Regional Clean Energy Hubs Market Evaluation and Baseline Customer Survey: Report

Final

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1. Introduction

The Regional Clean Energy Hubs (RCEH) Initiative was developed by NYSERDA as part of its overall strategy to assist New York State residents with accessing clean energy services and assistance. Investment in the establishment of Regional Clean Energy Hubs (Hubs) is a key part of the Statewide LMI Implementation Plan.[1] Hubs build capacity at the local level to strengthen the participation of disadvantaged communities (DACs) in the clean energy economy.[2] The program design incorporates lessons learned from a previous outreach program, the Community Energy Engagement Program (CEEP), which was active from 2017 to 2022. The RCEH Initiative launched in September 2022, to provide similar services to communities served by CEEP, and will run until 2026 (four years). This study will review the first year of the RCEH program and provide an initial assessment of primary program metrics.

Definitions:
- *Prime Contractor* – Lead Hub Organization (funded by NYSERDA).
- *Subcontractor* – Non-lead Hub Organization (funded by NYSERDA).
- *Hub Leadership Team* – Hub Directors or Co-Directors or other leaders that work at the Lead Organization (occasionally includes leaders at subcontractor organizations).
- *Energy Advisors* – Individuals who work with the Hub, either with the Prime or Subcontractor organizations, and conduct the regular outreach and engagement activities of the Hub.
- *Stakeholders* – Community members and households, small businesses, non-profits, and other organizations that can participate in NYSERDA programs.
- *Partners* – Separately-funded local community organizations or other agencies (e.g., the Department of Health and Human Services) working with the Hub to engage stakeholders in educational events, refer them or help them apply to clean energy programs, or identify clean energy installers.

Each of the 12 regional hubs is a community-based and non-profit organization that serves as the center of a network, with one prime contractor organization and a series of subcontractor organizations, collectively providing education, application support, project management support, workforce development opportunities, or other resources to customers in their respective economic development regions. To improve customer energy savings outcomes, NYSERDA is coordinating with NY utilities joint planning efforts to provide Hub staff with information on the available energy-efficiency programs offered by power utilities. The purpose of this effort is to ensure that the Hubs can educate local residents and businesses about both NYSERDA offerings and other funding sources for clean energy services

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[1] NYSERDA's Statewide Implementation Plan is available online: https://www.nyserda.ny.gov/All-Programs/Residential-and-Property-Owner-Income-Eligible-Programs/LMI-Stakeholder-Resources-New-Efficiency-New-York

[2] Disadvantaged communities (DACs) are defined as communities that meet the criteria identified for a disadvantaged community as defined by New York State (https://www.nyserda.ny.gov/ny/disadvantaged-communities). For the purpose of the RCEH evaluation, DACs also refer to hard to reach, underserved rural communities, and other areas with high levels of poverty and limited access to resources.

(e.g., utility programs and sister or other state agencies) to increase consumer participation in the clean energy economy.

1.1 Program Description

A total of 12 Regional Hubs (Hubs) are located across New York State (**Figure 1**). Each of the ten economic development regions across the state has one Hub, with the exception of the New York City region, which has three Hubs to serve the five boroughs. In each Hub, a prime contractor holds the contract with NYSERDA while a group of subcontractors work directly with the prime. Together, these organizations form a "Hub" in their region to operate the NYSERDA initiative.
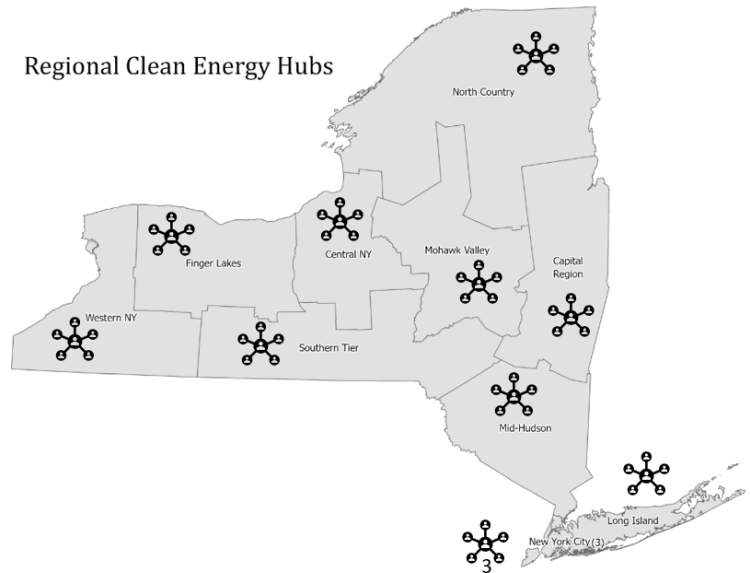
Figure 1. Hubs across New York State

The RCEH initiative is intended to serve as a high-throughput energy concierge program, where energy advisors – individuals who conduct the regular outreach and engagement activities of the Hub – educate individuals and communities about the clean energy economy and help people to sign up for NYSERDA's and other organizations' clean energy services and programs. Energy Advisors in each Hub conduct the following core activities:[3]

- Discuss home or business energy assessments and how they can help identify possible energy upgrades or retrofits to the customer's home or business to reduce energy burden.
- Help prospective customers fill out applications for free.
- home-energy assessments or energy incentives for which a household or business may qualify.
- Find a qualified contractor for customer home/business clean energy upgrades.
- Refer individuals seeking employment to clean energy job training programs.
- Share information with customers about electric vehicles (EV), charging stations, or shared mobility programs.

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[3] Hubs are designed to be a "one stop shop" and can also refer customers to utility-run energy assistance, health and safety programs, nutrition assistance, and other types of services to help customers find the support they need.

- Locate a community solar program and help residents and businesses determine if they could benefit from participation.

1.2 Purpose of the Evaluation

The purpose of this evaluation is to characterize the relationships between Hub organizations (i.e., understand how the Hubs operate); characterize progress to date in designing and implementing outreach and education programs (including community campaigns); set a baseline for DAC household awareness of clean energy opportunities; and provide recommendations for the initiative going forward.

The remainder of this report describes the RCEH initiative efforts at the time of evaluation, with a focus on: a) Hub structure and activities as of July 31, 2023, b) consumer awareness and barriers to adoption, and c) findings and recommendations for NYSERDA to enhance the RCEH initiative.

1.3 Methodological Overview

IEc conducted a formative evaluation to both assess RCEH initiative progress at the time of evaluation in designing and implementing outreach and education programs, and establish a baseline for DAC consumer awareness of clean energy products and services. As a part of this effort, IEc reviewed available secondary data from the program (Sept. 1, 2022 – July 31, 2023) and collected primary data using interview, survey, and focus group methods. The data collection period for this evaluation began in May 2023 and extended through April 2024. The data collection objective, purpose, and methods for the RCEH baseline evaluation are outlined in **Table 1**. Additional analytical details are included in **Section 4**, extended methodological details including sampling strategy and participant disposition are described in **Appendix A,** extended methodological detail for the extended secondary data review are described in **Appendix B,** and a crosswalk table of research questions and supporting data is included in **Appendix C**. **Appendix D** includes a discussion of extended results from the primary data collection efforts.

Table 1. Data Collection Objective, Purpose, and Methods

Objective	Purpose	Method
Establish understanding of and document Hub activities and progress, including context	- Characterize Hub outreach and engagement progress to date, including wraparound services. - Gather information on perceptions about key barriers to clean energy adoption (especially in DACs). - Identify project partners (subcontractors funded by NYSERDA and partners otherwise funded) for focus group data collection. - Characterize the number of existing community campaigns supported and new community campaigns. - Characterize the number of NYSERDA projects coordinated with wraparound services. - Characterize number of workshops and outreach efforts (in person and virtual). - Characterize the number of existing community campaigns supported and new community campaigns. - Provide context for understanding total MWBEs and SDVOBs participating in the clean energy sector.	- Interviews with RCEH Hub Leadership - Virtual Focus Groups with Subcontractors - Secondary Data Review: RCEH Hub Opportunities Data, Hub Monthly Engagement Report, 2021 – 2022 USEER Data
Refine list of Hub subcontractors	Inform focus group recruitment.	Hub List of Project Partners
Establish DAC consumer awareness baseline	- Characterize baseline DAC consumer awareness of clean energy services and opportunities. - Identify key barriers to clean energy adoption (especially in DACs).	- Virtual Focus Groups with Consumers in DACs - Online Survey of Consumers in DACs

2. Market Evaluation and Baseline Results

This report presents the market evaluation and baseline results and **indicators** in the following two sections: 1) Hub Structure and Activities and 2) DAC Consumer Awareness.

2.1 Hub Structure and Activities

This section of the report describes the general structure of the Hubs, as well as Hub activities at the time of evaluation including partnership-building, preliminary progress toward outputs and outcomes, and a discussion about successes and challenges during the baseline period.

Hubs are designed as a network of community organizations spread across NYSERDA's 10 economic development regions, with one prime contractor organization and a series of subcontractors per Hub (**Figure 2**). Hubs are funded by NYSERDA and managed by NYSERDA program staff. Within each Hub organization, Energy Advisor staff conduct outreach and provide resources to customers in their respective regions. Hubs and subcontractors also work with non-NYSERDA partners, organizations or other state agencies not funded through NYSERDA that nonetheless support Hub work by referring customers, distributing educational materials (e.g., pamphlets at a Department of Social Services office), provide space for tabling at events, or otherwise contribute to Hub activities.

Figure 2. Illustrative representation of Hub structure and networks
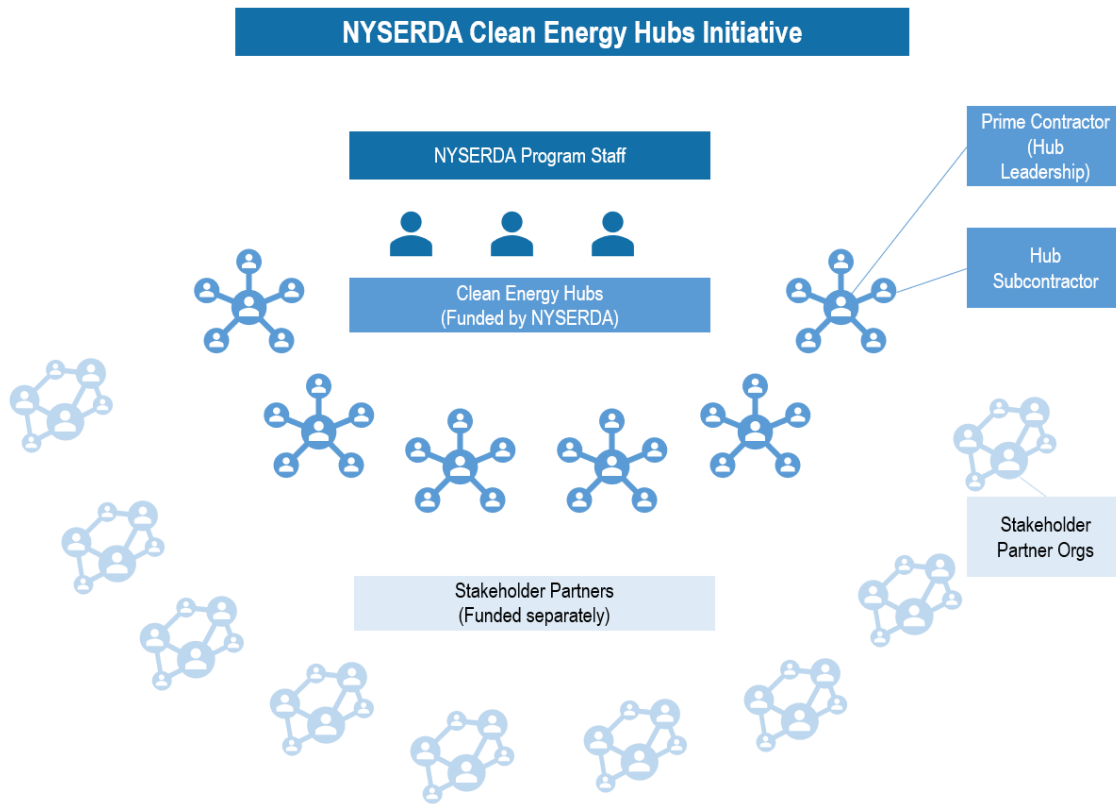
Note: This illustrative representation does not fully capture all 12 Hubs, but instead gives an idea of the general organization of the initiative. Each Hub has multiple subcontractors (one to seven). Non-NYSERDA partners extend the Hub structure into a broad network of organizations across New York State.

Hub organizations have a history of working with NYSERDA or other New York State agencies. Most Hubs have served New York State residents and businesses directly or peripherally as a part of the Community Energy Engagement Program (CEEP) (n=7 Hubs), as a Heat Smart campaign leader (n=3), and/or as a Clean Heating and Cooling Campaigns provider (n=3).[4] Hubs with previous NYSERDA program experience have leveraged the institutional knowledge developed in conjunction with past New York State programs. Hubs not previously *directly* involved with NYSERDA programs are either part of the Cornell Cooperative Extension (CCE, n=1) Network (and thus familiar with many NYSERDA partner organizations) or have extensive previous experience in helping communities meet their housing and/or clean energy needs (n=1).

This study does not specifically evaluate the following two key components of the RCEH Initiative: 1) the Regional Assessment and Barriers Analysis (RABA), and 2) stakeholder forums.

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[4] Large N is usually the denominator. Small n refers to a sample of the population. This report uses small n notation throughout to denote the number of respondents *for a specific finding*, and large N to refer to the total number of respondents (for a question or data collection effort).

The purpose of the RABA is to combine community data collection efforts with community engagement. The RABA will provide an analysis of each region's clean energy market landscape (including businesses, community assets, partner organizations, and barriers and opportunities), and is a required task for Hubs. The resulting documents, once completed, will serve as living and publicly available documentation to inform strategic outreach initiatives and outline recommendations for how the Hubs and NYSERDA can address barriers identified. The stakeholder forums are public meetings in which NYSERDA can elicit broad feedback from communities on energy issues that matter to them and are intended to compliment the RABA efforts. Hubs were in the preliminary stages of planning for both the RABA and stakeholder forums at the time of data collection. These activities will be evaluated in a future evaluation of the RCEH Initiative.

2.1.2   What local organizations are Hubs working with in partnership?

As Hubs are still in an early implementation phase for RCEH activities, it was determined that the baseline assessment of Hub partnerships would focus on subcontractors, rather than all partner organizations or agencies (Hub Leadership largely pointed to the ongoing RABA efforts as a means of first engaging their partner organizations or agencies). At the time of the Hub Leadership interviews, eight Hubs were preparing to conduct a RABA to build a foundation from which to better serve the communities in their regions, while two Hubs had already started their RABA process to avoid further delays to the outreach/planning. Two Hubs did not report the status of their respective RABAs.

NYSERDA's **Hub List of Project Partners,** which includes information on the subcontractors working with each prime contractor organization, provided a basis for the identification of the number of subcontractors. **Collectively, the Hubs have 55 subcontractors** (**Table 2**). Each Hub has between three and seven subcontractors, except Mohawk Valley (the prime had only one subcontractor at the time of data collection, resulting from challenges in contract negotiation with other potential subcontractors). This number of subcontractors (55) is expected to grow as Hubs conduct their respective RABAs and use the assessments to engage with new locally-based organizations. Presently, **this count of subcontractor organizations (55) also represents the baseline number of stakeholders and/or organizations promoting clean energy technologies and opportunities.** This report uses "subcontractors" to identify the partner organizations onboarded into the initiative, and "partners" for the non-NYSERDA partner organizations and agencies not yet onboarded at the time of evaluation. Some Hub subcontractor organizations serve multiple Hubs. For example, Pratt University and Kinetic Communities Consulting both

serve NYC Richmond/Queens and NYC Manhattan Hubs. Several Hubs subcontract with different Cornell Cooperative Extension offices as well.

Table 2. Subcontractor count by Hub.

Hub	Subcontractors
Capital Region	6
Central NY	3
Finger Lakes	5
Long Island	5
Mid-Hudson	3
Mohawk Valley	1
North Country	3
NYC Bronx/Brooklyn	3
NYC Manhattan	5
NYC Richmond/Queens	7
Southern Tier	8*
Western NY	6
TOTAL	**55**

Note: Some Hub subcontractor organizations serve multiple Hubs, which means the total number of unique subcontractors for all Hubs is less than 55. *Southern Tier may have fewer actual subcontractors – the Hub subcontractor focus group conversations suggested that not all of the groups that participated were subcontractors.

As with the prime contractors, some subcontractors have previous experience working with New York State-sponsored clean energy and assistance programs. Many Hub subcontractors have previously engaged with the prime contractor organizations in other NYSERDA-sponsored energy programs, including CEEP (n=3 subcontractor organizations), Heat Smart (n=3), Clean Heating and Cooling (n=3), Green Jobs and Green NY (GJGNY, n=1), and Solarize campaigns (n=2). As noted above, three Hub subcontractors are part of the Cornell Cooperative Extension (CCE) program and had been involved in prior clean energy or whole family health initiatives with CCE.

2.1.3 *What other outreach and engagement progress have Hubs made to date?*

Interviews with Hub Leadership found that four Hubs experienced delays in launching their customer outreach and community engagement efforts, as the Hub infrastructure took some time to set up. Preliminary activities that delayed these Hubs included Hub lead (prime) organizations negotiating contracts with their subcontractors as well as hiring, onboarding, and training their

energy advisors (Hub employees).[5] Once launched, the 12 Hubs are responsible for the following activities in their communities:

- Conducting customer outreach events and workshops.
- Connecting residents with wraparound services to support clean energy and energy efficiency activities.
- Organizing community campaigns to focus on specific clean energy and energy efficiency opportunities and issues.

Outreach Events and Workshops: At the time of interviews, nine Hub Leadership teams (N=12 Teams) reported that they had initiated customer outreach and community engagement in their respective Regions. Though there were 19 individual interviewees, the evaluation study included 12 interviews to elicit information from each of the 12 Hubs. This report analyzes Hub interviews at the Hub level, and will report on the collective insights from each Hub as a single response. Of the nine Hubs who had initiated outreach and engagement, six Hub Leadership interviewees indicated that their Hubs had "hard launched" at the time of the Hub leadership interviews, while three Hub Leadership interviewees reported that they were in the middle of a "soft launch" of the Hub, i.e., attending existing community events or accepting applicants via intake forms and referrals from other organizations while building Hub capacity (e.g., hiring and training Energy Advisors). These three "soft-launched" Hubs were planning for a "hard launch" of their Hub, where they would further pursue their engagement efforts under new RCEH branding.[6] The other three Hub Leadership teams said that they were still in the hiring/onboarding phase and had not yet initiated customer outreach (i.e., pre-soft-launch phase).

Hub Monthly Engagement Report Data, which describes activities in which Hubs and their subcontractors have engaged (e.g., educational events for first-time homebuyers, marketing projects, hiring and onboarding new staff, etc.), are reported by Hubs on a monthly basis. **The**

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[5] Here and throughout the report, when interview and focus group participant counts are identified, it is important to remember that not everyone volunteers information for every question, and behavior indicators of agreement (nod=yes) are not captured in our notes, so the participant counts are not necessarily indicative of total frequency. For example, if one participant indicates that lack of childcare options is a barrier for workforce development program participation, it does not necessarily indicate that they are the *only* participant that agrees with a topic or theme.

[6] RCEH branding was not always synonymous with NYSERDA branding. Some Hub Leadership teams indicated that it was important for their organization's optics to remain independent of NYSERDA branding to maintain trust and legitimacy in communities where they had already established themselves.

RCEH Monthly Hub Reporting data indicate that Hubs had conducted 103 customer outreach events and 12 workshops as of July 31, 2023.[7]

Wraparound Services**:** Braided funding to provide wraparound services is a key focus area for the RCEH initiative. This report defines wraparound services as any non-NYSERDA services that help applicants (typically residential customers) get the services they need in addition to clean energy assistance. Hub Leadership interviews identified the following wraparound service challenges:

- Securing services for people on the cusp of qualifying for assistance programs (n=2).
- Coordinating weatherization and energy projects to maximize energy savings (n=3).
- Finding creative funding solutions for households that need home health and safety issues addressed (e.g., mold, lead, pests), or critical home repairs (e.g., leaks) (n=5).[8]

Importantly, one Hub Leadership interviewee identified that braiding resources presents a challenge for Hubs as a labor-intensive and time-consuming task when working with high-need customers. The interviewee explained that intensive support for customers limits the Energy Advisors' ability to reach a broader audience, resulting in a tradeoff between level of assistance and quantity of people reached. Additionally, at least two Hub subcontractors indicated that they were interested in more support from NYSERDA to intelligently speak to the benefits of clean energy programs beyond those that offer clean energy upgrades that have long payback period (too long, in many cases, to entice DAC consumers who are looking for immediate energy bill relief).

RCEH Opportunities Data represent individuals, households and businesses that have entered NYSERDA's RCEH pipeline (e.g., signed up at a community event and requested to receive more information, applied and tagged the Hub for clean energy assistance through Empower +, or completed an air source heat pump installation project in their home), regularly reported to NYSERDA.[9] The **RCEH Opportunities Data indicate that as of July 31, 2023, there were**

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[7] **Outreach events** were reported inconsistently in the RCEH Monthly Hub Reporting data, so IEc reconciled/cleaned the engagement name information, record type, SOW Task number, and accomplishment description for consistency and developed a new "Engagement Description" variable. IEc has defined the Engagement Description item labeled "outreach events" as any instance where the combination of engagement name, record type (outreach), and SOW Task number (3.0) indicates an outreach event. **Workshops** is not an item captured systematically in the Monthly Hub Reporting dataset outside of the "Activity" variable. IEc captured any instance of "Energy Workshop" noted in the Activity column, but this is likely an underrepresentation. Only three Hubs had reported holding or presenting at energy workshops. Incomplete data yield incomplete results, so the impact of reporting challenges in the Hubs Salesforce datasets is minimal baseline values.

[8] In situations with very serious home repair needs or home health and safety issues like pests and roof leaks, NYSERDA funding may not be used. Sources like U.S. Department of Housing and Urban Development (HUD) funding can address some critical home repairs or health and safety concerns, but HUD has a different bidding process.

[9] NYSERDA. 2023. Hub Opportunities Data. Received from NYSERDA Program Staff on August 1, 2023.

143 opportunities with wraparound services [10] This assessment of opportunities with wraparound services includes opportunities at all stages of development (e.g., nurturing, preparing application, applied, contracted, completed, closed, etc.).

Community Campaigns**:** One way that the RCEH initiative design balances the issue of intensive wraparound services support for high-need customers is with community campaigns, which extend the Hubs' reach to a broad audience about a specific topic. Hubs receive additional funding to run community outreach campaigns to raise consumer awareness and strengthen the presence of the Hub in the community. **As NYSERDA had not yet made community campaign funds available at the time of data collection, there were no community campaigns to report in this evaluation study.** One Hub Leadership interviewee discussed a plan for a community campaign. Seven other Hub Leadership interviewees indicated that community campaigns were a priority on their engagement planning agendas and identified campaign ideas targeted to specific consumer groups, including: DAC residents, landlords, contractors (building a network), rural residents and small businesses, and mobile home residents. Two Hub Leadership interviewees identified campaigns to target specific building challenges, such as home health and safety issues like lead or mold, or needs for critical repairs for the home, such as addressing holes or persistent leaks (e.g., roof). Finally, two Hub Leadership interviewees indicated that they are too early in their "soft launch" planning process and for them to be well-positioned to plan campaigns. These Hubs indicated that they were unclear about how to proceed with campaigns in regions with more disparate population centers and a mix of consumer types with varying eligibilities, and pointed to the ongoing RABA process as a factor preventing them from planning a community campaign, because they were depending on the RABA results to inform the community campaign planning. [11]

> **Community Campaigns**
>
> Community campaigns are designed to balance the intensive support that Hubs provide to high-need customers seeking wraparound services by expanding Hub reach to broader or new audiences. At the time of interviews, Hub Leadership had identified a range of community campaign ideas ranging from engaging contractors to educating residents on a variety of home health and safety issues, like lead and mold.

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[10] In the RCEH Opportunities dataset, opportunities were identified as having wraparound services if they had an identified NYSERDA program *and* non-NYSERDA program listed in the respective columns and were not closed due to customer ineligibility or non-responsiveness. If opportunities were only associated with non-NYSERDA programs (e.g., referrals for other programs), this study did not consider the opportunities as having wraparound services. This assessment of wraparound services includes opportunities at all stages of development. Development stage is a variable entered and updated by Hub staff, and may not be reflective of the most recent stage of development if staff input their opportunities data in batches.

[11] NYSERDA released the RABA guidance shortly before the start of interviews, and many Hubs were waiting to finalize their RABA plans before planning community campaign outreach.

2.1.4 Did partnerships with local organizations lead to increased NYSERDA project implementation?

This evaluation study identified opportunities with wraparound services and a status of <u>completed</u> or <u>contracted</u> (a subset of the total 143 opportunities with wraparound services described in **Section 2.1.3**) as a proxy for the total number of *NYSERDA projects implemented as a result of partnerships with local organizations.* The RCEH Opportunities data indicate that as of **July 31, 2023, there are 17 projects with wraparound services that have been completed, and another 15 projects that have been contracted.** Importantly, the projects with wraparound services listed in the RCEH Opportunities Data represent only a portion of overall projects that Hubs have assisted customers in pursuing with Hub subcontractors and partner organizations, as the RCEH Opportunities and Monthly Hub Reports have limited capabilities for identifying projects *in coordination with partner organizations*. For example, the RCEH Opportunities data indicate only where partner organizations or agencies have been involved with opportunities in a program referral identifying the partner.

2.1.5 What workforce development progress have Hubs made to date?

Data from the 2022 U.S. Energy Employment Report (USEER) indicate a total of 226,641 clean energy jobs across all 10 economic development regions in New York State, and 226,978 clean energy jobs across New York State in 2022, an increase of 337 jobs from 2021.[12] USEER data do not reflect all clean energy-related jobs (i.e., the dataset is missing community organizing and education-related jobs); instead, they give a partial (but broad) indication of clean energy workforce trends in New York State. **Figure 3** shows clean energy job distribution by region and type.

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[12] Importantly, the USEER data are published annually, but one year delayed. Jobs in fossil fuel or fossil-fueled electricity generation are excluded from this total. Additionally, motor vehicle related jobs were excluded because the USEER dataset did not provide granular enough information on fuel type to be able to isolate battery electric or plug-in hybrid electric vehicle-related jobs from the total number of motor vehicle jobs reported.

Figure 3. Clean energy jobs by region and type 2021 - 2022 (USEER)

From 2021 - 2022, **Transmission, Distribution, and Storge** had the greatest change in total jobs, with increases in some regions and decreases in others. Jobs in **Renewable Electric Power Generation**, **Alternative Fuels**, and **Energy Efficiency** do not appear to have changed substantially between 2021 and 2022.

■ Renewable Electric Power Generation Jobs ■ Transmission, Distribution, and Storage Jobs ■ Alternative Fuels Jobs ■ Energy Efficiency Jobs

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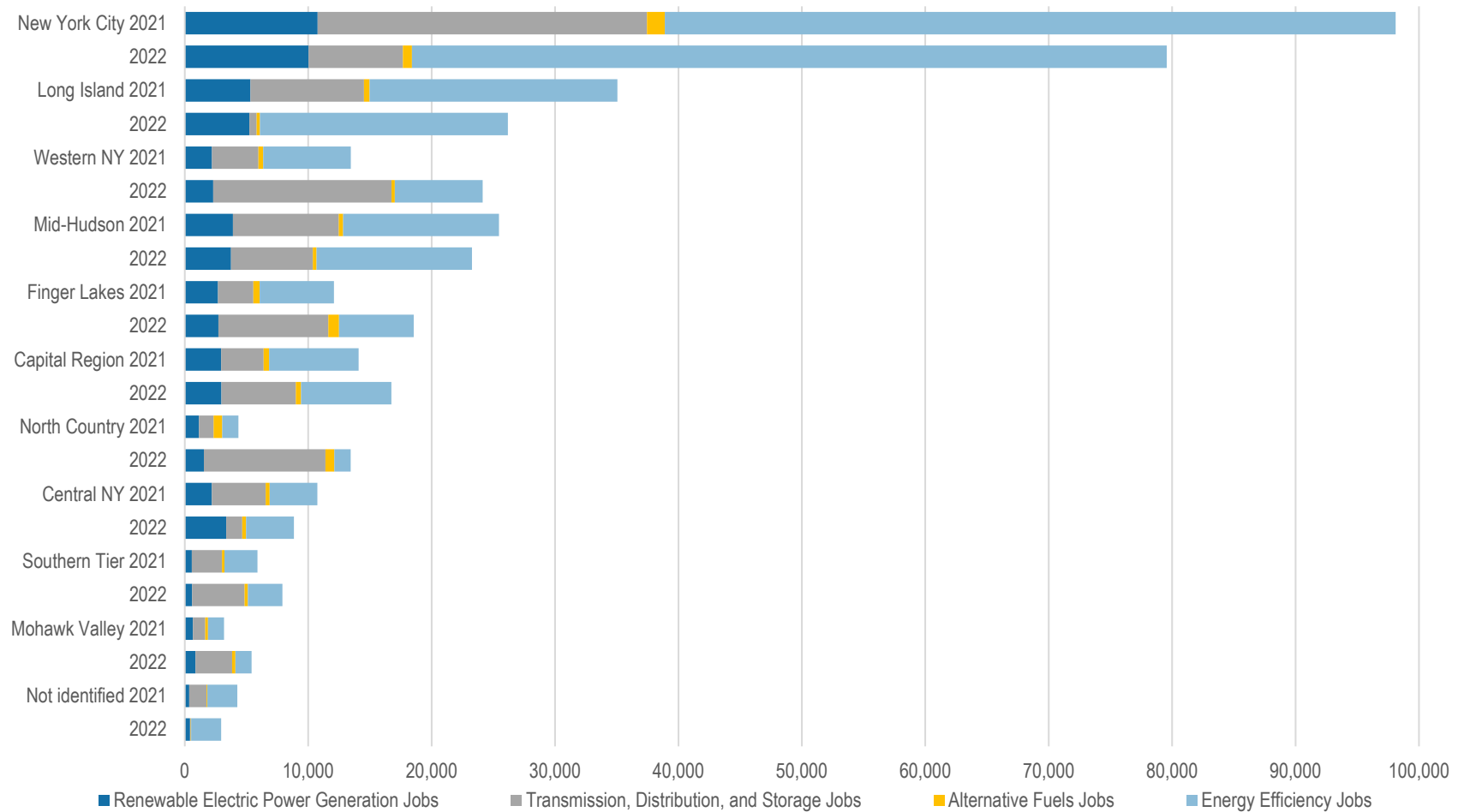
The Hub Monthly Reports data indicate that as of July 31, 2023, 58 of the 3,005 reports from Hubs focus on workforce development-related efforts. These values do not include outreach events – they reflect only reports tagged as workforce and small business development engagements or statement of work-related tasks. Three Hub Leadership interviewees indicated that their RCEH work was too nascent to have achieved substantive progress in this area.

Hub subcontractor focus group participants were more optimistic on the topic of workforce development. More than half (59%) of the Hub subcontractor focus group participants said that at the time their organizations were conducting workforce development-related outreach and activities; the remaining 41% were unsure or noted that workforce development was the responsibility of a different organization within the Hub (**Figure 4**).

Figure 4. Subcontractors conducting workforce development activities (N=29)

Over half of the subcontractor organizations in focus groups indicated that they have done activities to promote workforce development in DACs and other communities experiencing low income or limited access to resources.
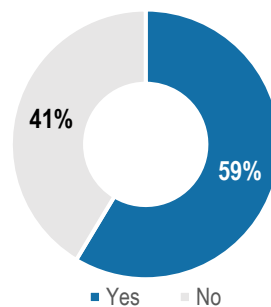
Hub Leadership interviewees identified strategies for workforce development-related outreach plans, including:

- Setting up a contractor job board (n=1).
- Facilitating a training course for clean energy sector jobs targeted to people with justice-related barriers to employment (e.g., felonies and misdemeanors) (n=1).
- Connecting high-school aged workers and shift workers to pre-apprenticeship programs relevant to the regional energy job landscape (n=2).

2.1.6   *What logistical challenges have Hubs encountered?*

Hub Teams reported a range of logistical challenges at the time of interview. **Hub Teams most commonly noted logistical challenges were branding, delayed guidance and opaque requirements from NYSERDA, and a limited pool of NYSERDA-approved contractors.**

Branding: A total of 10 (N=12) Hub Leadership interviewees cited challenges associated with creating a recognizable brand that people will know and trust. Four Hubs said that they intentionally distanced themselves from NYSERDA branding from the outset, while others described that their early connection with NYSERDA and reliance upon NYSERDA's planning has challenged their efforts to build trust in their region among potential partner organizations when the Authority did not follow through on the promised timeline or deliverables. One interviewee explained that their organization had used timeline information from NYSERDA to inform planning with a potential partner organization and were put in an uncomfortable position to explain that they could not follow through with the planned activity because NYSERDA had lagged in their promised timelines. The interviewee was concerned about the reputational impact that a lack of follow-through could have on their own organization, and indicated that their organization would be distancing themselves from NYSERDA branding going forward, as a protection.

Delayed Guidance and Opaque Requirements from NYSERDA: Five Hub subcontractor focus group participants noted difficulties getting consistent or sufficient information from NYSERDA. Two Hub subcontractors postulated that this is because NYSERDA's organizational structure is "siloed," and lacks "effective and efficient lateral communication between departments within NYSERDA," preventing clear information from reaching Hub teams. Similarly, two Hub Leadership teams expressed plans to keep communications with NYSERDA limited to the prime contractor in the interest of avoiding confusion among subcontractors around changing timelines and shifting expectations. Another two Hub Leadership interviewees and one subcontractor indicated that NYSERDA has not provided clear guidance on what costs or expenses qualify for grant money.

Hub subcontractor focus group participants also expressed dismay at the depth of information provided by NYSERDA (n=6). For example, one participant felt that they did not receive enough information on the new DAC criteria, and that the existing boundaries seemed arbitrary.[13] Additionally, one Hub subcontractor focus group participant described that they found more information on heat pumps from the New York Times than they have been able to gather from NYSERDA.[14]

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[13] Information describing the DAC criteria had not been released at the time of data collection for this evaluation.
[14] The interviewee described that they personally had installed a heat pump last year. They explained that they were unable to find sufficient information on the NYSERDA website, so they relied on an article from the New York Times for information on heat pump options and considerations for installation.

Contractors: Some regions have a limited number of NYSERDA-approved contractors available to conduct clean energy services, and incentives for contractors to become NYSERDA-approved appear limited. Three Hub subcontractor focus group participants indicated that NYSERDA has a reputation among some contractors as being a slow payer, and the NYSERDA approval process requires additional paperwork. Though NYSERDA approval provides contractors with a new avenue for attracting customers, each project also requires additional paperwork. The lack of administrative support for contractors presents a barrier and may deter contractors from seeking NYSERDA approval. Contractors can make more money doing other (non-NYSERDA funded) work with a lower administrative burden.

2.1.7 What collaboration opportunities and successes are there to date?

Hub Leadership interviewees and Hub subcontractor focus group participants shared a positive attitude about the collaborative approach fostered by NYSERDA; they identified that the Hubs were fostering a similar collaborative approach to efforts within and among Hub organizations.

Hub Leadership and subcontractors indicated that collaboration is essential to the success of the RCEH initiative. Through the Hub subcontractor focus groups (N=31) and Hub Leadership interviews (N=12), several themes emerged around opportunities for future improvements to further bolster collaboration: best practices sharing, outreach or support for organizations in NYSERDA's network under changing consumer programs, and additional functionality in Salesforce.

- Best Practices Sharing: One Hub subcontractor focus group participant commented that Hubs should not be solving things on their own; instead, more cross-collaboration opportunities could leverage skill sets of organizations experienced in specific relevant topics. Hub subcontractors (n=6) suggested the idea of having set forums where Hubs could interact, network, and exchange information beyond the regular check-in meetings or working groups, such as monthly meetings or a summit or conference. They suggested that this level of engagement would help to disseminate best practices and promote transparency and trust-building among subcontractors.
- Outreach to or Support for Organizations in NYSERDA's Network: Hub subcontractor focus group participants (n=2) also commented that they historically have not been consulted on the changes that NYSERDA makes to its programs. They feel that they are at risk of losing credibility among their partner organizations and agencies, as well as the public. This issue emerged in four Hub interviews as well, suggesting that targeted outreach or more formal support for organizations in NYSERDA's network in

anticipation of consumer program changes may be beneficial (e.g., new education materials and communications guidance for transitioning to new program design and branding). One Hub Leadership interviewee described that NYSERDA had recently ended or renamed a popular energy efficiency program, and the Hub had to relearn how the program is framed and then design and reprint the program informational materials, which can be confusing to the general public who had become familiar with the previous name for the consumer program.

- <u>Salesforce for Data Collection and Opportunity Lifecycle Management:</u> Hub Leadership interviewees (n=6) and subcontractor focus group participants (n=1) said that they want improved functionality from Salesforce. One Hub subcontractor expressed that they would like access to "see what NYSERDA sees" in Salesforce, particularly access to tracking customers' applications from start to finish through the process so that they can better keep applicants apprised of their progress through NYSERDA's system and be more knowledgeable when following up with program staff about applicant questions.

2.2 Consumer Awareness and Activities Supporting DACs

This section reviews the results from a baseline survey of DAC consumer awareness (N=225 participants), and a series of five DAC consumer focus groups (N=31 participants), focusing on resident awareness of energy efficiency products, renewable energy generation and storage, and free residential energy audits. Additionally, this section documents and characterizes NYSERDA outreach and engagement activities to strengthen DAC engagement in the clean energy economy, including customer applications facilitated, and barriers to clean energy adoption.

2.2.1   Are DAC consumers aware of clean energy opportunities?

Energy Efficiency Awareness**: Results from the consumer survey indicate that most respondents are either somewhat aware (57%) or very aware (16%) of energy efficiency products** (N=225, **Figure 5**). An analysis of variance (ANOVA) test of the responses to the question about energy efficiency awareness ("Please select the response below that best represents your overall level of awareness of **energy efficiency products**") found a significant difference in mean response across urban (2.58 on a 4-point Likert scale), rural (2.87), and suburban (2.95) survey respondents.[15] Additional t-tests found that the significant difference is

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[15] IEc conducted statistical comparisons using ANOVA and two-tailed t-tests to determine whether there were any statistically significant differences in mean Likert response between suburban, urban, and rural strata. While an ANOVA can indicate that a statistically significant difference in means, a t-test is necessary to determine the groups

between the urban and suburban strata; suburban respondents had a statistically higher mean awareness response compared to urban respondents. However, the significant result does not change the interpretation of the results: most respondents are either "somewhat aware" or "very aware" across all three survey strata (**Figure 5**).

Figure 5. Survey respondent awareness of the concept of "energy efficiency products" (N=225)

Whether rural, urban, or suburban, most survey respondents are either somewhat aware or very aware of energy efficiency products.
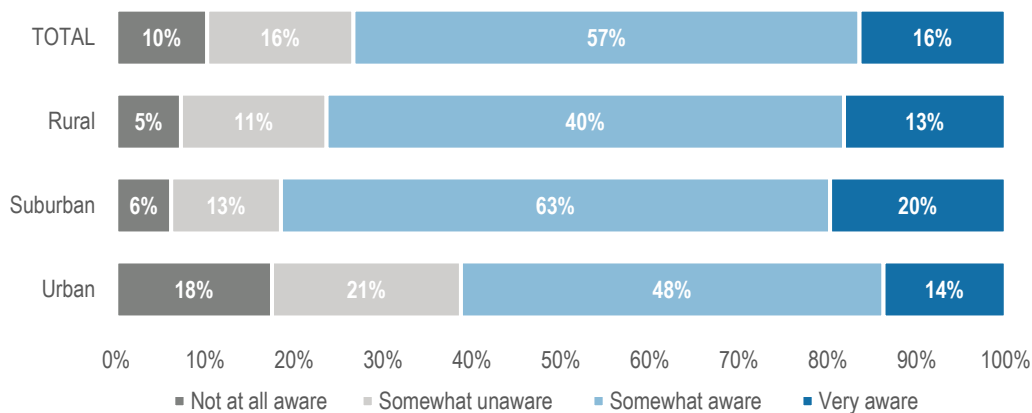
Note: Percentages are calculated relative to the sample (e.g., the proportion of rural respondents answering "very aware" was calculated relative to the total number of rural respondents).

More than half of the survey respondents agreed or strongly agreed with the following statements about energy efficiency (N=202): "energy efficient products save money" (74%), "energy efficient heating and cooling equipment is effective at keeping my home more comfortable" (70%), and "energy efficient products are available where I live and work" (69%), and "energy efficient technologies create new jobs in the clean energy workforce" (52%). Survey respondents were somewhat unsure about the following statements, neither agreeing nor disagreeing: "energy efficient products are low maintenance" (52%). There were only three respondents who selected "disagree" or "strongly disagree" in response to all of the statements above. Their responses to other related survey questions suggest that their stance on energy efficiency is a philosophical one, rather than an uninformed one.[16]

(rural, urban, suburban) between which the means are significantly different. In this case, the mean urban response was lowest (2.58), followed by rural (2.87) and suburban (2.95). While the rural and suburban means (and rural and urban means) were not significantly different, the t-test identified a difference between urban and suburban means.

[16] For example, all three respondents who strongly disagreed with the energy efficiency statements reported that they had installed programmable or smart thermostats in their homes.

When asked what phrases survey respondents most associated with the term "energy efficiency," the majority of respondents identified ENERGY STAR® appliances (78%), energy efficient products (70%), insulation (61%), and heating and cooling (56%) (N=199, **Figure 6**). In contrast to the list of options provided by the survey, the focus group discussion about what words or concepts participants associated with "energy efficiency" was more open-ended and high-level: cost savings (n=7) and energy savings (n=8) were the two most-mentioned ideas relating to energy efficiency. Focus groups each mentioned thermostat management, ENERGY STAR®, energy efficient appliances, and LED lightbulbs at least once (unprompted).

Figure 6. Survey respondent awareness of energy efficiency products and ideas (N=202)

ENERGY STAR® appliances and other energy efficiency products are the ideas respondents most associated with "**energy efficiency**." Survey respondents were allowed to select all that apply.
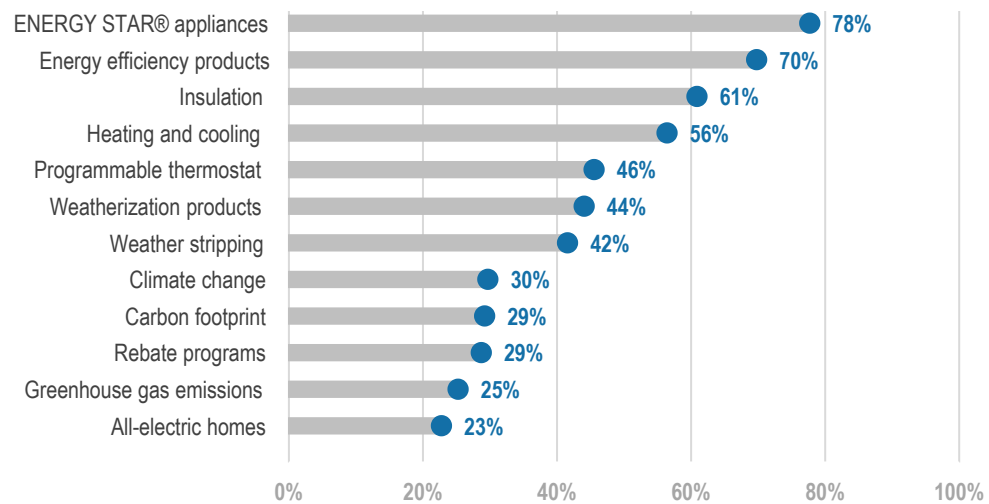
Note: Three individuals (<1%) selected "other." Two of these respondents indicated the other option as "LED lightbulbs," but as they also selected "energy efficient products" IEc considered this a duplicate response and did not include them here. The third respondent listed "natural gas," which is a fossil fuel and not considered an energy efficiency product or idea. IEc did not include this response in the graphic.

Renewable Energy Generation and Storage Awareness: **Results from the consumer survey indicate that most respondents are either somewhat aware (41%) or very aware (11%) of "renewable energy generation and storage"** (N=225, **Figure 7**). An ANOVA test of the responses to the question about renewable energy generation and storage awareness ("Please select the response below that best represents your overall level of awareness of **renewable energy generation and storage technologies**") found no significant difference in mean response across urban, rural, and suburban survey respondents.

A total of 25 focus group participants (81%) indicated that they are aware of "renewable energy generation and storage" as a concept (N=31).[17] The difference in awareness between survey and focus group participants may be a reflection of response bias (e.g., individuals interested the topic may have been more likely to participate in a focus group), or the term "renewable energy generation and storage" is opaque and people were more easily able to recognize concepts like wind, solar, hydropower, etc.

Figure 7. Survey respondent awareness of "renewable energy generation and storage" (N=225)

Approximately half of the survey respondents indicated that they are **somewhat aware** or **very aware** of renewable energy generation and storage.
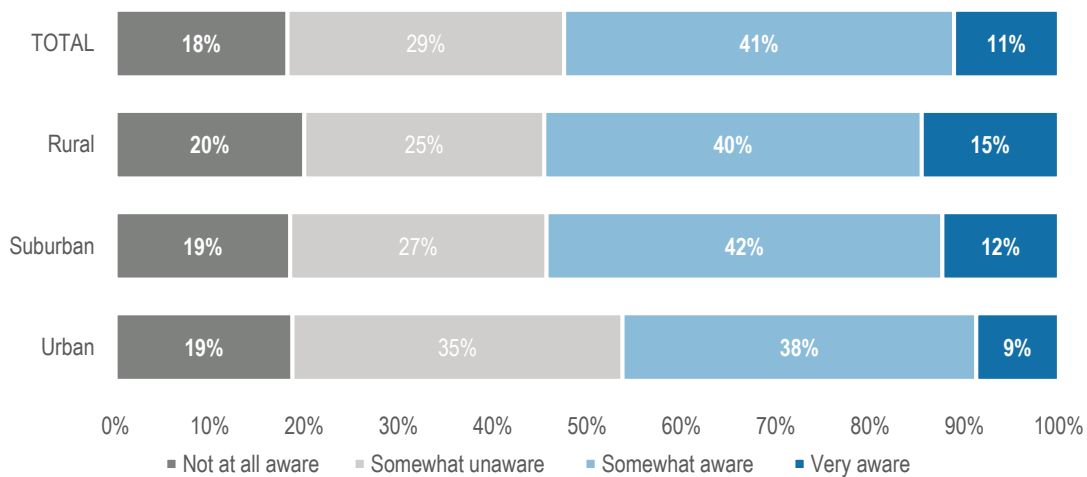
Note: Percentages were calculated relative to the sample (e.g., the proportion of rural respondents answering "very aware" was calculated relative to the total number of rural respondents).

More than half of the survey respondents agreed or strongly agreed with a range of statements about renewable energy generation and storage (N=184) including: "renewable energy generation and storage technologies create new energy jobs" (59%), "renewable energy generation and storage technologies reduce electricity bills" (58%), "renewable energy generation and storage technologies are safe for the environment" (58%), and "renewable energy generation and storage technologies support grid reliability during extreme weather events" (52%). As with the energy efficiency questions above (page 17), three survey respondents reported that they "disagree" or "strongly disagree" with the renewable energy generation and storage statements above.

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[17] As with the energy efficiency results, the focus group participation was likely biased by self-selection. However, survey-based recruitment was essential to getting participation in the focus groups, given the low response to both recruitment efforts.

Survey respondents most commonly associate terms like "rooftop solar panels" (72%), "wind power" (63%), and "community solar" (51%) with the term "renewable energy generation and storage" (N=184, **Figure 8**).

Figure 8. Survey respondent associations with the term "renewable energy generation and storage" (N=184)

Rooftop solar panels and wind power are the two terms that survey respondents most associated with "renewable energy generation and storage." Survey respondents were allowed to select all that apply.

Category	Percentage
Rooftop solar panels	72%
Wind power	63%
Community solar projects	51%
Hydropower	45%
Battery storage	45%
Electric vehicles	39%
Other	37%
Geothermal power	37%
Home battery storage	35%
Electricity grid modernization	34%
Climate change	21%
Heat pumps/mini-splits	20%
Carbon footprint	18%
Energy resiliency	18%
Greenhouse gas emissions	17%
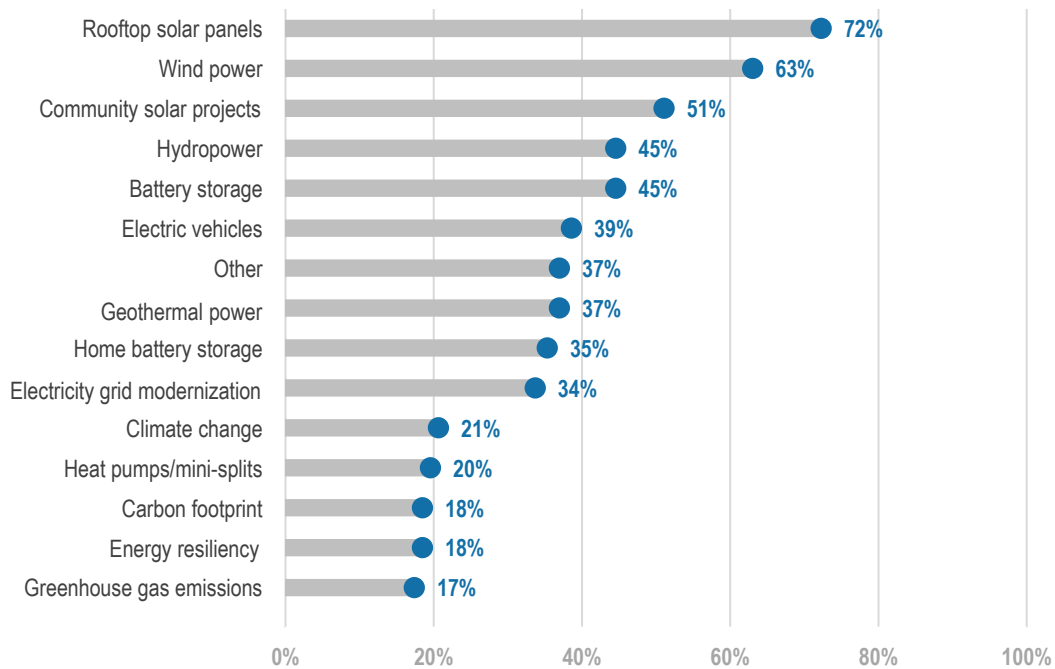
Consumer focus group discussions largely associated renewable energy with themes of reduced pollution and environmental impact. Focus group discussions centered more on specific renewable energy generation and storage technologies, and their connection to climate change issues, rather than new clean energy economy jobs (though one participant did volunteer clean energy jobs as a topic relating to renewable energy generation and storage). Focus group respondents (N=31) expressed concerns about rising electricity prices (n=3) and grid reliability with a grid energy mix that relied heavily on renewables (n=6).

Similarly, focus group respondents (N=31) most frequently mentioned solar panels (n=10) and wind power (n=7) as technologies or ideas related to "renewable energy generation and storage." Hydropower (n=4), geothermal (n=1), and biogas (n=1) were also identified by focus group

participants.[18] Some participants were familiar with battery backup (or specific battery technologies, like lithium and flywheels, n=4); in fact, three of five focus groups had at least one participant who knew about battery storage. One participant mentioned EVs, though from the context of discussion it was unclear whether they were discussing EVs as a form of energy storage or were making a more general connection. Consumer focus group participants also mentioned terms (unprompted) during the word association exercise including: new jobs (n=1), intermittent generation (n=2), natural (n=3), clean (n=2), environmentally friendly (n=4), and reducing pollution (n=3). These terms were not included on the list of survey response options.[19]

Awareness of/Experience with Energy Audit: Free residential energy audits, conducted by either NYSERDA or a utility, are an opportunity for consumers to learn about ways to reduce home energy consumption, and save on energy bills. The consumer focus group discussions also provided an opportunity to first ask whether individuals were aware that free residential energy audits were available to them in New York State. **Twelve focus group participants (39%) indicated that they were aware of the free residential energy audits available to them (N=31).** The consumer survey did not have an analogous question, though survey respondents were asked about whether they had received an energy audit.

A majority (69%) of survey respondents indicated that they had not received a free audit, and a further 10% did not remember whether or not they received such an audit (**Figure 9**). Of the respondents who had received a free audit (N=44), 20 of them (45%) received the home energy audit through a NYSERDA program, while 19 (43%) did not remember (**Figure 10**). By comparison, eight focus group participants (26%) had signed up for or received a free energy audit in their home (N=31). Three received their residential energy audit through NYSERDA.

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[18] Though not traditionally considered "renewable energy," one DAC consumer focus group participant indicated nuclear technology as a related electricity generation technology. The participant expressed specific concerns about a 2021 nuclear power plant decommissioning (Indian Point Energy Center in Westchester County, NY). The participant communicated that New York State's pursuit of decommissioning nuclear power plants seemed antithetical to the clean energy transition.

[19] Despite not including them in the survey response options for the Phase II evaluation, these terms may make sense to include in the Phase III DAC consumer survey instrument.

Figure 9. Survey respondents reporting whether they received an energy audit (N=225)

Most survey respondents indicated that they **had not received a free energy audit.**
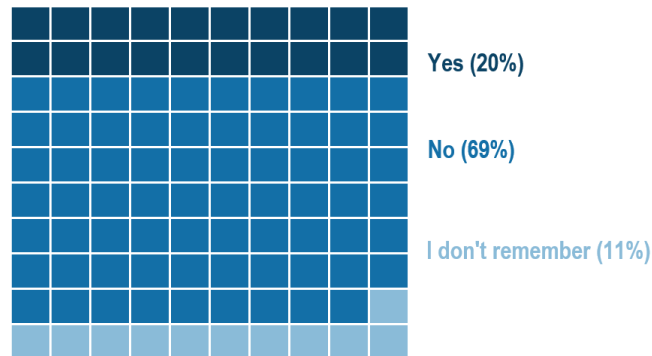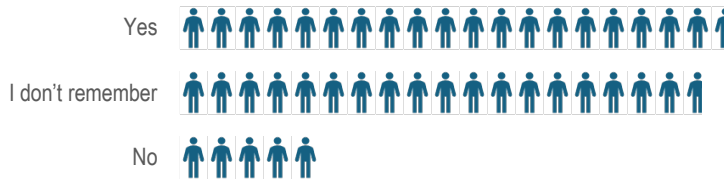
Yes (20%)

No (69%)

I don't remember (11%)

Figure 10. DAC consumer respondents receiving an energy audit through a NYSERDA program or another source (N=44)

Twenty survey respondents reported that they received an energy audit through a NYSERDA program, while 19 could not recall the source of the energy audit.

Yes

I don't remember

No

Note: One person icon equals one respondent.

A total of 57% of the survey respondents who had received a free energy audit completed projects addressing issues in their home identified during the audit (N=44). Focus group participants who were aware of energy audits but had *not* received one indicated that their reason for not pursuing the audit was because they were renters (n=4), they did not like the door-to-door outreach from utilities about energy audits (n=3), they simply had not yet found time to schedule an audit (n=2), or that they would like more information about what they were actually signing up for, first (n=1; i.e., the participant would like more information on process before committing).

Focus group participants who received an energy audit were asked to identify what recommendations were completed in their homes after the energy audit. Participants identified clean energy upgrades including appliances, weatherization measures (no further detail provided), insulation, and installation of a hot water heater. Less than half (44%) of survey participants indicated that they had ever installed clean energy or energy efficiency measures in their homes (N=225, **Figure 11**).

Survey participants reported having installed in general (i.e., not necessarily as a result of the audit) items including programmable or smart thermostats (27%), energy efficient/ENERGY STAR® appliances (23%), insulation (18%), and other weatherization (e.g., curtains or weatherstripping, 16%, N=93). Other items that survey participants have installed include (in no particular order) hot water heaters, furnaces, new windows, HVAC, heat pumps, and solar panels. Of those who installed clean energy or energy efficiency measures, only 43% reported seeing savings on their energy bills (N=98, **Figure 12**).

Figure 11. Survey respondents indicating whether they had installed clean energy or energy efficiency measures in their homes (N=225)

Less than half of survey respondents indicated that they **have installed clean energy measures (44%).**

Yes (44%)

No (48%)

Not Sure (8%)
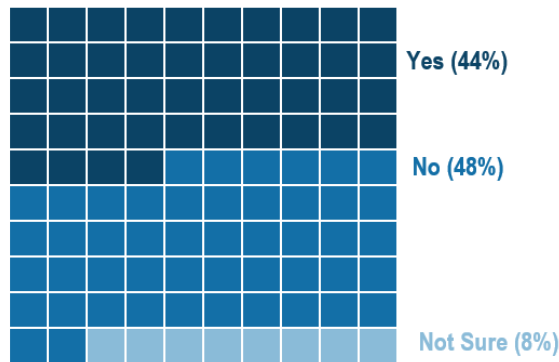
Figure 12. Survey respondents who observed savings and whether they have saved on their energy bills as a result of installing energy efficiency measures (N=98)

43% of survey respondents have observed energy savings on their heating / cooling bills as a result of energy efficiency measure installation

Yes (43%)

No (23%)

Not Sure (34%)
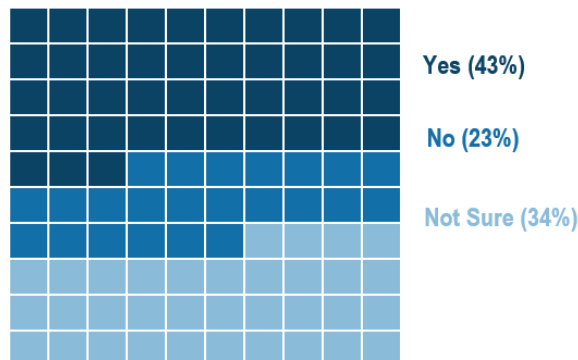
The DAC consumer focus group conversations about individuals' experiences with energy audits in their home increased the interest of five other participants, who all indicated that they would pursue a free energy audit in their own home.

2.2.2 What services/programs were the most used among DAC participants?

Anecdotal information from the primary data collection and analysis of the RCEH Opportunities dataset suggests that Home Energy Assistance Program (HEAP, offered by the NYS Office of Temporary and Disability Assistance) and EmPower+ (offered by NYSERDA) are highly used programs among DAC participants. Interviews with Hub Leadership and focus group discussions with subcontractors indicate that EmPower+ and HEAP are the two programs that Hub teams recommend most for income-qualifying individuals. The Hub Opportunities dataset tells a similar story, as EmPower+ and HEAP programs are the two most frequently reported programs for Hub Opportunities overall. This result is logical, given that both EmPower+ and HEAP programs are the residential programs most available to renters and provide a greater amount of customer assistance than other clean energy programs, so the total population of potential applicants is larger than for programs only available to homeowners. Additionally, EmPower+ and HEAP have a complementary application process, where applicants for either program need only show proof of qualification for the other program to participate (i.e., if an individual qualifies for HEAP, they can skip over some or all of the paperwork for EmPower+). NYSERDA program data confirming this anecdotal feedback was not available at the time of the evaluation.

Among consumer survey participants, HEAP and other utility bill assistance programs had the highest rate of name recognition or reported participation compared to the other energy-related programs listed in the survey (56% and 35%, respectively; N=225). EmPower and EmPower+ together had a very low rate of name recognition <u>or</u> reported participation (17%, N=225). Assisted Home Performance with ENERGY STAR® had a similar rate of name recognition <u>or</u> reported participation to EmPower and EmPower+ (19%, N=224).

Participation in Clean Energy/Energy Assistance Programs: Eight consumer focus group participants indicated that they had participated in a clean energy program or energy assistance program (N=31). Three of the participants had received energy audits through a NYSERDA program, while four participants had experience with HEAP.[20] All four participants who had received this assistance spoke highly of the HEAP program – one participant indicated that it "saved [their] life."

Over half (55%) of DAC consumer survey respondents were unfamiliar with clean energy and energy assistance programs through NYSERDA (N=225, **Figure 13**). A total of 14 survey respondents (6%)

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[20] Though not a NYSERDA program, HEAP is one of the programs to which RCEH Energy Advisors provide referrals.

had received utility bill assistance through HEAP or another source, 10 had received weatherization assistance (4%), and 6 had participated in Assisted Home Performance with ENERGY STAR® (3%, N=225). While not sampled for, there were contractors in each of the first three focus group discussions (n=3) who were very knowledgeable about NYSERDA programs and rebates and were able to speak to the types of energy purchases or programs for which NYSERDA can provide assistance, which served as an educational discussion for focus group participants unfamiliar with energy assistance programs.

Figure 13. Survey respondent familiarity with NYSERDA programs (N=225)

Over half of respondents (55%) are **unfamiliar with the New York State Energy Research and Development Authority Clean Energy Programs.**

Yes (28%)

No (55%)

Not Sure (17%)
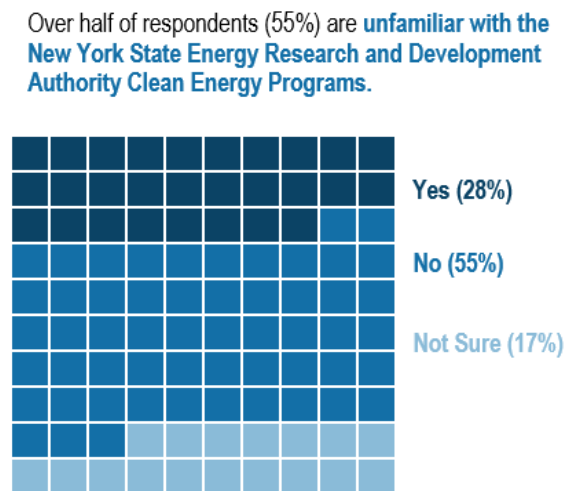
2.2.3   *What are the key barriers to clean energy adoption in DACs?*

Survey respondents indicated that the most common barriers to pursuing clean energy products, programs, and services include having "more pressing needs that take priority when [they] have available funds" (50%), needing "more information about the benefits of energy efficient products" (35%), needing "more information on ways to make energy purchases more affordable" (33%), and needing "more information on clean energy technology options for [their] home" (31%, N=225) (**Figure 14**). Focus group findings (N=31) supported the survey findings by identifying cost as the most common barrier to clean energy adoption (n=9). Focus group moderators did not provide respondents with the same prompts as the survey respondents saw on their screens, but focus group discussions revealed two additional barriers not included in the survey. These included a need for more information or evidence to support the decision to purchase or install clean energy equipment (n=2), and a lack of trust that the equipment or clean energy services would reduce home energy bills (n=4).

Figure 14. Barriers to pursuing clean energy or energy efficiency products and services (N=225)

Customers frequently have **more pressing needs that take priority** when they have available funds, or **need more information** before pursuing clean energy upgrades to their homes. Survey respondents were allowed to select all that apply.

Barrier	Percentage
I have more pressing needs that take priority when I have available funds	50%
I need more information on the benefits of energy efficient products	35%
I need more information on ways to make energy purchases more affordable	33%
I need more information on clean energy technology options for my home	31%
I don't have time to research energy-efficient options for my home	14%
I don't have confidence in rebate programs	13%
None of the above - I am currently pursuing energy efficiency improvements	8%
I don't have confidence in clean energy technology	8%
I don't have confidence in energy efficient appliances or other equipment	4%
Something else (please describe)	11%

Note: Respondents indicating "something else" largely indicated that they are renters (and therefore many energy-related equipment or options do not apply) or they are currently experiencing extremely low income and cannot afford to adopt clean energy or energy efficient measures in their homes.

Hub Leadership interviewees (N=12), subcontractor focus group participants (N=29), and consumer focus group participants (N=31) also identified challenges to DAC consumer participation in clean energy programs, including cost barriers, trust and legitimacy issues, negative perceptions or misconceptions about clean energy, and accessibility hurdles.

Cost Barriers: Overall, consumer focus group participants most commonly mentioned cost as a barrier to participation in clean energy programs or for clean energy purchases (n=9). Across data collection efforts (e.g., consumer focus groups, Hub Leadership interviews, and Hub subcontractor focus groups), several cost-related themes emerged:

- *Need for incentives to help reduce the purchase price for measures/equipment.* Eight Hub Leadership interviewees said that individual NYSERDA project funding may not provide enough cost reduction to make clean energy affordable to individuals experiencing poverty or those on the cusp of eligibility for income-based assistance programs. Additionally, NYSERDA does not provide funding for critical repair or weatherization assistance. While the Hubs work with customers to provide wraparound services to secure funding other federal and NYS programs can provide for this type of repair, securing assistance from those programs entails additional administrative burden, and presents a possibility for piecemeal repair if the projects are not coordinated. Another layer of complication for program

applicants is that NYSERDA programs cannot provide assistance prior to residents addressing critical repairs, pest infestations, and/or lead or mold remediation.

- *The increasing cost of electricity.* Cheap natural gas makes it harder to justify electrification, especially in northern areas of New York State. For applicants experiencing low income, Hubs leaders reported concerns about encouraging residents to go electric, in case of increased heating bills should, for example, the building envelope be leaky. Five DAC consumer focus group participants also expressed concern about rising energy bills associated with electrification, while other focus group participants (n=2) expressed skepticism that the grid could handle the increased demand from a shift to fully electric homes, personal electric vehicles, and fully electric transportation fleets (e.g., electric school buses). Another set of focus group participants noted feeling vulnerable to power disruption in extreme weather, during peak use, or other events if their home was all electric (n=7).

- *Financing restrictions for certain individuals or types of projects.* Four Hub Leadership interviewees indicated that financing restrictions also prevent DAC consumers from effectively accessing clean energy installations. Individuals cannot finance home energy projects through loans if they do not own the land upon which the residence is located. This is an issue for renters, owners without their name on the deed (a challenge in transferred ownership and estate planning), individuals living in mobile and manufactured homes, and indigenous people living on reservation land.

- *Split or insufficient incentives for non-household participants.* Eight Hub Leadership interviewees and four subcontractor focus group participants explained that the incentives for small businesses, multi-use building owners, and multi-family building owners are insufficient or split, limiting tenant ability to adopt clean energy measures where they live and work. Multifamily building owners shoulder some portion of the cost burden for clean energy/energy efficiency upgrades (typically a larger cost share than residential customers) and may not think the return on investment for apartment buliding upgrades are worth the investment required. Tenants cannot do much without landlord approval and may be wary of speaking with their landlords about energy savings because they are worried about eviction or being labeled as "problem tenants."

Trust and Legitimacy: Trust and legitimacy of the approach that organizations use to contact people was also mentioned as a key concern in the DAC consumer focus groups (n=4).

Participants spoke about their discomfort with utilities and third-party solar providers coming door to door, because scams are prevalent, and the timing is often inconvenient. Participants noted that door-to-door visitations often target transition times, such as when children arrive home from school or when families are getting ready to make dinner, creating a negative experience for consumers.

No More Door-to-Door

Across DAC consumer focus groups, utility-run "door-to-door" campaigns were repeatedly identified as annoying, inconvenient, or untrustworthy (perceived as a potential scam), from third party solar providers to utility programs.

Focus group participants indicated the following as trusted sources of information: doctors' offices or healthcare providers, family justice centers, childcare providers, Department of Social Services, Office of the Aging, lines for SNAP benefits, word of mouth (family, friends, acquaintances or colleagues), case study or other data-based evidence, and ratings or reviews from other customers. One individual, an energy installation contractor, identified NYSERDA as a trusted source. Other focus group participants said that if NYSERDA programs could be branded successfully in New York the way ENERGY STAR® appliances have successfully been branded at a national level, they might achieve a similar level of recognition. Four participants indicated that they use ENERGY STAR® labeling when making their own household appliance purchase decisions, including one landlord participant.

Negative Perceptions or Misconceptions about Clean Energy: In some communities, Hub Leadership teams and subcontractors see addressing the conflicting narratives about electrification and clean energy as a challenge. Hub Leadership interviewees explained that in some regions, suppliers of home heating oil have promoted a narrative that electrification can lead to unreliable service during storm events like the 2022 blizzard in Buffalo.[21] Hubs are not only tasked with educating communities about the benefits of clean energy, but also addressing misinformation or fear narratives spread by organizations that do not support clean energy initiatives (e.g., fuel distributors).

In other areas, consumer focus group discussions highlighted a pervasive distrust in New York State-run programs being truly affordable. Four focus group respondents indicated that they were interested in seeing evidence, either in the form of a case study or data over a few years, indicating that savings are real and maintained over time. Individuals want to be well-informed when they commit to an energy-related purchase: they want to know what to expect one month,

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[21] A total of 28 people died during the 'once in a generation' blizzard in Buffalo. **Source:** Regan, M.D., Gold, M.G., and Zaveri, M. 2022. "28 Dead in a 'Once in a Generation' Blizzard in Western New York." Published December 27, 2022 by *The New York Times.* https://www.nytimes.com/2022/12/26/nyregion/blizzard-storm-snow-deaths.html

one year, or many years in the future. One subcontractor focus group participant said that a savings calculator tool could help some potential customers see the savings and benefits over time. Such a tool would be beneficial to making the case for cost reduction in a way that is understandable to laypersons, but still leaves room for providing a more qualitative or experience-based approach (e.g., testimonials, case studies) for individuals who do not feel they have the expertise or knowledge of their home's heating and cooling equipment, building and weatherization features, and/or appliances to run a savings tool.

One Hub Leadership interviewee and three subcontractor focus group participants also shared that clean energy has become politicized in some places, and the not-in-my-backyard perspective continues to challenge the development of clean energy both upstate (e.g., commercial-scale solar farms) and downstate (e.g., "Not on my roof" signs in Staten Island). In some regions, residents lack trust in government entities as a rule. While IEc did not see evidence of this in the DAC consumer focus group discussions, one DAC consumer survey respondent shared: "I don't want government subsidized garbage in my home."[22]

Accessibility Hurdles: Accessibility hurdles came up predominantly in discussion with Hub Leadership teams and Hub subcontractors.[23] Respondents discussed key ways to address accessibility hurdles including providing translations into multiple languages, developing culturally competent examples, acknowledging education-related barriers or barriers related to having a prior justice issue, and accommodating prospective participants' childcare responsibilities.

Hub Leadership teams (n=2) and subcontractors (n=5) expressed that programs are not accessible to individuals who speak languages other than English and Spanish. Programs materials (including, and perhaps especially, applications) need to be translated into languages other than English and Spanish and include culturally competent examples of equipment, descriptions of scenarios, and marketing images. Subcontractor focus group participants identified a need for NYSERDA to hire translators and/or staff who are both bilingual and can explain clean energy programs to customers. NYSERDA is working on this issue and has an Energy Equity Collaborative team to help programs to work more closely with historically marginalized

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[22] This statement was in response to a question about factors influencing the consumer's ability or interest to pursue clean energy updates or purchases for their home.

[23] This may also be an issue of response bias, as survey recipients could elect only to take the survey in English or Spanish. Individuals of other cultural backgrounds who speak languages other than English or Spanish may not have taken the survey at all, even if the survey were offered in their primary language.

communities and link programs with support in translating and identifying opportunities for cultural competency improvements in promotional materials and outreach and education efforts.

Some Hub subcontractors (n=2) also reported that a common misconception they heard from local residents was that individuals seeking employment in the clean energy sector need a degree higher than a high school diploma or GED to secure a job. This deterred job-seekers from considering careers in the clean energy sector.

Specific to workforce training and development opportunities, childcare responsibilities can limit ability to participate if childcare is limited or unavailable to trainees. Hub Leadership (n=1) and subcontractors (n=2) expressed that parents with young children may feel that clean energy job trainings are not an option for them without a built-in option for childcare.

3. Findings and Recommendations

IEc developed the following list of findings and recommendations for NYSERDA.

Finding 1. NYSERDA and the Hubs are laying a solid foundation upon which to build a culture of collaboration. Hubs indicated appreciation for the way that NYSERDA has embraced collaboration for the RCEH Initiative more wholeheartedly than in other NYSERDA programs or campaigns. Hub Leadership and subcontractors alike discussed that they would like to hear from one another about best practices as the RCEH Initiative develops, especially with regard to Salesforce, braiding funding for wraparound services, and staying abreast of program changes.

Recommendation 1. NYSERDA should explore ways to effectively help Hubs share best practices to leverage expertise and lessons learned and identify opportunities to support Hub-to-Hub engagement and program development outside of regular meetings. NYSERDA could moderate a quarterly virtual lunch-and-learn or host an annual moderated workshop to provide a venue for dedicated problem-solving or skill-sharing on a particular topic or range of topics. Encouraging Hub Teams to utilize each other as resources is a way to continue promoting a culture of collaboration and information-sharing.

NYSERDA Response to Recommendation 1. IMPLEMENTED: To strengthen collaboration and coordination amongst the RCEH, NYSERDA currently hosts regular monthly Hub Leadership meetings, Hub Webinars, Hub All Staff Meetings, as well as a Salesforce Working Group and an Outreach Working Group. These convenings allow Hubs the space to stay up to date on program announcements, share insights gained from Hubs' on-the-ground regional engagement, and collectively develop strategies for reaching disadvantaged communities. NYSERDA, along with

subset of Hub members, is organizing an annual Hub meeting where Hub Staff will meet in person for two days and focus on peer learning and strengthening their partnership networks. Additionally, the Hub Implementation Contractor has developed a Hubs-specific Teams site to facilitate real-time discussion via chat among Hubs, distribute program information, and gather feedback collaboratively.

Finding 2. NYSERDA's approach to communications has challenged Hubs through inconsistent or opaque messaging and lack of outreach to or support for organizations when programs change. Hub Leadership expressed concerns that they could not depend on NYSERDA for timely or accurate information, and more than one interviewee said that they were being careful to brand their Hub independently of NYSERDA, so as not to undermine their own hard-won credibility in their region's communities. Hub subcontractors also expressed frustration with the rapid rate of NYSERDA program turnover (counterproductive for participants from resource constrained households) and the lack of outreach from NYSERDA about changing consumer programs (or program names), indicating that their organizations were not part of the conversation to change the program, and they had to respond to the changes swiftly by educating themselves on the changes and reprinting the informational materials.

Recommendation 2. NYSERDA should work on improving communication practices between program staff and the Hubs; this should include clear messaging around program benefits to avoid confusing overpromises on incentive amounts or timelines, providing sufficient program resources (e.g., FTE) for large and multifaceted programs, and offering "listening sessions" with Hubs and organizations in their network prior to launching new programs (or new program branding). Waiting to confirm incentive amounts until confirmed within NYSERDA and providing some transparency about the cause and expected duration of delays may help Hubs to plan outreach activities around available resources. NYSERDA's vision for the Hubs is broad and decentralized, but NYSERDA support is still necessary – additional program staff may help NYSERDA to more efficiently connect the Hubs with the resources they need.

NYSERDA Response to Recommendation 2. PENDING: In order to address concerns around communicating needs, NYSERDA is currently working on several tools to collect, organize, and manage feedback from the Hub Staff to facilitate communication between NYSERDA program staff and Hub staff. Collecting this feedback will allow NYSERDA to identify shared areas of improvement and opportunities for collaboration. For example, NYSERDA can record feedback heard from Hub Staff at meetings or received via chat or email, which the Hub Staff can then

view to see how the feedback is addressed. This feedback tracker will also be available for public viewing to further improve communication and transparency. Feedback received on NYSERDA programs will be recorded in the feedback tracker and provided to the NYSERDA Program Teams in a timely manner for a response and potential solution. Once the NYSERDA Program Team has responded to the feedback provided, the Hub who provided the feedback will be notified and the feedback will be updated. Additionally, NYSERDA is developing an anonymous feedback form and scheduling listening sessions for Hub Staff to provide suggestions or comments, which will be tracked in the feedback tracker. These tools will improve transparency, continue to build trust, and foster continuous improvement within the RCEH initiative and NYSERDA.

NYSERDA also continues to facilitate communication through the regularly scheduled Hubs meetings (Hub Leadership, Hub all Staff and Monthly Webinar meetings). NYSERDA Program Teams work with RCEH Staff to provide Hub Staff with program updates and trainings on NYSERDA and Non-NYSERDA programs through these meetings. Additionally, NYSERDA Program Teams are organizing working groups where they invite the Hubs to provide feedback on program design and development.

Hubs are also invited to participate in the Energy Equity Collaborative, a coordinated forum for community-based organizations and stakeholders that are representative of or principally serve Disadvantaged Communities, NYSERDA, and interagency partners to work together to address energy equity and climate justice issues and develop equitable programs.

Finding 3. DAC consumers are aware of energy efficiency and renewable energy generation and storage concepts but require evidence to make informed decisions about purchases.

DAC consumer focus group participants and survey respondents both highlighted information as a barrier to making decisions about purchases. Some participants indicated that they did not believe that cost-reduction rebate programs really worked. Focus group participants indicated that more visual marketing or relatable forms of evidence, such as a well-packaged infographic comparing programs and showing savings over time, or featuring program reviews from other customers (e.g., customer reviews with stars and specific feedback) may better support their decision-making.

Recommendation 3. NYSERDA should develop case studies showing cost effectiveness for a realistic DAC household before/after installation, or over time, to help provide potential customers with a better idea about the extent of cost savings (or payback period) they can

expect from clean energy or energy efficiency purchases. An effective case study would highlight a household's considerations in making the decision to purchase energy efficiency products or install renewable energy generation and storage technologies, and demonstrate realistic outcomes, like savings over time (if any). A case study could highlight the customer's perspective on comfort and other non-energy health benefits and provide a summary review of the product(s).

NYSERDA Response to Recommendation 3. IMPLEMENTED: NYSERDA is currently working with the Hubs to develop customized case studies and testimonials as well as consumer facing materials on living in an energy efficient home.

Finding 4. Negative perceptions, misinformation, and lack of confidence about the reliability of renewable energy generation and storage technologies and energy efficiency products may prevent DAC consumers from participating in the clean energy economy.
Some DAC consumer survey participants reported that they did not have confidence in the reliability of renewable energy generation and storage technologies or energy efficiency products. Some DAC consumer focus group participants also expressed concerns over electrification, specifically around possible service interruptions in an electricity grid powered by a renewable and distributed energy mix. Hub Leadership and subcontractors gave examples of fear-based campaigns from natural gas or fuel oil providers as misinformation they have been seeing in the marketplace that discourages their local residents from switching to fully electric appliances and home heating, ventilation, and cooling systems. While this feedback suggests real misinformation challenges around the clean energy transition, NYSERDA's experience in addressing negative perceptions around, for example, wind energy in the North Country, may be able to support Hubs in countering customer misinformation.

Recommendation 4. NYSERDA should support Hubs by developing materials with talking points explaining the benefits of the clean energy economy, such as the role of battery storage in ensuring stability of electricity service and framing educational materials around non-energy benefits such as health and comfort to reduce misunderstandings and negative perceptions about electrification. NYSERDA has past experience in addressing consumer reluctance to embrace solar PV and wind power that may be useful to Hubs as they work to address negative perceptions about grid reliability in the transition to a grid powered by renewable generation. Additionally, NYSERDA has long documented non-energy benefits in its evaluations and can use this information to help Hubs make a case to consumers for clean energy solutions.

NYSERDA Response to Recommendation 4. PENDING: A Hub serves as the source for community members across the region to receive reliable and accurate information about clean energy programs and opportunities. As a team of non-profit organizations that come from the communities they serve, Hub Staff are actively attending, hosting and organizing community events to engage with communities. In addition, the Hubs are developing websites and marketing campaigns that speak in plain language about incentive and rebate programs, renewable energy generation and storage technologies and energy efficiency measures to debunk misinformation.

4. Methods Summary

This section describes the methodologies for data collection and the analytical approaches used for the evaluation. IEc reviewed available secondary data from the program and collected primary data using interviews, survey, and focus group methods, summarized below in **Table 3**.

Table 3. Data Sources, Participants, and Activity Type

Data Source	No. Activities	No. Participants	Activity Type
Interviews with RCEH Hub Leadership	12	19	Primary Data Collection
Hub List of Project Partners	NA	NA	Secondary Data Review
Virtual Focus Groups with Subcontractors	3	29	Primary Data Collection
Virtual Focus Groups with Consumers in DACs	5	31	Primary Data Collection
Online Survey of Consumers in DACs	1	225	Primary Data Collection
Hub Opportunities Data	NA	NA	Secondary Data Review
Hub Monthly Engagement Report Data	NA	NA	Secondary Data Review
2021- 2022 USEER data	NA	NA	Secondary Data Review

Note: NA = not applicable

IEc collected primary data using a series of approaches, including **interviews with Hub Leadership teams (N=12 teams)**, which focused on activities at the time of evaluation, planned activities, barriers to clean energy adoption, and Hub subcontractors and/or community partners. The IEc team also conducted v**irtual focus groups with Hub subcontractors (3 focus groups, N=29 participants)**, as partner organizations and agencies had not yet been identified. These discussions included similar questions as the Hub Leadership interviews to validate the data and provide another "organizer" perspective about the initiative. Finally, the IEc team conducted a **survey (N=225 participants) and series of virtual focus groups targeting DAC consumers (5 focus groups, N=31 participants)**, which together aimed to systematically characterize barriers to clean energy adoption from a DAC consumer perspective and assess a baseline of consumer

awareness of clean energy technologies, energy efficiency, and assistance programs. The virtual focus groups aimed to provide context and richness to a similar set of questions focused on consumer awareness and barriers to clean energy adoption. Geographic distribution of consumer focus group and survey participants by economic development region is included in **Appendix D.**

For the **qualitative data analysis**, IEc analysts categorized ("coded") interview and focus group notes using Excel. Data collection efforts were saved in individual Excel files (e.g., interviewees together, DAC consumer focus groups together) where rows represented different participants, and columns represented different "codes." This approach is similar to the text coding approach using NVivo qualitative data analysis software. IEc sometimes uses Excel to process smaller samples (e.g., 35 or fewer participants).

IEc also conducted **survey data cleaning and analysis** in Excel. One duplicate respondent was removed from the final dataset, and data were "Cleaned" by adding "SKIP" and "no response" notes where relevant. Where branch or skip logic prevented a respondent from seeing a question, "SKIP" was included in the cell to indicate that the respondent skipped the question, and the skip should be subtracted from the total count of responses for the particular question. IEc coded cells as "no response" where a response was required for the question as a whole, but by virtue of the programming (e.g., matrix-style question or carousel selection), the respondent managed to avoid providing a response to a part of a question. Survey data were analyzed using descriptive statistics (e.g., response distribution and frequency). IEc also conducted statistical comparisons using ANOVA and two-tailed t-tests to determine whether there were any statistically significant differences in mean Likert response between suburban, urban, and rural strata.

The RCEH evaluation also leveraged secondary data from the **RCEH Opportunities Data, Hub Monthly Engagement Report Data,** and the **Hub List of Project Partners.** NYSERDA's **Hub List of Project Partners** provided a foundation from which a refined list of contacts for the subcontractor focus group recruitment was developed. The list of subcontractors was validated and modified based on interview discussions (and in some cases follow-up email confirmations) with Hub Leadership. Finally, IEc used **USEER Data** to establish the market context for number of organizations promoting clean energy.

Notes regarding **data cleaning** operations on the secondary datasets and the impact on indicator reporting are included in the footnotes of this report where relevant.