Technology Solutions and Programmatic Approaches to Support Cost-Effective Strategies for Residential Energy Efficiency

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ABSTRACT

Residential energy efficiency programs are continuing to evolve, however fragmentation within the industry and a historic lack of technology to handle data input and analysis has impeded program development. Instead, programs have incurred significant costs to obtain, track, measure, and evaluate data. Even then the data is typically a backwards view for extended time periods and the resulting recommendations have been delivered after an often substantial time lag.

Strategically designing and implementing a program to include real time data collection and testing of alternatives allows both incremental course correction and timely celebration of successes. Partnerships with private sector implementers, researchers, software providers, installers, non-profits, and utilities have enabled systemic development of a real-time data stream to create quick response, and ongoing program improvements. Integration of well-designed technology allows near-term information-driven program management and reporting, as well as longer-term Evaluation, Measurement, and Verification.

Using our technology platform, we are gathering and analyzing qualitative and quantitative data related to: lead conversion rates; message impact (based on content and channel); acquisition channel effectiveness; customer satisfaction; program compliance; process time lines; energy usage; perceptions/misperceptions, motivators/barriers of multiple players/partners; and more.

The information we are generating enables ongoing pilot program improvements related to multiple aspects of the program. These improvements are showing early signs of market transformation, including influence at the statewide ratepayer program level, as well as DOE discussions about broader programmatic and policy improvements. This paper focuses on a single program, but the application of technology provides similar opportunities to other efficiency programs.

The Neighbor to Neighbor Energy Challenge Technology Framework

The Neighbor to Neighbor Energy Challenge's (N2N's) entire program approach is technology enabled. Technology is used out in the field or on the web to sign up customers. It is also used to engage with customers on an ongoing basis, either through the web, social media, or email communications. But the linchpin to this approach is a new, industry specific platform customized in collaboration with program partners to meet the needs of the N2N program and other residential energy efficiency programs. The technology platform provides tools for the various partners involved in programs including homeowners/customers, trade allies, staff, and

program administrators. The tools are specifically designed to increase uptake of energy efficiency programs as well as provide real-time tracking of impacts and other key metrics.

A centralized platform anchored in a customer relationship management system (CRM) is absolutely critical to effective program management; it allows for the tracking of individual homes, projects, rebates, and the like as well as the impacts of outreach efforts, marketing pushes, and similar. The N2N platform acts as an information hub and gives program administrators a window into what is really driving action and outcomes, and what is simply not effective. The platform also supports extensive testing and innovation, which means that the program is never too exposed on an over commitment of resources by continuing a program element that isn't working. Instead, it is easy to pinpoint issues early, dive into the data to address any shortcomings, and quickly adapt and go back into the market with a refined strategy.

The Neighbor to Neighbor Energy Challenge Program Framework

Background

In early 2009, the U.S. DOE competitive *BetterBuildings Neighborhood Program* grant announcement provided an opportunity to pilot an innovative model to test hypotheses related to improving Connecticut's residential energy programs. The team consists of a partnership of best-in-class public, private, academic, and non-profit organizations, including both the state energy efficiency and renewable energy ratepayer funds[1]. The partners represent a coalition of experts in residential energy efficiency, outreach, organizing, marketing, technology, behavioral science, measurement and verification, and program design.

N2N recruited 14 municipalities with a history of clean energy leadership to participate with the goal of engaging households to reduce their energy usage by 20%. The participating municipalities are spread across the state and represent a mix of suburban low and high density, rural, and a range of income demographics, with a combined total of 97,000 households.[2]

N2N was awarded a $4.2MM *BetterBuildings* grant in August of 2010. The program did a soft launch in November 2010, and began use of the N2N technology platform and formally launched the pilot program in March 2011.

Program Model

Community-based marketing and outreach. The pilot program employs community-based strategies to systematically overcome barriers to residential participation in energy programs. Strategies include providing motivation to reduce energy waste in the home, as well as education

[1] Partners include: Clean Energy Finance Investment Authority (CEFIA) as grants administrator; Earth Markets as program manager, including program design, implementation, and evaluation; Clean Water Fund to manage outreach and community organizing, Connecticut Energy Efficiency Fund providing direct install residential efficiency programs, rebates on insulation, appliances, windows and HVAC equipment, financing, and funding for a municipal rewards program; the MIT Field Intelligence Laboratory and EMpower Devices providing behavioral strategy and messaging expertise, program design, and evaluation, measurement, and verification; SmartPower providing marketing strategy and implementation; Snugg Home as technology platform provider; and Student Conservation Association providing a team for grassroots outreach and the direct install lighting program.

[2] The average Connecticut household spends approximately $3,500 per year on energy, and numerous homes in the state use about 30% more energy than efficient ones.

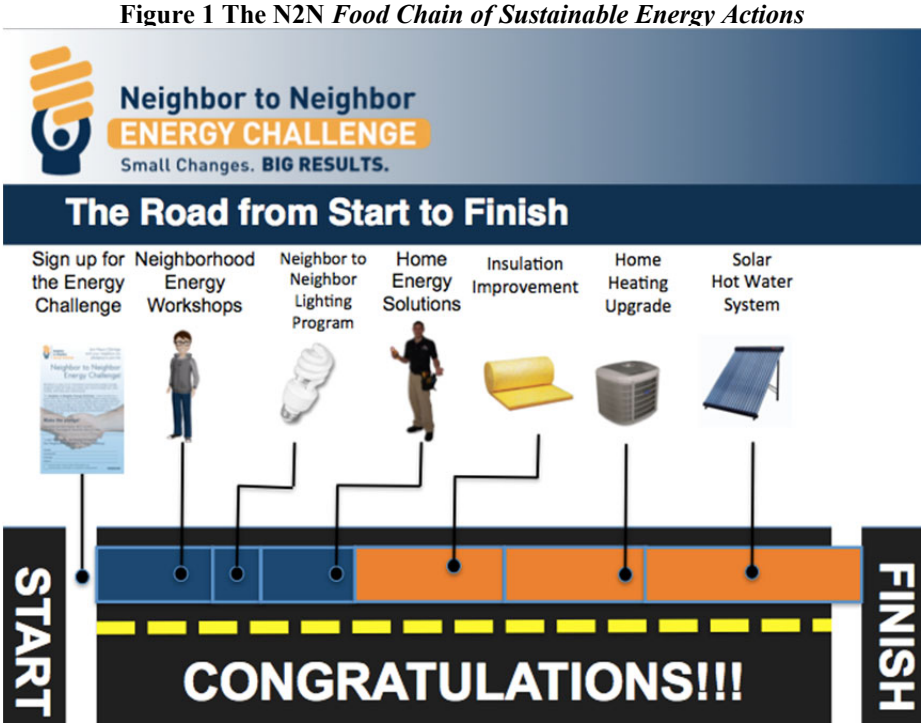
on available state programs and incentives, how to prioritize energy improvements, and how to find trustworthy contractors. A community-based approach was selected to allow for a "trusted messenger" strategy for outreach and marketing to support increased participation – both in terms of reaching more participants and having those participants achieve deeper energy savings. (Fuller, Kunkel, Zimring, Hoffman, Soroye, and Goldman, 2010; Michaels 2009)

The community outreach is focused on several sectors to become trusted messengers for the program. N2N has tailored strategies for libraries, faith-based groups, community and civic groups, schools, local businesses, social service agencies serving the elderly and low-income residents, municipal leaders, and community leaders. Strategies include educational workshops, tabling at local events/meetings, neighborhood canvassing, "lead by example" campaigns with community leaders, word of mouth, social media, earned media, and contractor co-marketing, among others. Proven behavior-based strategies are also employed including framing, social norming, friendly competition, peer pressure, scarcity, goal setting, feedback loops, and a strong focus on language and messaging (Abrahamse 2009; Ehrhardt-Martinez, Donnelly, and Laitner 2010; Honebein, Cammarano, and Donnelly 2009; Lutzenhiser 2009).

The value proposition to participants in N2N is that they get a trusted ally to make saving energy in the home easy by bringing together available incentives, selecting pre-qualified contractors, guiding them through each step of the process, helping them track energy savings over time, connecting them to neighbors to share their experiences, and helping their community earn rewards.

A portfolio approach to energy efficiency actions. N2N aims to get residents on a "*food chain of sustainable energy usage*" by continuously engaging them to increase their levels of energy savings and clean energy usage (Figure 1). This relationship-based approach includes ongoing contacts through community outreach, an innovative website that provides a personal energy dashboard and resources, and social media strategies (Facebook, YouTube, etc.).

Figure 1 The N2N *Food Chain of Sustainable Energy Actions*



Energy saving program components to support a resident through the N2N "food chain" include:

- A portfolio of community workshops aimed at educating the public on home performance and calling homeowners to action, ranging from lighting, energy upgrades (see below), and fixing common Connecticut home issues, such as ice dams, gas leaks, and mold;
- A free Do-it-Yourself Energy Advisor highlighting home energy upgrades and prioritizes them based on comfort, health, and return on investment;
- A free personal energy dashboard where energy usage and actions can be tracked;
- A free direct install lighting program administered by N2N;
- A subsidized direct install weatherization and assessment service, called Home Energy Solutions (HES, which is also offered free to low income residents)[3], administered by the utility on behalf of the efficiency ratepayer fund; and
- Home energy upgrades based on recommendations made during the HES visit, such as appliances, insulation, advanced air sealing, and heating, cooling, and hot water heating equipment upgrades.

[3] Home Energy Solutions is a 3-5 hour service offered for a $75 co-pay. It includes blower door testing, air and duct sealing, water saving measures, and compact fluorescent light bulbs. It also includes prioritized recommendations for deeper savings; access to rebates for appliances, insulation, furnaces, and water heaters; and access to low interest financing for home energy upgrades. Low income residents are eligible to receive HES and eligible appliance and insulation upgrades free of charge.

Residents can enter the "food chain" at any point along the continuum, based on their readiness and motivation. One of the major challenges of the program has been to convert participants from the free or low-cost actions to home energy upgrades and solar.

Pilot Goal: Prove out cost-effectiveness of community-based approach. The goal of this pilot program is to demonstrate that community-based strategies coupled with a "food chain" or "laddered" approach can be a highly cost-effective program model. The hypothesis is that this model will be more cost-effective than traditional residential efficiency program models. Traditional models rely on a whole house approach in one fell swoop or a piecemeal approach with little or no connection between individual program offerings.

The N2N program framework adapts the Lifetime Customer Value (LCV) approach to the residential efficiency space. This approach places emphasis on the total participation of the customer over the life of the program and spreads out the cost of acquiring this customer over the total number of actions they take (Shaw and Stone 1988). The business goal is to have an ongoing relationship with the customer and monetize that relationship by cross-selling or up-selling additional products and services (i.e., N2N "food chain" actions). In the efficiency space, the goal would be to have the customer achieve greater energy savings over time as their home becomes more and more efficient through "food chain" actions. N2N measures the 'V' (Value) in LCV in negawatts[4] (but it can be measured in addition to or instead of revenues or profits, depending on the program).

Relationship to Statewide Ratepayer Program

CEEF, the state efficiency ratepayer fund, has a history of robust residential efficiency programs that deliver savings to a large number of customers, primarily through HES, the direct install service and assessment. Over the last few years, there has been a desire to drive additional energy upgrades after the initial HES visit that would yield deeper energy savings. There has also been interest in expanding community-based outreach. N2N essentially wraps around the existing HES program with a higher touch approach and a trusted messenger model with the goal of pulling more customers through to the deeper upgrades. As a ratepayer fund, CEEF is constrained in its ability to run large innovative pilots, such as the N2N model, by cost-benefit requirements. The opportunity to use federal grant funding to test the N2N program model afforded CEEF the ability to partner with the program and access all of the lessons learned and use technology to supplement traditional Evaluation, Measurement, and Verification work.

Utilities administer the HES program on behalf of CEEF, so N2N partnered with the utility serving its 14 participating communities[5] to gain access to individual monthly electricity usage data, as well as HES and rebate program participation data for N2N participants. In addition, the utility provides N2N with community-wide aggregate energy usage data, as well as aggregate HES and rebate penetration data. The utility program administrator also qualifies contractors to perform HES services. N2N selected a subset of these contractors to work in the 14 communities. Through a separate Request for Qualifications (RFQ) process, these selected

[4] The term "negawatts" was coined by Amory Lovins of the Rocky Mountain Institute; he defined a negawatt as one megawatt of electricity conserved for one hour.

[5] Connecticut Light and Power, a Northeast Utilities company.

contractors agreed to commit to an additional level of marketing, customer service, and data reporting requirements.

N2N program personnel attend monthly CEEF meetings to report on progress and lessons learned, particularly those of interest to the broader HES program and the goal of driving more energy upgrades. These meetings draw a broad stakeholder group including ratepayer fund board members and consultants, utility program administrators, loan program administrators, contractors, policy makers, and environmental advocates. Additionally, N2N staff work closely with utility program administrator staff on an ongoing basis.

Rationale and Support for Data Driven Program Model

Our methodology is based on the assumption that despite extensive program planning, some strategies will succeed and some will fail. At every stage the program team is taking a critical eye to its work. Progress is continuously assessed based on a wide variety of success metrics, focusing on an ultimate goal of maximizing home energy upgrades.

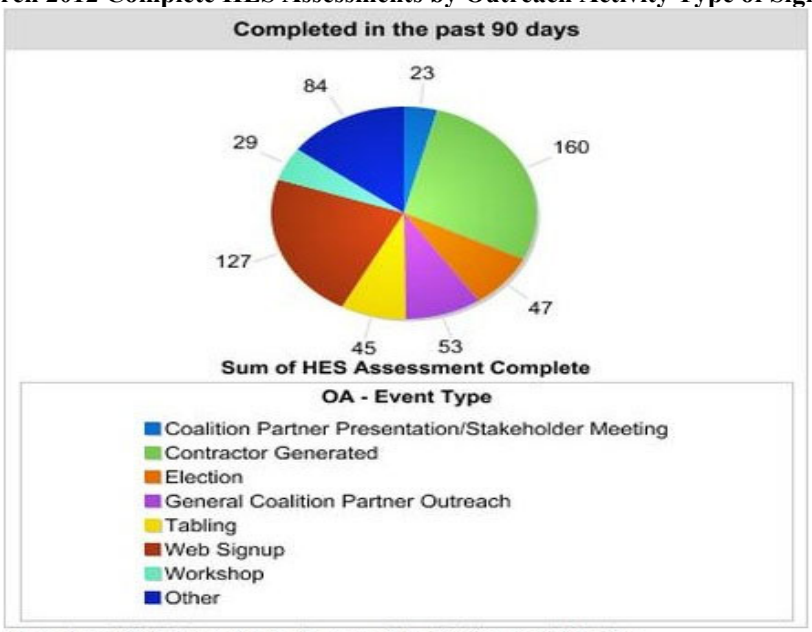
N2N's data-driven testing approach is called action research, and it enables adaptive program design and implementation. Action research includes continuously analyzing a real-world system (in this case, the N2N Energy Challenge program) with actual customers participating in their daily lives (Burns 2007). This approach relies on "clear performance metrics and targets (the expected outcomes), rapid feedback of results (the actual outcomes), and a culture where small failures are tolerated (and learned from) and rapid turnaround of iterative solutions is enabled" (Honebein et al 2009). The N2N action research approach has yielded continuous process refinements to measure and improve staff and volunteer outreach performance, assess and refine marketing messages, and actively manage contractor performance, all with the goal of achieving higher conversion rates for completion of energy saving actions, culminating in upgrades.

Goal setting and feedback loops are integral to effective program management and the outreach campaigns that drive program uptake. N2N has leveraged the technology platform to develop sophisticated internal and external dashboards that cover every conceivable aspect of driving adoption of increasing complex energy actions. This is approached from the perspective of acquisition marketing, which is essentially the ability to track the lifetime energy savings value of a customer. This is a critical and often-missing perspective in the efficiency space, where the ultimate goal is for customers to move from simple behaviors to the installation of measures that achieve deeper more persistent savings.

The N2N team worked to develop a set of standard and customized dashboards and reports covering: outreach activities held, leads generated by channel, actions taken across multiple program components, various sales pipeline metrics including key points in the process where a customer might drop off, contractor performance, energy savings metrics, social media customer participation, and online metrics. These dashboards have allowed N2N to analyze where outreach resources should be deployed across a portfolio of options. For instance, the dashboards allow us to compare a canvassing strategy with a "foot in the door" strategy like a free lighting program, to see which is better at ultimately driving upgrades, and which is more cost-effective or how to tweak a strategy to make it more cost-effective. (See Figure 2 for a chart from one of many dashboards.) Dashboards have also allowed N2N to identify those contractor partners performing at the top of their game, those that need additional support, and those

appropriate to remove from the N2N participating contractors. For instance, Figure 3 shows a wide variety of performance with contractors completing HES visits for between 32% and 74% of their N2N leads. The same is true of upgrade percentages, where unfortunately it is the smaller N2N contractors with the highest conversion rates to upgrades.

Figure 2. March 2012 Complete HES Assessments by Outreach Activity Type of Sign-Up



Based on HES Assessments completed in the past 90 days

Action Research Examples

Below are examples of action research N2N has conducted in the first eighteen months of the pilot program and how the data platform supports iterative, real-time program analysis and adaptive program refinements.

Pipeline Close Rate Analytics

N2N has conducted a variety of pipeline and close rate analyses, to narrow gaps in drop-off at each point in the pipeline. These examples focus on lead generation for HES visits, close rates for HES (which include an assessment and prioritization of additional energy upgrades), and close rates for follow-up upgrades.

Poor HES close rate at program start-up. During the soft launch of the program, and within two months of field operations, we were seeing a HES close rate of just 26%. The HES close rate is the number of leads that are converted into completed visits. We assumed this was due to poor lead quality given the newly trained outreach staff, but undertook a hybrid quantitative and qualitative analysis to verify the causes.

On the quantitative side, we found a high degree of probability that after N2N handed leads to the utility to assign to contractors the leads were falling through the cracks or going cold. The dashboard report revealed that the HES lead conversion to completed visit was low across

the board, but extremely low for one particular contractor who happened to be getting the majority of leads. In this case, it turned out that the contractor was simply not reporting completed visits to N2N (e.g., over 50% of customer records were missing entirely).

Further analysis of how long before contractors got a lead from the utility and when they made the first contact with the lead revealed instances where contractors who received the leads at the same time N2N received and processed them had much higher HES close rates. A deep dive into the data and program processes revealed several instances where leads were significantly delayed in being assigned to contractors by the utility, and even lost entirely.

The result of this analysis was that N2N implemented several process changes in how leads were processed and assigned to ensure as fast a turnaround time as possible from a resident signing up and a contractor receiving the lead and making first contact. This included removing the additional step of having the utility program administrator involved in HES lead assignment. Instead, N2N took over assigning the leads directly to the contractors.

On the qualitative front, we found that we weren't sourcing enough leads that actually intended to go through with the HES visit. We even found some that were surprised that the HES visit was the next step in the "food chain" and that were scared off. To better understand the individual and social characteristics driving sign-ups and follow through with HES, N2N conducted its first Listening to the Voice of the Consumer analysis. The methodology uses ethnographic research techniques that included working with the outreach staff to collect raw "customer voice" data (e.g., recording word for word customer reactions at tabling events, workshop, and other outreach activities). The next step included pulling out the most important characteristics from these voices, combining them into similar categories, analyzing the customer voices, and turning it into information that drives program improvements.

Including outreach staff in the analysis drives self-education, slows down and adds structure to the outreach process, and uses smaller data sets to drive high quality returns because the outreach staff really listens to and understands the needs of the customers. N2N used the data platform to capture detailed information about each outreach activity, including an extensive event debrief that covers everything from which pitches were used, which program benefits were emphasized, the reaction to those pitches, supporting materials and collateral that was used, sponsoring entities, and word for word customer reactions.

The results of the Listening to the Voice of the Consumer exercise revealed several issues that contributed to a low close rate for HES sign-ups:

- some people didn't want to say "no" to the young, enthusiastic outreach staff, but were happy to say no to the contractor following up;
- some people wanted additional information, but we simply put them in the queue to get scheduled;
- some didn't understand what they signed up for;
- the outreach staff didn't always understand what they were pitching; and
- the outreach staff didn't consistently set expectations of the expected next steps.

Poor upgrade rate after HES visit. N2N next turned its attention to the extremely low upgrade rate after the HES visit, initially at just 4% (percent of homes that undertook an upgrade after the HES visit). N2N worked with the data platform to develop a contractor scorecard that reported a number of metrics, including:

- HES leads assigned,
- HES lead conversion rates (addressed previously),
- the percentage of customer releases signed (which N2N needs to get individual household monthly utility data),
- the percentage of assessment reports uploaded to the N2N platform,
- the percentage of HES visits that had a bid for upgrades delivered to the customer, and
- the percentage of HES visits that had an upgrade completed (N2N's equivalent of an audit-to-upgrade rate) (the subject of this section) (See Figure 3).

Individual scorecard results were initially just shared with each contractor and compared to a program average with some commentary on where each contractor ranked compared to other contractor partners.

The contractor scorecard immediately revealed wide disparities between the lowest and highest performing contractors for each of the metrics. For instance, some contractors had almost 100% completion rate for the customer release and assessment report, where others struggled to get in the 50 to 60% range, indicating some firms needed process improvements. Most revealing, three contractors that were handling 40% of the HES volume for N2N had a bid rate (percent of HES visit homes that received a follow up bid) for energy upgrades of just 2% on average, and an upgrade rate of 0%. These dismal numbers were dragging down the overall upgrade rate for the program. Bid rates were a key problem. On average, about one in four customers who completed HES could expect to receive a bid for upgrades, despite the majority of housing stock in N2N communities needing insulation due to the large percentage of older homes. Even the highest performing contractors had bid rates under 50% and upgrade rates (percent of HES visit homes that completed an upgrade) in the low- to mid-teens (see Figure 3).

To understand if there were customer dynamics at work in addition to contractor performance issues, N2N surveyed approximately 100 participants that had completed HES but had not made upgrades. The survey revealed a low level of awareness or acknowledgement of receiving any recommendations for additional energy improvements that could be made. It also revealed a surprisingly high rate of customers who wanted more information about upgrades and how to move forward, including whether there were any rebates or incentives available (there were, and they should have received access to them at the end of the HES visit).

These findings led to a complete overhaul of N2N's approach to contractor management, drawing on best practices from other *BetterBuildings* programs achieving higher audit-to-upgrade conversion rates. In the fall of 2011, N2N issued an RFQ to formally select a new set of contractors to work with the program under detailed program guidelines governing service level agreements around customer service and data reporting, as well as expectations for bid and upgrade rates. Additionally, N2N announced that the contractor scorecard would be made public and include contractor firm names, and would be shared with program partners including the ratepayer fund and utility program administrators.

At the same time, N2N introduced a new contractor liaison/energy advisor team to primarily focus on supporting contractors in improving their processes and interactions with N2N. In addition, the energy advisor would be available to customers who had questions about upgrade recommendations or the upgrade process. N2N also instituted monthly contractor meetings and identified the need for sales training. The contractor liaison team uses the data platform to manage the program's pipeline and to work one on one with contractors to follow where customers are in the process. As a result of intensive focus on the bid process, N2N saw several contractors increase their bid rate and a small improvement in the overall upgrade rate. However, until sales training is delivered, these numbers will remain lower than they should be.

Figure 3. N2N HES & Upgrade Statistic Snapshot (Leads received between 9/1/11 and 4/30/12)

HES Program Status	Project Owner (Contractor Names have been redacted)											Grand Total Or Program Average
	1	2	3	4	5	6	7	8	9	10	11	
HES Total Leads	132	125	81	98	71	319	120	68	384	207	241	**1846**
HES Visits Completed	91	48	45	48	22	168	82	48	272	104	150	**868**
Avg. Days to Complete	46	32	36	36	37	65	25	81	42	38	43	**44**
% Completed	69%	38%	56%	49%	31%	53%	68%	71%	71%	50%	62%	**47.0%**
% Scheduled	5%	9%	4%	5%	11%	7%	5%	1%	5%	0%	4%	**5%**
% Lost Projects	17%	34%	32%	36%	4%	31%	8%	28%	15%	48%	26%	**26%**
HES Savings Data												
Avg % Savings from HES	9.3%	5.2%	8.9%	7.3%	16.1%	6.9%	10.8%	7.9%	10.0%	9.1%	8.1%	**8.8%**
Savings >15% (% of visits)	7%	6%	0%	0%	60%	10%	15%	10%	14%	6%	7%	**11%**
Bids and Upgrades												
Bids Delivered	9	22	22	3	11	60	30	1	53	10	17	**238**
Bid Rate	10%	46%	49%	6%	50%	36%	37%	2%	19%	10%	11%	**27%**
Upgrades from HES Leads	3	1	1	0	1	6	14	1	23	2	5	**57**
Total Completed Upgrades	4	1	1	0	1	8	14	2	23	2	6	**62**
Upgrade % (of bid)	33%	5%	5%	0%	9%	10%	47%	100%	43%	20%	29%	**24%**

Second look at analysis of close rates for upgrades. After several months of implementation of new contractor protocols and supports, as well as upgrade focused messaging, N2N is once again in the middle of improving the process. Although the above process improvements did lead to higher quality leads, there is still work to be done to prioritize which leads to focus more time and attention on and which leads to let go cold. N2N recently finished automating an approach on the platform that uses four survey questions, in addition to housing characteristics, to put customers into different "swim lanes" based on where they are in the process and their likelihood of moving through to upgrades. Customers in different swim lanes are tracked through the technology platform to determine how the N2N outreach team can support them throughout the process from lead status through upgrades. Future analysis will determine the effectiveness of the process improvements.

Improving N2N Results Through Action Research

As a result of the technology platform and the action research approach, N2N went about systematically addressing each of the issues identified in the quantitative and qualitative analyses. For instance, the quantitative analysis led to several changes in the program design related to contractors:

- N2N staff took over lead distribution to contractors and makes sure that leads are distributed from N2N directly to contractors within one to two days,
- N2N issued a Request for Qualifications to set clear expectations of contractor requirements
- N2N hired two staff Energy Advisors that act as contractor liaisons to support and train the contractors as they strive for higher conversion rates, and
- N2N arranged for contractor sales performance training to help them speak the customer's language to encourage higher upgrade rates.

The qualitative research led N2N to refine the outreach pitches and collateral used to prime customers that the ultimate goal is home performance, including upgrades. In addition, several training programs were added for N2N staff to beef up their technical knowledge about home energy upgrades, as well as to teach them marketing and behavioral science to help speak the customer's language. Small changes have been made to the program that ensure that customers understand what they are signing up for, such as implementing a "receipt" for the sign-up in the field that details next steps and serves as a reminder of sign-up. N2N also provides additional customer touch points such as an email confirmation including the outreach event where they signed up and the name of the contractor who would be contacting them.

As a result of these program improvements, N2N saw a 35% increase in HES close rates within the first month and a doubling of the close rate within two months. The close rate went from 26% to a rate that is just under 50% today (Sept. 2011 to April 2012) (Figure 3).

Supporting Market Transformation

N2N pulls two dashboards each month out of the data platform for broader distribution to stakeholders: 1) A program summary covering outreach, social media, pipeline metrics for each energy saving program component (lighting, HES, upgrades), and energy reductions by program component and heating fuel source; and 2) The contractor scorecard, designed to change the way the contractors operate. These dashboards are presented to state ratepayer fund board members, utility program administrators, policy makers, and program partners (including contractors) every month. All of N2N's market transformation efforts in Connecticut are anchored off of these reports.

These dashboards provide a mechanism to get everyone really focused on opportunities and issues, not just in N2N's program, but also in the broader statewide programs. And they help drive broader policy discussions about needed changes and possible approaches. They bring a level of granularity and specificity to the policy debate that hasn't been possible before. For instance, in debating whether the statewide program could implement a process change to get a customer release for access to utility data, N2N was able to demonstrate that half of its contractors had a release complete rate of greater than 92%, indicating it was certainly possible by sharing best practices among contractors. Similarly, in discussing the low HES-to-upgrade conversion rate in the statewide program, N2N was able to provide detailed data on the variability of bid rates among contractors, highlighting the need for process improvements, contractor engagement (meetings, liaison staff, sales training), and potentially a realignment of expectations for participating contractors in the statewide program.

The statewide program has incorporated some of the program elements piloted in N2N; has issued a request for proposals for technology solutions specifically to support HES; instituted new performance metrics for contractors that track the ability to drive deeper savings; and is developing a new training curriculum for contractors that includes sales techniques.

Conclusion: Next Steps and Possible Broader Applications

Residential energy efficiency programs can be expensive to implement within a regulatory framework. This pilot program aims to demonstrate the conditions under which community-based program models can deliver more impact per dollar spent than traditional program marketing, particularly when coupled with a LCV approach, within a regulatory framework. N2N has used these technology and program management tools to track the data to prove out this hypothesis (which will be completed as part of the N2N Impact Evaluation expected early 2013).

In addition, the technology and program management tools help keep all of N2N's partners on the same page, and to instigate program evolution and market transformation in the broader statewide program. In the end, this may be the biggest accomplishment of N2N - driving changes in how ratepayer funded residential efficiency programs are administered.

N2N is continuously driving forward on implementing existing, and discovering new, best practices to improve program execution. The N2N technology platform supports this process, and is the key to driving an improved customer acquisition, lead generation, and on-going strategy. N2N is incorporating several new pieces into the technology platform, such as:

- Addition of several automatic emails into different steps of the customer "food chain" to provide prompts and priming for upgrades;
- Addition of customer segmentation data to the CRM to support better targeted marketing for acquisition, cross-sell, and up-sell; and
- Integration of website, Facebook, and other social media analytics into the CRM.

The N2N team is also in the process of building out a customer acquisition cost model and Lifetime Customer Value analysis, undertaking this from both a regulatory lens, as well as from a stand-alone business lens. The regulatory lens is to provide a comparison of a community-based program with other regulated program models. The business lens is to develop a portfolio of cost-effective strategies for future implementation, including understanding how different funding approaches, such as contractor fees, referral fees, sponsorships, etc., would contribute to program administration cost-effectiveness. The model will also be used to support the program evaluation by integrating analytical support for calculating regulatory tests and non-energy benefits (e.g. societal benefits and avoided greenhouse gas emissions). All of this modeling work relies heavily on the availability of a cutting edge data platform.

The information generated by the N2N team and supported by the N2N platform enables ongoing pilot program improvements as detailed in this paper. In addition, the N2N platform is enabling the N2N program to show early signs of market transformation, including influence at the statewide ratepayer program level, as well as DOE discussions about broader programmatic and policy improvements. Beyond the regulatory and program design discussions, the N2N team

and platform are creating more informed and integrated relationships between marketing efforts and program implementation as well as between the program and critical trade allies.

In the near future, we expect the platform to support renewable energy measures in addition to energy efficiency. This will allow the opportunity to harness additional process improvements within programs. The initial stages of this are already underway under a separate DOE grant.

While we have focused on a single program in this paper, the ability to provide real time analytics and timely process improvements through the use of technology partnerships is not unique to N2N. Similar data can populate a multitude of metrics, as specified by the program, and feed ongoing management discussions.

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