	1	5
Windham	Dec-06			0	0	0	0	0	0	0
Windsor	Apr-07	Apr-07	Jun-08	2	0	0	0	0	0	2
Woodbridge	Sep-05	Dec-07	Feb-07	2	0	0	1.33	0	1	4.3
Woodbury	May-08		Sep-09	0	0	0	0	0	0	0
Woodstock	Oct-07	Aug-09	Apr-09	1	0	0	0	0	0	1
Total	**94**	**42**	**51**	**172**	**30**	**4**	**4**	**21**	**28**	**259**

1.1 Community-Level Participation (Continued)

1.1.1 Community Participation, Annual Summary (January 1, 2009 to December 31, 2009)

- As of December 31, 2009, there are ninety-four municipalities that have made the Connecticut Clean Energy Community (CCEC) pledge, 42 qualifying CCECs, and 51 recipients of Community Innovation Grants. During 2009 community level participation continued to grow:
  - Six additional municipalities made the CCEC pledge.
  - Three additional municipalities qualified as a CCEC.
  - Fifteen additional municipalities received Community Innovation Grants.
- As of December 31, 2009 towns had qualified for 259 kW of earned clean energy systems. Between January 1, 2009 and December 31, 2009 there were 39 kW of qualifications for earned clean energy systems.
- As of December 31, 2009 there are 13 municipalities with over 100 sign up points that have not made the CCEC pledge and 29 municipalities that have reached 100 signup points and made the CCEC pledge but have not made a municipal purchase.

1.1.2 Community Participation, Q3 and Q4 2009 Summary

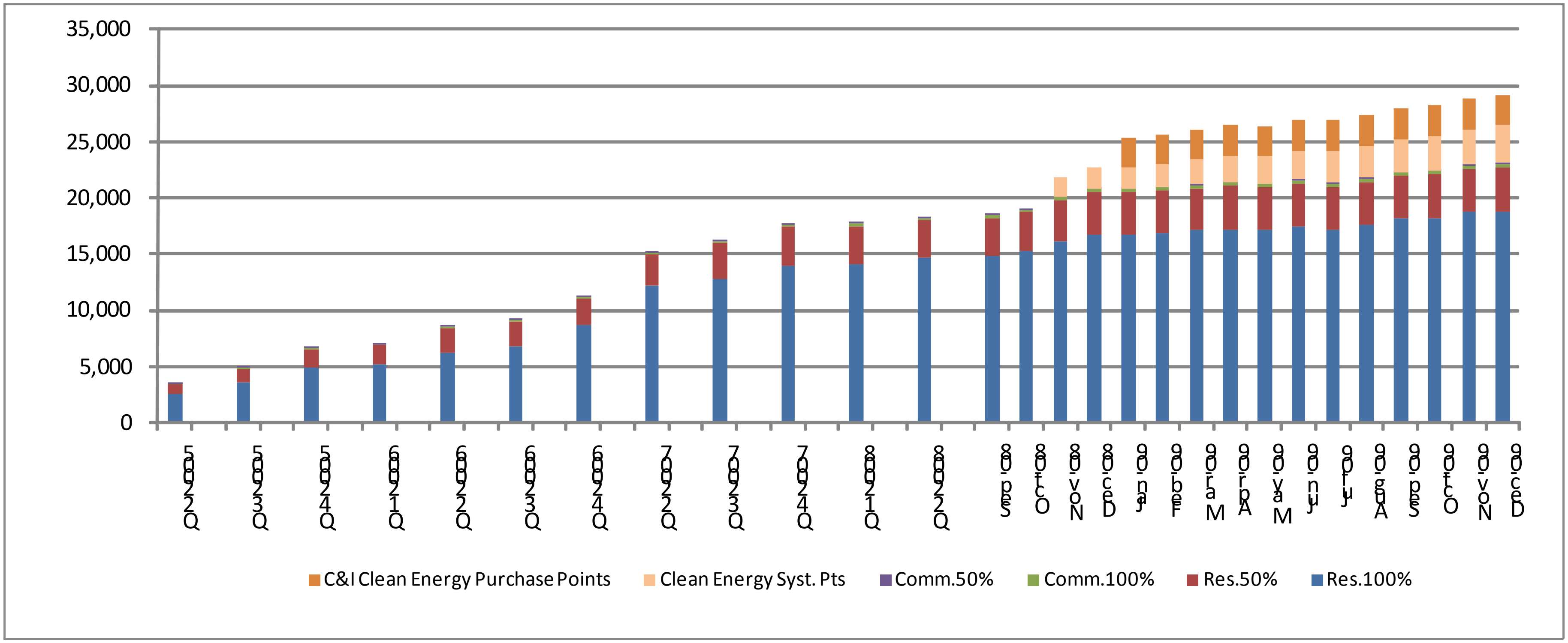
- During Q3 and Q4 of 2009 community level participation continued to grow:
  - Two municipalities made the CCEC pledge.
  - Three additional municipalities qualified as CCECs.
  - Three municipalities received Community Innovations Grants.
- During Q3 and Q4 of 2009 participating communities qualified for 17 kW of earned clean energy systems. The following municipalities qualified for a clean energy system:
  - Branford achieved a 100 signup point qualification (9 kW earned to date).
  - Cornwall was awarded a one kW PV system for its anticipated qualification as an EPA Green Power Community (9 kW earned to date).
  - Greenwich was awarded a five kW PV system for three 100 signup point qualifications (5 kW earned to date).[23]
  - Hamden achieved a 100 signup point qualification (10 kW earned to date).
  - Branford was awarded a three kW PV system for two 100 signup point qualifications (3 kW earned to date).[24]
  - Portland achieved a 100 signup point qualification (7 kW earned to date).
  - Weston achieved a 100 signup point qualification (4 kW earned to date).
  - Westport achieved a 100 signup point qualification (8 kW earned to date).
  - Wilton achieved a 100 signup point qualification (5 kW earned to date).
  - Windsor achieved a 100 signup point qualification (2 kW earned to date).
  - Woodstock achieved a 100 signup point qualification (1 kW earned to date).

[23] Greenwich was awarded 2 kW for each of the first two 100 point qualifications as part of the former southwest CT bonus.
[24] North Haven was awarded 2 kW for the first 100 point qualification as part of the former southwest CT bonus.

1.2 Points Indicators

1.2.1 Change in Points

Figure 5: Total Points Over Time, Cumulative



1.2.1.1 Change in Points, Annual Summary (January 1, 2009 to December 31, 2009)

- During 2009, total signups increased moderately and total points increased significantly. Signups increased by 2,239 (11% increase) and points increased by 6,531 (29% increase). The disparity in increase in signups and points is due to points rewarded for clean energy systems (1,592 additional points) and points rewarded for C&I clean energy purchases (2,700 additional points). [25]

[25] Changes to the Clean Energy Communities program took effect November 1, 2008, modifying the way in which Clean Energy Communities (CEC) can accumulate points. All signups to the CTCleanEnergyOptions program now count as point, regardless as to whether the signup is a 50% or 100% customer. Additional points are now rewarded for clean energy systems installed in CECs and for clean energy purchases made by C&I customers. http://www.ctcleanenergy.com/YourCommunity/CTCleanEnergyCommunities/Communities/tabid/82/Default.aspx

- The 2009 annual increase in signups, 2,239, is the lowest annual increase since the inception of the CCEO and is less than the average annual increase in signups experienced between 2005 and 2008 (5,221).
- The rate of signup growth was relatively low during the first two quarters of 2009 (351 during Q1 and 413 during Q2) but increased during the last two quarters of 2009 (711 during Q3 and 764 during Q4). The decreased signup growth during 2009 is likely due primarily to the economic downturn[26] and the presence of competitive suppliers offering alternative clean energy products, such as Viridian Energy[27] and ConEdison Solutions.[28] Neither the spring nor the fall bill inserts resulted in the same surge in signups that has been observed after nearly all previous bill inserts.
- As of December 31, 2009, points totaled 29,290, comprised of 23,122 signups to the CCEO, 3,468 clean energy system points, and 2,700 C&I clean energy purchase points.
- As of December 31, 2009, there are 22,782 residential signups, representing 99% of all signups and 78% of all points. In addition, there are 19,112 residential and commercial 100% signup participants, representing 83% of total signups.
- The 3,468 clean energy system points represent 12% of total points.
- Since the program's launch, the percentage of residential signups has remained at 98% of total signups or higher.

1.2.1.2 Change in Points, Q3 and Q4 2009 Summary

- During Q3 and Q4 of 2009, total signups increased by 1,475 (compared to an increase of 764 signups in Q1 and Q2) and points increased by 2,317
  - Despite the increase in signup growth during Q3 and Q4 (compared to Q1 and Q2), signup growth was lower in 2009 than in all previous years.

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[26] Bird, Lori, Claire Kreycik and Barry Friedman. 2009. Green Power Marketing in the United States: A Status Report (2008 Data). National Renewable Energy Laboratory, Technical Report NREL/TP-6A2-46851. Golden, CO. www.nrel.gov/docs/fy09osti/46581.pdf

[27] http://www.viridian.com/Viridian/Custom/CUST077/PersonalPages/rp_ct.aspx

[28] http://conedisonsolutions.com/connecticut_green_power.html

1.2.2 Top 20 Connecticut Municipalities in Total Points

Table 1-2: Top 20 Connecticut Municipalities in Total Points

Rank	Municipality	Clean Energy Community Pledge	Connecticut Clean Energy Community Qualified	Community Innovations Grant Awarded	Residential Signup Points	Commercial Signup Points	C&I Clean Energy Purchase Points	Clean Energy System Points	Total Points
1	Stamford	Apr-05	Nov-05	Dec-06	448	8	1,500	42.0	1,998
2	New Haven	Feb-04	Jun-05		1,183	16	0	81.0	1,280
3	West Hartford	Jan-05	Jun-05	Oct-06	1,132	14	0	27.0	1,173
4	Hartford	Feb-06	Feb-06	Feb-07	268	13	800	12.0	1,093
5	Fairfield	Feb-05	Nov-05	Aug-06	810	8	0	54.0	872
6	Ridgefield	Feb-07	Aug-07	Sep-07	511	1	200	30.0	742
7	Hamden	Jul-05	Oct-05	Sep-06	603	5	0	36.0	644
8	Milford	Jan-05	Jan-06	Sep-06	514	5	0	72.0	591
9	Glastonbury	Jan-06	Jan-06		543	7	0	33.0	583
10	Middletown	May-05	Jun-05	Jul-06	402	9	100	57.0	568
11	Westport	Mar-05	Jan-07	Dec-06	481	6	0	72.0	559
12	Branford	Mar-06	Apr-06	Jun-07	447	11	0	66.0	524
13	Mansfield	Jul-05	Feb-06	Sep-06	407	4	0	60.0	471
14	Manchester	Apr-07	Apr-07		383	6	0	39.0	428
15	Stonington	Jun-08			285	5	0	111.0	401
16	Newtown	Nov-06	Nov-06		248	4	100	45.0	397
17	Greenwich	Mar-08	Dec-09		331	5	0	60.0	396
18	Madison	Jul-07	Sep-07		366	5	0	9.0	380
19	Guilford				325	8	0	39.0	372
20	Simsbury	Mar-08		Sep-09	303	3	0	39.0	345
	Top 20 (of Total 166 Eligible Municipalities)	**19 (of 94 Participating Municipalities)**	**17 (of 41 Qualifying Municipalities)**	**12 (of 51 Recipient Municipalities)**	**9,999 (of 22,782 Total Res. Signup Points)**	**143 (of 340Total Comm. Signup Points)**	**2,700 (of 2,700Total Comm. Signup Points)**	**984 (of 3,468 Clean Energy System Points)**	**13,817 (of 29,290 Total Points)**

1.2.2.1 Top 20 Connecticut Municipalities in Total Points, Annual Summary (January 1, 2009 to December 31, 2009)

- The top municipality in total points is Stamford at 1,998, followed by New Haven at 1,280 and West Hartford at 1,173 (all three are Connecticut Clean Energy Communities).
  - Stamford is the top municipality in total points largely because of a large C&I clean energy purchase for which Stamford was awarded 1,500 points.
- Twenty-six municipalities have 300 or more points, representing an increase of six in the number of municipalities with 300 or more points from the fourth quarter of 2008.
- All of the top 20 municipalities have 200 or more points and a total of 35 municipalities have 200 or more points. This represents an increase of seven municipalities with 200 or more points from the fourth quarter of 2008.
- Eighty-seven municipalities have over 100 points, an increase of 10 municipalities from Q4 2008.
- Stamford, Hartford and Ridgefield experienced the largest increases in points during the 2009, with increases of 1,564, 850 and 199 points, respectively.
  - The increase in points for all thee municipalities is largely due to points awarded for large C&I purchases.
- Westport, Simsbury and North Haven experienced the largest increases in signups during 2009, with increases of 163, 113 and 99 signups, respectively.
- The top 20 municipalities in total signup points include 19 of ninety-four municipalities that have made the CCEC pledge, 17 of 41 qualifying Connecticut Clean Energy Communities and 12 of 51 municipalities that have received Community Innovation Grants.
- The top 20 (of 166) municipalities in points represent 44%, 42%, 100%, 28% and 47% of residential, commercial, C&I clean energy purchase, clean energy system and total points, respectively.
  - Interestingly, while the top 20 municipalities represent a disproportionate amount of the clean energy system points, clean energy system points are the least concentrated type of points (i.e., residential, commercial, C&I, total) among the top 20.
- There were three changes in the top 20 municipalities in signup points during 2009, with Hartford, Newtown and Simsbury entering the top 20 and Bethany, Cheshire, and Portland dropping out.

1.2.2.2 Top 20 Connecticut Municipalities in Total Points, Q3 and Q4 2009 Summary

- Simsbury, New Haven and Westport experienced the largest increases in points during Q3 and Q4 2009 with 117, 81 and 72 more points, respectively.
- Simsbury, New Haven and Westport also experienced the largest increases in signups during Q3 and Q4 2009 with 105, 72 and 63 more signups, respectively.

1.2.3 Connecticut Clean Energy Communities, Points

Table 1-3: Total Points for Connecticut Clean Energy Communities

	Number of Muni. (% of Total)	Residential Signup Points (% of Total)	Commercial Signup Points (% of Total)	C&I Clean Energy Purchase Points (% of Total)	Clean Energy System Points (% of Total)	Total Points (% of Total)
Clean Energy Communities (CCEC)	41 (25%)	13,556 (60%)	197 (58%)	2,700 (100%	1,283 (37%)	17,736 (61%)
CCEC pledge (but not CCEC qualified)	53 (32%)	5,502 (24%)	93 (27%	0 (0%)	1,091 (31%)	6,686 (23%)
Nonparticipants	72 (43%)	3,724 (16%)	50 (16%)	0 (0%)	1,094 (32%)	4,868 (17%)
Totals	166 (100%)	22,782 (100%)	340 (100%)	2,700 (100%	3,468 (100%)	29,290 (100%)

- As of December 31, 2009, 41 Connecticut Clean Energy Communities (CCECs) represent only 25% of all municipalities, but 60% of residential signup points, 58% of commercial signup points, 100% of C&I clean energy purchase points, 37% of clean energy system points and 61% of all points.
  - Of the four types of points that comprise total points (i.e., residential signups, commercial signups, C&I clean energy purchase points and clean energy system points), clean energy system points are significantly less concentrated among CCECs than the other types of points.
- The percentage of residential signup points accounted for by CCECs increased by 3% during 2009, while percentage of commercial points increased by 4%, clean energy system points increased by 1%, and total points increased by 6%.
- CCEC pledge communities that have not qualified as CCECs and nonparticipating communities account for much smaller percentages of points (23% and 17%, respectively).

1.2.4 Annual Increases in Points and Signups for Connecticut Clean Energy Pledge Communities and Qualified Connecticut Clean Energy Communities

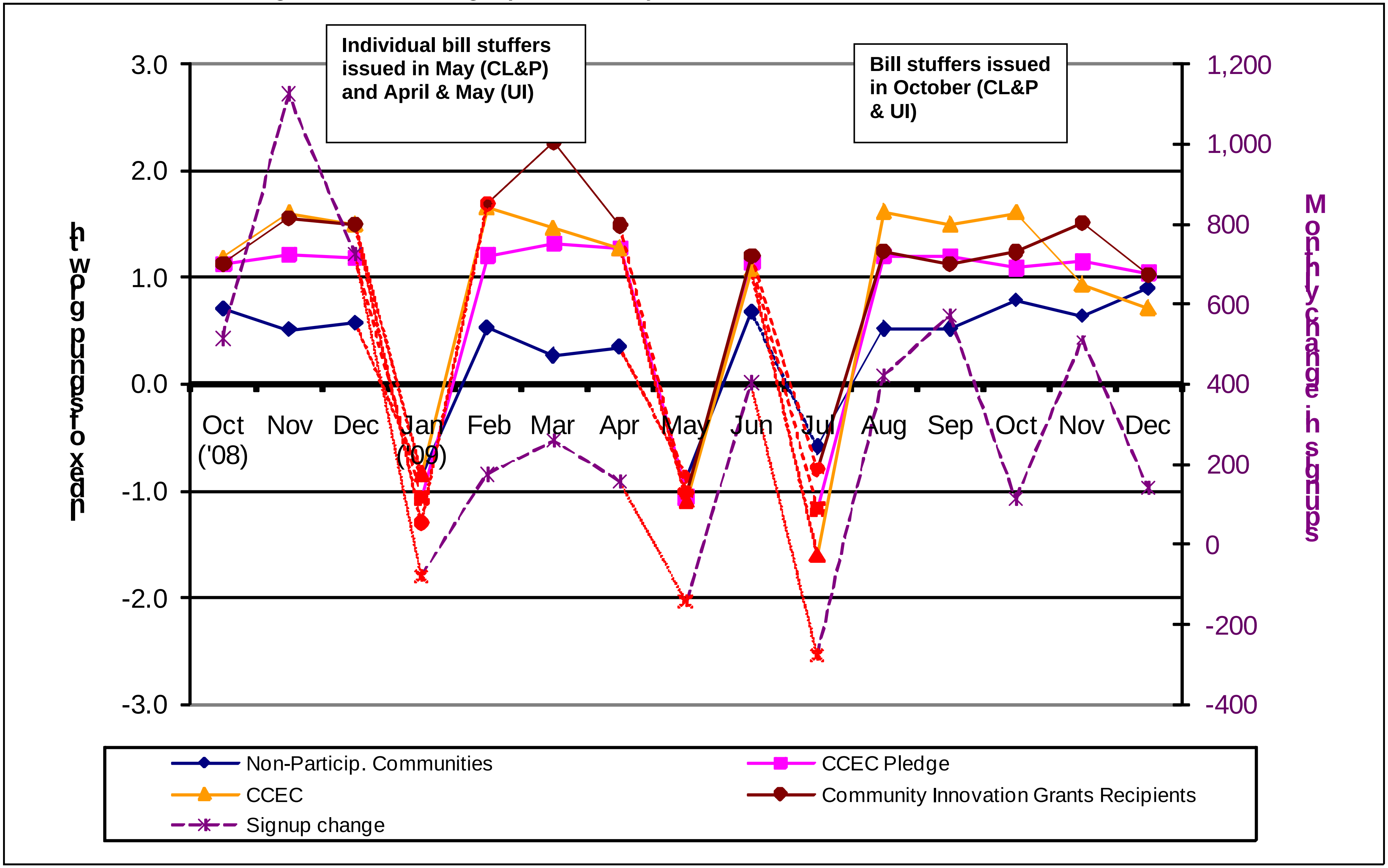
Table 1-4: Annual Increases in Points and Signups, by Program Participation

	Number of Municipalities (Percent of Total)	Annual Increase, Total Points (Percent of Total)	Annual Increase, Signups (Percent of Total)	Annual Increase, Clean Energy System Points (Percent of Total)	Total Households (Percent of Total)	Ratio of Percentage of Annual Increase in Points to Percentage of CT Households	Ratio of Percentage of Annual Increase in Signups to Percentage of CT Households
CCEC pledge	94 (57%)	5,648 (87%)	1,910 (85%)	1,335 (70%)	944, 117 (71%)	1.2	1.2
CCECs	41 (25%)	4,493 (69%)	1,267 (57%)	757 (40%)	559,171 (42%)	1.6	1.3
Community Innov. Grants	51 (31%)	4,445 (68%)	1,268 (57%)	763 (40%)	501,691 (38%)	1.8	1.5
Nonpart.	72 (43%)	857 (13%)	329 (15%)	566 (30%)	388,933 (29%)	0.5	0.5
Totals	166 (100%)	6,505 (100%)	2,239 (100%)	1,902 (100%)	1,333,050 (100%)		

- Ninety-four CCEC pledge communities account for 87% of the annual increase in total points, 85% of the annual change in signups, and 70% of the annual increase in clean energy system points though they only account for 57% of all municipalities and 71% of all households.
- Forty-one Connecticut Clean Energy Communities (CCECs) account for 69% of the annual increase in total points, 57% of the annual increase in signups, and 40% of the annual increase in clean energy system points while they account for 25% of the municipalities and 42% of all households.
- Fifty-one communities that have received Community Innovation Grants account for 68% of the annual increase in total points, 57% of the annual increase in signups, and 40% of the annual increase in clean energy system points while they account for 31% of the municipalities and 38% of all households.
- CCEC pledge communities, CCECs, and Community Innovation Grants recipients account for a disproportionate amount of new signups in 2009, relative to the number of households found in their communities, with a ratio of the percentage of annual signup increase to percentage of Connecticut households of 1.2:1, 1.3:1 and 1.5:1, respectively.
- Increases in clean energy system points are more proportionately distributed than all other types of points.

1.2.5 Index of Signup Growth, Adjusted for the Number of Households

Figure 6: Index of Signup Growth, Adjusted for the Number of Households[29]



[29] The index, calculated for each category of communities, is a ratio of the percentage of the monthly increase in signups to the percentage of Connecticut households found in each category of communities. For example, in October, 2009, Connecticut Clean Energy Communities accounted for 65% of the monthly increase in signups but only 40% of the households in Connecticut, resulting in an index score of 1.6 (65% / 40% = 1.6)

1.2.5.1 Index of Signup Growth, Annual Summary (January 1, 2009 to December 31, 2009)

- CCEC pledge communities, CCECs, and Community Innovation Grants recipients accounted for disproportionate amounts of new points and signups during 2009.
- Signups declined during three months of 2009 (January, May, and July).
- In May of 2009, signups declined for the first time while bill stuffers were being sent to ratepayers
- During Q4 2009, nonparticipant communities experienced an increase in signups as has often been the case for quarters that included bill stuffers sent to ratepayers (as was the case in Q2 2007 and Q2 2006).
- During 2009, the average increase in points for CCEC pledge communities, CCECs, Community Innovations grants recipients and nonparticipant municipalities was 60, 110, 87, and 11 points per municipality, respectively.
- During 2009, the average increase in signups for CCEC pledge communities, CCECs, Community Innovations grants recipients and nonparticipant municipalities was 20, 31, 25, and 4 signups per municipality, respectively.
- During 2009, the average increase in clean energy system points for CCEC pledge communities, CCECs, Community Innovations grants recipients and nonparticipant municipalities was 14, 18, 15 and 8 points per municipality, respectively.
- Seventeen of the 18 communities with point increases of 50 or more during 2009 were CCEC pledge communities; fifteen were Clean Energy Communities. All nine communities with point increases of 100 or more are CCEC pledge communities.
  - Five of the nine communities with point increases of 100 or more received points for a C&I clean energy purchase.
- All eight of the communities with signup increases of 50 or more during 2009 were CCEC pledge communities; seven were Clean Energy Communities

1.2.5.2 Index of Signup Growth, Q3 and Q4 2009 Summary

- CCEC pledge communities, CCECs, and Community Innovations Grants Recipients accounted for disproportionate amounts of new signups in Q3 and Q4 of 2009. .
- Nearly all CCEC pledge communities (87 of 94), CCECs (39 of 41) and Community Innovations Grants Recipients (48 of 51) and nonparticipant communities (65 of 72) increased their numbers of signups during Q3 and Q4 of 2009.
- All seven communities that experienced point increases of 50 or more during Q3 and Q4 2009 were CCEC pledge communities.
- During Q3 and Q4 2009 the average increase in points for CCEC pledge communities, CCECs, Community Innovations grants recipients and non-participant municipalities was 19, 25, 22 and 7, respectively.
- During Q3 and Q4 2009 the average increase in signups for CCEC pledge communities, CCECs, Community Innovations grants recipients and non-participant municipalities was 13, 18, 15 and 3, respectively.
- During Q3 and Q4 2009 the average increase in clean energy system points for CCEC pledge communities, CCECs, Community Innovations grants recipients and non-participant municipalities was 6, 7, 6 and 4, respectively.

1.2.6 Maps of Combined Residential and Commercial Clean Energy Signup Points by Municipality

Municipalities with the largest number of points continue to be concentrated along the southwestern Connecticut corridor and in the greater Hartford region (Figure 7). Annual increases in points follow largely the same pattern (Figure 8)

Figure 7: Map of Combined Residential and Commercial Clean Energy Signup Points by Municipality, Q4 2009

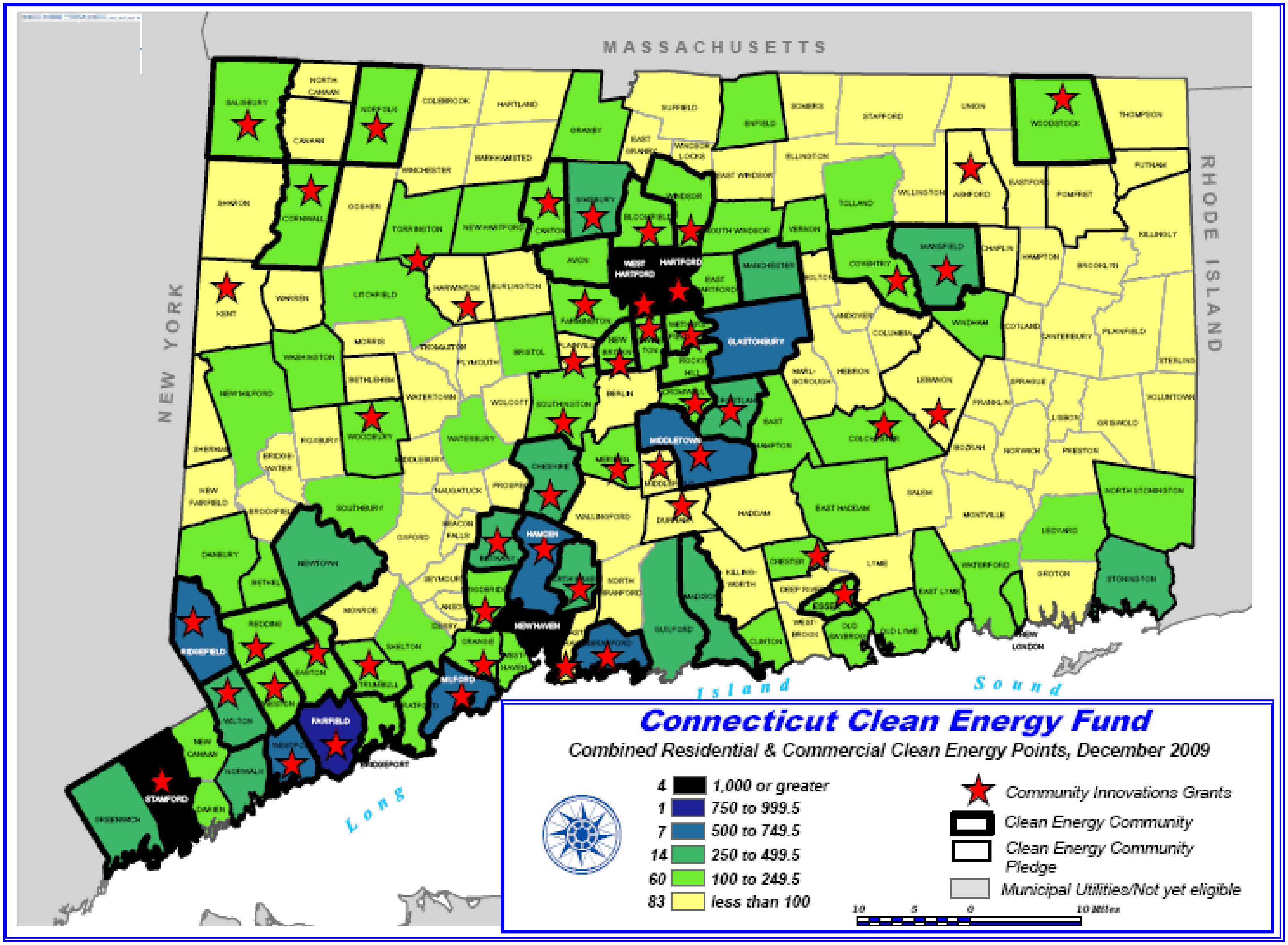
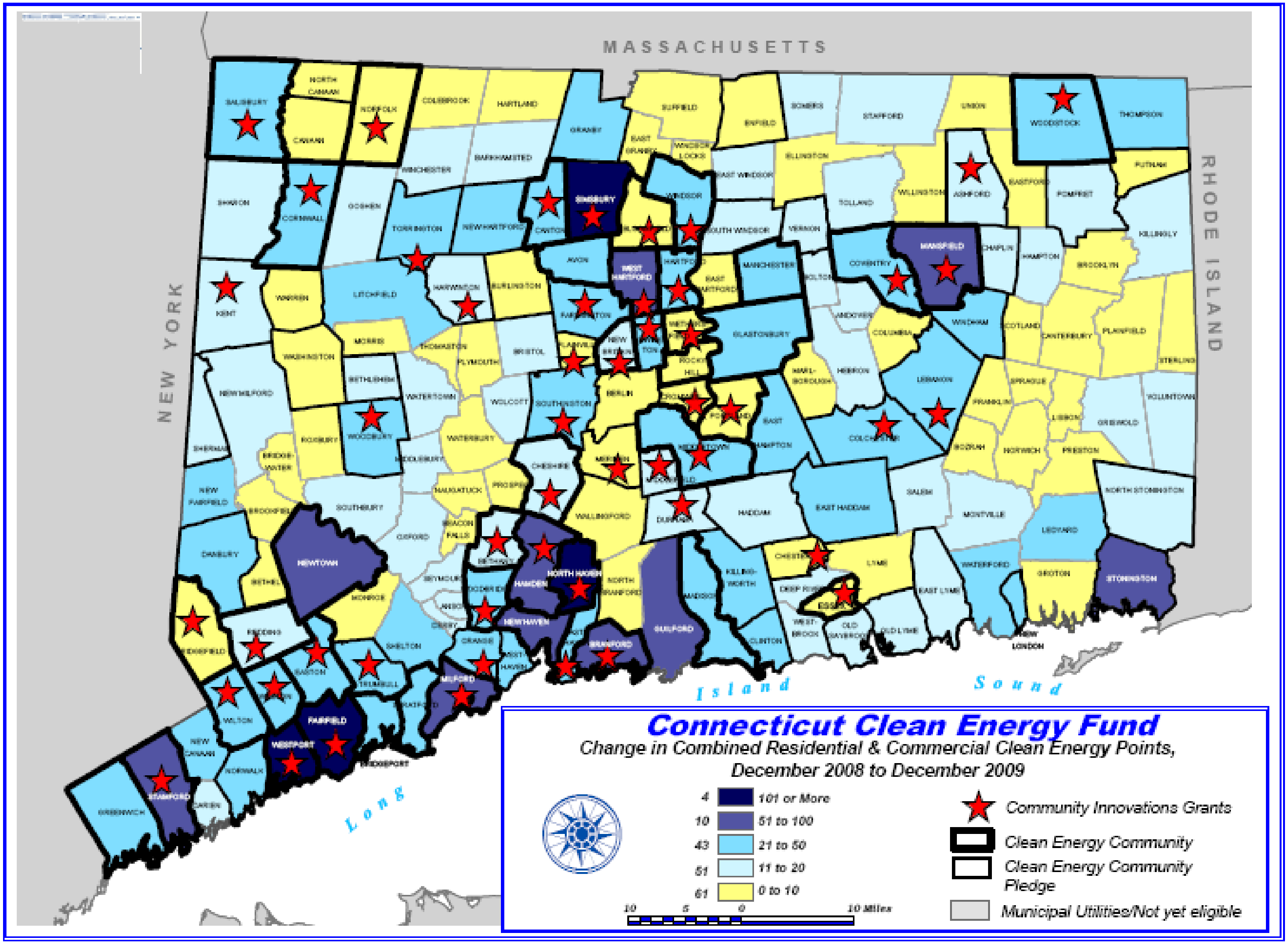


Figure 8: Map of 2009 Annual Change in Combined Residential and Commercial Clean Energy Signup Points by Municipality



1.2.7 Annual Increases in Points for Participating and Non-Participating Municipalities

Table 1-5: Annual Change in Points and Signups, by Program Participation

Annual Change in Points	CCEC pledge Communities	CCEC Qualifiers	Community Innovations Grant Recipients	Nonparticipating Municipalities	Total Number of Municipalities
101 or more	4	4	3	0	4
51 to 100	9	6	8	1	10
21 to 50	40	22	19	7	47
11 to 20	21	9	4	29	50
10 or less	20	10	7	38	58
Total	**94**	**51**	**41**	**75**	**169**

- Thirteen of the fourteen municipalities in the two largest categories of annual change in points (51 to 100 and 101 or more) are CCEC pledge communities. Eleven of the fourteen municipalities are Clean Energy Communities and 10 have received Community Innovations Grants.
- Nearly 90% of all non-participating municipalities experienced annual point increases of 20 points or less.

1.3 Household Penetration Indicators—Cumulative (Q4 2009)

1.3.1 Top 20 Connecticut Municipalities in Household Penetration

Table 1-6: Top 20 Connecticut Municipalities in Household Penetration

Rank	Municipality	Clean Energy Community Pledge	Connecticut Clean Energy Community Qualifier	Community Innovations Grant Awarded	Residential Signup Points	Households	Household Penetration
1	Cornwall	Feb-07	Jan-08	Sep-07	212	658	32.2%
2	Canaan	May-09			55	306	18.0%
3	Bethany	Aug-05	Nov-06	Aug-06	302	1,912	15.8%
4	Norfolk	Aug-06	Jan-07	Sep-06	101	749	13.5%
5	Easton	Apr-06	Apr-08	Jun-07	193	2,499	7.7%
6	Salisbury	Dec-06	Sep-08	Feb-07	140	1,834	7.6%
7	Chester	May-06		Nov-06	117	1,582	7.4%
8	Mansfield	Jul-05	Feb-06	Sep-06	407	5,620	7.2%
9	Portland	Nov-04	Jun-06	Jun-06	271	3,789	7.2%
10	Lyme				60	861	7.0%
11	Ridgefield	Feb-07	Aug-07	Sep-07	511	8,421	6.1%
12	Washington	Aug-07			94	1,681	5.6%
13	Weston	May-07	Nov-07	May-09	183	3,276	5.6%
14	Madison	Jul-07	Sep-07		366	6,624	5.5%
15	Canton	Apr-05	Nov-06	Feb-07	202	3,706	5.5%
16	Woodbridge	Sep-05	Dec-07	Feb-07	162	3,053	5.3%
17	Essex	Feb-06	Jun-07	Oct-06	161	3,109	5.2%
18	Hampton				38	734	5.2%
19	Westport	Mar-05	Jan-07	Dec-06	481	9,387	5.1%
20	Redding	Jun-07	Nov-07	Apr-09	163	3,262	5.0%
	Top 20 (of Total 166 Eligible Municipalities)	**18 (of 94 Participating Municipalities)**	**15 (of 41 Qualifying Municipalities)**	**15 (of 51 Recipient Municipalities)**	**4,219 (of 22,782 Total Res. Signup Points)**	**63,063 (of 1,333,050 Total Households)**	

- The top municipality in household penetration at the end of Q4 is Cornwall (32.2%), followed by Canaan (18.0%) and Bethany (15.8%).
- Twenty municipalities have household penetration rates of 5% or higher at the end of Q4 2009, representing an increase of four municipalities from Q4 of 2008.
- Thirty municipalities have household penetration rates of 4.0% or higher, representing an increase of seven municipalities with household penetration rates of 4.0% or higher from Q4 2008.
- Canaan experienced the largest increase in household penetration during 2009, an increase of 6.6% (from 11.4% to 18.0% household penetration rate), followed by Cornwall and Westport with household penetration rate increases of 2.1% and 1.7%, respectively.
- The top 20 municipalities include 18 of ninety-four CCEC pledge communities, 15 of 41 qualifying Connecticut Clean Energy Communities and 15 of 51 municipalities that have received Community Innovation Grants.
- The top 20 municipalities in household penetration tend to be smaller communities, with an average of 3,153 households, compared to the top 20 municipalities in signup points, with an average of 19,055 households.
- While the top 20 municipalities in household penetration represent 19% of residential signup points they only account for 5% of eligible Connecticut households.
- There was one change in the top 20 municipalities in household penetration from the fourth quarter of 2008 to the fourth quarter of 2009, with Westport entering the top 20 and West Hartford dropping out.

1.3.2 Connecticut Clean Energy Communities, Household Penetration

Table 1-7: Average Household Penetration for Connecticut Clean Energy Communities versus Nonparticipants

	Number of Municipalities (Percent of Total)	Residential Signups (% of Total)	Average Municipal Household Penetration	Household Participation Rate[30]	Total Households (Percent of Total)
Clean Energy Communities (CCEC)	41 (25%)	13,556 (60%)	4.8%	2.4%	559,171 (42%)
CCEC pledge (but not CCEC qualified)	53 (32%	5,502 (24%)	2.6%	1.4%	384,946 (29%)
Nonparticipants	72 (43%)	3,724 (16%)	1.4%	1.0%	388,933 (29%)
Totals	166 (100%)	22,782 (100%)	2.6%	1.7%	1,333,050 (100%)

- As of December 31, 2009, 41 Connecticut Clean Energy Communities (CCECs) have an average household penetration rate of 4.8%, while CCEC pledge communities that have not qualified as CCECs have an average household penetration rate of 2.6% and nonparticipating communities have an average participation rate of 1.4%.
- Overall, 2.4% of all households in CCECs are enrolled in the CCEO program while 1.4% of all households in CCEC pledge communities that have not qualified as CCECs and 1.0% of all households in nonparticipating communities are enrolled in the CCEO program.
- Statewide, 1.7% of households are enrolled in the CCEO program
- The ratio of overall household participation rates of CCECs to nonparticipating communities is 2.5:1.

[30] The household participation rate calculates the percentage of all households in a given group of communities that are enrolled in the CCEO (i.e., xx participants / xx # of households) whereas the average municipal household participants

1.3.3 Maps of Residential Penetration by Municipality

Municipalities with highest rates of household participation in the CCEO program continue to be concentrated in smaller communities found in northwestern Connecticut, in southwestern and south central Connecticut, and in parts of northeastern Connecticut (Figure 9). Annual increases in residential participation rates follow largely the same pattern (Figure 10)

Figure 9: Map of Residential Penetration by Municipality, Q4 2009

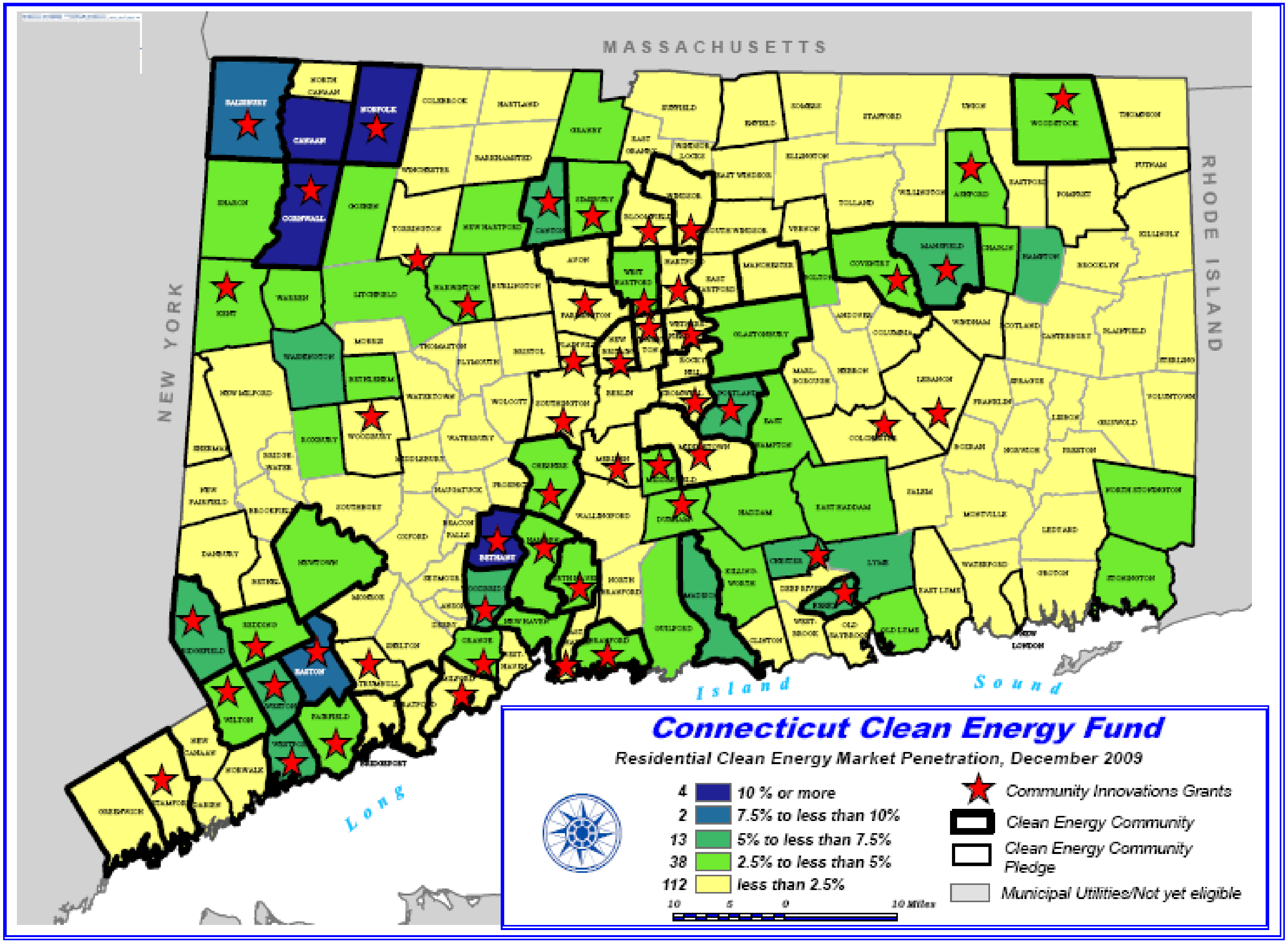
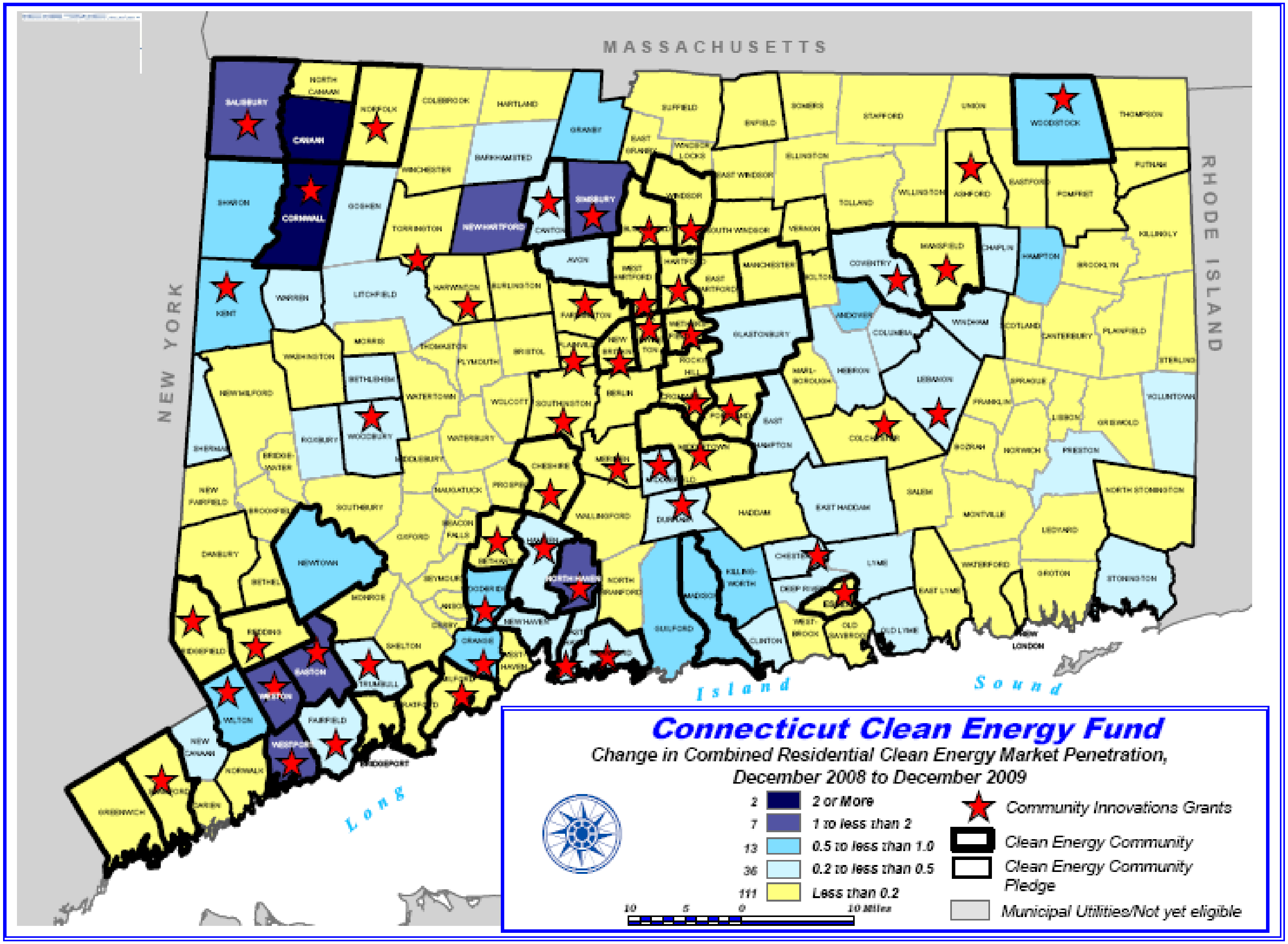


Figure 10: Map of Annual Change in Residential Penetration by Municipality



1.3.4 Annual Increases in Household Penetration for Participating and Non-Participating Municipalities

Table 1-8: Annual Change in Household Penetration, by Program Participation

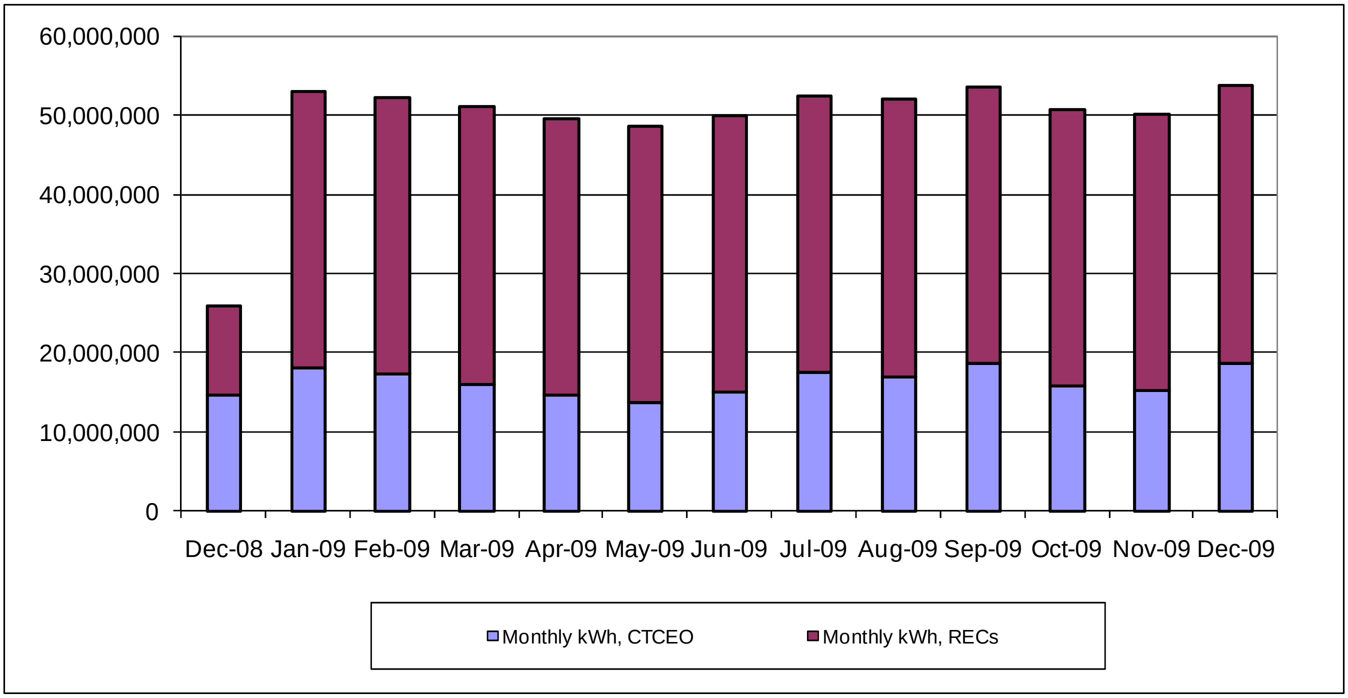
Annual Change in Household Penetration Rates	CCEC pledge Communities	CCEC Qualifiers	Community Innovations Grant Recipients	Nonparticipating Municipalities	Total Number of Municipalities
2.0 or more	2	1	1	0	2
1 to less than 2.0	7	5	6	0	7
0.5 to less than 1.0	10	5	5	3	13
0.2 to less than 0.5	25	8	12	11	36
0.2 or less	50	22	27	61	111
Total	**94**	**41**	**51**	**75**	**169**

- All nine municipalities in the two largest categories of annual change in household penetration rates (1 to less than 2.0 and 2 or more) are CCEC pledge communities. Six of the nine municipalities are Clean Energy Communities and seven have received Community Innovations Grants.
- Nearly all (72 of 75) nonparticipating municipalities experienced annual change in household penetration rates 0.5 or less.

1.4 Energy Consumption Indicators

1.4.1 Monthly kWh Consumption

Figure 11: Monthly kWh Consumption of CCEO Customers and RECs Purchases [31]



- From January 1, 2009 to December 31, 2009, the estimated average monthly kWh consumption was 51,367,271 kWh.
    - Of the 51,367,271 kWh, 16,457,145 kWh are attributable to enrollments to the CCEO, while the remaining 34,910,127 kWh are attributable to bilateral RECs purchases made by made by municipalities, the state of Connecticut, universities and businesses based in Connecticut.
        - The overall monthly average kWh consumption in 2009 was 27,457,630 kWh greater than in 2008, with the monthly average consumption attributable to enrollments in the CCEO increasing by 3,797,824 kWh and average monthly REC purchases increasing by 23,659,806.
    - During the third quarter of 2009, the average monthly kWh consumption was 52,616,615 kWh. This represents a 3,276,970 kWh increase from Q2 2009. There was a similar seasonal increase from Q2 2008 to Q3 2009; the increase is likely due to seasonal patterns in energy use (i.e., higher electricity usage in the winter months of Q3 due to summer cooling demand).

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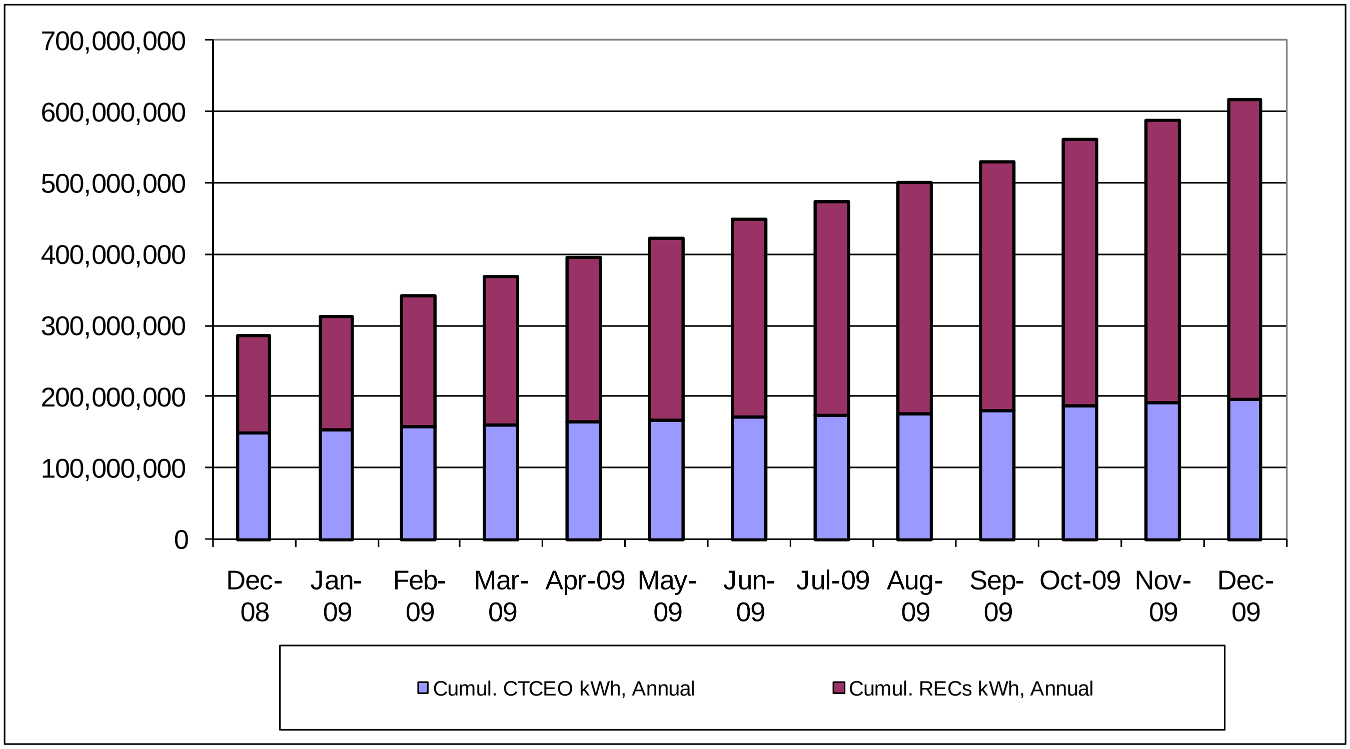
[31] Monthly kWh consumption includes gross kWh consumption from the CCEO and gross bilateral RECs purchases, but excludes RECs from on-site distributed generation (DG). Gross bilateral RECs data was provided by the following REC suppliers: Sterling Planet, Community Energy, 3Degrees, Renewable Choice Energy, Carbon Solutions Group, by REC contracts and correspondences from town officials provided by Bob Wall of CCEF. REC purchases do not include RECs reported by the EPA Green Power Partnership website (http://www.epa.gov/grnpower/) but not verified by a REC supplier, REC contract, or correspondence from a town official with the exception of RECs purchased by the state of Connecticut, which were confirmed by Bob Wall of CCEF. Gross bilateral RECs data was provided as total annual MWh. For this report, it was assumed that gross bilateral RECs were consumed in equal monthly installments. For example, a purchase of 120 MWh of RECs is estimated to equal 10 MWh per month.

- During the fourth quarter of 2009, the average monthly kWh consumption was 51,496,284 kWh. This represents a 1,120,331 kWh decrease from Q3. There was a similar seasonal decrease from Q3 to Q4 2008; the decrease is likely due to seasonal patterns in energy use (i.e., lower electricity usage in the fall and early winter months of Q4 compared to higher cooling demands in the summer months of Q3).

1.4.2 Total Annual kWh Consumption[32]

Figure 12: Annual kWh Consumption of CCEO Customers and RECs Purchases



- During 2009, the cumulative estimated kWh consumption was 616,407,252 kWh, equal to 59% of the goal of achieving a 3% voluntary clean energy market by the end of 2010.
    - Cumulative annual kWh consumption of 559,147,319 kWh represents an increase of 329,491,558 kWh from 2008 (a 115% increase).
    - Of the 616,407,252 kWh of cumulative annual kWh consumption, 197,485,734 kWh are attributed to enrollments to the CCEO while the remaining 418,921,518 kWh are attributed to bilateral RECs purchases made by municipalities, the state of Connecticut universities and businesses based in Connecticut.
- During the third quarter of 2009, the cumulative quarterly kWh consumption was 157,849,846 kWh.
- During the second quarter of 2009, the cumulative quarterly kWh consumption was 154,488,853 kWh.
- Nearly 100% (98%) of kWh of the RECs purchased were made by municipalities, the state of Connecticut universities and businesses based in CCEC pledge communities (96% were in CCECs).

[32] Cumulative kWh consumption includes gross kWh consumption from the CCEO and gross bilateral RECs purchases, but excludes RECs from on-site distributed generation (DG). Gross bilateral RECs data for 2008 and 2009 was provided by the following REC suppliers: Sterling Planet, Community Energy, 3Degrees, Renewable Choice Energy. REC purchases for 2008 and 2009 do not include RECs reported by the EPA Green Power Partnership website (http://www.epa.gov/grnpower/) but not verified by a REC supplier with the exception of RECs purchased by the state of Connecticut, which were confirmed by Bob Wall of CCEF. Data for REC purchases made in 2007 were provided by Bob Wall of the CCEF. 2007 based on data collected from CCEO suppliers, municipalities, the EPA Green Power Partner Program and other sources. Gross bilateral RECs data was provided as total annual MWh. For this report, it was assumed that gross bilateral RECs were consumed in equal monthly installments. For example, a purchase of 120 MWh of RECs is estimated to equal 10 MWh per month.

Over one-half (57%) of the RECs purchased in 2009 were purchased by commercial and industrial customers, followed by the State of Connecticut, which was responsible for over a quarter of all RECs purchased in 2009, and municipalities (14%) (See Table 1-9)

Table 1-9: RECs Purchased by Connecticut Based Firms and Organizations

Type of Organization	Total kWh of RECs Purchased, 2009	Percentage of Reported kWh, 2009
Commercial and Industrial	239,783,914	57%
State of Connecticut	107,225,622	26%
Municipality	57,317,250	14%
Schools and Universities	14,562,987	3%
Non-profit Organizations	31,745	<1%
Grand Total	418,921,518	100%

1.5 Environmental Benefits Indicators[33, 34]

Table 1-10: Projected Potential Annual Emissions Reductions [35]

Emissions	Unit	Emission Factors	Emissions Reductions	
CO_2	lbs/MWh	710.625	219,017	tons CO_2
Carbon Equivalent	MTCE/MWh	0.088	54,187.92	MTCE

- The estimated mid-year reduction of CO_2 attributable to the mid-year total of 616,407,252 kWh is 219,017 tons of CO_2 and 54,188 MTCE.

Table 1-11: Projected Potential Annual Conventional Fuel Avoided [36]

Fuel / Source	NEPOOL Mix (%)	Annual MWh Avoided (MWh)	Annual Avoided Primary Heat Generation (mmBTU) [37]	Consumption Avoided	
Coal	10.60%	65,311	660,102	**31,433**	tons coal
Oil	1.49%	9,177	92,748	**15,991**	barrels oil
Natural Gas	36.48%	224,849	2,272,553	**2,342,838**	mcf gas
Raw Uranium Ore (Nuclear) [38]	31.30%	192,966		**3,289,524**	lbs U ore

- In terms of conventional fuel, the 616,407,252 kWh are equivalent to 31,433 tons of coal, 15,991 barrels of oil, 2,342,838 mcf of natural gas and 3,289,524 pounds of Uranium ore.

[33] Environmental benefits are based on annual kWh consumption of 616,407,252 kWh. In addition, analysis assumes equivalent generation from only non-polluting renewable sources - e.g. solar, wind, hydro. Does not include fuel cell, land fill gas or other sources that generate emissions.
[34] Environmental benefits calculations assume that the 616,407,252 kWh of electricity would have been generated in the NEPOOL territory in the absence of the CTCleanEnergyOptions Program.
[35] Average emission factors for NEPOOL region wide residual mix from 1st Quarter 2009 to 4th Quarter 2009. Source: https://www.nepoolgis.com/myModule/rpt/myrpt.asp?r=112
[36] Sources: (a) Average NEPOOL region wide residual mix from 2nd Quarter 2008 to 1st Quarter 2009, (b) EPA's Unit Conversions, Emissions Factors, and Other Reference Data Report (Nov 2004) - http://www.epa.gov/appdstar/pdf/brochure.pdf [EPA Nov 2004]
[37] BTU/kWh conversion of 10,107 BTU/kWh used - approximately 34% plant efficiency. Source [EPA Nov 2004]
[38] Source: http://www.uic.com.au/wast.htm. Assumes 50,000 tonnes/yr of uranium ore to support a 1,000 MW light water nuclear plant. Assuming 75% capacity factor gives 6,570,000 MWh/yr.

Table 1-12: Projected Potential Annual Fossil Fuel Consumption Equivalents [39,40]

	Consumption Equivalents	
Cars	**43,006**	Cars
Number of tree seedlings grown for 10 years (Sequestration)	**5,094,595**	Tree seedlings grown for 10 years

- Annual kWh are equivalent to removing 43,006 cars from the road for a year or 5,094,595 tree seedlings grown for 10 years.

[39] Assumes CO2 emission of 4.62 metric tons/yr for an average passenger vehicle. Source: U.S. Climate Technology Cooperation Gateway, http://www.usctcgateway.net/tool/

[40] Assumes that for each tree seedling planted, 0.039 metric tons of CO2 will be sequestered. Source: U.S. Climate Technology Cooperation Gateway, http://www.usctcgateway.net/tool/

1.6 Interviews with REC Purchasers

NMR interviewed six REC purchasers in December of 2009, consisting of two schools and four private firms. The interviews covered a wide range of topics, including amount of kWh and type of generation of recent REC purchases, reasons for purchasing RECs, the influence of CCEF programming and other factors on REC purchases, barriers to RECs purchases, and barriers to enrollment in the CCEO program.

1.6.1 Summary of REC Purchases

Five of the six respondents purchased a total of 93,878,667 kWh of RECs to offset electricity usage for the 2009 calendar year, while one respondent purchased 50,000,000 kWh during 2009, but the RECs were applied to electricity usage from July 2007 to June 2008. All respondents made REC purchases for the 2008 calendar year and all are very likely to make REC purchases in 2010.[41]

The REC purchases range from 400,000 kWh to over 84,000,000 kWh, and all REC purchases were Green-e certified. In terms of type of generation, four of the six REC purchases were 100% wind generation, one was 100% biomass and one was a mix of national wind, regional wind and small hydroelectric generation.

REC purchases represent a wide range of each respondent’s total electricity usage. Two respondents made purchases to cover 100% of their usage, one made a purchase representing approximately 22% of annuals usage, one made a purchase for 16% of usage and two made purchases representing less than 10% of usage.

1.6.2 Reasons for Making REC Purchases

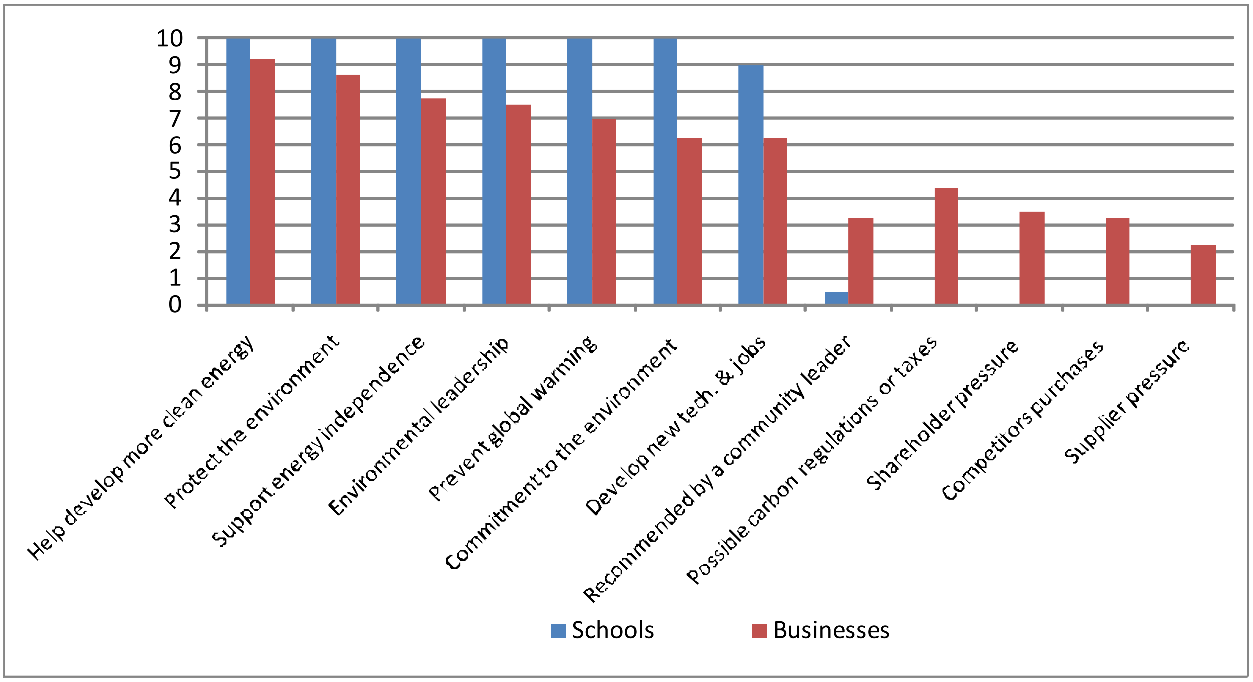
Respondents were first asked to describe why they made their REC purchase and then asked to rate a variety of possible reason for making a REC purchase. When asked why they made their REC purchase, five of six respondents reported largely for the environmental benefits of purchasing RECs or in order to demonstrate to the public their commitment to the environment and clean energy projects. Two respondents noted that the decision to purchase RECs was made at the corporate level as one part of a broader strategy to be more “green.”

One respondent provided a significantly different reason for purchasing RECs: to help the company's community obtain CCEF-funded solar panels. Members of the local community approached the company and encouraged it to purchase RECs for the community's benefit.

[41] Respondents were asked to rate the likelihood of making REC purchases in 2010 on zero to 10 scale, with zero meaning “not at all likely” and 10 meaning “extremely likely.” All respondents rated their likelihood as 7.5 or higher.

Respondents were also asked to rate the importance of a number of factors in their decision to purchase RECs on a zero to 10 scale, with zero meaning "not at all important" and 10 meaning "extremely important" (Figure 13). Respondents from schools rated all reasons as extremely important except for recommendations from a community leader, which was rated as "not at all important." Business respondents were more varied in their responses, placing more importance on helping develop more clean energy, protecting the environment, supporting energy independence and demonstrating environmental leadership. Businesses placed less importance on factors related to pressures from shareholders, competitors and suppliers.

Figure 13: Mean Level of Importance of Factors in REC Purchase Decision[1]



[1] Respondents from schools were not asked to rate the importance of "possible carbon regulations or taxes," "stakeholder pressure," "competitors purchases," or "supplier pressure."

1.6.3 Influence of CCEF on REC Purchases

Four of the six respondents were aware of the CCEF before they first purchased RECs and all six respondents were aware of CCEF before the time of the interview.

The four respondents who were aware of CCEF before they made their REC purchases were asked a series of questions to examine the influence of CCEF on their REC purchase. First, respondents were asked to rate the likelihood that they would have purchased the same amount of RECs if CCEF was **not** working to promote, develop and invest in clean energy in Connecticut using a zero to 10 scale, with zero meaning "not at all likely" and 10 meaning "extremely likely," and then they were asked to rate the influence of CCEF's activities and programs on their decision to purchase RECs (Table 1-13). One respondent reported that they would not have been likely to have made their REC purchase without CCEF, adding that it would probably not have purchased any RECs, if not for the CCEF's solar panel benefit. Three respondents reported that they would have been extremely likely to purchase the same amount of RECs without CCEF's activities. However, when asked if CCEF's work and supporting their local community's participation in CCEF programs were critical factors in their decision to purchase RECs, two respondents strongly agreed. These two respondents were asked to identify CCEF activities or programs that were important factors in their decision to purchase RECs, with one identifying energy reimbursement programs and the other indicating the solar panel incentive.

Table 1-13: Ways to Increase Awareness of the CCEO Program

	0 to 3	4 to 6	7 to 10
Likelihood of purchasing the same amount of RECs without CCEF's work to promote, develop and invest in clean energy (0 = "not at all likely," 10 = "extremely likely")	1	0	3
CCEF's work to promote, develop and invest in clean energy in Connecticut was a critical factor in the decision to purchase RECs in 2009. (0 = "strongly disagree," 10 = "strongly agree")	2	0	2
Supporting our community's participation in CCEF programs was a critical factor in the decision to purchase RECs in 2009. (0 = "strongly disagree," 10 = "strongly agree")	2	0	2
At the time that we bought the RECs, the activities and programs of the CCEF were NOT necessary to persuade us to purchase the RECs in 2009. (0 = "strongly disagree," 10 = "strongly agree")	1	1	2

1.6.4 Barriers to Purchasing RECs

When asked to identify potential barriers or obstacles to purchasing RECs, five respondents identified cost and five identified the need to educate management or the company in general about RECs (Table 1-14). It should be noted that three respondents did not consider these obstacles, but instead part of the process of making the purchase.

Table 1-14: Barriers or Obstacles to REC Purchases

Barrier / Obstacle[1]	Number of Respondents
Cost or expense	5
Educating management or company about RECs	5

[1] Three respondents reported that these were not really barriers, just part of the process of purchasing RECs.

Respondents were then asked to identity barriers or obstacles preventing other Connecticut based firms or organizations from purchasing RECs (Table 1-15). All six respondents identified cost while three identified lack of knowledge of RECs.

Table 1-15: Barriers or Obstacles for Other Connecticut Based Firms or Organizations Not Currently Purchasing RECs

Barrier / Obstacle	Number of Respondents
Cost or expense	6
Lack of knowledge of RECs	3

Respondents were asked what CCEF could do to help overcome the barriers to purchasing RECs. Three respondents suggested helping to reduce the cost of RECs, either by increasing clean energy production or by working with REC suppliers and wholesalers. Three respondents suggested increased marketing and educational efforts to increase awareness of clean energy and RECs, including holding educational forums or associations for green companies to learn about RECs and clean energy as well as network with other green companies.

1.6.5 Awareness of the CCEO Program

Three of the six respondents were aware of the Options program and each chose RECs for a different reason: because the firm is purchasing RECs to offset electricity usage nationwide, because of price, and because they first began purchasing RECs before the Options program began.

Finally, four of the six respondents were aware that their RECs purchases could help their communities earn free solar panels.

1.7 Regional Training Workshop Surveys

Throughout 2009 CCEF conducted regional training workshops for members of Clean Energy Task Forces from Connecticut Clean Energy Communities. At the conclusion of the workshops, CCEF distributed paper surveys to workshop participants.[42] The surveys covered a range of topics, including barriers to enrollment in the CCEO program, factors affecting the decision to enroll in the CCEO program, ways in which Connecticut residents learn about clean energy, and motivations for residents to enroll in the CCEO. Overall, 22 workshop participants responded to the survey. Electronic copies of the completed surveys were sent to NMR by CCEF and data were analyzed by CCEF.

1.7.1 Raising Awareness of CCEO

Respondents were asked to rate the effectiveness of a number of ways to increase awareness of the CCEO program by using a scale from zero to 10, where zero means “not effective” and 10 means “extremely effective.” Respondents were most likely to identify friends, family, neighbors and colleagues as an extremely effective way to increase awareness of the CCEO program (17 of 22 respondents), followed by information booths, local projects (funded by CIGP) and speaking with members of local Clean Energy Task Forces (Table 1-16).

Table 1-16: Ways to Increase Awareness of the CCEO Program (n = 22)

	Not effective (0 to 3)	Moderately effective (4 to 6)	Extremely effective (7 to 10)
Friends, family, neighbors or colleagues	2	3	17
Information booths at community events, such as a parade or sporting event	0	6	15
Local project s funded by CCEF’s Community Innovation Grants Program	2	4	14
Speaking with members of their local Clean Energy Task Force	2	5	13
Yard sign, window sticker, bumper sticker or other logo from CCEF that could be displayed by current subscribers to the CTCleanEnergyOptions Program	4	5	11
Media coverage	4	7	10
Outreach and activities by non-profit environmental organizations (e.g. Clean Water Fund, Sierra Club, People’s Action for Clean Energy, Interreligious Eco-Justice Network	3	8	10
Inserts in utility bills	10	6	5
Direct mailings from Sterling Planet or Community Energy	6	10	5
Outreach and activities by the Connecticut Clean Energy Fund (CCEF)	16	6	0
Science centers or museums	14	5	0

[42] The surveys were designed by NMR and CCEF

When asked to identify the single most effective way to increase awareness of the CCEO program, respondents identified personal contacts (6 respondents), media, and outreach at forums, fairs or other events (Table 1-17).

Table 1-17: Ways to Increase Awareness of the CCEO Program (Multiple Response, n = 22)

	Number of Responses
Personal contact	6
Media exposure; messaging	5
Outreach at forums, fairs and other events	5
Local task forces	2
Local political leaders / selectmen	2
Small, local organizations (scouts, churches, etc)	1
Direct mail	1
Training local leaders	1
Through schools and children	1
No single way	1
Physical presence	1
More grants	1
Yard signs	1
Gift cards from local businesses for enrolling in Options program	1

Respondents were asked to identify the major barriers or obstacles to raising awareness of the CCEO program. The most frequently identified barrier was cost (seven respondents), followed by people being busy and the poor economy (Table 1-18).

Table 1-18: Major Barriers or Obstacles to Increasing Awareness of the CCEO Program (Multiple Response, n = 22)

	Number of Responses
Cost	7
People are too busy	5
Lack of information, or awareness, or media coverage	5
Economic barriers; the poor economy	4
Disinformation about CCEF or global warming	3
Reluctant to change	3
Confusion or lack of understanding of what is being purchased	2
Lack of conservation ethic in community	2
Fear that clean energy is unreliable	2
Do not trust of information about CCEO	1
Available funding and resources to promote the Options	1
No room in electric bills	1
No major barriers	1

1.7.2 Enrolling in the CCEO

Respondents were asked to rate factors that may affect someone's decision to enroll in the CCEO program on a scale from -5 to +5, where -5 means the factor has strong negative effect on the decision to purchase, 0 means the factor has no effect, and +5 means the factor has a strong positive effect. The factors with the strongest positive effect were helping to protect the environment, helping support energy independence, helping develop new technologies and new jobs, helping prevent global warming, and helping support the development of more clean energy; these factors were rated as having a positive effect or no effect by all respondents (Table 1-19). Several factors were identified as having a negative effect on enrolling in the CCEO, including awareness of the CCEO, obtaining information about the CCEO, the enrollment process, and most importantly, the current price of the CCEO.

Table 1-19: Factors that May Affect Decisions to Enroll in the CCEO (n = 22)

	Negative effect (-5 to -2)	No effect (-1 to 1)	Positive effect (2 to 5)
Helping protect the environment by enrolling in the CTCleanEnergyOptions program	0	6	16
Helping support energy independence or security by enrolling in the CTCleanEnergyOptions program	0	6	16
Helping support the development of new technologies and create new jobs by enrolling in the CTCleanEnergyOptions program	0	8	14
Helping prevent global warming by enrolling in the CTCleanEnergyOptions program	0	9	13
Helping support the development of more clean energy by enrolling in the CTCleanEnergyOptions program	0	11	11
Level of awareness of the CTCleanEnergyOptions program in your community	10	3	9
Ability to obtain information about the CTCleanEnergyOptions program	6	7	9
The process of enrolling in the CTCleanEnergyOptions program	8	9	5
The current price of the CTCleanEnergyOptions	17	3	2

When asked why residents in their community enroll in the CCEO, respondents were most likely to identify energy independence, general environmental benefits, global warming or climate change, and supporting renewable energy (Table 1-20).

Table 1-20: Why People Enroll in the CCEO Program (Multiple Response, n = 22)

	Number of Responses
Energy independence	8
Environmental benefits; caring for the environment	6
Global warming, climate change	6
Support renewable energy	4
Do the right thing	3
Pollution, clean air	2
Green jobs	2
For future generations	1
Help get solar panel for town	1
Enrollees choose for their own reasons	1

Overall, nine respondents experienced barriers when enrolling in the CCEO program, with seven respondents identifying the enrollment process (five respondents identified the enrollment process in general, while two other respondents identified specific aspects of the enrollment process) and four identifying the cost as the barrier (Table 1-22).

Table 1-21: Barriers to Enrolling in the CCEO Program (Multiple Response, n = 9)

	Number of Responses
Difficult to enroll, confusing	5
Price, cost	4
Needed CL&P insert to enroll	1
Need utility account number to enroll	1
Difficult to choose between suppliers;	1

In addition, respondents were asked if a series of four potential obstacles to enrolling in the CCEO Program were barriers to residents of their home communities. Cost was identified as the most common barrier, followed by lack of trust or understanding of clean energy products (Table 1-22).

Table 1-22: Barriers Preventing Residents of Home Community from Enrolling in the CCEO

	Number of Responses
Cost	18
Don’t understand or trust clean energy products	11
Don’t understand how to enroll	8
Unable to choose both competitive supplier for generation and the CCEO Program	8

When asked to identify ways to overcome barriers to enrolling in the CCEO program, respondents most commonly identified outreach and person to person discussions (Table 1-23).

Table 1-23: Ways to Overcome Barriers to Enrollment in the CCEO Program

	Number of Responses
Outreach, person to person discussions	5
More media coverage and information	2
Enroll with options with competitive suppliers; make it easier to enroll in CCEO and choose competitive supplier	2
Remove premium, lower cost	2
Provide option to sign up directly with provider	1
More bill inserts / mailers	1
Make CCEO part of the standard mix	1
Through children & education efforts	1
Simplify the program	1
More information about environmental benefits	1
More information about conservation (to offset costs)	1
More outreach by suppliers to towns	1

1.7.3 Municipal Clean Energy Purchases and Working with CCEF

Respondents were asked if their municipal government was currently making a clean energy purchase to meet CCEF program requirements. Respondents from nine of 13 municipalities reported they are making a municipal clean energy purchase, four are not and four do not know (Table 1-24).

Table 1-24: Clean Energy Purchases by Municipal Governments (n = 17 municipalities)

	Number of Responses (by Municipality)
Yes	9
No	4
Don't know	4

Of the nine municipalities that are making clean energy purchases, six are making purchases through the CCEO, two are using a combination of on-site renewable and Green-e certified RECs, and one is relying solely on on-site renewable (Table 1-25).

Table 1-25: Type of Clean Energy Purchases by Municipal Governments (n = 9 municipalities)

	Number of Responses (by Municipality)
CCEO	6
Combination of on-site renewable and Green-e certified RECs	2
On-site renewable	1

Last, respondents were asked if there were any issues that the CCEF could help with. Respondents most commonly identified a need for increased marketing, advertising and education efforts (Table 1-26).

Table 1-26: Ways to Overcome Barriers to Enrollment in the CCEO Program

	Number of Responses
More marketing, advertising, and education efforts	4
Nothing; existing programs are good / sufficient	2
Stable budget	1
Celebrity endorsements	1
Help recruit new members to clean energy task forces	1
Template for small town Energy Strategy	1
Change regulations to allow more small wind development	1
Develop landfill gas resources	1
Incentives	1
Help make home into clean energy demonstration project	1
Communication problems	1

1.8 Community Innovation Grants Reports

Communities that have committed to Clean Energy Communities program and the EPA Community Energy Challenge are eligible to receive a Community Innovation Grant. The grants are used to support local clean energy awareness and education projects. Participating communities are eligible for a $4,000 grant while towns that have already received and spent a previous grant through this program are eligible for a $2,000 grant. Through December 2009, one community, Bethany, has received a second grant while all other grant recipients have received a single grant.

When applying for the Community Innovations Grant Program (CIGP) grant, applicants must identify the primary goals of the project, which include raising community awareness, educating school students, and increasing sign-ups to the Clean Energy Options program. CIGP recipients are required to submit biannual reports which summarize grant-supported activities from the previous six months, including a description of the activities or events, costs of the supported activities, signups generated by the activities and media coverage of the activities. CIGP recipients are asked to include copies of any media coverage that has been generated.

NMR reviewed CIGP reports submitted for activities that took place during the 2009 calendar year.[43] Overall, a total of 47 CIGP reports from 30 municipalities were submitted. As in previous years and CIGP report reviews, CIGP recipients have engaged in a wide variety of activities that include substantial amounts of volunteer time from recipients. Some activities have focused on raising signups to the CCEO program, while others have had more of an educational and public awareness focus.

[43] CIGP reports were submitted for two time periods in 2009, covering activities from January to June 2009 and July to December 2009.

In terms of project goals, 32 of the 47 reports indicated that increasing signups was a primary goal, followed by raising community awareness (31 reports) and educating students (20 reports). In addition, four reports indicated that the CIGP supported activities to either establish or expand recycling programs. Fourteen of the 47 reports documented press coverage of CIGP supported activities, including coverage in the Hartford Courant, The Cromwell Chronicle, the Easton Courier and Essex Events. Eleven reports documented 364 signups generated by CIGP supported activities. Signups were often associated with hosting an information table or booth with enrollment materials at local recycling centers or libraries, or at various community events, such as educational events held at local libraries, Earth Day celebrations, municipal election days, and town celebrations. In some cases CFLs were distributed in exchange for enrolling in the CCEO program. Some of the more successful activities that appeared to increase public awareness and signups included participating in multiple events rather than single events to increase awareness, hosting public forums on clean energy and the environment, incorporating student environmental groups, and incorporating CFL handouts.

The review of CIGP reports also found that 10 municipalities had not finished their projects during 2009 while three others had not conducted any CIGP related activities during the previous six months.

Finally, a number of CIGP reports were either incomplete or provided minimal amounts of information about the CIGP supported activities. CCEF should consider stressing the importance of the CIGP reports to current CIGP recipients.

2 Media Analysis

2.1 Connecticut Clean Energy Fund News

July:

- July 1: The Connecticut Clean Energy Fund announced that it has reopened its Small Solar PV Rebate Program.
- July 22: The Connecticut Clean Energy Fund announced that the town of Canaan, Conn., has joined the Connecticut Clean Energy Communities Program.

August:

- August 24: The Connecticut Clean Energy Fund announced that the town of Sharon, Conn., has joined the Connecticut Clean Energy Communities Program.
- August 25: The Connecticut Clean Energy Fund announced that a 478-kilowatt solar photovoltaic system has been completed and is successfully operating at East Lyme High School.
- August 26: The Connecticut Clean Energy Fund announced that seven recently completed solar photovoltaic installations, supported with grants from CCEF, have brought on line a total of 1.2 megawatts of clean energy generating capacity, enough to power approximately 150 average Connecticut homes over a year.

September:

- September 29: The Connecticut Clean Energy Fund announced that Norma J. Glover has been elected the new chairman of the Connecticut Clean Energy Fund Board.
- September 30: A dedication ceremony was held at Branford High School to celebrate the installation of a 7-kilowatt solar photovoltaic system earned by the town of Branford, Conn., and installed at the school.

October:

- October 13: The Connecticut Clean Energy Fund announced that the town of North Haven, Conn., has received the designation of "Connecticut Clean Energy Community."
- October 27: The Connecticut Clean Energy Fund announced that more Connecticut residents will now be able to qualify for financial assistance under the CT Solar Lease Program.
- October 28: The Connecticut Clean Energy Fund announced that a 226.92-kilowatt solar photovoltaic system has been completed and is successfully operating at Basement Systems Inc. in Seymour, Connecticut.

November:

- November 6: The Connecticut Clean Energy Fund announced that the solar photovoltaic system at the Horace Mann School's John Dorr Nature Laboratory in Washington, Conn., is completed and successfully operating.
- November 19: The Connecticut Clean Energy Fund announced that a 46.2-kilowatt solar photovoltaic system has been completed and is successfully operating at the Stamford, Conn., headquarters of JB Moving Services Inc.

2.2 Summary of Media Coverage

Beginning in Q3 2009, media coverage of CCEF and associated programs under Program Goal Three were tracked through “Google Alerts.” Google Alerts are daily email updates of the latest relevant Google search results (web, news, blogs, etc.) based on a query or topic. In previous years, media coverage was tracked through a subscription to the Yankee Clipper clipping service. Clipping services, in addition to the media coverage, provide additional data such as word count, column size, author, advertising cost or equivalency ($), headline, and circulation. In addition, the Yankee Clipper clipping service provided media coverage from a larger number of local and weekly papers that do not have an on-line presence. Due to the revision to the data collection process, article levels beginning in the third quarter (Q3) of 2009 are not strictly comparable to previous quarters.

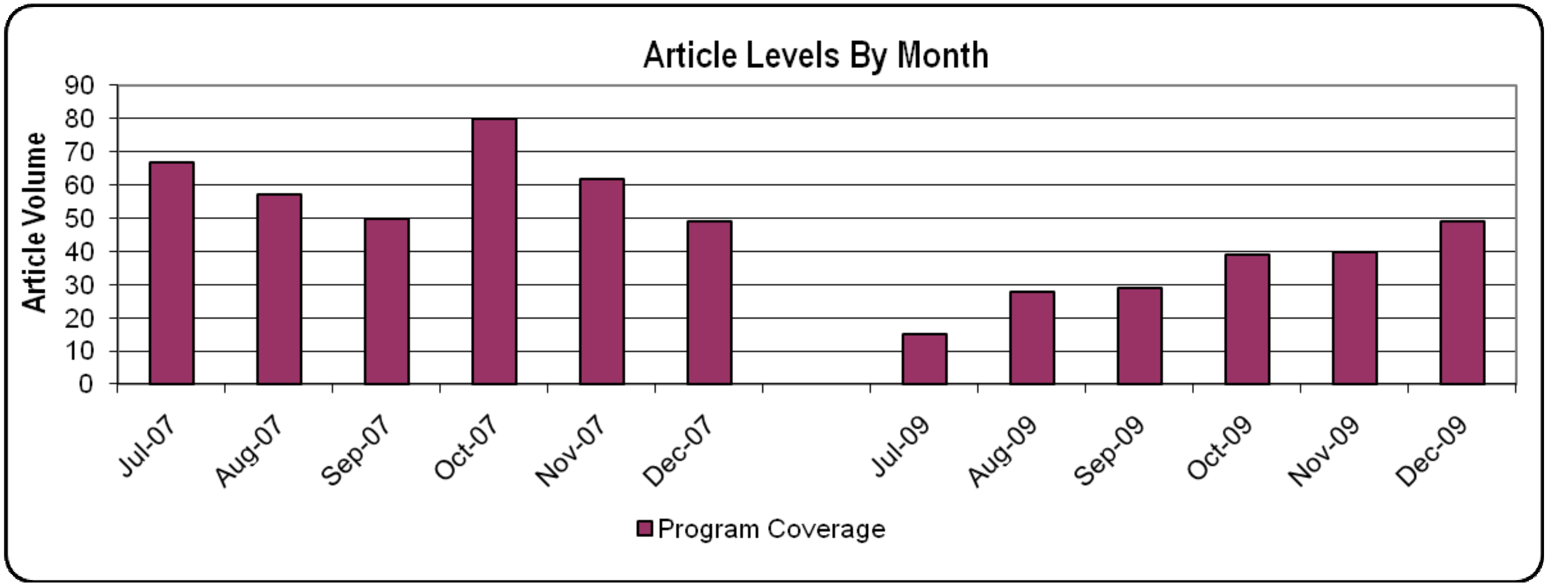
Article volume between Q3 and Q4 2009 rose each month, which differs from previous years. The rise in articles may be partially attributed to the July 1 announcement that CCEF reopened its Small Solar PV Rebate Program. When comparing previous article volume from 2004-2007, article volume always dipped in Q3 and rose in Q4. This trend of increased coverage in Q4 compared to Q3 continued in 2009. The decline in program coverage articles from 2007 is likely attributable to the modified data collection methods and modification in key words searched, which began in Q3 2009.

The increased coverage of CCEF programs during Q4 2009, particularly the Supply Side programs, provided an avenue for awareness in Q4. The number of Supply Side articles increased by 94% between Q3 and Q4 2009 and Supply Side articles were the most commonly covered program goal in Q3 and Q4 2009 whereas Market Development articles were the most commonly covered program goal in Q3 and Q4 of 2007. Market Development articles also increased slightly between Q3 and Q4 2009. Additionally, the connection between CCEF programs and the environmental benefits message continued to grow. In both Q3 and Q4, the environmental benefits message was the most frequently communicated message. Overall, messaging appeared in 80% of articles during Q3 and Q4 of 2009. The mention of program Web sites increased between Q3 and Q4 2009, from 12 in Q3 to 34 in Q4, including six articles that mentioned two different program Web sites. Negative coverage was minimal in Q4 2009, with only two articles focusing on the temporary shutdown of the Small Solar PV Rebate Program.

2.2.1 CCEF Major Events Summary (Current Quarter Activity Table)

Event Item	Date	Description	Location	CCEF Program(s)	Brief Summary
1.	Aug. 12, 2009	Workshop	Ashford, CT	CEC, Solar	CCEF sponsored workshop in a series for municipal clean energy task forces across the state.
2.	Aug. 26, 2009	Workshop	Fairfield, CT	CEC, Solar	CCEF sponsored workshop in a series for municipal clean energy task forces across the state.
3.	Sep. 11-12, 2009	2009 Green Expo	New Haven, CT	CEC, Solar	CCEF was a featured exhibitor at this green expo, which aimed to educate and gain greater public awareness of green ideas.
4.	Oct. 3, 2009	Solar Tour '09	State-wide	Solar	Solar powered homes and businesses across Connecticut were open to the public. The event provides the public with an opportunity to experience solar electric and solar thermal (hot-water heating) power, daylighting, and other green and renewable technologies.
5.	Oct. 16, 2009	Avon Old Farms Solar PV Dedication	Avon, CT	Solar	Dedication of 204.96 kW solar installation at the school as part of the school's commitment to the Green Schools Alliance. CCEF Chair Norma Glover was among the speakers.
6.	Oct. 19, 2009	Workshop	East Haddam, CT	CEC, Solar	CCEF sponsored workshop in a series for municipal clean energy task forces across the state.
7.	Oct. 22, 2009	Expo	Guilford, CT	CEC, Solar	Second annual "energy expo" to acquaint Guilford residents with energy efficiency and renewable energy options.
8.	Nov. 21, 2009	PACE Annual Environmental Energy Event	Hartford, CT	CEC, Solar	Exhibits included Connecticut environmental organizations as well as clean energy installers approved by the CCEF.
9.	Nov. 23, 2009	Energy Education Webinar	N/A	CEC, Solar	Webinar discussed the free energy education programs available for grades k-12 for local CT schools, presented by CCEF, CT Energy Efficiency Fund and the Institute for Sustainable Energy.
10.	Dec. 3, 2009	Energy Education Webinar	N/A	CEC, Solar	Webinar discussed the free energy education programs available for grades k-12 for local CT schools, presented by CCEF, CT Energy Efficiency Fund and the Institute for Sustainable Energy.
11.	Dec. 3, 2009	Connecticut Clean Energy Fund Public Meeting	Hartford, CT	CEC, Solar	Meeting provided the members of the public, including clean and renewable energy stakeholders, with an overview of existing and proposed CCEF programs and solicited feedback for the development of its Strategic Plan for FY2011-FY2012.
12.	Dec. 8, 2009	Clean Energy Community Regional Workshops	Chester, CT	CEC, Solar	Regional workshops throughout the state that are designed to share best practices among local clean energy leaders. This workshop focused on successful strategies to promote the CTCleanEnergyOptions Program
13.	Dec. 14, 2009	Clean Energy Community Regional Workshops	Avon, CT	CEC, Solar	Regional workshops throughout the state that are designed to share best practices among local clean energy leaders. This workshop focused on successful strategies to promote the CTCleanEnergyOptions Program
14.	Dec. 16, 2009	Clean Energy Community Regional Workshops	Ashford, CT	CEC, Solar	Regional workshops throughout the state that are designed to share best practices among local clean energy leaders. This workshop focused on successful strategies to promote the CTCleanEnergyOptions Program

2.2.2 Print Data: Earned/Free Media—Cumulative[44,45 46]



- Article volume between Q3 and Q4 2009 rose each month, unlike previous analysis, which found a decline in coverage during Q3 followed by increased coverage during Q4. The rise in articles in Q4 may partially be attributed to the July 1 announcement that CCEF reopened its Small Solar PV Rebate Program.
- Article levels beginning in the third quarter (Q3) of 2009 are not strictly comparable to previous quarters because of modifications made to data collection procedures during Q3 2009.[47] However, when comparing previous article volume from 2004-2007, article volume was always higher in Q4 than in Q3. This trend continued between Q3 and Q4 2009.
- The decline in program coverage articles from 2007 is likely attributable to the modified data collection methods and modification in key words searched, which began in Q3 2009.

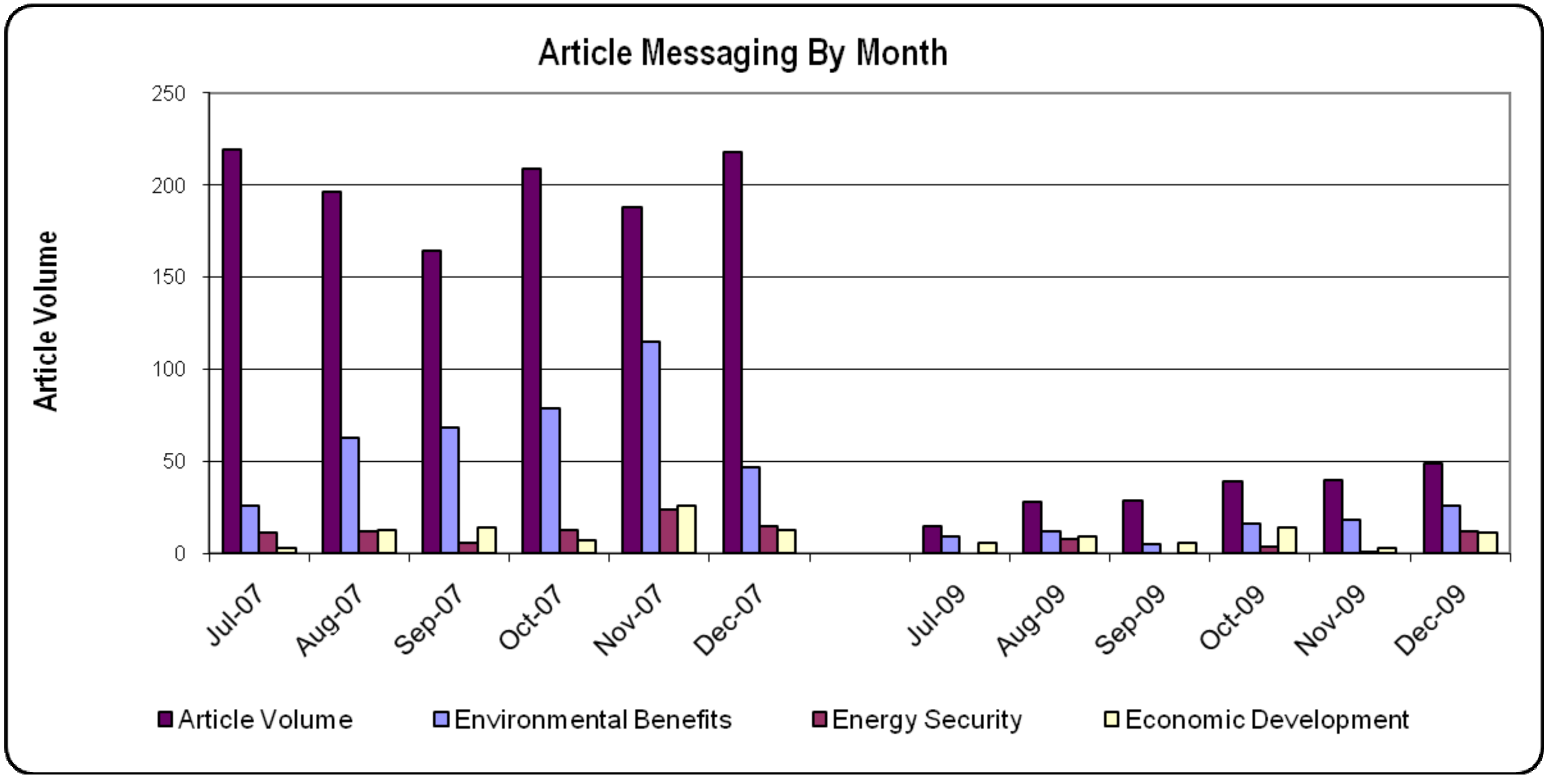
[44] Source: Yankee Clipper, Google Alerts

[45] Beginning in Q3 2009, search terms used to identify articles for the print media analysis transitioned from the following terms: alternative energy, renewable energy, clean energy, SmartPower, and 20% by 2010 to terms currently used: Connecticut Clean Energy Fund, Connecticut Clean Energy Communities, Connecticut Clean Energy Community, Connecticut Clean Energy Options, CT Clean Energy Options, 20% by 2010 Campaign, EPA Community Energy Challenge.

[46] Program Coverage articles directly mention CCEF, CT Clean Energy Communities, etc. and/or discuss long-term program outcomes such as purchases of clean energy, non-purchase commitments, etc.

[47] Beginning in Q3 of 2009, media coverage of CCEF and associated programs under Program Goal Three were tracked through "Google Alerts." Google Alerts are daily email updates of the latest relevant Google search results (web, news, blogs, etc.) based on a query or topic. In previous years, media coverage was tracked through a subscription to the Yankee Clipper clipping service. Clipping services, in addition to the media coverage, provide additional data such as word count, column size, author, advertising cost or equivalency ($), headline, and circulation.

2.2.3 Print Data: Earned/Free Media—Cumulative Messaging Analysis[48,49,50, 51]

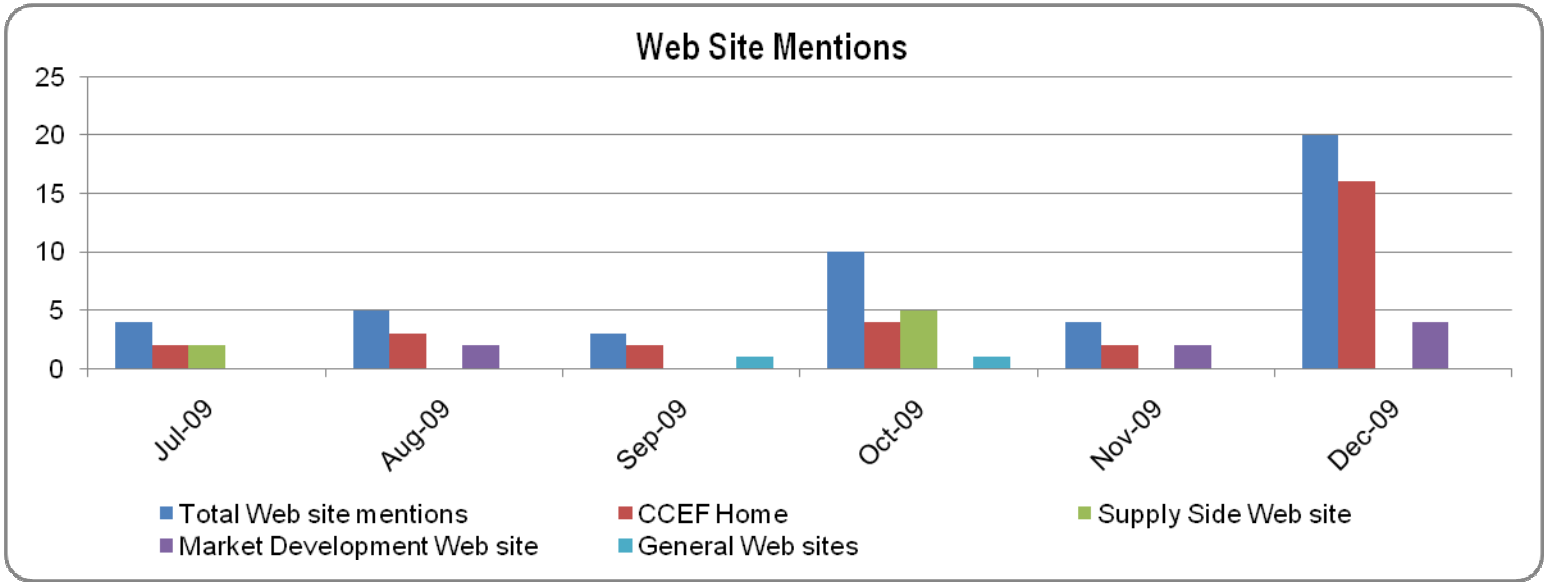


- In Q3 and Q4 2009, 43% of program specific articles mentioned Environmental Benefits, 13% mentioned Energy Security, and 25% mentioned Economic Development. The key messages are defined as: Clean energy provides environmental benefits; clean energy provides energy security; and clean energy provides economic development.

[48] Messaging analysis was modified as of Q2 2007. Working definitions of key messaging are as follows: Economic Development – the article links clean energy with economic development; Energy Security – the article links clean energy with energy security; Environmental Benefits – the article links clean energy with environmental benefits such as mitigating global warming and climate change.
[49] Individual articles can be coded for multiple key messages. For example, if an article links clean energy to both environmental benefits and energy security, it is coded as Environmental Benefits and Energy Security.
[50] Source: Yankee Clipper (2007), Google Alerts (2009)
[51] Article Volume in 2007 includes "General" articles that did not directly mention CCEF, but were coded for messaging.

- Messaging appeared in 80% of articles in Q3 and Q4 2009. In Q3, 55 of 72 articles contained messaging and in Q4 105 of 128 articles contained at least one message. This is significantly higher than Q3-Q4 2007, where messaging appeared in 46% of articles.

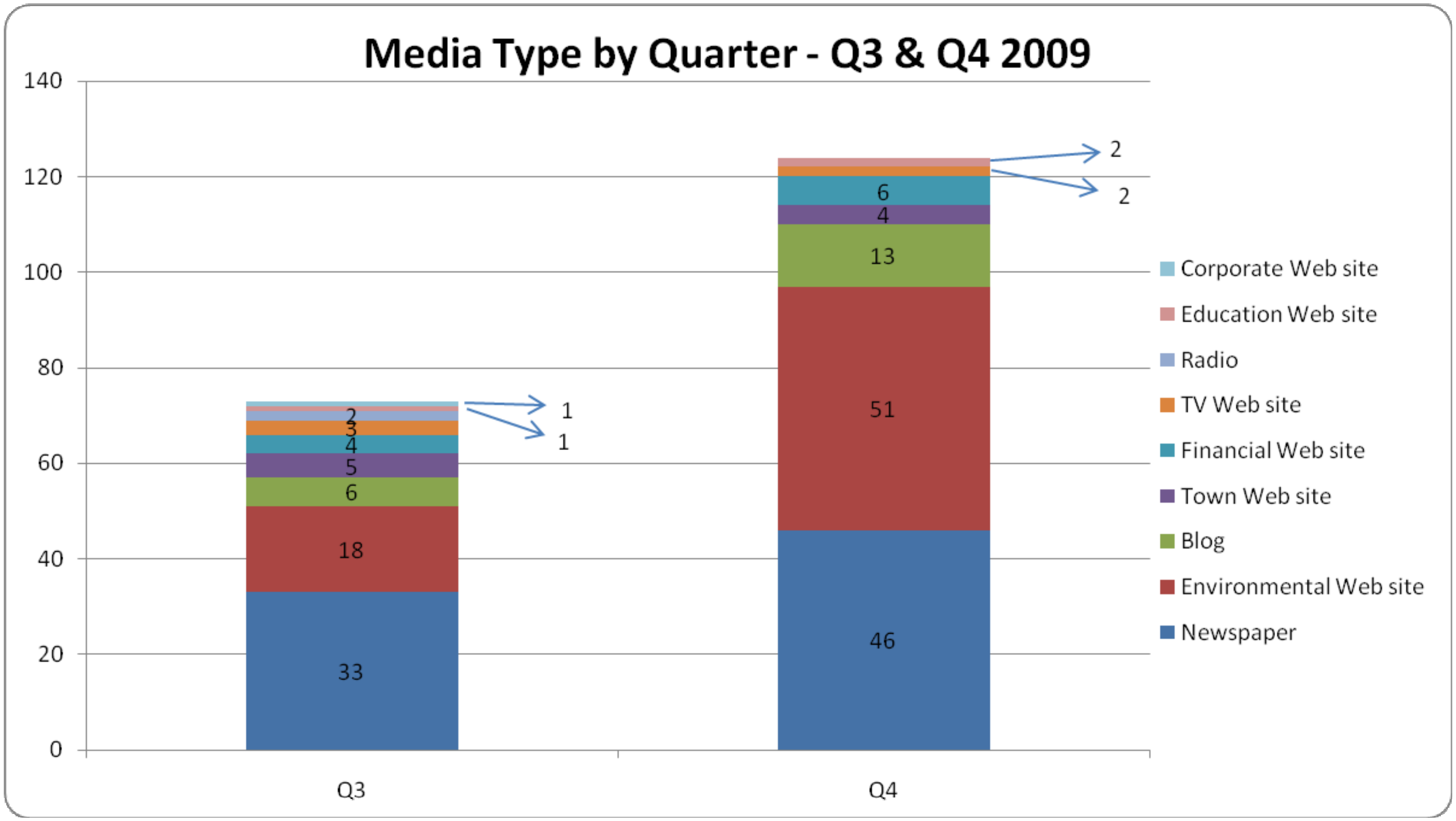
2.2.4 Print Data: Earned/Free Media—Web Site Mentions[52]



- CCEF Web sites were mentioned 46 times in Q3 and Q4 2009, including six articles that mentioned two CCEF Web sites. This is a significant increase from Q3 and Q4 2007, which had 28 Web site mentions.
- In addition to Web site mentions, the analysis in Q3 and Q4 2009 tracked the specific Web site listed in the article. There was an increase in the number of Web site mentions between Q3 and Q4. The majority of the increase can be attributed to the 16 CCEF Home Web site (www.ctcleanenergy.com) mentions in December 2009.

[52] **CCEF Home** Web site is www.ctcleanenergy.com. **Market Development** web sites include www.ctcleanenergy.com/communities, www.ctcleanenergy.com/yourcommunity, and www.ctcleanenergyoptions.com**.** **Supply Side** Web sites include www.ctcleanenergy.com/solarthermal and www.ctcleanenergy.com/innoflash/#/solar/how_voltaic. **General Web** sites include www.ctinnovations.com and www.CTEnergyInfo.com.

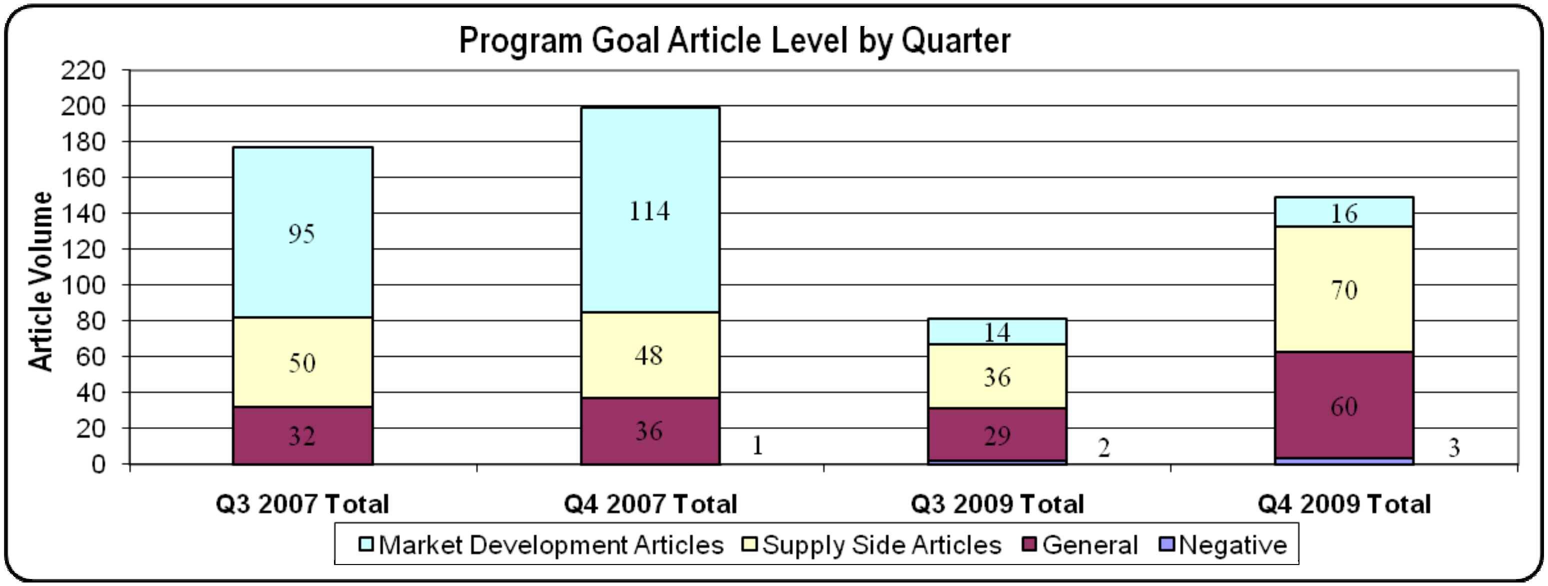
2.2.5 Print Data: Earned/Free Media – Program Articles by Media Type[53]



- In Q3 and Q4 2009, the most common sources of CCEF media coverage were newspapers, environmental Web sites and blogs.

[53] Definitions of Media type:
Newspaper: Web sites for local or national newspapers.
Town Web site: Web sites owned and maintained by individual towns in Connecticut.
Financial Web site: Web sites with a focus on the financial sector, including financing for clean energy projects.
Technology Web site: Web sites with a focus on technology news.
Education Web site: School Web sites for colleges in Connecticut.
Environmental Web site: Web sites with a focus on energy and environmental news.
Blog: Web sites that act as news aggregators and do not focus on a particular sector.
TV Web site: Web sites for local or national TV stations.
Radio: Web sites for local or national radio stations.
Corporate Web site: Corporate Web sites for companies in Connecticut.

2.2.6 Print Data: Earned/Free Media—Cumulative Program Goal Analysis[54,55,56]



- In Q3 2009, 81 articles covered specific aspects of CCEF programming, including two articles that included coverage of two program goals. In Q4 2009, 149 articles covered specific aspects of CCEF programming, including one article that included coverage of two program goals.
- Program goal coverage appears to have shifted since 2007 as Supply Side articles were the most commonly covered program goal in Q3 and Q4 2009 whereas Market Development articles were the most commonly covered program goal in Q3 and Q4 of 2007.

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[54] Program goal analysis was based on the Connecticut Clean Energy Fund's (CCEF) program goals, articulated in CCEF's Strategic Focus http://www.ctcleanenergy.com/about/documents/StrategicFocus2004-2007.pdf). **Supply Side articles** address program goal 1. These are articles that focus on CCEF sponsored projects created to generate electricity. Examples include fuel cell, PV system and biomass projects supported by Project 100, the On-site Renewable DG Program and Pre-Development Projects. In addition, articles that mention the residential PV rebate program are considered Supply Side articles. **Market Development articles** address program goal 3. These are articles that focus on the Connecticut Clean Energy Option Program (CCEOP). Any article that mentions the CCEOP, Connecticut Clean Energy Communities, the SmartPower 20% by 2010 Campaign, or SmartPower in general is considered a Market Development article. In addition, articles that mention solar PV systems provided by CCEF to communities for meeting signup goals are labeled as Market Development. **General** articles are articles that include calendar events, a specific function, or an activity sponsored by CCEF, SmartPower, or Connecticut Innovations. **Negative** articles are articles that mention investigations into CCEF, SmartPower, or Connecticut Innovations programs as well as negative editorials.

[55] Individual articles can be coded for multiple program goals. If an article covered activities for both program goal 1 and program goal 3 it was coded as both a Supply Side and a Market Development article.

[56] Beginning in Q3 2009, search terms used to identify articles for the print media analysis transitioned from the following terms: alternative energy, renewable energy, clean energy, SmartPower, and 20% by 2010 to terms currently used: Connecticut Clean Energy Fund, Connecticut Clean Energy Communities, Connecticut Clean Energy Community, Connecticut Clean Energy Options, CT Clean Energy Options, 20% by 2010 Campaign, EPA Community Energy Challenge.

- There were five negative articles in Q3 and Q4 2009. These articles focused on the temporary shutdown of the Small Solar PV Rebate Program.

2.2.7 Print Data: Earned/Free Media— National Articles of Interest[57]

Quarter	Month	Date	Publication	Headline	CCEF Web S
Q3	September	9/8/09	WNPR	Biomass Plants Get Boost From Clean Energy Incentives	
Q3	September	9/18/09	HuffingtonPost.com	Addressing Global Warming: the Next American Revolution by...You!	
Q4	November	11/6/09	The New York Times	School Colors: Green and Greener	
Q4	December	12/4/09	CNBC	Connecticut Science Center Becomes FIRST in Nation to use Fuel Cell for the Majority of its Power	ctcleanenergy.
Q4	December	12/4/09	CNN Money	Connecticut Science Center Becomes FIRST in Nation to use Fuel Cell for the Majority of its Power	ctcleanenergy.
Q4	December	12/4/09	Fox Business	Connecticut Science Center Becomes FIRST in Nation to use Fuel Cell for the Majority of its Power	ctcleanenergy.
Q4	December	12/4/09	Wall Street Journal	Connecticut Science Center Becomes FIRST in Nation to use Fuel Cell for the Majority of its Power	ctcleanenergy.

See spreadsheet for full list of articles read and coded for the Q3-Q4, 2009 report.

[57] Source: Google Alerts

Appendix A: Interview Guide for Connecticut Based Firms and Organizations Purchasing RECs

[BEFORE INTERVIEW, Fill in Data about REC purchase in this Interview Guide]

Hello, my name is **_______** and I am calling for Nexus Market Research on behalf of the Connecticut Clean Energy Fund (CCEF; http://www.ctcleanenergy.com/). The Connecticut Clean Energy Fund promotes, develops, and invests in clean energy sources for the benefit of Connecticut ratepayers. As part of our monitoring and evaluation of CCEF's clean energy programs, we are collecting data on kWh of clean energy purchased, in the form of Renewable Energy Credits (RECs), by Connecticut based businesses, municipalities, educational institutions, and organizations. In addition, your response could help [Municipality XX] earn a free solar Photovoltaic array, as Connecticut communities can be eligible to receive free solar PV arrays when businesses and organizations within their community purchase sufficient quantities of Green-e certified RECs.

According to [HIGHLIGHT INFORMATION SOURCE BEFORE INTERVIEW]:

- the United States Environmental Protection Agency's Green Power Partnership program [READ WEBSITE IF ASKED: http://www.epa.gov/grnpower/],
- XX REC Supplier

your FIRM / ORGANIZATION is currently purchasing Renewable Energy Credits, or RECs, from XX REC SUPPLIER. I would like to ask you a few questions about your REC purchase. The interview should take less than 10 minutes. Is now a good time, or would you prefer to arrange a day and time to conduct the interview?

[IF NECESSARY, OFFER THE CONTACT NAME FROM BELOW AS THE PERSON TO CONTACT WITH ANY QUESTIONS ABOUT THE VALIDITY OF THE RESEARCH.]

Bob Wall	Director, Energy Market Initiatives Connecticut Clean Energy Fund	860-257-2354

Introduction

I1. Are you the person most knowledgeable about your FIRM's / ORGANIZATION's purchase of RECs from XX REC SUPPLIER?

- Yes [SKIP TO **Q#1**]
- No [CONTINUE]

I2. Could I speak with the person most knowledgeable about your FIRM's / ORGANIZATION's purchase of RECs from XX REC SUPPLIER [RECORD CONTACT INFORMATION]?

- Yes [REPEAT INTRODUCTION AND ASK I1]
- No [TRY TO RESCHEDULE OR TERMINATE]

Confirming REC Purchases, 2008 and 2009

[FILL IN WITH ANY PARTIAL DATA BEFORE INTERVIEW]

Thank you for taking the time to speak to me about your FIRM's / ORGANIZATION's REC purchase. Do you need a moment to collect any paperwork or records about your REC purchase before we begin?

1. I would like to begin by confirming with you the details of your REC purchase. According to the [HIGHLIGHT INFORMATION SOURCE BEFORE INTERVIEW]:

   - the United States Environmental Protection Agency's Green Power Partnership program [READ WEBSITE IF ASKED: http://www.epa.gov/grnpower/],
   - XX REC Supplier

   your FIRM / ORGANIZATION is currently purchasing XX kWh of Renewable Energy Credits, or RECs, from XX REC SUPPLIER. Is that correct?

[CONFIRM THE FOLLOWING DATA: 2009]

kWh of RECs: ______________________

REC Supplier: ______________________

Type of Generation:

And the type of generation of the RECs you are purchasing are as follows: Is that correct?

Type of Generation	**Percentage of REC supply**
Wind:	%
Solar:	%
Landfill gas: :	%
Biomass:	%
Small hydro:	%
Other [SPECIFY:	%
Other [SPECIFY:	%
TOTAL	**100%**

Don't Know
Refused

2. Were the RECs Green-e certified?

   a. Yes
   b. No
   c. Don't Know
   d. Refused

3. What percentage of your 2009 annual electricity usage did the REC purchase represent?

   Percentage of annual electricity usage: _________________%
   Don't Know
   Refused

4. Was the purchase a single, annual purchase, a purchase for multiple years, or do you purchase RECs on a monthly basis?

   a. Annual purchase
   b. Monthly
   c. Other time interval [SPECIFY: ______________________________]
   d. Don't know
   e. Refused

2008 REC Purchases

5. Did you purchase RECs during the 2008 calendar year, that is, between January 1, 2008 and December 31, 2008?

   a. YES
   b. NO [SKIP TO Q#10, "Reason for REC Purchases"]]
   c. Don't Know [SKIP TO Q#10,]
   d. Refused [SKIP TO Q#10,]

6. [IF YES TO Q#5] How many kWh of RECs did you purchase in 2008?

   kWh of RECs: _______________________
   Don't Know
   Refused

7. What percentage of your 2008 annual electricity usage did the REC purchase represent?

    Percentage of annual electricity usage: ________________%
    Don't Know
    Refused

8. What was the type of generation of the RECs? If multiple types of generation, please estimate the percentage of each type of generation [NOTE: TOTAL SHOULD ADD TO 100%]

Type of Generation	**Percentage of REC supply**
Wind:	%
Solar:	%
Landfill gas: :	%
Biomass:	%
Small hydro:	%
Other [SPECIFY:	%
Other [SPECIFY:	%
TOTAL	**100%**

    Don't Know
    Refused

9. Were the RECs Green-e certified?

    a. Yes
    b. No
    c. Don't know
    d. Refused

Reasons for REC Purchases

10. Why did your FIRM / ORGANIZATION purchase the RECs during 2009?___________________________________
    Were there any other reasons?___________________________________

11. Before today's call, were you aware of the Connecticut Clean Energy Fund, or CCEF?

    a. Yes
    b. No [SKIP TO Q#20]
    c. Don't Know [SKIP TO Q#20]
    d. Refused [SKIP TO Q#20]

12. Were you aware of the Connecticut Clean Energy Fund before or after your FIRM / ORGANIZATION made its REC purchase?

    a. Before
    b. After [CONFIRM: "*To make sure I understand correctly, you made your REC purchase and then became aware of CCEF after the purchase*"; SKIP TO Q#20]
    c. Don't Know [SKIP TO Q#20]
    d. Refused [SKIP TO Q#20]

13. At the time that you first heard about the Connecticut Clean Energy Fund, which of the following statements best describes the status of your REC purchase. Had you…? [READ LIST]
    a. Not done any research on RECs
    b. Already been thinking about purchasing RECs
    c. Already begun collecting information about RECs
    d. Already selected the type and amount of RECs you were going to purchase
    e. Already purchased the RECs
    f. Don't Know
    g. Refused

[IF Q#13 = e (*already purchased RECs)* AND Q#12 = a (*aware of CCEF before made REC purchase),* READ: Earlier you said that you were aware of the CT Clean Energy Fund before you made your REC purchase, yet you just said that you had already purchased the RECs at the time you first heard about the CCEF. How so?]

14. On a scale of 0 to 10, where 0 is not at all likely and 10 is extremely likely, how likely is it that you would have bought the same AMOUNT of RECs if the Connecticut Clean Energy Fund was not working to promote, develop and invest in clean energy in Connecticut?

15. [ASK IF Q#14 = 0, 1, 2, OR 3] What quantity of RECs would you have bought during 2009 in the absence of the Connecticut Clean Energy Fund?

Next I am going to read you several statements about how you came to your decision to purchase RECs. On a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree, how much do you agree with each statement? [98 = DON'T KNOW; 99=REFUSED]

16. CCEF's work to promote, develop and invest in clean energy in Connecticut was a critical factor in my FIRM's / ORGANIZATION's decision to purchase RECs.

[IF Q#16 CONTRADICTS Q#14, READ: *Earlier you said that you were (un)likely to have bought the RECs without the activities of the CCEF, but now you say CCEF was (not) a critical factor in your decision to purchase RECs. How so?]*

17. Supporting our community's participation in CCEF programs was a critical factor in my FIRM's / ORGANIZATION's decision to purchase RECs.

[IF Q#17 CONTRADICTS Q#14, READ: *Earlier you said that you were (un)likely to have bought the RECs without the activities of the CCEF, but now you say your community's participation in CCEF programs was (not) a critical factor in your decision to purchase RECs. How so?]*

18. At the time that my FIRM / ORGANIZATION bought the RECs, the activities and programs of the CCEF were **NOT** necessary to persuade my FIRM / ORGANIZATION to purchase the RECs.

[IF Q#18 CONTRADICTS Q#14, READ: *Earlier you said that you were (un)likely to have bought the RECs without the activities of the CCEF, but now you say CCEF was (not) a critical factor in your decision to purchase RECs. How so?]*

19. [ASK IF Q#14 < 5 OR Q#15 < 5, OR Q#16 >6, OR Q#17 >6, OR Q#18 <5] What CCEF activities or programs were important factors in your decision to purchase RECs?

20. Now I would like you to rate the importance of several other factors in your decision purchase RECs. Please use a scale of 0 to 10 scale, where 0 means not at all important and 10 means extremely important [97 = NOT APPLICABLE; 98 = DON'T KNOW; 99=REFUSED]

    a. To help protect the environment
    b. To help prevent global warming
    c. To help support energy independence
    d. To help support the development of more clean energy
    e. To help develop new technologies and create new jobs
    f. Because a community leader recommended that we purchase clean energy
    g. To demonstrate our environmental leadership compared to our COMPETITORS / PEER INSTITUTIONS
    h. [IF BUSINESS / UNIVERSITY] To demonstrate to our customers / students our commitment to the environment
    i. [IF BUSINESS] Because our competitors are purchasing clean energy
    j. [IF BUSINESS] To prepare our business for possible future carbon regulations or taxes
    k. [IF BUSINESS] To respond to shareholder pressure to purchase clean energy
    l. [IF BUSINESS] To respond to supplier pressure to purchase clean energy
    m. [IF A MUNICIPALITY] Because our constituents' want to support clean energy
    n. [IF A RELIGIOUS OR NON-PROFIT ORGANIZATION] Because our congregation / members want to support clean energy
    o. Are there any other factors that I missed? [RECORD AND ASK TO RATE]

21. How likely are you to make similar levels of REC purchases during the 2010 calendar year as was done in 2009? Please use a 0 to 10 scale, where 0 is not at all likely and 10 is extremely likely?

22. Why do you say that [FOLLOW UP IF UNLIKELY TO MAKE SIMILAR LEVELS OF REC PURCHASES: DO YOU EXPECT TO PURCHASE LARGER OR SMALLER AMOUNTS OF RECS?] ?

23. Thinking back to when your FIRM/ORGANIZATION first decided to make a REC purchase, were there any obstacles or barriers to the purchase?

    a. Cost or expense
    b. Lack of knowledge of availability of RECs
    c. Educating management about RECs
    d. Other [SPECIFY: ____ ____]
    e. Don't know
    f. Refused

24. For Connecticut based FIRMS / ORGANIZATIONS that are NOT purchasing RECs, what do you think are the biggest barriers preventing them from purchasing RECs?

    a. Cost or expense
    b. Lack of knowledge of availability of RECs
    c. Educating management about RECs
    d. Other [SPECIFY: ____ ____]
    e. Don't know
    f. Refused

25. Why do you say that?

26. What recommendations do you have for CCEF to help CT based firms overcome these barriers to purchasing RECs?

27. Are you aware of the CTCleanEnergyOptions? [IF ASKED TO DESCRIBE, READ: CTCleanEnergyOptions is a Department of Public Utilities Control (DPUC) approved program that allows any CL&P or UI customer the opportunity to support clean energy made from approved renewable resources such as wind and small hydro by adding a clean energy charge to their monthly electricity bill. Customers who enroll continue to receive electric delivery service from their utility and pay a small clean energy surcharge. http://www.ctcleanenergyoptions.com/]

    Yes
    No [SKIP TO Q#29]
    Don't Know [SKIP TO Q#29]
    Refused [SKIP TO Q#29]

28. [IF Q#27= YES] Why did you purchase clean energy in the form of RECs rather than enrolling in the CTCleanEnergyOptions program?

29. Before today's call, were you aware that your FIRM's / ORGANIZATION's purchase of RECs could help your community earn a free PV panel from the CT Clean Energy Fund?

    a. Yes
    b. No
    c. Don't Know
    d. Refused

30. Would you like more information as to how your REC purchase could help your community earn a free PV panel from the CT Clean Energy Fund?

    a. Yes [PROVIDE THEM WITH BOB WALL'S CONTACT INFORMATION]

    b. No

Bob Wall	Director, Energy Market Initiatives Connecticut Clean Energy Fund	860-257-2354

That completes our interview. Thank you very much for your time.

Appendix B: Survey of Attendees of CCEF Regional Workshops

Survey of Attendees of Regional Workshops, CCEF

Thank you for your participation in the Connecticut Clean Energy Fund's (CCEF) Regional Training Workshop. Now that you have completed the training workshop, CCEF would like you to complete the following survey. The results will help the monitoring and evaluation of CCEF's programs, contribute to improving CCEF's programs, and contribute the growth of clean energy in Connecticut. Please be aware that the information you provide will be held completely confidential.   Please answer all questions to the best of your ability.

1. What do you think are the most effective ways to increase awareness of the CTCleanEnergyOptions program among the residents of your community? In the table below, please rate **EACH** of the potential ways to increase awareness of the CTCleanEnergyOptions program by using a scale from 0 to 10, where 0 means "not effective" and 10 means "extremely effective."

Ways of Becoming Aware of the CTCleanEnergyOptions Program	**Not Effective (0)**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Extremely Effective (10)**
Inserts in utility bills											
Direct mailings from Sterling Planet or Community Energy											
Speaking with members of their local Clean Energy Task Force											
Information booths at community events, such as a parade or sporting event											
Media coverage											
Friends, family, neighbors or colleagues											
Outreach and activities by the Connecticut Clean Energy Fund (CCEF)											
Science centers or museums											
Outreach and activities by non-profit environmental organizations (e.g. Clean Water Fund, Sierra Club, People's Action for Clean Energy, Interreligious Eco-Justice Network											
Local projects funded by CCEF's Community Innovation Grants Program											
Yard sign, window sticker, bumper sticker or other logo from CCEF that could be displayed by current subscribers to the CTCleanEnergyOptions Program											
Other, please describe and rate:											
Other, please describe and rate:											
Other, please describe and rate:											

2. In your opinion, what is the most effective way to raise awareness of the CTCleanEnergyOptions program in your community?

3. In your opinion, what are the major barriers or obstacles to raising awareness of the CTCleanEnergyOptions program in your community?

4. In the table below you will see some factors that may affect someone's decision to purchase or not purchase clean energy and enroll in the CTCleanEnergyOptions program. Thinking about conversations you may have had about clean energy and the CTCleanEnergyOptions program with residents in your community, please rate **EACH** factor using a scale from -5 to +5, where -5 means the factor has strong negative effect on the decision to purchase, 0 means the factor has no effect, and +5 means the factor has a strong positive effect.

Factor	**Strong Negative Effect (-5)**	**-4**	**-3**	**-2**	**-1**	**No Effect (0)**	**+1**	**+2**	**+3**	**+4**	**Strong Positive Effect (+5)**
The current price of the CTCleanEnergyOptions											
Level of awareness of the CTCleanEnergyOptions program in your community											
Ability to obtain information about the CTCleanEnergyOptions program											
The process of enrolling in the CTCleanEnergyOptions program											
Helping protect the environment by enrolling in the CTCleanEnergyOptions program											
Helping prevent global warming by enrolling in the CTCleanEnergyOptions program											
Helping support energy independence or security by enrolling in the CTCleanEnergyOptions program											
Helping support the development of more clean energy by enrolling in the CTCleanEnergyOptions program											
Helping support the development of new technologies and create new jobs by enrolling in the CTCleanEnergyOptions program											

5. Are there any other factors that may affect someone's decision to purchase or not purchase clean energy and enroll in the CTCleanEnergyOptions program? In the table below, please describe any other factors and rate each factor using the same scale, where -5 means the factor has strong negative effect on the decision to purchase, 0 means the factor has no effect, and +5 means the factor has a strong positive effect.

Other Factors (Please describe and rate below)	Strong Negative Effect (-5)	-4	-3	-2	-1	No Effect (0)	+1	+2	+3	+4	Strong Positive Effect (+5)

6. Why do you think residents in your community enroll in the CTCleanEnergyOptions program? What benefits do they hope to realize by enrolling?

7. Thinking back to when you first decided to enroll in the CTCleanEnergyOptions program, were there any obstacles and barriers to enrolling? Please mark with an '**X**' in the appropriate box below.

Yes	
No	

a. If you answered **YES**, what were the obstacles and barriers?

8. For the residents in your community, what do you think are **the biggest** obstacles or barriers to enrolling in the CTCleanEnergyOptions program?

Barrier	**Mark with an 'X'**	
	Yes	**No**
Cost		
Don't know how to enroll		
Don't understand/trust clean energy products		
Unable to choose both a competitive supplier for generation service and CTCleanEnergyOptions (note: this potential barrier for CL&P customers was eliminated in October 2008; customers may now choose both)		

9. What do you think are the most effective ways to overcome these obstacles or barriers that prevent residents from enrolling in the CTCleanEnergyOptions program?

Lastly, we have a few questions about community commitments to clean energy purchases.

10. Is your municipal government currently purchasing clean energy to meet CCEF's program requirements for the 20% by 2010 campaign? Please mark with an '**X'** in the appropriate box below.

Town Name____________________

Yes	
No	
Don't know	

a. If you answered **YES**, what type of clean energy purchases is your municipal government making? Please indicate in the table below the type of clean energy purchase your community is making

Types of Clean Energy Purchases	**Mark with an 'X'**	
	Yes	**No**
CTCleanEnergyOptions		
Green-e certified Renewable Energy Credits (RECs)		
On-site renewable systems (i.e., solar PV, wind or fuel cell)		
A combination of sources (Please describe):		
Don't know		

11. Thinking about conversations you may have had with other members of your community's Clean Energy Task Force and other community leaders, what are the biggest barriers to a municipal government making a clean energy purchase?

Barrier	**Mark with an 'X'**	
	Yes	**No**
Cost		
Failure to budget		
Don't know how		
Don't understand/trust clean energy products		
Difficulty siting on-site renewable system		
Other (please describe below):		

12. Last, are there any issues that you and your community need help with from CCEF in order to keep clean energy growing in Connecticut? Please describe below:

Thank you for your input!