

NYSERDA REV Campus Challenge Market Evaluation

Final Report

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Acronyms and Abbreviations

AASHE	The Association for the Advancement of Sustainability in Higher Education
AASHE STARS	AASHE Sustainability Tracking, Assessment & Rating System
CAP	climate action plan
CUNY	The City University of New York
CFO	chief financial officer
DPS	New York State Department of Public Service
EMP	energy master plan
EPA	U.S. Environmental Protection Agency
FTE	full-time equivalent
GHG	greenhouse gas
HVAC	heating, ventilation, and air conditioning
kWh	kilowatt hours
MMBtu	million British thermal unit
MW	megawatts
MWh	megawatt hour
NYCSHE	New York Coalition of Sustainability in Higher Education
NYS	New York State
NYSERDA	New York State Energy Research and Development Authority
OsEM	On-Site Energy Manager
REV	Reforming the Energy Vision
RTEM	Real Time Energy Management
SBC	system benefits charge
SUNY	The State University of New York

Executive Summary

NYSERDA recognizes that the approximately 250 colleges and universities in New York State have made varying degrees of progress in advancing clean energy and sustainability projects. NYSERDA designed its REV Campus Challenge to motivate additional progress through a multipronged strategy:

- Support, track, and acknowledge clean energy and sustainability progress at educational institutions across the state
- Increase recognition of institutions' clean energy and sustainability achievements
- Provide a knowledge-sharing platform for peers to assist and motivate one another with the implementation of clean energy and sustainability projects
- Uncover gaps in available resources and fill these gaps by offering technical assistance, how-to guides, competitions, and peer mentorship

NYSERDA selected the Market Evaluation Team to evaluate the REV Campus Challenge, with the following four evaluation objectives:

- Characterize and track progress among the state's institutions of higher education
- Track the program's market progress indicators against baseline
- Understand the current levels of institutional and student participation and engagement, along with participation drivers and barriers, and identify opportunities to increase market impact
- Estimate indirect impacts resulting from program activities

This evaluation began in August 2020, shortly after business and campuses in New York State and across the country shut down or modified operations due to the COVID-19 pandemic. Specifically, many campuses in New York State implemented partial or fully remote learning during the 2020-2021 school year. Due to the timing of this evaluation, the Market Evaluation Team also investigated the impact of COVID-19 on campus clean energy activities. Results of this survey, where not specially noted, were likely influenced by the COVID pandemic.

The Market Evaluation Team used a combination of methods to evaluate progress:

- In-depth interviews with REV Campus Challenge staff at NYSERDA and campus staff at member and nonmember campuses across the state
- Surveys of staff and students at member and nonmember campuses
- Secondary data analysis

Key Findings

In alignment with the evaluation objectives, the interviews and surveys sought insights on the level of awareness and value associated with clean energy and sustainability initiatives, campus participation in clean energy actions and what influences those decisions, the degree of student and community engagement with these initiatives, and the role that support and recognition can play in advancing clean energy and sustainability across New York campuses.

Awareness and Value of Clean Energy: Interview and survey responses from campuses revealed that it is now common to collect energy data, although the extent of data collection tends to correlate with a campus's demonstrated commitment to clean energy and sustainability. The most engaged REV Campus Challenge members—namely those with Leader or Achiever status¹—were more likely to track annual energy use and greenhouse gas (GHG) emissions, compared to those with Participant status or nonmembers. Similarly, Leaders and Achievers indicated the strongest understanding of clean energy opportunities on their campus. Interviews with campus contacts in various roles revealed that awareness of energy usage data and clean energy opportunities is highest among sustainability coordinators and facilities managers while lower among admissions office staff.

Clean Energy Initiatives and Influence: Campuses across New York State, especially REV Campus Challenge members, reported clean energy-related activity across several areas. A majority of campuses, both members and nonmembers, reported completing at least one clean energy initiative recently, with 90% of member campuses completing at least one clean energy initiative in the 2019--2020 school year and 75% of nonmember campuses doing the same over the past three years.² Most commonly, campuses reported completing a clean energy project (63% of members; 50% of nonmembers). When looking at engagement with the broader campus community, a substantial proportion of REV Campus Challenge members reported participating in a peer group, incorporating clean energy topics into new or existing courses, and establishing or expanding community partnerships; this proportion was significantly higher than among nonmember campuses. Across all clean energy accomplishments, members said that

¹ The REV Campus Challenge has three membership/status levels—Leaders, Achievers, and Participants—in order from most engaged with clean energy to least. Members are allowed to self-select the level that most closely matches their campus.

² The member and nonmember surveys used different timeframes for this question: the member survey asked respondents about their clean energy initiatives in the past year, while the nonmember survey asked about the past three years.

‘information and incentives from NYSERDA’ was the most influential factor in their decision to complete the given accomplishment.³

Student and Community Engagement: Responses collected through the student survey indicated widespread familiarity with clean energy and sustainability initiatives, with more than 60% of surveyed students reporting being familiar. Students said they most often engaged through clean energy-related curriculum and student groups, and just under 25% of member campuses reported that student engagement increased after they joined the REV Campus Challenge. Although stakeholders from most member campuses believed that a campus-wide commitment to clean energy influences student enrollment, less than half (39%) of interviewed students at member campuses strongly or somewhat agreed that this commitment was important to their decision to attend that institution. Students said they were more focused on education and course offerings, and many did not learn about on-campus clean energy initiatives until after attending. Member campuses more commonly established or expanded community partnerships, with only one nonmember campus taking this action. Approximately 33% of member campuses reported that their clean energy initiatives improved relations with the local community, a 22% increase from when they first joined the REV Campus Challenge. Member campuses acknowledged that information from NYSERDA was influential in developing these community partnerships.

Support and Recognition: Participation in the REV Campus Challenge strongly correlated with the degree of support and recognition campuses reported for clean energy and sustainability initiatives. Members said the REV Campus Challenge provided significant support toward their clean energy goals, with 55% of members rating the REV Campus Challenge resources a 4 or 5 on a 1-to-5 agreement rating scale (with 5 representing *strongly agree*). Two-thirds (67%) of members reported that campus management supported their implementation of clean energy projects in the 2019-2020 school year, a 23% increase compared to when they joined the REV Campus Challenge. Similarly, nearly half the member campuses had at least one full-time employee devoted to clean energy and sustainability initiatives, whereas no nonmembers reported devoting full-time staff to this work. Members also reported greater involvement in peer groups and knowledge-sharing related to clean energy in the 2019-2020 school year; just one nonmember reported engaging in this type of collaboration over the same period. By

³ “Information and incentives from NYSERDA” was an option in the member survey which is why these topics were analyzed together.

contrast, 27% of member campuses across all campus types reported receiving recognition for clean energy achievements in the 2019-2020 school year.

COVID-19 Impact: Campuses across New York State reported substantial impacts to operations and clean energy projects as a result of the COVID-19 pandemic. Specifically, nearly all campuses, both members and nonmembers, shifted to partial or fully remote learning, while over half of campuses changed the way buildings were used or their operating hours. Nearly all members (94%) reported COVID-19 related impacts on clean energy projects, specifically a shift in focus to pandemic-related projects, reduction in funding, or a reduction in staff. Notably, no members said that the pandemic accelerated clean energy project timelines. As noted in the *Market Progress Indicators* section, it is likely that the significant reduction in the reported clean energy projects completed in the past year among members is related to the COVID-19 pandemic. When asked how long they anticipated that these impacts would have an effect on clean energy projects, about half of members thought these impacts would last more than one year.

Testable Hypotheses

The Market Evaluation Team used findings from its primary research to assess NYSERDA's three hypotheses regarding the influence and efficacy of the REV Campus Challenge. This section provides an assessment of each testable hypothesis along with its associated research questions and supporting rationale. The Market Evaluation Team assessed each research question associated with a testable hypothesis against the following criteria:

- **Strong Evidence:** Findings from research activities provide strong evidence in support of testable hypothesis component.
- **Some Evidence:** Findings from research activities provide evidence that supports some component(s) of the testable hypothesis component.
- **Inconclusive:** Findings from research activities are either counter to the hypothesis or do not provide sufficient evidence to assess hypothesis component.

Hypothesis #1

Hypothesis: If NYSERDA recognizes progress toward and achievement of New York State institutions' clean energy goals, then the adoption of clean energy projects and strategies on campuses in New York State will increase.

Hypothesis #1 Assessment and Supporting Evidence

Research Question: Has NYSERDA provided recognition of progress toward and achievement of clean energy goals by REV Campus Challenge members?

Assessment: Strong Evidence

- 27% of members reported receiving recognition in the 2019-2020 school year; seven specifically mentioned NYSERDA as the source of recognition, with four stating recognition was limited to their REV CC member-level badge. Other sources were U.S. EPA (five), AASHE (three), and Environmental America (two).
- NYSERDA has a “Meet the Members” section on the REV Campus Challenge website that spotlights the clean energy accomplishments of members.
- No nonmember survey respondents reported receiving recognition for clean energy accomplishments in 2019-2020.

Research Question: Have campuses that received recognition increased the number of clean energy projects and strategies?

Assessment: Some Evidence. The 27% of campuses that reported receiving recognition since they joined the REV Campus Challenge completed approximately the same number of clean energy projects as those who did not receive recognition. However, they were significantly more likely to report peer, community, and student engagement strategies.

- Members who received recognition reported a marginally higher percentage of clean energy projects (70%) than members who did not receive recognition (60%), but the difference is not statistically significant. Nearly all members reported impacts from the COVID-19 pandemic on their ability to complete clean energy projects (such as shifting management priorities and reductions in funding and staff availability), factors that may have affected the potential impact of recognition.
- Members who received recognition were significantly more likely to participate in a peer group/knowledge share related to clean energy (65% vs. 37%), establish new or expand existing partnerships with community organizations focused on clean energy (57% vs. 28%), or promote a clean energy project or REV Campus Challenge designation in student-facing resources (39% vs. 25%).

Research Question: Do members receiving recognition indicate/show evidence that recognition motivated increased clean energy projects and strategies?

Assessment: Some evidence. While the opportunity for recognition was somewhat influential on several clean energy accomplishments, interviewed campus staff noted that recognition that draws greater publicity would be more influential.

- 25% of members who completed new clean energy projects in the 2019-2020 school year said the opportunity for recognition was influential in their investment decision.
- Opportunities for recognition were influential in campuses’ decisions to complete two student-focused activities:
 - 52% said the opportunity for recognition was influential in their decision to promote a clean energy project or REV Campus Challenge designation in student-facing resources
 - 32% said the opportunity for recognition was influential in their decision to undertake new student/faculty initiatives
- Campus stakeholders said the highest motivation for pursuing clean energy projects was internal, that is, the campus’ own drive for sustainability.
- Sustainability staff said awards (like participation badges) were not as helpful as recognition that draws greater publicity (such as recognition in the press, awards that can be placed visibly on campus).

Hypothesis #2

Hypothesis: If NYSERDA drives participation in existing clean energy commitment opportunities, resources and peer groups, then clean energy implementation on New York State campuses will accelerate because of improving knowledge sharing and demonstrating the value of clean energy projects and strategies.

Hypothesis#2 Assessment and Supporting Evidence

Research Question: Has NYSERDA driven participation in clean energy commitment opportunities, resources, and peer groups?

Assessment: Strong evidence.

- REV Campus Challenge membership has grown year-over-year to 132 members in the 2019-2020 school year.
- Members were highly engaged in sustainability events and conferences. 74% attended a conference during the 2019-2020 school year. 20% of nonmembers attended a sustainability conference or event during the 2019-2020 school year, significantly less than members.
- 41% of members participated in the program workshop in the 2019-2020 school year, consistent with the prior year.

Research Question: Have campuses that participated in these opportunities increased clean energy implementation?

Assessment: Some evidence. NYSERDA information and incentives were influential on the completion of new clean energy projects at 63% of member campuses. Comparatively, 13% of members said information from peer campuses was influential on completing new clean energy projects, with sustainability coordinators reported that this knowledge sharing was primarily focused on learning best practices. Thus, The Market Evaluation Team could not identify a linkage between knowledge sharing and clean energy project implementation.

- 63% of members said information and incentives from NYSERDA had an influence on their completion of new clean energy projects. Agreement was relatively consistent across all three member levels (Leaders: 67%, Achievers: 55%, Participants: 71%).
- Fewer members reported that NYSERDA was influential on their establishment of new/expansion of existing community partnerships (38%) and participation in a peer group/knowledge share (35%).
- 12 of 15 sustainability coordinators from member campuses said sharing of knowledge primarily focused on learning best practices and project details from peer campuses rather than assistance with design or securing approval.
- 13% of members said information from peer campuses was influential on completing new clean energy projects. In comparison, information from peer campuses was more influential on new student/faculty initiatives (36%), new community initiatives (28%), and new courses/curricula (27%).

Research Question: Is there evidence of increased knowledge sharing among NYS campuses who participate in these opportunities?

Assessment: Strong evidence.

- 45% of members participated in a peer group/knowledge share related to clean energy in the 2019-2020 school year. This varied widely by tier (80% Leaders, 50% Achievers, 21% Participants).
- Only one nonmember respondent participated in a peer group/knowledge share related to clean energy in the past three years, significantly less than any member level.

Hypothesis #3

Hypothesis: If NYSERDA identifies gaps in the availability of needed resources and works with the market to fill the gap, then institutions will have greater confidence in and improved understanding of the value of clean energy projects leading to a greater number of projects being implemented and accelerated progress toward achieving clean energy goals.

Hypothesis#3 Assessment and Supporting Evidence

Research Question: Do REV Campus Challenge members report utilizing program resources? What about nonparticipating institutions?

Assessment: *Strong evidence.*

- Member use of program resources was somewhat consistent across program types: 19% for On-Site Energy Managers (OsEM), 18% for Real Time Energy Management (RTEM), and 14% for FlexTech.
 - In the next 18 months, 40% of member campuses said they would be likely to participate in FlexTech or RTEM, while 24% said they would be likely to participate in OsEM.
 - Zero nonmember who completed clean energy projects mentioned using NYSERDA resources.
-

Research Question: Did these resources help to increase institutions' confidence in and understanding of the business case for clean energy investments?

Assessment: Strong evidence.

- Since joining the REV Campus Challenge, members reported an increase in their understanding of clean energy opportunities on their campus (77% had a strong understanding in 2019-2020 vs. 49% when first joined the REV Campus Challenge [from late 2016 to 2019]).

Research Question: How influential have these program resources been to increase the number of clean energy projects?

Assessment: Strong evidence.

- 63% of members who completed clean energy projects in the 2019-2020 school year said information and incentives from NYSERDA were an influence on their decisions.
- Members who reported an increase in their understanding of clean energy opportunities on their campus since joining the program were more likely to complete a new clean energy project (68%, n=50) than members who did not report an increase in their understanding (53%, n=30; p=0.19).
- Members who reported an increase in their understanding completed a greater number of clean energy initiatives than members who did not report an increase (2.6 mean vs. 2.0 mean, p=0.17).
- Sustainability staff said financing offered through FlexTech was the most influential aspect. They also said the energy studies/audits would not have happened without NYSERDA assistance.

Research Question: Do participants (or nonparticipants who utilize program resources) demonstrate greater confidence in and understanding of the value of clean energy projects than nonparticipants/campuses that don't utilize program resources?

Assessment: Inconclusive. Members who utilized program resources were not statistically different from members who did not utilize program resources.

- Members using program resources were not more likely to report an increase in understanding of clean energy opportunities on their campus. The 30 members who reported using NYSERDA resources and the 54 members who did not reported a similar increase in their understanding of the clean energy opportunities on their campus since they joined the REV Campus Challenge (62% reported an increase for those who did, 65% for those who did not).

Research Question: Do participants utilizing resources report greater progress toward clean energy goals?

Assessment: Strong evidence.

- 55% of members said the resources and programs provided by the REV Campus Challenge helped further their institution's goals.

Conclusions and Recommendations

This section presents the Market Evaluation Teams conclusions from the research, supporting findings, and associated recommendations. Conclusions are organized in the same manner as the main body of the report, by overarching topic area. This section also includes the results for each testable hypothesis and any implications that this year's results have on future research efforts.

Awareness and Value of Clean Energy

Conclusion: Nonmembers' and Participant-level members' lower awareness of how their campuses use energy may be impacting their ability to complete clean energy projects or initiatives at the same level as Leaders and Achievers.

Nonmembers and Participant-level members were significantly less engaged with their campus' energy usage. Although most members and nonmembers reported collecting energy usage data (80% of members and 70% of nonmembers), nonmembers and Participant-level members were less likely to collect total energy usage (MMBtu) and GHG emissions data. Additionally, nonmembers were less likely to have created or updated a climate action plan, energy master plan, or GHG inventory (5%, n=20) compared to REV Campus Challenge members (55%, n=91). As discussed by sustainability staff and facilities manager interview respondents, campuses commonly relied on energy usage data to gain detailed insights, identify energy reduction opportunities, and to justify investments in clean energy projects.

Nonmembers and Participant-level members also reported lower completion levels of clean energy projects or initiatives. Participant-level members were significantly less likely to complete a clean energy project in the past year (49%, n=35) than Leaders (75%, n=20) and Achievers (71%, n=28). Members were more likely than nonmembers to participate in a peer groups, incorporate clean energy topics into new or existing courses, and establish or expand community partnerships.

Recommendation:

- Encourage campuses that do not have a strong understanding of clean energy opportunities on their campus (typically Participant-level members and nonmembers) to take small steps to learn more about how their campuses use energy. For example, these steps could be tracking usage beyond electricity and engaging in peer groups or community partnerships, which can help them to better understand the value of clean energy to their campus.

Conclusion: High levels of awareness of energy usage data and clean energy opportunities among campus staff involved in energy projects and decisions does not translate to the same level of awareness among the broader campus community.

The majority of campus staff involved in energy projects and decisions (the respondent group for the member and nonmember surveys) reported collecting energy usage data, with 80% of members and 70% of nonmembers reporting doing so in the 2019-2020 school year. Additionally, 77% of members thought they had a strong grasp on the clean energy opportunities on their campus. Comparatively, two of the six

admissions staff interviewed from member campuses rated their level of familiarity with clean energy and sustainability initiatives on campus at a 4 or 5 (on a 1-to-5 scale, with 5 representing the highest familiarity level). Though most students were familiar with at least one of their campus' clean energy and sustainability initiatives, 38% of the students surveyed (n=188) were unfamiliar with any. This may be influenced by the fact that many students were learning partially or fully remotely during the past school year due to the COVID-19 pandemic and were less likely to be engaged with on-campus activities.

Recommendation:

- Provide members with guidance on best practices for communicating clean energy initiatives and opportunities to the broader campus community, including key stakeholders and students. Specifically, highlight the benefits of broader campus awareness of clean energy initiatives and opportunities, such as increased opportunities to engage current and prospective students and reduced barriers to gaining approval from campus leadership for clean energy projects. If NYSERDA decides to pursue this recommendation and desires additional information, engage with several member campuses to understand the benefits they have recognized by communicating clean energy initiatives to the broader campus community.

Clean Energy Initiatives and Influence

Conclusion: REV Campus Challenge activities have had an influence on member clean energy initiatives.

A majority of campuses (members: 90% in the past year; nonmembers: 75% in the past three years) reported completing at least one clean energy accomplishment, most commonly the completion of clean energy projects (63% of members; 50% of nonmembers). When looking beyond projects to engagement with the broader campus community, REV Campus Challenge members were significantly more likely than nonmembers to report participating in a peer group (45% for members vs. 5% for nonmembers), incorporating clean energy topics into new or existing courses (37% for members vs. 10% for nonmembers), and establishing or expanding community partnerships (36% for members vs. 5% for nonmembers). When asked what influenced their decision to pursue various clean energy accomplishments, members cited “information and incentives from NYSERDA” as the top influencing factor for five of six accomplishments.

Members who reported an increase in their understanding of clean energy opportunities on their campus since joining the program were more likely to complete a new clean energy project (68%, n=50) than members who did not report an increase in their understanding (53%, n=30). Additionally, members who

reported an increase in their understanding completed a greater number of clean energy initiatives than members who did not report an increase (2.6 mean vs. 2.0 mean).

Conclusion: Many factors beyond NYSERDA’s control may be influencing campuses’ achievement of clean energy accomplishments.

While “information and incentives from NYSERDA” was the most commonly cited influencing factor for five of six accomplishments (with “participating in a peer group/knowledge share related to clean energy” as the exception), members cited several other factors. For example, for the most commonly-cited clean energy accomplishment – completing a new clean energy project (n=52) – nearly half of members reported the influence of other factors, including information from a consultant or provider of clean energy services (50%), and information/incentives from a utility (48%).

Beyond these factors, members reported several impacts to clean energy projects due to the COVID-19 pandemic, such as a shifted focus from management to pandemic-related projects (74%), funding reduction for clean energy projects (35%), staff reductions for clean energy project implementation (33%), and delays on construction for clean energy projects (26%).

Conclusion: Opportunities remain to grow REV Campus Challenge membership, particularly if NYSERDA can address awareness and resource barriers.

The most common barriers to joining the REV Campus Challenge cited by nonmembers were a lack of program awareness (50%, n=20), budget constraints (35%), and staffing (30% do not have enough staff, 10% lack appropriately trained staff, and 10% lack staff to take leadership). Among nonmember respondents, 40% (n=20) said they were somewhat or very likely to become a member of the REV Campus Challenge. Lack of program awareness was the most common barrier for respondents who said they were somewhat or very likely to become a member of the REV Campus Challenge (88%; n=8), while nonmembers who said they were not likely to join were most commonly constrained by budgets (50%; n=12) or not having enough staff (42%). This may have been exacerbated by the impacts of the COVID-19 pandemic.

To help further their clean energy goals, nonmembers were most interested in technical training on building energy efficiency topics (75%; n=20), training on indoor air quality (75%), an e-newsletter (75%), and greater assistance navigating NYSERDA programs (70%).

In the 2019-2020 school year, member attendance at clean energy and sustainability events was significantly higher than the 2018-2019 school year, moving from 54% to 71% (there were no nonmember survey data from 2018-2019 for comparison). Given that many events were held virtually due to the COVID-19 pandemic, it is likely that this reduced barriers to attendance, presenting an opportunity for offering a virtual option for future events.

Recommendation:

- To address awareness issues, work with existing contacts at nonmember campuses to identify key decision makers who may be open to REV Campus Challenge participation. Focus messaging on the benefits of clean energy projects and initiatives to the campus and surrounding community as well as on the opportunities for learning and training that can be provided through the program. Utilize the success of virtual events employed during the COVID-19 pandemic to decrease barriers to, such as travel time and staff availability, to participation in events.

Student and Community Engagement

Conclusion: The REV Campus Challenge helps generate greater student and community engagement with campus clean energy and sustainability initiatives.

Information from NYSERDA and participation in the REV Campus Challenge helped foster campus community partnerships. Many members (37%, n=82) established new partnerships or expanded existing partnerships with community organizations in the past year, especially Leaders (50%; n=20).

Comparatively, only one nonmember (n=20) respondent reported establishing new partnerships or expanding existing ones. When asked what factors contributed to the decision to establish or expand community partnerships, member respondents cited information and incentives from NYSERDA (38%) as the most common factor, followed by information from a consultant or provider of clean energy services (34%), information or incentives from a utility (31%), and information from a peer institution (28%, which may be partially attributable to program activities).

Among students at member campuses, 62% reported being familiar with clean energy and sustainability initiatives on their campus, with the highest levels of awareness for clean energy-related curriculum (51%) and student groups (48%). Likewise, these elements were the most-often cited clean energy initiatives that students participated in (22% for curriculum; 11% for student groups).

Conclusion: Opportunities exist to further incorporate clean energy and sustainability into current and prospective student communication.

In the 2019-2020 school year, 29% of members (n=83) promoted a clean energy project or REV Campus Challenge designation in student-facing resources. Additionally, the majority of members said the implementation of clean energy projects for recruiting prospective students was important (76%; n=84). The implementation of clean energy projects resonated with students, with 72% (n=156) stating that their campus cares about clean energy and sustainability. However, students typically considered many factors in their decision of which school to attend, with 39% (n=154) stating that their school's commitment to clean energy and sustainability was important in their decision to attend. Students said they were more focused on education and course offerings and many did not learn about campus clean energy initiatives until after attending.

Admissions office staff felt that NYSERDA could assist campuses with engaging students on the topics of clean energy and sustainability, specifically by supporting energy challenges that are geared toward the general student population, recognizing students for clean energy achievements, funding for student internships, and assistance with on-campus signage to communicate energy savings projects.

Recommendation:

- Assist campuses with translating the benefits of clean energy projects and initiatives into student- and community-facing materials, recognizing campus's differing preferences for clean energy and sustainability communication. When designing materials, ensure that campuses take into consideration the accessibility of such materials by students who are not physically present on campus, as the COVID-19 pandemic may have resulted in some longer-term shifts in the way students interact with campuses.

Support and Recognition

Conclusion: Although a significant portion of campuses received recognition for clean energy accomplishments from NYSERDA or another organization, it has not been a key motivating factor for advancing clean energy and sustainability initiatives.

Among REV Campus Challenge members, 45% of Leaders (n=20), 29% of Achievers (n=28), and 16% of Participants (n=37) received recognition for their clean energy accomplishments from NYSERDA or outside organizations in the 2019-2020 school year. Though there is a correlation between a campus's membership level and whether they received recognition, more than half of Leaders and Achievers had not received recognition, indicating that a lack of recognition did not deter campuses from advancing their initiatives. Interviews with sustainability staff reinforced these findings: one of five sustainability staff who received recognition from NYSERDA cited this recognition as a motivating factor, and no

sustainability staff reported that outside recognition was a driver for their clean energy and sustainability initiatives.

Conclusion: The primary value to campuses of recognition comes from public relations activities that promote clean energy achievements.

When asked about which types of recognition would be most helpful, sustainability staff expressed preference for recognition that draws greater publicity, such as acknowledgement of achievements in the press or awards visibly placed on campus. This finding aligned with the survey result that 52% of members who promoted clean energy projects or REV Campus Challenge designation in student-facing resources (n=23) cited recognition as a driver for this decision, suggesting that broader publicity for clean energy achievements is important to campuses.

Recommendations:

- Support campuses with achieving broader recognition for clean energy and sustainability achievements, such as assisting with language or ideas for relevant press releases and on-campus signage, rather than just online recognition (on the NYSERDA website) for REV Campus Challenge members. Consider packaging this assistance as a toolkit that campuses can use when completing a clean energy achievement. Additionally, utilize social media accounts to help campuses promote their clean energy accomplishments.
- Develop an understanding of the type of recognition best suited to each campus' specific situation to provide the most valuable type of recognition for each campus. For example, if a campus is in the process of retrofitting an existing building, recommend how the campus can leverage this project in its own marketing materials while simultaneously working with relevant organizations to provide recognition.

Conclusion: Support from campus management is an important factor in determining the clean energy and sustainability progress made by campuses.

Among surveyed member campuses, a greater percentage of campuses with Leader or Achiever status rated their campus management's support for clean energy and sustainability initiatives as high compared to those with Participant status. Furthermore, Leaders and Achievers reported that management support significantly increased since joining the REV Campus Challenge. In comparison, less than half of nonmember campuses strongly agreed that management is committed to clean energy and sustainability, demonstrating the differences in support from campus administration between members and nonmembers.

Relatedly, Leaders (75%, n=15) and Achievers (71%, n=20) were more likely to report completing a new clean energy project during the 2019-2020 school year.

Conclusion: Technical assistance and training is highly valued by members and critical for them to achieve their clean energy goals.

Seventeen of 27 (63%) interviewed campus stakeholders explained that the economics of a clean energy project, including a weighing of costs and benefits, was a critical determinant in whether management provided project approval. Member campuses emphasized that grants and other financial support from NYSERDA, such as FlexTech funding, often played a role in determining economic feasibility. Outside of funding, members (n=84) said it would be valuable for NYSERDA to provide more technical training on building energy efficiency topics (60%), assistance with applying to NYSERDA programs (significantly higher for Participants: 70% vs. 55% total), a regular REV Campus Challenge newsletter (50%), and more opportunities for collaboration with other members (significantly higher for Achievers; 61% vs. 44% total).

Recommendation:

- Support member campuses with a stratified approach to achieving clean energy projects based on their membership level, specifically focusing on assistance finding relevant NYSERDA program opportunities for less advanced campuses (Participants) and increased knowledge sharing for moderately advanced campuses (Achievers). Across all members, identify campuses that may need upgrades to a specific building system component (such as HVAC) and target them with additional technical training.

Logic Model

Conclusion: The program's logic model represents the program accurately but requires additional explanation to fully convey the program theory.

Across the logic model, The Market Evaluation Team found that nearly all elements are valid based on discussions with the program team and through market evaluation activities. The Market Evaluation Team noted two barriers that are not included in the logic model—a lack of campus management support for clean energy projects and a lack of local recognition for clean energy accomplishments. Though all activities and outputs are valid, the Market Evaluation Team had trouble discerning the logic behind each linkage, as some activities link to multiple activities and outputs. Similarly, the Market Evaluation Team could connect the outcomes to the components of NYSERDA's testable hypotheses, but the causal

linkages between different testable hypothesis components is not clearly defined. Finally, the inclusion of “students” in the target audience did not seem relevant given that they are not the key audience that program staff need to engage to encourage campuses to join and participate in the REV Campus Challenge.

Recommendations:

- Review the barriers, activities, outputs, outcomes, and target audiences for clarity and representativeness of the current state of the program. Specifically, several aspects could be modified:
 - **Add a missing barrier**—the lack of campus management support/prioritization for clean energy projects and activities. Greater management buy-in/support for clean energy projects is a near-term outcome in the logic model and one of the indicators tracked and reported to DPS (I18).
 - **Revise the “lack of state-level recognition for clean energy projects and strategies” barrier** to incorporate local-level recognition. Though several members referenced state-level recognition as helpful, they also thought help with how to communicate the benefits of projects on a more local level, such as through on-campus signage and inclusion in campus marketing materials, would be valuable.
 - **Document an explanation for each linkage between activities, outputs, and outcomes** to help to clarify the rationale behind the linkage and demonstrate how the activity leads to the associated output. This could be included as supplementary documentation to assist others with understanding the logic model.
 - **Remove “students” from the target audience** because program activities all focus on engaging with campus administration/staff.

1 Introduction

Only a portion of the more than 250 higher education institutions in New York State have made substantial progress in improving campus energy efficiency, while others have struggled to begin. Various clean energy initiatives, challenges, peer groups, conferences, and events are held in New York State to increase and encourage participation in the higher education industry but with only moderate to minimal uptake, according to tracking data available to NYSERDA. For college and universities that have acted, often little public recognition is given for their adoption of clean energy projects and progress. Colleges and universities embarking on their path to clean energy adoption would benefit from lessons learned and transfer of knowledge available from their peers that have already made progress in energy efficiency.

In 2015, NYSERDA launched the REV Campus Challenge to drive the recognition and implementation of clean energy projects and strategies at institutions of higher education and their surrounding communities in New York State. As of February 2017, approximately 40% of the state's higher education institutions have signed up for the REV Campus Challenge, which grew to approximately 51% in 2020. Members have access to financial support through NYSERDA's Flexible Technical Assistance (FlexTech) program, which provides cost-shared funding up to \$500,000 for REV Campus Challenge members to work with energy consultants to better understand and pursue clean energy opportunities on their campuses and develop action plans for the future.

The REV Campus Challenge includes several other benefits:

- Recognition for clean energy accomplishments
- Access to a diverse network of peer institutions to share best practices and challenges
- Access to helpful resources selected by the REV Campus Challenge for their relevance to clean energy and sustainability at New York State colleges and universities

To evaluate the REV Campus Challenge, NYSERDA hired the Market Evaluation Team to conduct a five-year assessment of market progress toward the program's stated goals. The Market Evaluation Team built on data collection activities the program team previously completed (the annual member survey) and expanded activities to also include a review of secondary data, in-depth interviews with campus staff, and online surveys of students and nonmember campus representatives. The following research objectives guided this research:

- Characterize and track progress among the state's institutions of higher education
- Track the program's market progress indicators against baseline

- Understand the current levels of institutional and student participation and engagement, along with participation drivers and barriers, and identify opportunities to increase market impact
- Estimate indirect impacts resulting from program activities

The Market Evaluation Team also tested three hypotheses through this research:

- If NYSERDA recognizes progress toward and achievement of New York State institutions' clean energy goals, then the adoption of clean energy projects and strategies on these campuses will increase.
- If NYSERDA drives participation in existing clean energy commitment opportunities, resources, and peer groups, then clean energy implementation on New York State campuses will accelerate because of improved knowledge sharing and demonstrated value of clean energy projects and strategies.
- If NYSERDA identifies gaps in the availability of needed resources and works with the market to fill the gap, then institutions will have greater confidence in and better understanding of the value of clean energy projects. This will lead to a greater number of projects being implemented and accelerated progress toward achieving clean energy goals.

The Market Evaluation Team fielded this research during the COVID-19 pandemic, which caused many campuses to modify operations and impacted budgets. The pandemic likely had an impact on both response rates and the responses themselves, creating a challenge when comparing results to prior years and identifying influencing factors on campus decisions and actions. The impacts of the COVID-19 pandemic are noted in various sections throughout this report to highlight the wide-ranging impacts of the pandemic on New York State campuses.

1.1 Summary of Methods

This section briefly describes the methodology for each data collection activity. A comprehensive discussion of each data collection activity is in the *Methodology* section.

1.1.1 Member and Nonmember Surveys

The Market Evaluation Team fielded surveys with representatives from New York State colleges and universities that have enrolled in REV Campus Challenge (the 2019-2020 member survey) and representatives from campuses not enrolled in the program (the 2019-2020 nonmember survey). The Market Evaluation Team attempted outreach via phone and email from November 2020 through January 2021 for the member survey and January through March 2021 for the nonmember survey, offering a \$50 gift card incentive for nonmembers to encourage participation. Of 132 members enrolled in REV Campus Challenge for the 2019-2020 school year, 93 (70%) completed a survey. For nonmembers, 21 of 124

campuses (17%) completed a survey. The Market Evaluation Team used the nonmember survey to estimate indirect impacts.

1.1.2 In-Depth Interviews

The Market Evaluation Team reached out to sustainability managers, facility and energy management staff, and admissions office staff at member and nonmember campuses and completed in-depth phone interviews with 15 sustainability directors and coordinator staff, 15 facility and energy management staff, and six admissions office staff. The Market Evaluation Team made up to three outreach attempts to each contact through a combination of email and phone calls from November 2020 through February 2021. The Market Evaluation Team offered a \$50 gift card incentive to nonmember facility and energy management staff to encourage participation.

1.1.3 Student Survey

The Market Evaluation Team enlisted member and nonmember New York State campuses to help distribute an online survey to students, offering a chance to win one of 10 \$50 gift cards to encourage participation. Staff members who agreed to administer the survey to students did so via an anonymous link emailed to the entire student body. The student survey yielded 183 responses from four New York State campuses (n=7,492 students across four campuses, three members and one nonmember). Survey fielding took place during March and April 2021.

1.1.4 Secondary Data Review

The Market Evaluation Team developed a campus inventory of all New York State institutions to cover the following items:

- Institution type and level of enrollment (both undergraduate and graduate)
- NYSERDA program participation
- Financial information (tuition cost and endowment)
- Contact information, including names, phone numbers, and email addresses for sustainability directors/coordinators, facility/energy management staff, and admissions office staff

1.2 Impact of COVID-19 Pandemic on Research

The COVID-19 pandemic had a substantial impact on campuses in New York State, which in turn impacted this year's evaluation of the REV Campus Challenge. The New York Governor declared a state of emergency on March 7, 2020, and all SUNY and CUNY institutions began distant learning for the

remainder of the semester on March 11, 2020. All schools across the state closed shortly after, on March 16, 2020. New York State colleges and universities did not start allowing students back on campus until the fall of 2020 while still offering hybrid and distant learning.

Both member and nonmember campuses reported impacts to their operations in general and specifically their clean energy projects. When asked about general operations changes, nearly all members (92%) and nonmembers (85%) reported switching to a partial or fully remote learning model and the majority of members (82%), and half of nonmembers (50%) reported changing the way buildings were used. Additionally, member campuses reported significant impacts to clean energy projects, such as shifting focus to pandemic-related projects, reducing funding for clean energy projects, reducing staff, and stopping a planned clean energy project. Full details on the impacts felt by campuses are included in the *COVID-19 Impacts* section.

These impacts affected this year's evaluation results in multiple ways. First, as noted in the *Market Progress Indicators* section, it is highly likely that the significantly lower number of campuses reporting the completion of clean energy projects in the 2019-2020 school year was due to the pandemic. This is notable because NYSERDA tracks this indicator and reports it to the New York State Department of Public Service (DPS) and other stakeholders yearly. Second, as noted in the *Methodology* section, The Market Evaluation Team had difficulty reaching contacts for surveys and interviews at a subset of campuses, some of which were shut down during the survey fielding period. Finally, the student survey asked students about their engagement with clean energy and sustainability initiatives on campus. Due to the full or partial remote learning model employed by campuses, it is likely that some engagement values are underreported compared to what would be expected without the impact of the COVID-19 pandemic.

The Market Evaluation Team will take these factors into account when comparing results of market progress indicators to prior years and when using this year as a comparison to future evaluation years.

2 Market Evaluation Results

This section contains detailed results from each data collection activity completed by the Market Evaluation Team. Given the high degree of overlap in research topics covered in each data collection activity, this section is organized as follows.

The first subsection covers **market progress indicators** from this year's evaluation that NYSERDA reported to the New York State Department of Public Service (DPS) in February 2021 and the **impacts of the COVID-19 pandemic** on this year's results.

The next subsections present detailed results from each of the **core evaluation areas**, with insights synthesized across member, nonmember, and student surveys and in-depth interviews with sustainability coordinators, facilities managers, and admissions office staff:

- Awareness and value of clean energy
- Clean energy initiatives and influence
- Student and community engagement
- Support and recognition

The last subsection reports feedback on the program's **logic model** based on the program stakeholder interview and insights uncovered during the data collection activities.

2.1 Market Progress Indicators

Table 1 lists the indicators measuring the progress of the REV Campus Challenge reported annually to the DPS as well as the results reported by NYSERDA in 2018-2019 and results for the most recent (2019-2020) school year. This table presents the following results:

- **Percentage of survey respondents:** Members who reported a particular action or behavior as a percentage of the total number of survey respondents answering the question (except for indicators I1, I2, I3, and I6) in 2018-2019 and 2019-2020.
- **Count weighted to member population:** The estimated number of REV Campus Challenge members who reported a particular action or behavior calculated using the proportion of survey respondents in the given year multiplied by the total REV Campus Challenge Member population in that year (that is, 127 members in 2018-2019 and 132 members in 2019-2020).

Table 1. REV Campus Challenge Indicators Reported to DPS

#	Indicator ^a	Source	Percentage of Survey Respondents			Count Weighted to Member Population		
			2018-2019 School Year	2019-2020 School Year	Difference	2018-2019 School Year	2019-2020 School Year	Difference
13	Number of REV Campus Challenge Members	Program records	-	-	-	127 ^b	132 ^b	+5
12	Number of NYS institutions participating in AASHE STARS	AASHE	-	-	-	75 ^b	76 ^b	+1
16	Number of NYS institutions attending existing clean energy events/conferences	Member survey	118% ^c	173%* ^c	+55%	73	98	+25
11	Number of NYS institutions participating in REV Campus Challenge initiatives/competitions	Program records	28% ^d	39%* ^d	+11%	70 ^b	98 ^b	+28
17	Number of REV Campus Challenge Members collecting and reporting energy usage	Member survey	86%	80%	-6%	109	105	-4
111	Number of REV Campus Challenge Members reporting new clean energy projects on campus	Member survey	77%	63%*	-14%	98	83	-15
19	Number of REV Campus Challenge Members reporting new clean energy curricula or curriculum integration	Member survey	33%	37%	+4%	42	49	+7
124	Number of REV Campus Challenge Members reporting new or improved community partnerships to expand clean energy goals	Member survey	34%	36%	+2%	43	48	+5
114	Number of REV Campus Challenge Members receiving recognition	Member survey	32%	27%	-5%	41	36	-5
112	Number of REV Campus Challenge Members with new or updated climate action plans, energy master plans, or GHG inventories	Member survey	54%	55%	+1%	68	73	+5
110	Number of REV Campus Challenge Members with staff assigned to manage sustainability/clean energy goals	Member survey	66%	69%	+3%	83	91	+8
18	Number of REV Campus Challenge Members reporting a greater understanding of clean energy opportunities on their campus	Member survey	67%	54%	N/A ^e	85	71	N/A ^e
117	Number of REV Campus Challenge Members reporting greater student engagement with clean energy initiatives	Member survey	48%	29%	N/A ^e	60	38	N/A ^e
118	Number of REV Campus Challenge Members reporting greater buy-in and support from management for clean energy projects and initiatives	Member survey	66%	39%	N/A ^e	84	52	N/A ^e
125	Number of REV Campus Challenge Members reporting improved community relations as a result of clean energy strategies	Member survey	43%	35%	N/A ^e	55	46	N/A ^e

^aThe indicators are ordered in the same way as the output from the NYSERDA Annual DPS reporting system.

^bBecause this indicator is sourced from program or other data, the Market Evaluation Team did not scale the results up to the full member population.

^cThis is calculated as a percentage of the initial baseline (22 campuses).

^dThis is calculated as a percentage of all New York higher-education campuses (250).

^e**Because the method for calculating this indicator changed, there is no reasonable equivalent for comparison. Instead, the recalculated metrics should be used as a new baseline, with future years compared to this year to observe change and progress.**

* Denotes significant difference at the 95% confidence interval.

Compared to 2018-2019, the following three indicators fell by 5% or more:

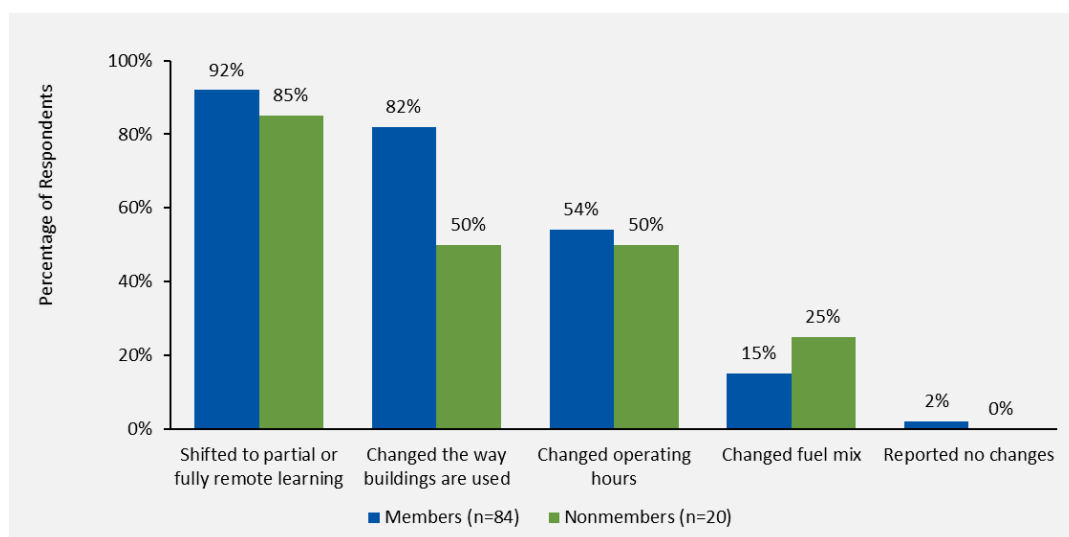
- I11, the number of REV Campus Challenge Members reporting new clean energy projects on campus, was lower by 14%. This is the only negative difference between 2018-2019 and 2019-2020 that is statistically significant ($p=0.0484$ using a two-tailed z-test).
- I7, the number of REV Campus Challenge Members collecting and reporting energy usage, was lower by 6%.
- I14, the number of REV Campus Challenge Members receiving recognition, was lower by 5%.

It is reasonable to link changes in these indicators with impacts due to the COVID-19 pandemic. The impacts listed below are likely to have affected indicators I11 and I7, as they are directly tied to the capacity of sustainability staff and the level of funding. Though indicator I14 could have been slightly affected by the impacts listed below (because of fewer projects completed), it is also possible the organizations that provide recognition cancelled or postponed their events or they shifted to focus instead on pandemic-related impacts, which in turn decreased the opportunities for clean energy recognition.

2.1.1 COVID-19 Impacts

The onset of the pandemic early in 2020 impacted campuses in a variety of ways. The Market Evaluation Team asked several questions to learn which campus areas were impacted most. Ninety-two percent of members ($n=84$) and 85% of nonmembers ($n=20$) said their campuses shifted to remote learning in some capacity as a result of the pandemic (Figure 1). The transition to remote learning, as described by sustainability and facilities staff, decreased energy consumption because fewer students and staff were on campus. In addition, significantly more members (82%, $n=84$, $p<0.10$) reported campus buildings were being used for pandemic-related services compared to nonmembers (50%, $n=20$).

Figure 1. Operational Changes among Respondents due to COVID-19



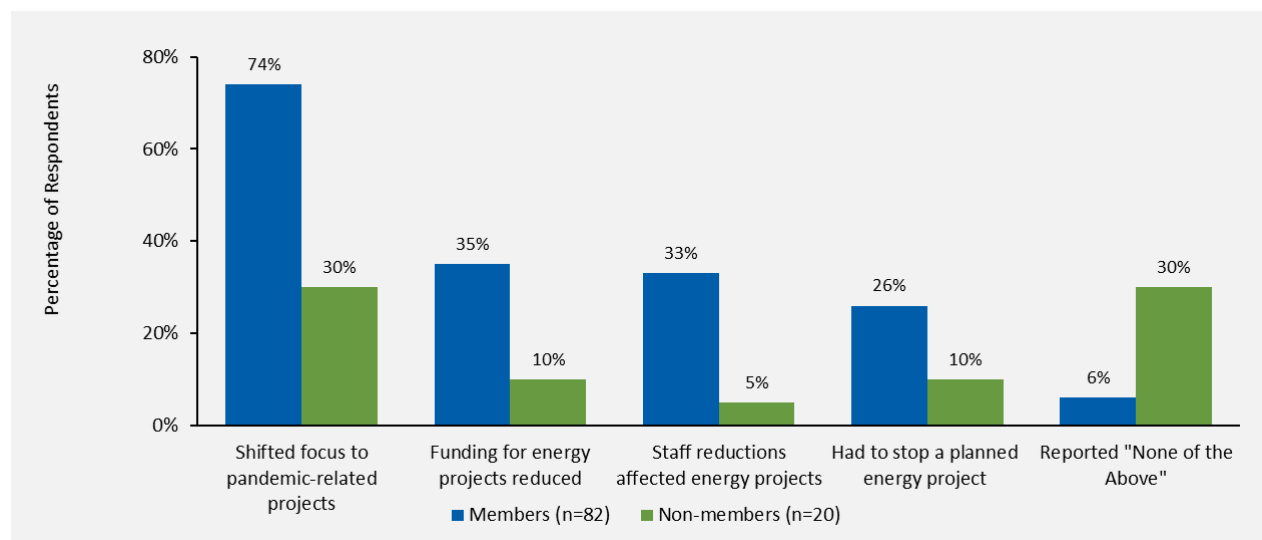
Source: 2019-2020 Member Survey question F1 “Have your operations changed in any of the following ways as a result of the pandemic?” Multiple responses allowed (n=84). 2019-2020 Nonmember Survey question E1 “Have your operations changed in any of the following ways as a result of the pandemic?” Multiple responses allowed (n=20).

Though general campus operations were affected to a similar degree for members and nonmembers, clean energy projects on member campuses were more heavily impacted by COVID-19 than on nonmember campuses. Significantly more members said their energy efficiency projects were affected by a shift in focus to pandemic-related projects (74%, n=82, $p<0.10$), lack of funding (35%), staff reductions (33%), and temporary project suspensions (26%) (Figure 2). Though nonmembers were significantly less affected (30%, n=20, $p<0.10$) by these COVID-19 impacts, this may be because fewer or no clean energy projects were being pursued on nonmember campuses.

When asked about the impacts of COVID-19 on campus, sustainability and facilities staff commonly gave feedback such as the following:

- Projects were paused/postponed
- Less funding was available due to economic impact of COVID-19 pandemic on campuses, and there was more financial scrutiny of projects
- There were more concerns about indoor air quality, safety, and filtration/ventilation, which led to operational adjustments and a shift in priorities

Figure 2. COVID-19 Impacts on Clean Energy or Energy Efficiency Projects



Source: 2019-2020 Member Survey question F2 “Have you had any of the following impacts to clean energy or energy efficiency projects as a result of the pandemic?” Multiple responses allowed (n=82). 2019-2020 Nonmember Survey question E2 “Have you experienced any of the following impacts to clean energy or energy efficiency projects as a result of the pandemic?” Multiple responses allowed (n=20).

When asked how long the impacts of COVID-19 will be felt on their institution’s clean energy projects, 53% of members projected for *more than 1 year* (n=77) compared to 40% nonmembers (n=20) (Table 2). By member level, 71% of Participants (n=35), 41% of Leaders (n=17), and 36% of Achievers (n=35) said it would take *more than 1 year* for operations associated with energy efficiency projects to return to pre-pandemic levels. Overall, the timelines projected by members and nonmembers were relatively similar, and responses from both groups indicated that a return to normalcy for energy efficiency projects is unlikely within six months.

The variability in responses shown in Table 2 was reaffirmed by facilities and sustainability staff who said they were uncertain how long the pandemic’s financial and operational impacts would last. Nevertheless, facilities and sustainability staff thought long-term goals would not be affected, despite short-term COVID-19 impacts.

Table 2. Projected Duration of COVID-19 Impacts on Energy Efficiency Projects

	Leaders (n=17)	Achievers (n=25)	Participants (n=35)	Total Members (n=77)	Nonmembers n=20)
More than 1 year	41%	36%	71%	53%	40%
7 months to 1 year	35%	36%	11%	25%	30%
6 months or less	6%	16%	6%	9%	10%
Don't know	18%	12%	11%	13%	20%

Source: 2019-2020 Member Survey question F3 “How long do you anticipate these impacts will be felt on your institution’s clean energy/energy efficiency projects?” (n=77). 2019-2020 Nonmember Survey question E3 “How long do you anticipate these impacts will be felt on your institution’s clean energy/energy efficiency projects?” (n=10).

2.2 Awareness and Value of Clean Energy

To assess how campuses across New York State understand and value clean energy, the Market Evaluation Team examined their clean energy data collection practices and perspectives. This section includes insights gathered from campuses across New York State and provides details on awareness of campus energy usage, energy usage collection and reporting, sustainability event participation, and involvement in clean energy initiatives. Table 3 lists a summary of key findings included in this section.

Table 3. Awareness and Value of Clean Energy Key Findings

Evaluation Questions	Key Findings
How are NYS campuses collecting energy data? How has energy data collection changed/ improved?	<ul style="list-style-type: none"> • Most campuses collected at least some energy data, with electricity usage the most common type among all campuses. Leaders and Achievers were more likely to collect total energy usage (MMBtu) and GHG emissions data than Participants and nonmembers. • Overall energy data collection rates by type of data have stayed relatively consistent across years. • See <i>Awareness and Collection of Energy Data</i> section for more details.
What level of awareness and understanding do NYS campuses have of campus energy use and clean energy opportunities on campus? How well are emissions reduction and energy savings understood?	<ul style="list-style-type: none"> • Members feel like they have a strong understanding of clean energy opportunities on their campus, with the level of understanding higher among Leaders and Achievers than Participants. • While awareness of energy usage data and clean energy opportunities is high among campus staff involved in energy projects and decisions, the broader campus community did not report as high of an awareness level of clean energy initiatives. • See <i>Awareness and Collection of Energy Data</i> and <i>Understanding of Clean Energy Opportunities</i> sections for more details.

2.2.2 Awareness and Collection of Energy Data

Across New York State, many campuses are collecting some type of energy usage information, as shown in Table 4. Though the majority of both member (80%, n=79) and nonmember (70%, n=20) campuses reported collecting at least one type of energy usage data, nonmembers are less likely to collect data

beyond electricity usage. The rate of data collection is highest among REV Campus Challenge Leaders and Achievers, while Participants’ collection of energy use data was more similar to nonmembers.

Table 4. Percentage of Campuses Collecting and Reporting Energy Data, 2019-2020 School Year

Type of Data	Members				Nonmembers (n=20)
	All (n=78-80)	Leaders (n=18-19)	Achievers (n=28)	Participants (n=32-33)	
Electricity usage (MWh)	78%	95%	93%	55%	65%
Total energy usage (MMBtu)	64%	83%	82%	41%	35%
GHG emissions (MTCO ₂ eq)	53%	83%	79%	16%	5%
At least one type	80%	95%	93%	58%	70%

Source: 2019-2020 Member Survey questions “Please provide your institution’s most recent information on the following.” B3 “Campus electricity usage (in MWh)”, B4 “Campus total energy usage (in MMBtu)”, B5 “Campus greenhouse gas (GHG) emissions.” 2019-2020 Nonmember survey question D7. “Does your campus collect information on any of the following?”

Three of 15 facilities staff, when asked about their energy data collection process, reported having building-level metering, advanced energy management systems, and dashboards that enable detailed insights on energy use. Three facilities staff said a third party helped them aggregate campus energy data and develop reports. Few sustainability staff reported changes in their data tracking process in recent years, but four said their campuses have begun creating more in-depth GHG reports, pursuing Real Time Energy Management (RTEM) and tracking Scope 3 emissions. Larger campuses were more likely to collect total energy usage and electricity usage data.

Interview responses from sustainability staff and facilities managers corroborated the member and nonmember survey findings on energy data collection presented in Table 4. Generally, facilities managers put a greater emphasis on collecting energy consumption data, such as electricity and natural gas usage pulled from monthly utility bill data, than on collecting emissions data. Six of 15 facilities staff members said they used energy usage data to estimate campus emissions. Four of 14 sustainability staff members said their campuses also collected, or attempted to collect, Scope 3 emissions specifically associated with purchased goods, student travel, and employee commuting.⁴

⁴ “Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly impacts in its value chain.” <https://www.epa.gov/climateleadership/scope-3-inventory-guidance#:~:text=Scope%203%20emissions%20are%20the,impacts%20in%20its%20value%20chain.&text=Scope%203%20emissions%2C%20also%20referred,an%20organization's%20total%20GHG%20emissions>

Though survey responses indicated a high level of basic energy data collection, this did not translate into high awareness among the broader campus community. For example, two of the six admissions staff interviewed from member campuses rated their level of familiarity with clean energy and sustainability initiatives on campus at a 4 or 5 (on a 1-to-5 scale, with 5 representing the highest level of familiarity). Similarly, 39% of the students surveyed (n=188) were unaware of any of their campus’s clean energy and sustainability initiatives.⁵

As shown in Table 5, member campus’ collection of different types of energy use data has remained consistent, with no statistically significant changes since NYSERDA began tracking each data type in the 2017-2018 school year.

Table 5. Percentage of Member Campuses Collecting and Reporting Energy Data, 2017-2020

	2017-2018 School Year (n=91)	2018-2019 School Year (n=83)	2019-2020 School Year (n=79)
Electricity usage (MWh)	79%	84%	78%
Total energy usage (MMBtu)	74%	75%	64%
GHG emissions (MTCO ₂ eq)	55%	53%	53%
At least one type	79%	86%	80%

Source: 2019-2020, 2018-2019, 2017-2018 Member Survey questions “Please provide your institution’s most recent information on the following.” B3 “Campus electricity usage (in MWh)”, B4 “Campus total energy usage (in MMBtu)”, B5 “Campus greenhouse gas (GHG) emissions.”

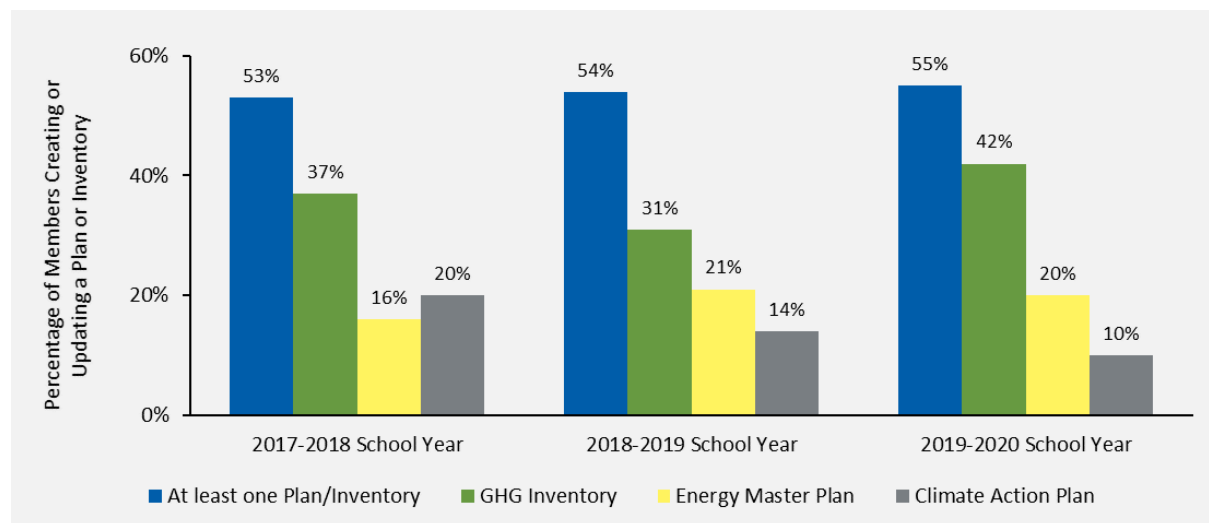
2.2.3 Energy Planning and Reporting

During the 2019-2020 school year, 55% of member respondents (n=91) reported creating or updating a climate action plan, energy master plan, or GHG inventory, significantly more than nonmember respondents (5%, n=20, $p < 0.05$). Member respondents most frequently reported updating or creating a GHG inventory (42%), an energy master plan (20%), and a climate action plan (10%). Of these three plan types, the GHG inventory had the largest difference among member levels, with 61% of Leaders (n=21) 50% of Achievers (n=30) and 23% of Participants (n=40) reporting updating or creating one. In addition, a statistically significantly higher percentage of private schools (51%, n=45) reported updating their GHG inventory during the 2019-2020 school year compared to public institutions (33%, n=46, $p < 0.10$).

⁵ In the student survey question B2. “What kinds of clean energy initiatives or projects are you aware of on your campus?” The Market Evaluation Team asked students their awareness of a variety of clean energy and sustainability initiatives typically found on NYS campuses.

Over the past reporting years, the number of REV Campus Challenge members creating or updating at least one of these plans or inventories has remained consistent (Figure 3). At the plan type level, the number of members who reported creating or updating a climate action plan (CAP) during the 2019-2020 school year was significantly less (10% lower, $p < 0.10$) than reported in 2017-2018. Conversely, significantly more members (11% more, $p < 0.10$) reported creating or updating a GHG inventory during the 2019-2020 school year compared to 2018-2019, indicating a slight shift in focus toward GHG emissions.

Figure 3. Members Who Created or Updated a CAP, EMP, or GHG Inventory

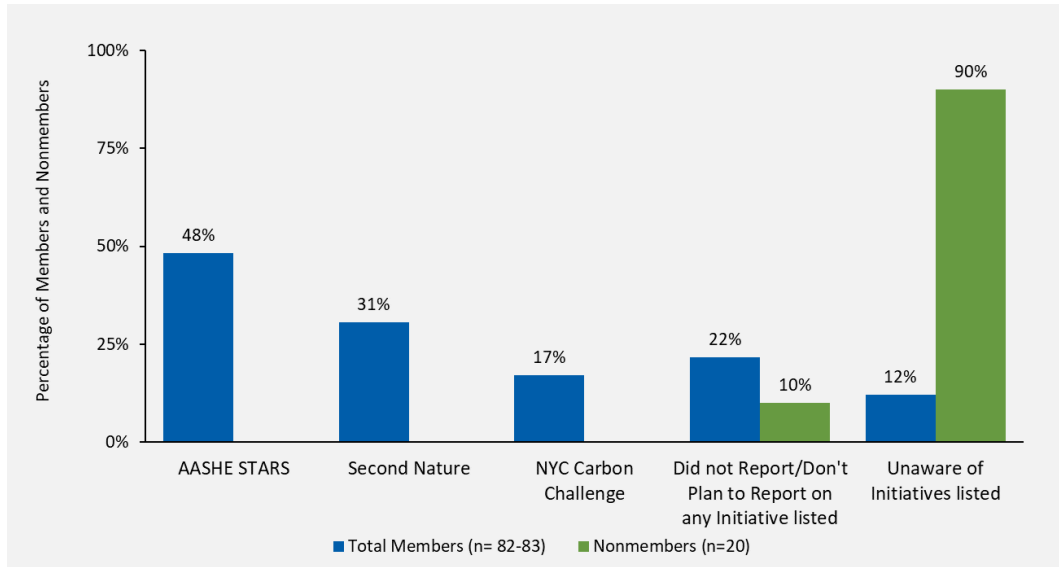


Source: 2019-2020 Member Survey question B2 “Did your campus create a new or updated climate action plan, energy master plan, or greenhouse gas (GHG) inventory in 2019?” Multiple responses allowed (n=91). 2018-2019 Member Survey question Q3 “Did your campus create a new or updated climate action plan, energy master plan, or GHG inventory in 2018?” Multiple responses allowed (n=97). 2017-2018 Member Survey question Q3 “Did your campus create a new or updated climate action plan, energy master plan, or GHG inventory in 2017?” Multiple responses allowed (n=91).

The Market Evaluation Team asked survey respondents if they had submitted or updated a report for The Association for the Advancement of Sustainability in Higher Education (AASHE) Sustainability Tracking, Assessment & Rating System (STARS), Second Nature – Carbon or Climate Commitment, or NYC Carbon Challenge. The AASHE STARS report was the most common initiative among members, with 48% of campuses stating they have, or intended to, submit or update a report in 2019-2020 (n=83). This was followed by Second Nature and the NYC Carbon Challenge in which 36% and 17% of members said they have, or intend to, report, respectively (n=82). Among nonmembers, 90% (n=20) were unaware of any of the three initiatives (AASHE STARS, Second Nature, or the NYC Carbon Challenge). Nonmembers had statistically significant lower rates of reporting than members for all three initiatives.

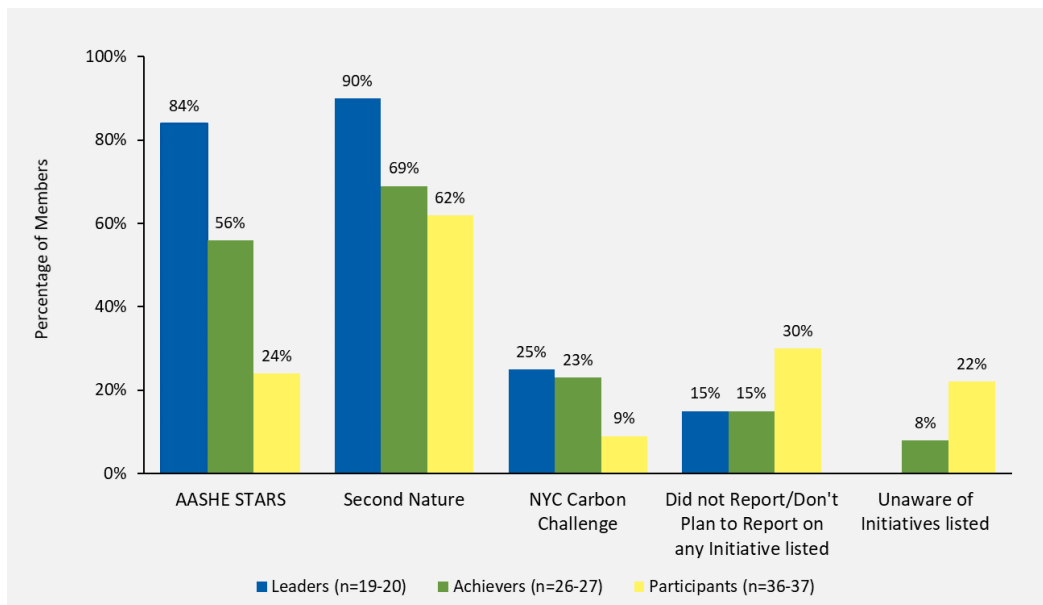
Figure 4 shows campus reporting by members and nonmembers, and Figure 5 shows campus reporting by member level.

Figure 4. Members and Nonmembers Who Have, or Intend to, Report to a Clean Energy Initiative



Source: 2019-2020 Member Survey question B1 "Please indicate which clean energy initiatives you submitted a report or update to for 2019:" 2019-2020 Nonmember Survey question D2 "Which, if any, of the following clean energy initiatives have you submitted a report or update to for 2019?"

Figure 5. Respondents by Member Level Who Have, or Intend to, Report to a Clean Energy Initiative



Source: 2019-2020 Member Survey question B1 "Please indicate which clean energy initiatives you submitted a report or update to for 2019."

2.2.4 Application of Energy Data

Interviews with facilities and sustainability staff revealed that campuses commonly relied on energy usage data to gain detailed insights and to justify investments in clean energy projects. Several sustainability staff members said the energy use data was used to complete annual reports or comply with reporting requirements laid out by initiatives like the AASHE STARS assessment.

Across both interview groups, the most common reported use of data was to uncover energy reduction opportunities on campus that were suitable for clean energy improvements and increased savings.

Specifically, respondents mentioned these data use cases:

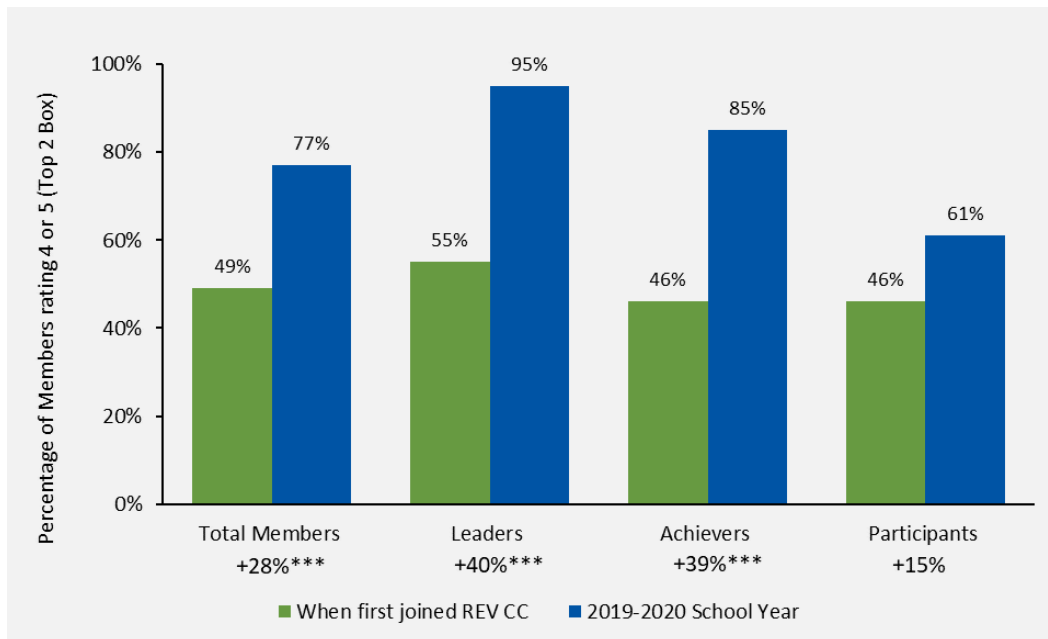
- Explore usage trends over time to diagnose performance issues
- Uncover opportunities for preventive maintenance and energy consumption reduction
- Identify “energy hogs” and the greatest energy-saving opportunities
- Prioritize capital improvements that will increase efficiency and reduce operational costs
- Financially justify proposed energy projects

2.2.5 Understanding of Clean Energy Opportunities

To determine how well clean energy opportunities are understood by campus stakeholders across New York State, the Market Evaluation Team asked respondents about their knowledge of clean energy opportunities both in the most recent school year and when they first joined REV Campus Challenge. When asked to rate their current level of understanding of clean energy opportunities on campus, 77% gave a rating of 4 out of 5 or higher (n=84), as shown in Figure 6. Compared to when the members first joined REV Campus Challenge, Leaders and Achievers saw the greatest increases (+40% and +39%, respectively), followed by Participants (+15%), which shows the lack of engagement among Participant-level members relative to their Leader and Achiever peers.

As noted in the *Application of Energy Data* section, collecting energy usage data can help campuses better understand the opportunities for clean energy projects, which may explain the lower rating given by Participant-level members.

Figure 6. Member Understanding of Clean Energy Opportunities



Source: 2019-2020 Member Survey questions D2 “For each of the following items, please rate the level/amount of each in 2019. - My level of understanding of clean energy opportunities on our campus.” (n=84, total members) and D3 “For each of the following items, please rate the level/amount of each when you first joined the REV Campus Challenge. - My level of understanding of clean energy opportunities on our campus.” (n=74, total members). ***Denotes a statistically significant difference between ratings at $p < 0.01$.

2.3 Clean Energy Initiatives and Influence

To understand clean energy progress on campuses, the Market Evaluation Team assessed their clean energy initiatives and what influenced their decisions. This section includes insights gathered from campuses across New York State and provides details on event participation, implementation of clean energy projects and initiatives, and factors that influenced decisions. Table 6 summarizes key findings discussed in this section.

Table 6. Clean Energy Initiatives and Influence Key Findings

Evaluation Questions	Key Findings
What actions have NYS campuses taken as a response to emissions reduction and energy savings information?	<ul style="list-style-type: none"> • 90% of member campuses reported completing at least one clean energy or sustainability initiative in the 2019-2020 school year, while 75% of nonmember campuses reported the same over the past three years. The most common initiative for both members and nonmembers was “completing a clean energy project.” • Members were more likely than nonmembers to participate in a peer group, incorporate clean energy topics into new or existing courses, and establish or expand community partnerships. • See <i>Campus Clean Energy Projects and Initiatives</i> section for more details.
What factors are influential on members’ clean energy initiatives?	<ul style="list-style-type: none"> • Members stated information and incentives from NYSERDA as the most influential factor for five of six clean energy accomplishments, with “peer group/knowledge share related to clean energy” as the only accomplishment where information/incentives was not rated as the most-influential factor (35%, which is second-most influential compared to “information from a peer institution with 49% influence). • See <i>Influential Factors</i> section for more details.
What barriers exist for nonmembers to join the program?	<ul style="list-style-type: none"> • Nonmember survey respondents said the most common barriers to their participation in REV Campus Challenge were lack of program awareness (50%, n=20), budget constraints (35%), and staffing (30% do not have enough staff, 10% lack appropriately trained staff, and 10% lack staff to take leadership). • Lack of program awareness was the most common barrier for respondents who said they were likely to become a member of the REV Campus Challenge (88%; n=8), while nonmembers who said they were not likely to join were most commonly constrained by budgets (50%; n=12) or not having enough staff (42%). • See <i>Nonmember Participation and Barriers</i> section for more details.

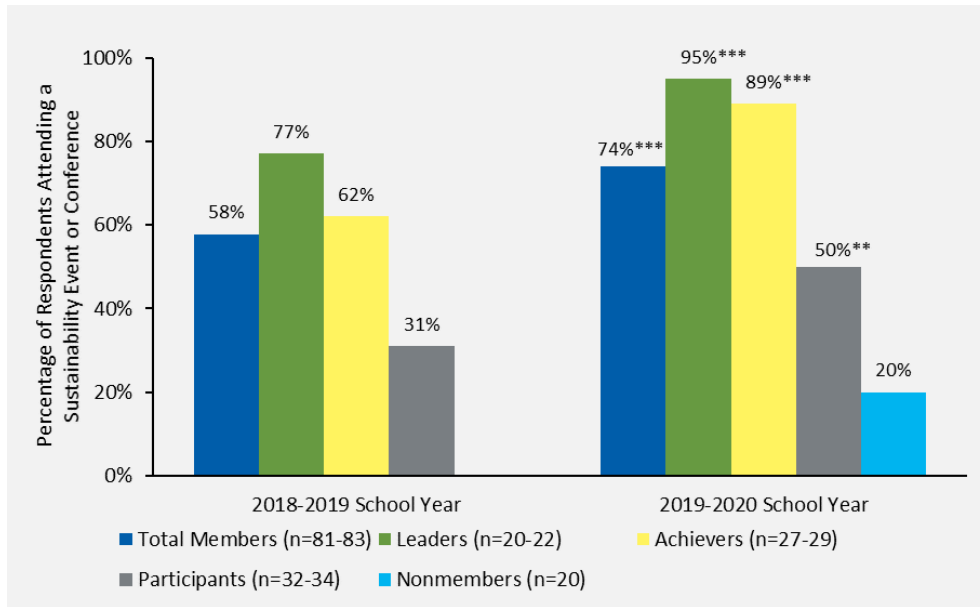
2.3.1 Event Participation

To gauge each campus’s level of involvement in sustainability events, the Market Evaluation Team asked respondents whether someone from their institution had attended a clean energy or sustainability event during the 2019-2020 school year. Member respondents reported being highly engaged in sustainability events and conferences, with 74% of members (n=81) attending a conference during the 2019-2020 school year. Comparatively, 20% of nonmembers mentioned attending a sustainability conference or event during the 2019-2020 school year, which was significantly less than members (n=20, $p<0.10$). Among members, the State of New York Sustainability Conference was the most commonly attended event during the 2019-2020 school year, which was held virtually due to the COVID-19 pandemic.

As shown in Figure 7, all member groups and nonmembers saw a significant increase ($p<0.01$ or $p<0.05$) in attendance at sustainability events during the 2019-2020 school year compared to 2018-2019. The Market Evaluation Team believes this difference resulted from the switch to a virtual format due to the COVID-19 pandemic, resulting in a lower barrier to entry for participants (i.e., no travel time and/or lower cost). Figure 8 shows attendance at specific clean energy and sustainability events over the same time period.

Outside of these non-NYSERDA events, 41% of members (n=86) reported attending the annual workshop during the 2019-2020 school year, which was similar to reported attendance from the member survey for the 2018-2019 school year (40%, n=83).

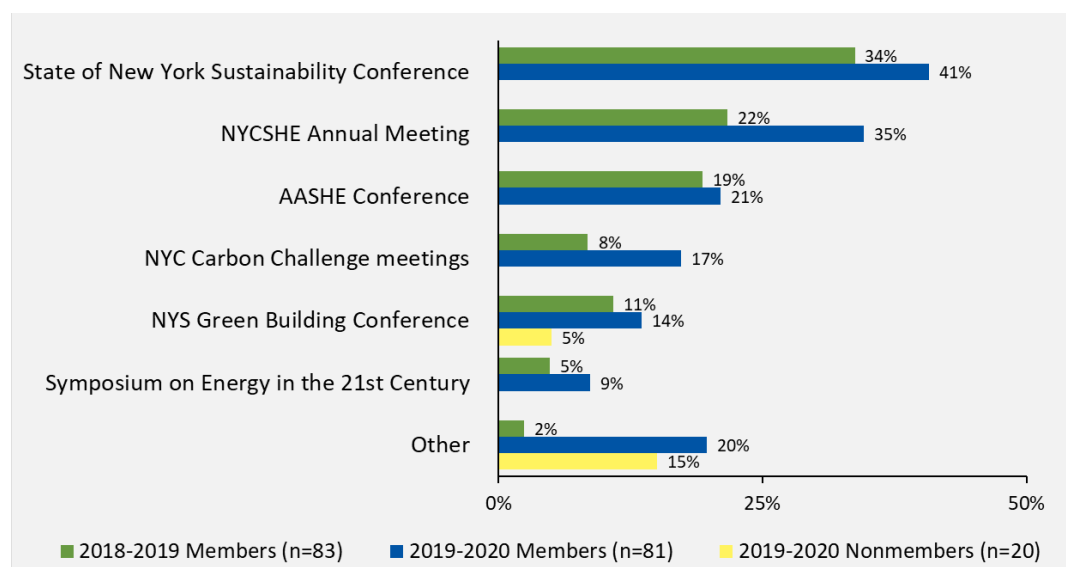
Figure 7. Respondents Reporting Attending a Sustainability Event or Conference



Source: 2019-2020 Member Survey question B6 “Did you (or someone from your institution) attend any of the following clean energy/sustainability events?” Multiple responses allowed (n=81). 2018-2019 Member Survey question “Did you attend any of the following clean energy/sustainability events?” Multiple responses allowed (n=83). 2019-2020 Nonmember Survey question D11 “Did you (or someone from your institution) attend any of the following clean energy/sustainability events?” Multiple responses allowed (n=20). The nonmember survey was not conducted in 2018-2019. ***Denotes a statistically significant difference between ratings at $p < 0.01$ and ** Denotes a statistically significant difference between ratings at $p < 0.05$

Note: Though the event list remained the same between both survey years (2018-2019 and 2019-2020), the majority of events were held virtually in 2020 due to the COVID-19 pandemic.

Figure 8. Member and Nonmember Specific Event Attendance



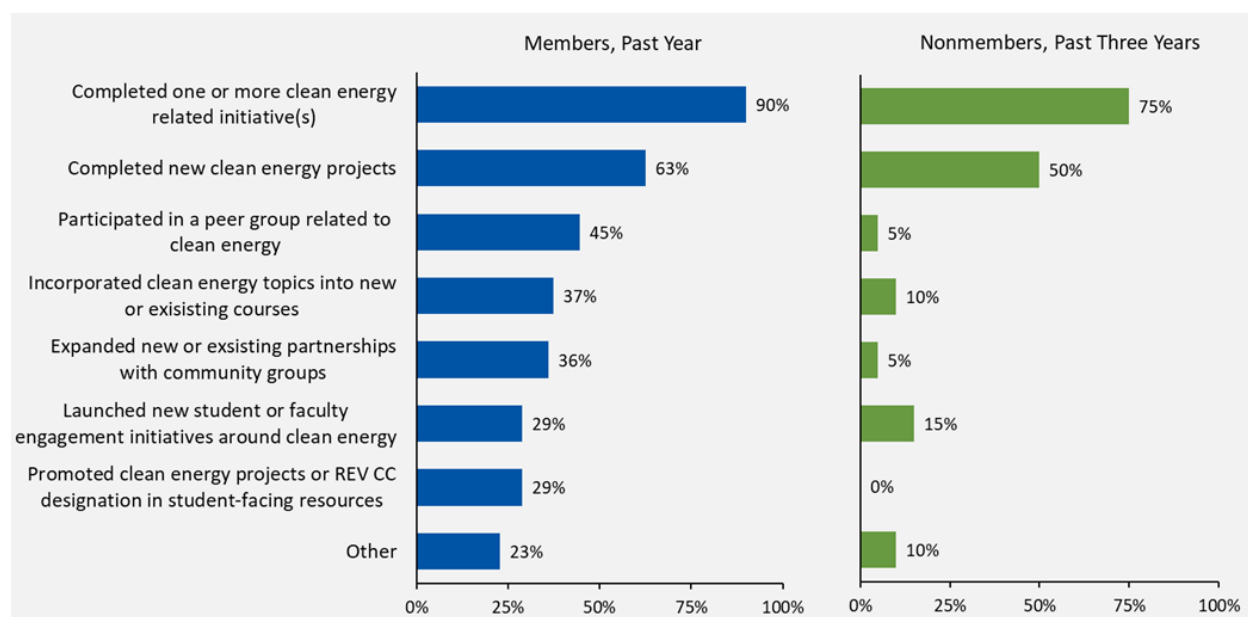
Source: 2019-2020 Member Survey question B6 “Did you (or someone from your institution) attend any of the following clean energy/sustainability events?” Multiple responses allowed (n=81). 2018-2019 Member Survey question “Did you attend any of the following clean energy/sustainability events?” Multiple responses allowed (n=83). 2019-2020 Nonmember Survey question D11 “Did you (or someone from your institution) attend any of the following clean energy/sustainability events?” Multiple responses allowed (n=20). The nonmember survey was not conducted in 2018-2019.

Note: Though the event list remained the same between both survey years (2018-2019 and 2019-2020), the majority of events were held virtually in 2020 due to the COVID-19 pandemic.

2.3.2 Campus Clean Energy Projects and Initiatives

As shown in Figure 9, despite the impacts of the COVID-19 pandemic, nearly all (90%, n=83) members accomplished at least one clean energy-related initiative during the 2019-2020 school year, while 75% of nonmembers reported doing the same over the past three years (n=20). Though the top accomplishment for both members and nonmembers was the same—completing new clean energy projects—the second-most common accomplishment differed, with members citing “participation in a peer group related to clean energy,” while nonmembers said they “launched new student or faculty engagement initiatives around clean energy.” Members and nonmembers also discussed various other clean energy initiatives, with renewable energy projects as the most common (three mentions). When analyzed by member level, the percentage of members who completed a clean energy project was significantly higher among Leaders (75%, n=20, $p<0.05$) and Achievers (71%, n=28, $p<0.10$) than Participants (49%, n=35). Additionally, Participant-level members were significantly more likely to report zero clean energy accomplishments in 2019-2020, with 23% (n=35, $p<0.01$) stating “none of the above.” Comparatively, zero Leaders or Achievers said “none of the above.”

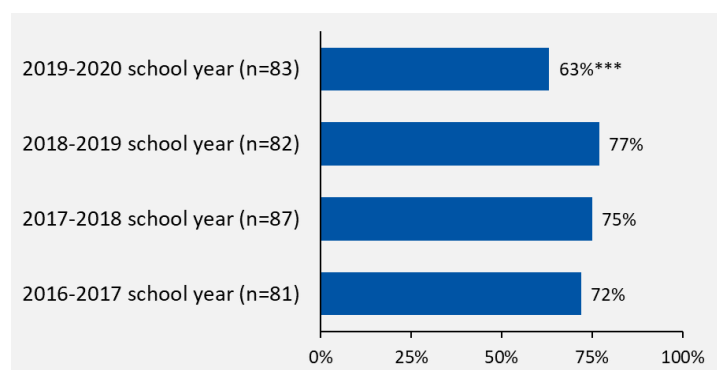
Figure 9. Member and Nonmember Clean Energy-Related Accomplishments



Source: 2019-2020 Member Survey Question B8 “In 2019, did your institution accomplish any of the following?” Multiple responses allowed (n=83). 2019-2020 Nonmember Survey Question D14 “In the past three years, did your campus accomplish any of the following?” Multiple responses allowed (n=20).

Over past reporting years (2016 through 2018), the percentage of members reporting new clean energy projects on campus remained consistent, as shown in Figure 10. This pattern changed during the 2019-2020 school year when 63% of members reported new clean energy projects, a significant decrease compared to the previous year (n=82, $p < 0.10$). As noted in the *COVID-19 Impacts* section, campuses reported several impacts of the COVID-19 pandemic on clean energy projects, which was likely a major contributing factor to this observed decrease. Specifically, campuses described impacts to campus priorities, funding, and staff reductions. Most notably, zero campuses said they sped up a timeline for an existing clean energy/energy efficiency project, even with campus’ modified operations potentially allowing easier access for contractors (i.e., partial or fully remote).

Figure 10. Members Reporting New Clean Energy Projects



Source: 2019-2020, 2018-2019, 2017-2018, 2016-2017 Member Survey question B8 “In 2019, did your institution accomplish any of the following?” (Completed new clean energy projects (i.e. energy efficiency, energy conservation, or renewable energy)). ***Denotes a statistically significant difference at $p < 0.01$

Interviews with facilities managers suggested that completing clean energy and sustainability projects improved building operations practices. For example, seven member respondents mentioned upgrades to energy-efficient equipment, and seven others were seeking new opportunities to improve energy efficiency or expand clean energy projects (n=40). Eleven of the 15 facilities manager respondents discussed positive impacts, including an enhanced ability to monitor energy data and finding ways to optimize energy use, increasing comfort for occupants, and a pursuit of turning to cleaner energy sources.

Conversely, four facilities managers cited maintenance and operations challenges associated with clean energy projects. Common barriers included minimal interest from maintenance staff to pursue projects, energy curtailment events conflicting with classes, extensive retraining, and equipment defects.

2.3.3 Influential Factors

The Market Evaluation Team collected information from campuses about what influenced (both directly and indirectly) their clean energy accomplishments. As discussed in the prior section, member campuses completed a variety of clean energy-focused accomplishments. Member respondents were most motivated by information and/or incentives from NYSERDA for five of six clean energy accomplishments (Table 7, highlighted cells), with “peer group/knowledge share related to clean energy” as the only accomplishment where information/incentives was not rated as the most-influential factor (35%, which is second-most influential compared to “information from a peer institution with 49% influence). However, given that the program specifically encourages and fosters these types of knowledge sharing sessions, it is reasonable to assume that some of this influence is due to program activities.

Aside from NYSERDA-related influencing factors, members were also influenced by information from consultants or energy service providers (second-most influential for three of six accomplishments), information/incentives from a utility, and information from peer institutions (most influential factor for “engage in clean energy knowledge-sharing with peers” and second-most influential factor for “launch new student or faculty engagement initiatives”). Information from peer institutions included voluntary data sharing/collaboration (10 mentions, n=23), sharing general best practices (five mentions, n=23), attending a conference or event (four mentions, n=23), and how to expand academic programs (one mention, n=23). Additionally, member campuses also noted the following sources as influential on their completion of clean energy projects/initiatives:

- City/community initiatives or regulations (8 mentions, n=19)
- Internally (i.e., staff, faculty, and students; 4 mentions, n=19)
- Third parties (i.e., consultation services and other agencies; 2 mentions, n=19)

Table 7. Influencing Factors to Complete Various Clean Energy Accomplishments

Influence factor	Clean Energy Accomplishments					
	Promoted a clean energy project or REV Campus Challenge designation in student-facing resources (n=23)	Completed new clean energy projects (n=52)	Launched new student or faculty engagement initiatives (n=22)	Established new or existing community partnerships (n=29)	Peer group/ knowledge share related to clean energy (n=37)	Developed new courses/ curricula (n=30)
Information/ incentives from NYSERDA	74%	63%	41%	38%	35%	30%
Information from a consultant or provider of clean energy services	22%	50%	23%	34%	35%	23%
Information/ incentives from a utility	22%	48%	14%	31%	24%	20%
Opportunity for recognition	52%	25%	32%	21%	19%	20%
Information from a peer institution	17%	13%	36%	28%	49%	27%
Training, workshop, webinar, or event	35%	10%	23%	21%	32%	30%
Other	13%	23%	18%	24%	35%	20%
None	9%	4%	18%	10%	8%	23%

Highlighted cells indicate the most influential factor for each clean energy project or initiative.

In order to substantiate causal influence between REV Campus Challenge activities and member clean energy initiatives, the Market Evaluation Team analyzed reported clean energy accomplishments for members who reported an increase in their campus' engagement/knowledge since joining the REV Campus Challenge compared to those who did not. Members who reported an increase in their understanding of clean energy opportunities on their campus since joining the program were more likely to complete a new clean energy project (68%, n=50) than members who did not report an increase in their understanding (53%, n=30; $p=0.19$). Additionally, members who reported an increase in their understanding completed a greater number of clean energy initiatives than members who did not report an increase (2.6 mean vs. 2.0 mean, $p=0.17$).

2.3.4 Indirect Impacts Estimation

The Market Evaluation Team used results from the nonmember survey to estimate the indirect impacts of NYSERDA programs on clean energy projects. This was the first year for which NYSERDA assessed indirect impacts for REV Campus Challenge. Market Evaluation Team and NYSERDA concurred that only nonmembers were eligible for indirect impacts, as all benefits associated with member clean energy projects are included in the direct impacts measurement. The Market Evaluation Team designed the evaluation to identify nonmembers who have adopted a climate action/energy master plan due to the influence of the REV Campus Challenge and who met the minimum requirements for a REV Campus Challenge membership level. The Market Evaluation Team then estimated impacts associated with clean energy projects implemented by these nonmembers. Full details of this methodology are included in *Appendix A. Indirect Impacts Estimation Methodology*.

The primary requirement for nonmember clean energy projects to count toward program indirect impacts was that the nonmember campus had a climate action plan or energy master plan. This requirement is one of the initial steps that the program encourages all members to take. However, none of the 20 surveyed nonmember campuses reported having a climate action plan or energy master plan. Therefore, the Market Evaluation Team did not find any program indirect impacts in this evaluation year because none of the nonmembers qualified. One nonmember did report creating a GHG inventory in 2010, but this was not included as a qualifier toward indirect impacts as the requirement was a climate action plan or energy master plan.

Though no non-participating campuses surveyed were influenced by the REV Campus Challenge, as defined by the qualifying requirements the Market Evaluation Team and NYSERDA agreed to, 10 reported completing a clean energy project within the past three years, with five of those completed in the

past year. Nine of these 10 projects included lighting upgrades, with five of them including HVAC upgrades as well. Those respondents did not answer the question about what influenced their decisions to complete these clean energy projects, as the survey asked these questions only if the respondent reported having a climate action or energy master plan.

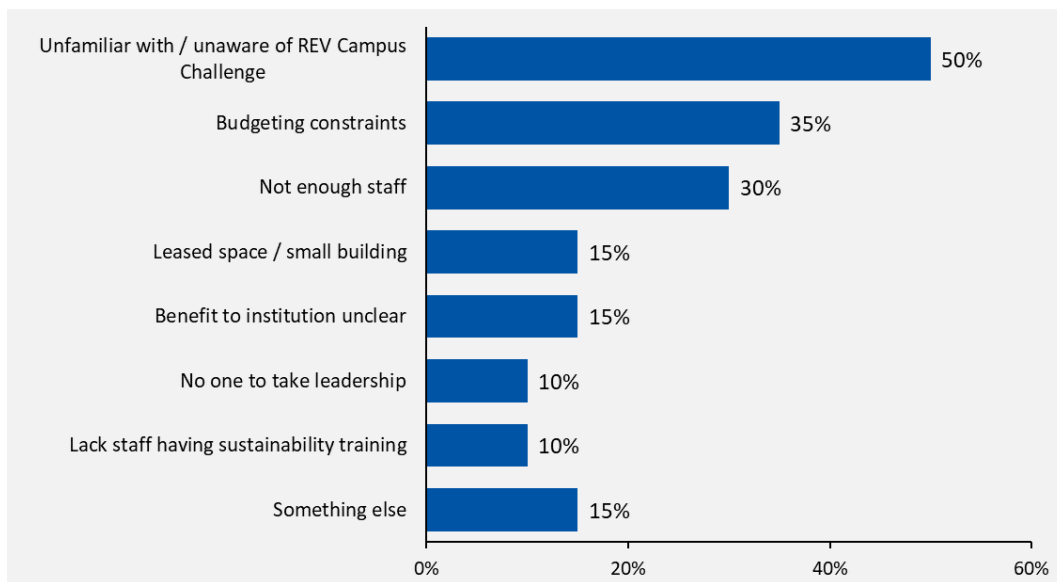
The Market Evaluation Team plans to reassess indirect impacts in the third year of this evaluation. Before then, the Market Evaluation Team will work with NYSERDA to determine how the indirect impact qualification criteria and methodology should be modified to appropriately capture clean energy accomplishments by nonmember campuses. Based on the responses from this year's evaluation, the Market Evaluation Team recommends removing the requirement that nonmember campuses have a climate action plan or energy master plan, as program activities can still influence clean energy project adoption without these plans. The Market Evaluation Team also recommends re-examining the full indirect impacts methodology in conjunction with the program theory to ensure they are aligned.

2.3.5 Nonmember Participation and Barriers

Ten nonmember respondents said they have heard of the REV Campus Challenge before (50%; n=20). These respondents said they first learned about the program from a NYSERDA email (40%), from a professional contact (40%), visiting the NYSERDA website (10%), or through another nonacademic program (10%). The three most common aspects of the program that nonmembers had heard of included the FlexTech program (40%; n=10), recognition for clean energy accomplishments (20%), and educational member workshops and events (20%).

Less than half of nonmember respondents (40%; n=20) said they were likely to become a member of the REV Campus Challenge. As shown in Figure 11, nonmember survey respondents said the most common barriers to their participation in REV Campus Challenge were lack of program awareness (50%, n=20), budget constraints (35%), and staffing (30% do not have enough staff, 10% lack appropriately trained staff, and 10% lack staff to take leadership). Lack of program awareness was the most common barrier for respondents who said they were likely to become a member of the REV Campus Challenge (88%; n=8), while nonmembers who said they were not likely to join were most commonly constrained by budgets (50%; n=12) or not having enough staff (42%).

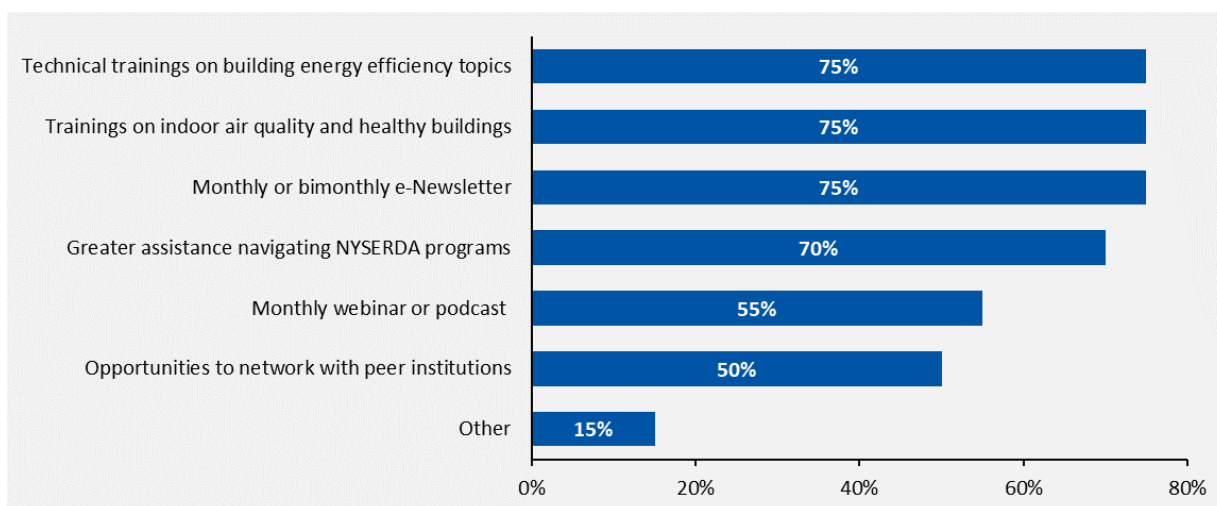
Figure 11. Nonmember Barriers to Joining REV Campus Challenge



Source: 2019-2020 Nonmember Survey question C8 “What are the top reasons why your campus has not joined the REV Campus Challenge?” Multiple responses accepted. (n=20)

To help further their clean energy goals, nonmembers were most interested in technical training on building energy efficiency topics (75%; n=20), training on indoor air quality (75%), an e-newsletter (75%), and greater assistance navigating NYSERDA programs (70%) (Figure 12).

Figure 12. Resources to Help Nonmembers Further Clean Energy Goals



Source: Nonmember survey Question C4 “The REV Campus Challenge is committed to providing members with resources that help further their clean energy goals. Which of the following would be valuable to your institution? Please select that apply.” (n=20)

2.4 Student and Community Engagement

The Market Evaluation Team administered online surveys with students and campus staff and conducted interviews (with campus staff) to better understand opportunities for college students to participate in campus clean energy and sustainability-related activities and the role these activities had on student enrollment decisions. This section discusses student awareness of and engagement with clean energy initiatives and community relations with respect to clean energy and sustainability initiatives. Table 8 summarizes key findings included in this section.

Table 8. Student and Community Engagement Key Findings

Evaluation Questions	Key Findings
How aware and engaged are students of/with campus clean energy and sustainability initiatives?	<ul style="list-style-type: none"> • 61% of students reported being familiar with clean energy and sustainability initiatives, with the highest levels of awareness for clean energy-related curriculum (48%) and student groups (44%). Likewise, these elements were the most-often cited clean energy initiatives that students participated in. • 23% of member campuses felt that student engagement with clean energy increased since they joined the REV Campus Challenge. • See <i>Student Engagement</i> section for more details.
What impact do campus clean energy and sustainability initiatives have on student enrollment decisions?	<ul style="list-style-type: none"> • While 76% of members felt that their campus' commitment to clean energy was important in their efforts to encourage students to enroll, 39% of students said it was important in their decision to enroll. • 36% of students felt that the availability of clean energy and sustainability courses was important on their decision to enroll. • See <i>Clean Energy Impact on Enrollment</i> section for more details.
Have NYS campuses integrated clean energy and sustainability into course curriculum? How broadly? In which disciplines? Does curriculum integrate campus energy reporting data?	<ul style="list-style-type: none"> • 37% of member and 10% of nonmember campuses reported integrating clean energy and sustainability topics into new or existing courses in the 2019-2020 school year. • 11 of 15 sustainability staff said that clean energy and sustainability topics are incorporated into their curriculum, typically in environmental studies, geography, engineering, and economics courses. Of these 11, six specifically mentioned that energy usage data is incorporated into the curriculum. • See <i>Student Engagement</i> section for more details.
What level of collaboration exists between campuses and communities on clean energy and sustainability initiatives?	<ul style="list-style-type: none"> • 37% of members said they established or expanded existing partnerships with communities; comparatively, only one nonmember campus said the same. • Members who established or expanded community partnerships noted many factors that had an influence on their decision, but information from NYSERDA was the most-often cited influencing factor. • 33% of member respondents said their clean energy initiatives improved relations with the local community, a statistically significant increase of 22 percentage points from when they joined the REV Campus Challenge (11%). • See <i>Campus-Community Collaboration</i> section for more details.

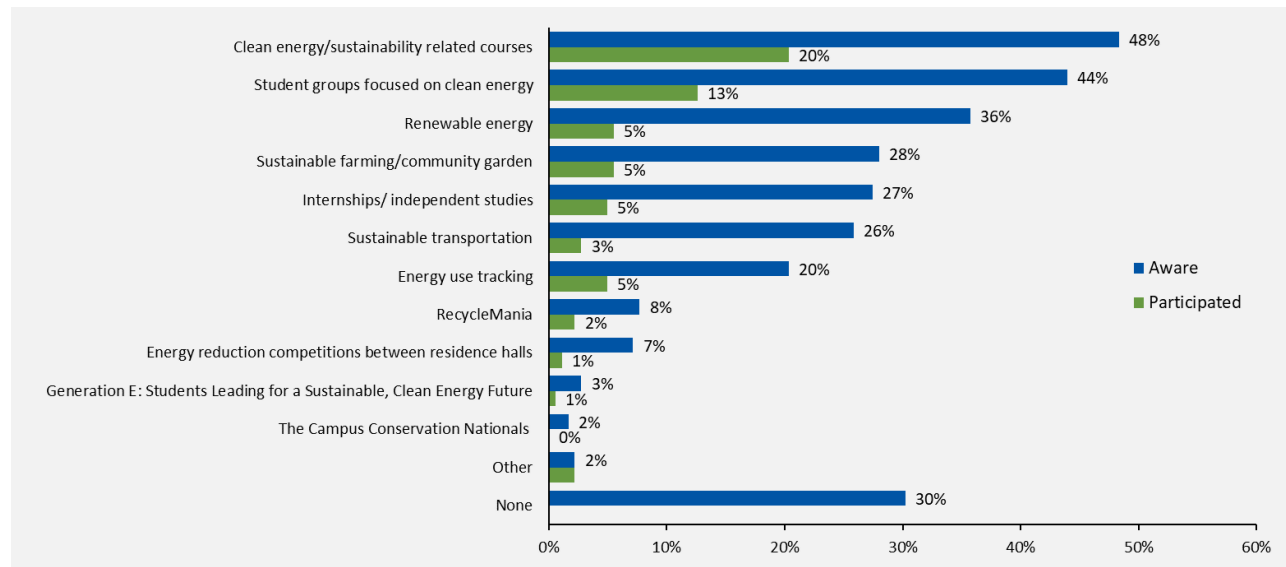
2.4.1 Student Engagement

To assess engagement, the Market Evaluation Team asked current students at member and nonmember campuses about their awareness of and participation in clean energy initiatives on campus. Overall, 61% of students (n=169) and 62% of member campus students (n=117) said they were familiar with campus

clean energy and sustainability initiatives in general. When asked about specific initiatives they were aware of, students were most likely to say courses related to clean energy (48% for all students; 51% for students at member campuses, n=122) and student groups/councils focus on clean energy and initiatives (44% for all students; 48% for students at member campuses, n=122) on their campus, as shown in Figure 13.

The Market Evaluation Team also asked students if they had ever been involved with or participated in any of the clean energy or sustainability initiatives that they were aware of on their campus. These results matched their awareness levels; the most common responses were to have taken a clean energy/sustainability-related course (20% for all students; 22% for students at member campuses) or participate in student groups/councils focus on clean energy and initiatives (13% for all students; 11% for students at member campuses, n=122). Students said they were most motivated to participate in these clean energy/sustainability initiatives by their general interest in learning about sustainability (47%; n=51) and a desire to take better care of the planet (41%).

Figure 13. Student Awareness of and Engagement with Campus Clean Energy Initiatives



Source: 2019-2020 Student Survey questions B2 “What kinds of clean energy initiatives or projects are you aware of on your campus?” B3 “Since you’ve been a student, have you ever been involved with or participated in any of these clean energy or sustainability initiatives on your campus?” Multiple responses allowed (n=133).

In the past year, campus stakeholders reported incorporating clean energy topics into new or existing courses, with 37% of members (n=83) and 10% of nonmembers (n=20) stating that this occurred. Eleven of 15 sustainability staff said that some of their curriculum incorporated clean energy and sustainability topics, typically in environmental studies, geography, engineering, and economics courses. Of these 11,

six specifically mentioned that energy usage data are incorporated into the curriculum. Additionally, 29% of member survey respondents said student engagement levels increased since they joined the REV Campus Challenge.

To help further drive student engagement with clean energy projects, admissions staff said they used incentives (through competitions) and marketing tactics (e.g., e-newsletters and on-campus bulletins). When asked how NYSERDA could help campuses motivate student engagement, sustainability staff mentioned the following:

- Support student challenges, especially those that are less technical/not exclusively for engineering students (mentioned by three respondents)
- Recognizing students for clean energy and sustainability achievements
- More resources and workshops that focus on student engagement versus technical topics
- Funding/grants for student interns or to finance student ideas
- On-campus signs that show energy savings

2.4.2 Clean Energy Impact on Enrollment

The Market Evaluation Team asked member and nonmember respondents several questions regarding clean energy projects and prospective students. Most members said the implementation of clean energy projects for recruiting prospective students was important (76%; n=84), which is significantly higher than the percentage of nonmembers saying the same (25%; n=20, $p < 0.01$). Among the three member types, the implementation of clean energy projects for recruiting prospective students was most important for Leaders (90%; n=20).

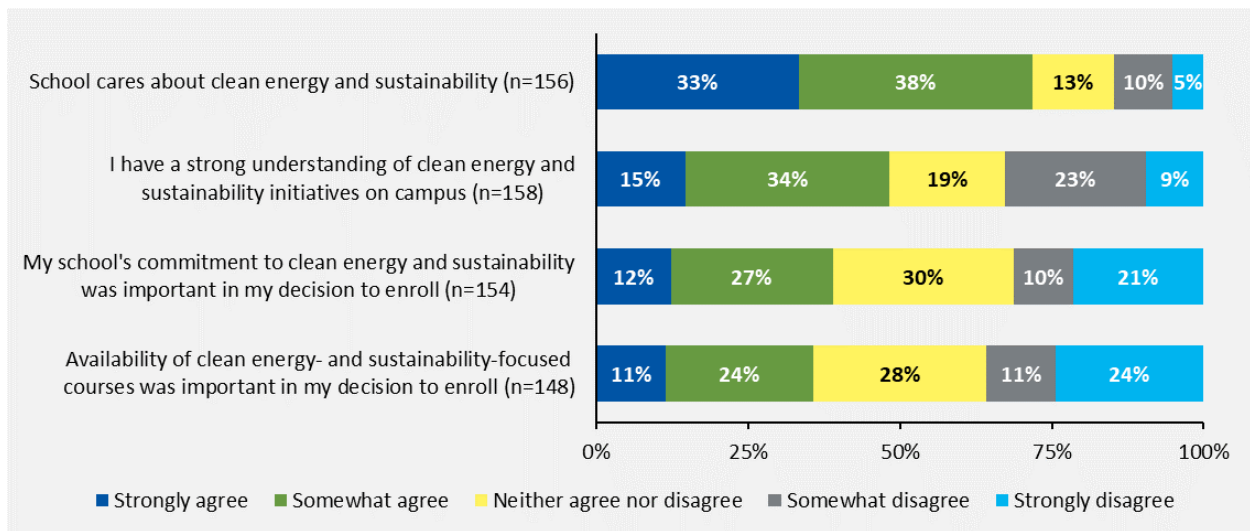
Campuses reported promoting clean energy projects and REV Campus Challenge designations in student-facing resources during the 2019-2020 school year. Overall, 29% of members (n=83) promoted a clean energy project or REV Campus Challenge designation in student-facing resources in 2019-2020, but none of the nonmember respondents did so within the past three years (n=20). The Market Evaluation Team also asked admissions staff about promoting clean energy projects in marketing materials for prospective students. Two of six interviewed admissions staff said they included sustainability and clean energy projects in their marketing materials for prospective students. The other four said clean energy or sustainability comes up only during the recruiting process if a prospective student mentions it specifically. Five of the six interviewed admissions staff said they often rely on current students to help recruit prospective students, with three stating that their campus has a student ambassador program.

When discussing what clean energy and sustainability topics appeal most to prospective students, three admissions office staff mentioned interest in waste, specifically related to food and water consumption. Admissions staff said NYSERDA could help promote energy and sustainability initiatives to prospective students by providing customizable marketing materials and information on what other colleges have done to promote their sustainability initiatives and by offering partnerships with NYSERDA at recruiting events.

2.4.2.1 Student Attitudes Toward Enrollment Decisions

As shown in Figure 14, 36% of students said the availability of courses that focus on clean energy and sustainability was important to their decision to attend their college, and 39% said their school’s commitment to clean energy and sustainability was important to their decision to attend. Of the students who disagreed that their school’s commitment to sustainability was important in their decision to enroll (31%, n=154), 60% said it was not something they considered when choosing a college (n=80). Students said they were more focused on education and course offerings, and many did not learn about on-campus clean energy initiatives until after attending. Nonetheless, Figure 14 also shows that 73% of students believe their campuses care about clean energy and sustainability.

Figure 14. Student Attitudes Toward Clean Energy Initiatives on Campus

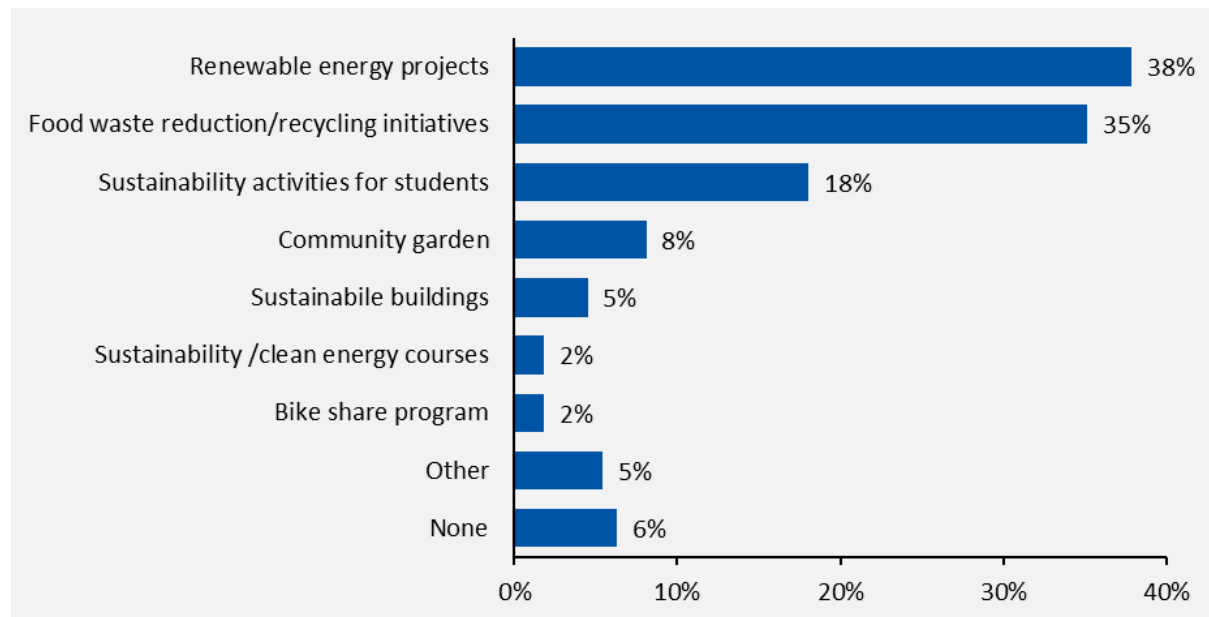


Source: 2019-2020 Student Survey question C1 “For each of the following items, please rate how much you agree or disagree with the statement.”

As shown in Figure 15, in the future, students reported that they would like to see more renewable energy projects (38%), food waste/recycling initiatives (35%), and sustainability activities for students (18%). Student survey respondents offered these specific comments related to desired campus initiatives:

- “The usage of solar panels, **student engagement with energy**, providing green jobs for local community to handle upkeep of solar panels, on campus green houses or gardens etc.”
- “I would like to see more efforts to **encourage students to recycle and have more recycling bins in dorms**. Most students use them incorrectly or don't know what is recyclable.”
- “More solar energy on campus, **energy reduction competitions among residence halls**, use of our greenhouse to produce fresh food for the whole campus community, ethical and proper recycling, reduction in food waste, and a return to reusable dishware.”

Figure 15. Desired Campus Initiatives Among Students



Source: 2019-2020 Student Survey question C3 “What type of clean energy or sustainability projects or initiatives would you like to see implemented on your campus in the future?” (n=111)

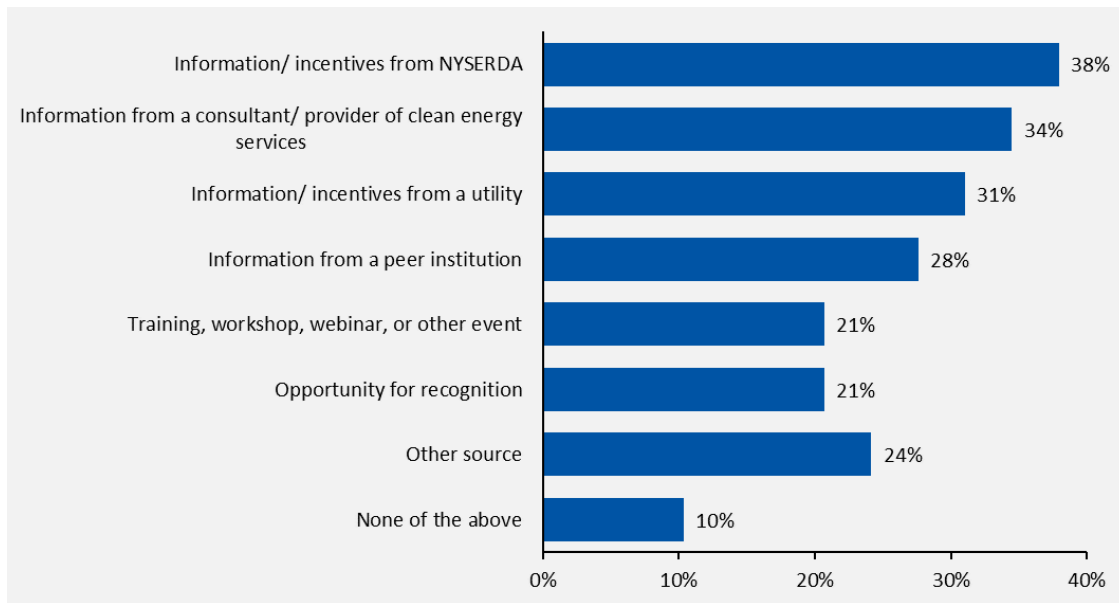
2.4.3 Campus-Community Collaboration

The Market Evaluation Team asked member and nonmember campuses about their partnerships with neighboring communities during the 2019-2020 school year, such as joint ownership of projects focused on clean energy or sustainability. Eleven of 15 sustainability staff from member campuses reported collaborating with the off-campus community through clean energy and sustainability initiatives. These initiatives included participating in the Climate Smart Communities program; being part of town climate, energy, or sustainability committees; and providing guidance on community projects, including those pertaining to renewable energy, electric vehicles, watersheds, food waste, and outdoor lighting.

Over one-third of members (37%, n=82) established new partnerships or expanded existing partnerships with community organizations in the 2019-2020 school year, especially Leaders (50%; n=20). In comparison, only one nonmember respondent reported establishing new partnerships or expanding existing ones (n=20).

As noted in the 2.3.3 *Influential Factors* section, information from NYSERDA and participation in the REV Campus Challenge helped foster campus community partnerships. When asked what factors contributed to the decision to establish or expand community partnerships, 38% of member respondents who established community partnerships (n=29) cited information and incentives from NYSERDA as the most common factor and 34% said information from a consultant or provider of clean energy services (Figure 16).

Figure 16. Contributing Factors to Establish Community Partnerships



Source: 2019-2020 Member Survey question B10 “You mentioned your institution completed the accomplishments listed below in 2019. Which, if any, of the following factors contributed to your institution’s decision to take these actions?” (n=29)

The Market Evaluation Team asked member respondents to rate the level of contribution their clean energy initiatives have had to improving relations with the surrounding community before and after joining the REV Campus Challenge (on a scale of 1 to 5 where 5 is a *very high level* and 1 is a *very low level*). Thirty-three percent of member respondents (n=85) rated their level of contribution as a 4 or 5 during the 2019-2020 school year, a statistically significant increase of 22 percentage points from when they joined the REV Campus Challenge (11%, $p < 0.01$).

2.5 Support and Recognition

The Market Evaluation Team surveyed members and nonmembers and interviewed facilities and program staff to identify what types of knowledge are exchanged among peer institutions, the level of support campuses receive for advancing sustainability goals, and the role of public recognition for clean energy initiatives. Table 9 lists a summary of key findings included in this section.

Table 9. Support and Recognition Key Findings

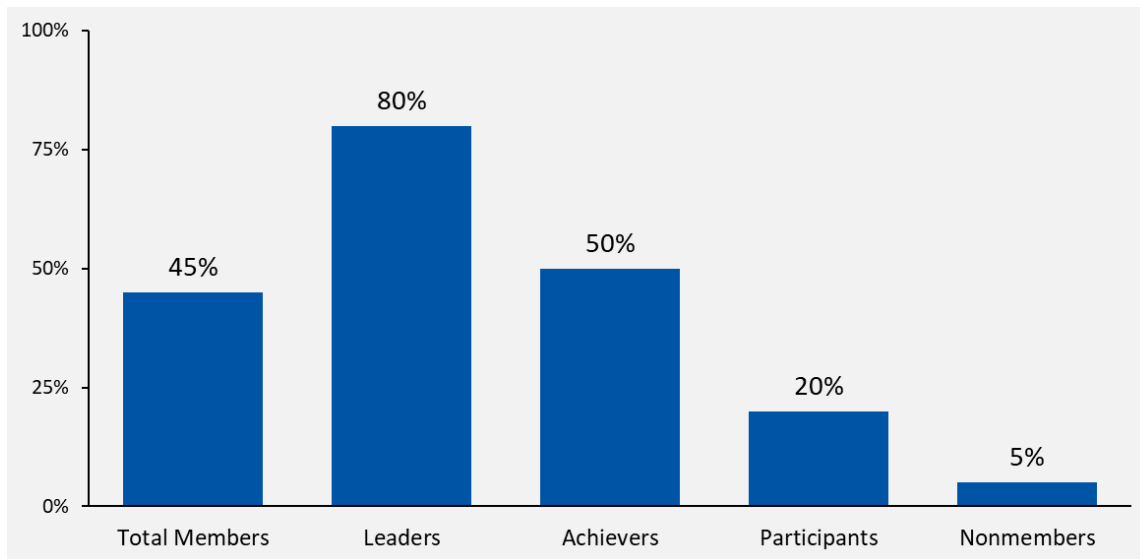
Evaluation Questions	Key Findings
<p>What types of knowledge exchange, or collaboration, related to clean energy and sustainability initiatives takes place among NYS campuses? How frequently? Among whom?</p>	<ul style="list-style-type: none"> • 45% of members reported participating in a peer group or shared clean energy-related knowledge in the past year; comparatively, only one nonmember reported doing the same in the past three years. The level of sharing was highest among Leaders (80%), then Achievers (50%), and finally Participants (20%). • See <i>Learning Exchange</i> section for more details.
<p>What level of support does management have for clean energy projects and initiatives?</p>	<ul style="list-style-type: none"> • 67% of members felt that campus management supported clean energy and projects and initiatives, a 23-percentage point increase when compared to before they joined the REV Campus Challenge. The change in support from before joining the REV Campus Challenge to after was statistically significant for Leaders (+26) and Achievers (+33) but not for Participants (+15). • See <i>Support from Campus Administration</i> section for more details.
<p>What support have NYS campuses received in pursuit of more advanced clean energy goals? What actions have NYS campuses taken as a result of support received in pursuit of more advanced clean energy goals?</p>	<ul style="list-style-type: none"> • 46% of member campuses had at least one full-time employee (FTE) dedicated to clean energy and sustainability, while 23% had less than one FTE. By comparison, 10% of nonmember campuses had less than one FTE dedicated to clean energy and sustainability, while the remainder had none. • Members who reported an increase in their administration’s support for clean energy initiatives since they joined the program did not report a statistically significantly higher number of clean energy projects than members who did not report an increase in support. • Members felt that the program provided significant support toward their clean energy goals, with 55% of members (n=85) rating the REV Campus Challenge resources a 4 or 5 on a 1 to 5 rating scale (with 5 representing the highest). • See <i>Support Staff for Clean Energy and Sustainability</i> and <i>Support from Campus Administration</i> section for more details.
<p>How many NYS campuses are receiving recognition? Through which channels (program or non-program)?</p>	<ul style="list-style-type: none"> • 27% of member campuses reported receiving recognition for clean energy achievements in the 2019-2020 school year, with Leader (45%) and private (40%) campuses most likely to receive recognition. Seven members specifically mentioned NYSERDA as the source of recognition. Other sources of recognition included the U.S. EPA (5 respondents), Environment America (two respondents), and other local sources (5 respondents) • See <i>Recognition for Clean Energy Achievements</i> section for more details.

2.5.1 Learning Exchange

Knowledge sharing among REV Campus Challenge members was common during the 2019-2020 school year and was highly correlated to membership level. Nearly half of surveyed members (45%, n=83) said they had participated in a peer group or shared knowledge related to clean energy during the 2019-2020 school year (Figure 17). By membership level, peer group and knowledge-sharing was significantly more

common among Leaders (80%, n=20) than among Achievers (50%, n=28, p<0.05), and significantly more common among Achievers than Participants (20%, n=35, p<0.05). Peer group and knowledge-sharing was rarely reported by surveyed nonmembers, only one of whom had participated in a peer group or shared knowledge related to clean energy *in the past three years* (5%, n=20).

Figure 17. Participation in Peer Group or Knowledge Sharing



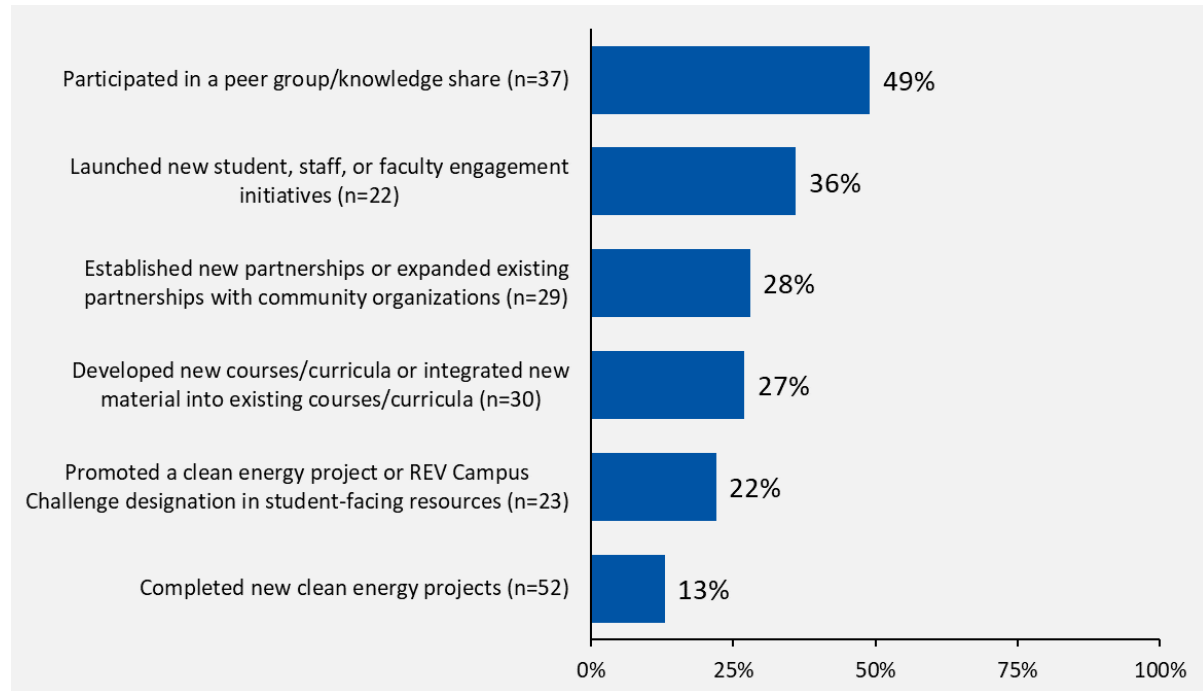
Source: 2019-2020 Member Survey questions B8 “In 2019, did your institution accomplish any of the following? (Select all that apply): Participated in a peer group/knowledge share related to clean energy” (n=83) and 2019-2020 Nonmember Survey question D14 “In the past three years, did your institution accomplish any of the following? (Select all that apply): Participated in a peer group/knowledge share related to clean energy” (n=20)

The Market Evaluation Team also asked member survey respondents if information from peer institutions influenced the clean energy projects and initiatives they undertook in the 2019-2020 school year (Figure 18). Peer institutions had the most influence on participation in peer groups and knowledge-sharing (49%, n=37). Information from peers also influenced many members to launch new student, staff, or faculty engagement initiatives (36%, n=22), establish or expand partnerships with community organizations (28%, n=29), and develop courses and curricula (27%, n=30).

Among the clean energy initiatives included in the member survey, peer information had the lowest level of influence on the completion of clean energy projects (13%, n=52). This finding is somewhat supported by interviews with campus sustainability staff, who noted that the influence was not directly related to a project. Though 12 of 15 (80%) interviewees reported collaborating with other New York State campuses on clean energy and sustainability initiatives, all said the collaborations mostly focused on general knowledge-sharing of best practices rather than partnering on specific projects.

Five of 15 sustainability staff took part in New York Coalition of Sustainability in Higher Education (NYCSHE) activities, and others mentioned more localized/specialized organizations such as the New York Six Liberal Arts Consortium and Associated Colleges of St. Lawrence Valley. Some cited more informal collaborations, such as communications among the network of SUNY schools or collaborations with larger, nearby private universities.

Figure 18. Peer Influence on Clean Energy Projects and Initiatives



Source: 2019-2020 Member Survey question B10 “You mentioned your institution completed the accomplishments listed below in 2019. Which, if any, of the following factors contributed to your institution’s decision to take these actions? (Select all that apply): Information from a peer institution” Sample sizes in answer option text are for total members.

2.5.2 Support for Clean Energy Achievements

Most members across membership levels said support from the REV Campus Challenge furthered their campuses’ sustainability goals, and most received a high level of support from their administrations. Campuses that dedicate staff for clean energy projects and initiatives was highly correlated to membership level, with most Leaders having dedicated staff while most Participants did not.

2.5.2.1 Support from NYSERDA

Most member survey respondents gave a high rating for the resources and programs provided by the REV Campus Challenge for their contributions to further their institution's goals during the 2019-2020 school

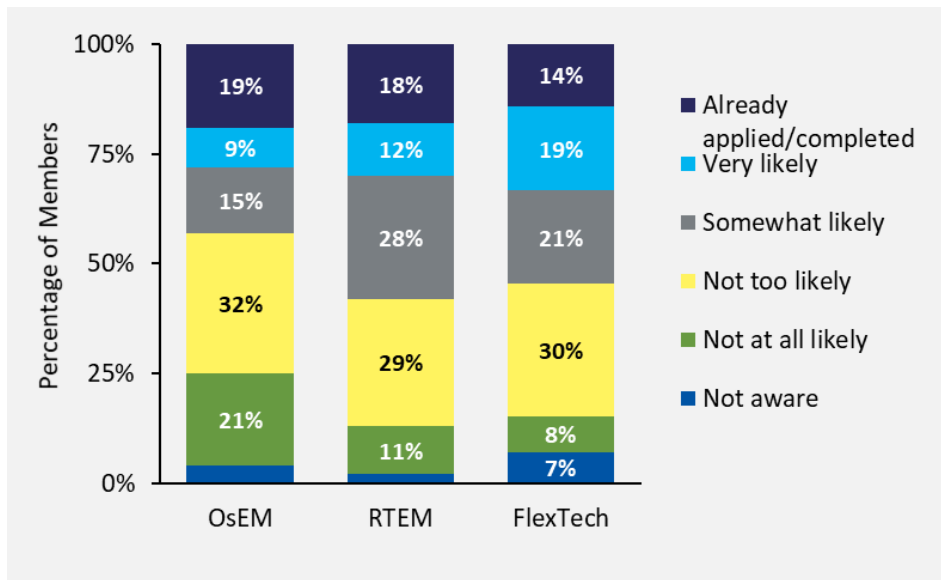
year. Specifically, 55% of members (n=85) rated the REV Campus Challenge resources a 4 or 5 on a 1 to 5 rating scale (with 5 representing the highest) for its contribution in 2019-2020. When asked about the major benefits of being part of the REV Campus Challenge, the top feedback from the 19 interviewed sustainability staff and facilities managers included greater awareness of available resources and opportunities (seven respondents), funding and grants (five respondents), ability to connect with other campuses in the state (four respondents), and access to training and workshops (three respondents).

A substantial portion of members reported interest in relevant NYSERDA offerings. For FlexTech, 14% (n=84) reported they had already applied or participated, while an additional 40% were *very likely* or *somewhat likely* to participate in the next 18 months. This was consistent with member survey results for the 2018-2019 school year (17% already applied, 41% *very likely* or *somewhat likely*, n=82).⁶ Members who said that their understanding of clean energy opportunities on their campus increased since joining the REV Campus Challenge (n=51), were significantly more likely to state that they would be *very likely* to participate in FlexTech in the next 18 months (25% vs. 9% for members whose understanding did not increase, n=33; $p<0.10$). As shown in Figure 19, this level of interest was similar for the RTEM program but somewhat lower for the OsEM program.

Facility and sustainability staff identified several other sources of support available to them: utility incentives (e.g., Consolidated Edison, National Grid), other NYSERDA offerings, SUNY support, New York Power Authority, State University Construction Fund of Albany, grants from other organizations, and third-party consultancies.

⁶ The 2018-2019 member survey question had the same response scale as the 2019-2020 member survey question but specifically asked about their planned participation in “FlexTech or Roadmaps in the next 12 months.”

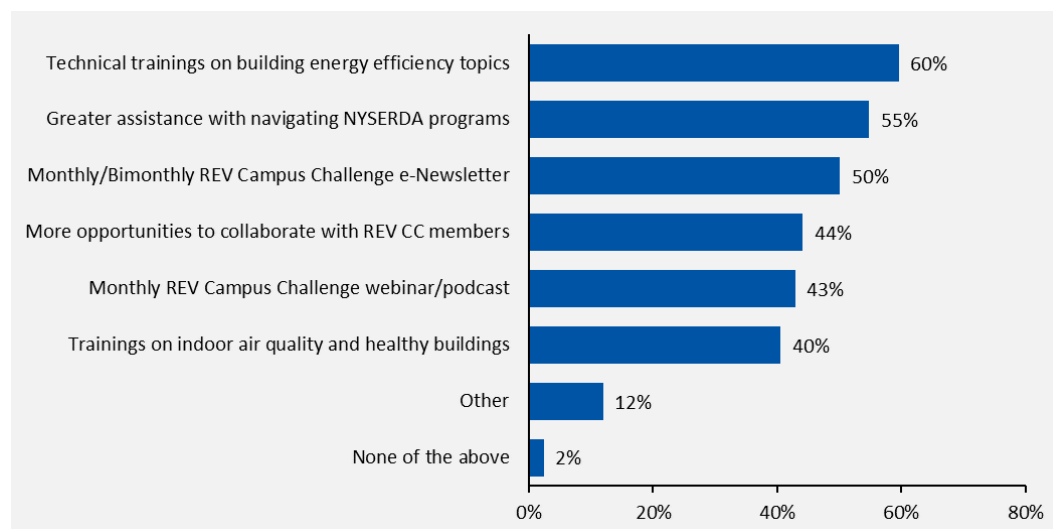
Figure 19. Member Likelihood to Engage in NYSERDA Programs in the Next 12 Months



Source: 2019-2020 Member Survey question E2 “In the next 12 months, how likely is your campus to engage in the following clean energy activities?” (n=82).

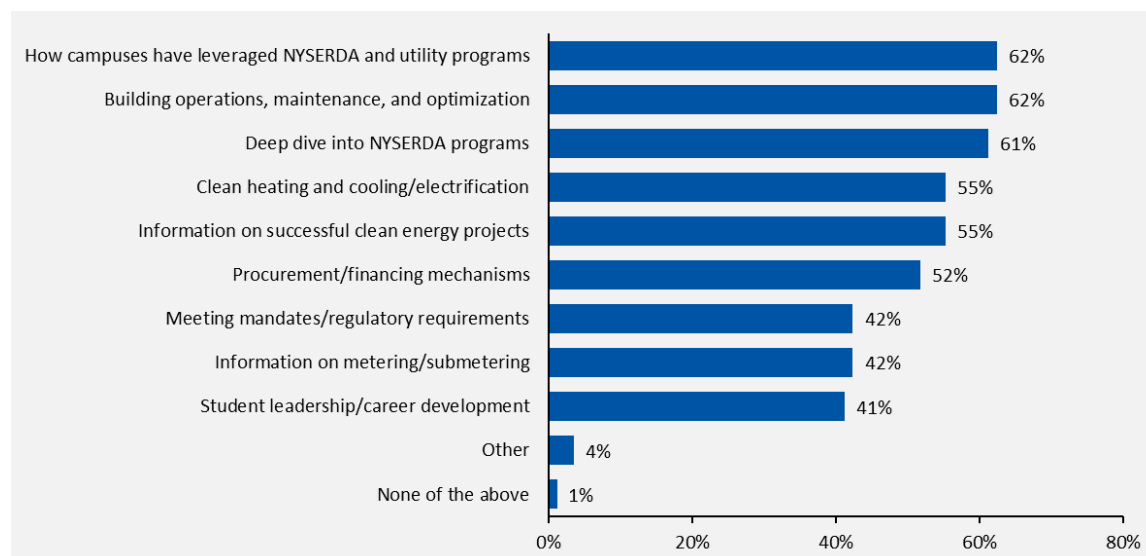
In regard to additional resources that would help members further their clean energy goals, over half of respondents said technical training on building energy efficiency topics would be helpful (60%; Figure 20). Member respondents were interested specially in building operations, maintenance, and optimization (62%), and how other campuses have utilized NYSERDA and utility programs (62%), as shown in Figure 21,

Figure 20. Additional Resources to Help Clean Energy Goals



Source: Member Survey Question E4 “The REV Campus Challenge is committed to providing members with resources that help further their clean energy goals. Which of the following would be valuable to your institution? Please select all that apply” (n=84).

Figure 21. REV Campus Challenge Event Topics of Interest



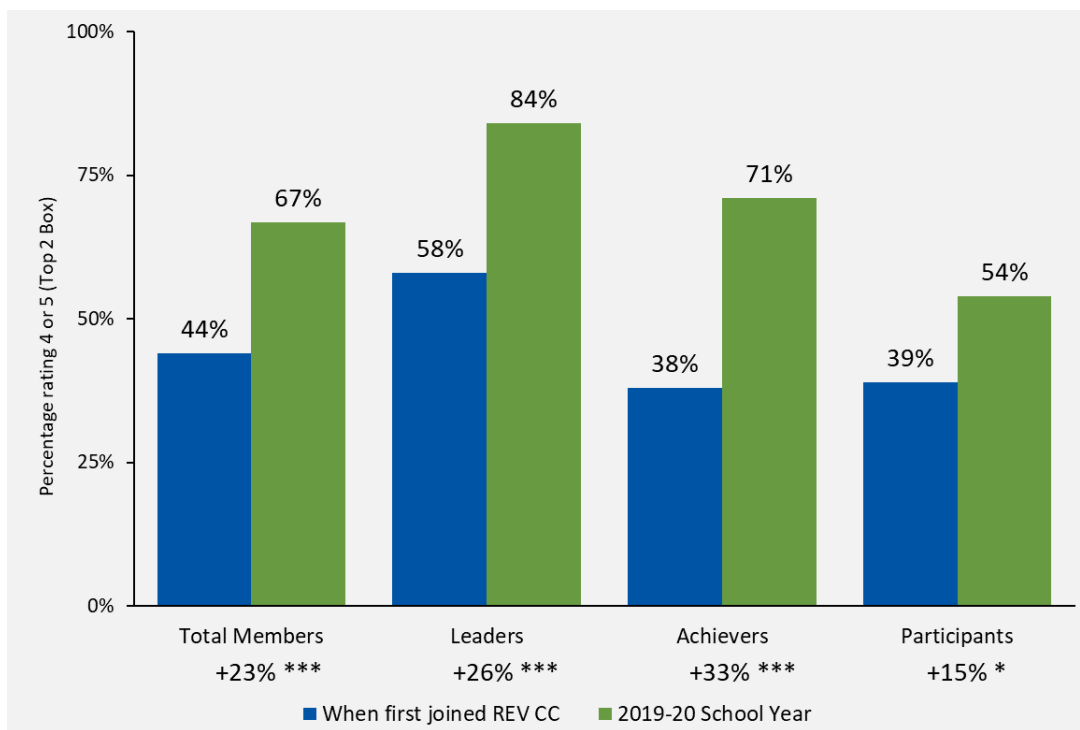
Source: Member Survey Question E5 “If REV Campus Challenge was to provide trainings, webinars/podcasts, or newsletters, what topics would be of interest to your institution?” (n=85).

2.5.2.2 Support from Campus Administration

Buy-in and support of management for clean energy projects and initiatives is common among members, especially among campuses that have already made significant progress related to clean energy and sustainability. Most member respondents gave high ratings for the level of support they received from

their administrations for implementing clean energy projects and initiatives during the 2019-2020 school year. Overall, 67% (n=84) gave high ratings (4 or 5 on a 1-to-5 rating scale, with 5 representing the highest level) for administration support, ranging from 84% of Leaders (n=19) to 54% of Participants (n=37; Figure 22). The increase in ratings from when members joined to the 2019-2020 school year was highly significant overall (+23%, n=71), as well as for Leaders (+26%, n=19) and Achievers (+33%, n=24, p<0.01), but was less significant for Participants (+15%, n=28, p<0.10). Leaders also rated the support they were receiving from their administrations when they joined the program significantly higher (58%, n=19) than did Achievers (38%, n=24, p<0.05) or Participants (39%, n=28, p<0.05).

Figure 22. Level of Administration Support for Clean Energy Projects and Initiatives



Source: 2019-2020 Member Survey questions D2 “For each of the following items, please rate the level/amount of each in 2019: For each of the following items, please rate the level/amount of each in 2019. - The level of support from the administration for implementing clean energy projects and initiatives.” (n=84) and D3 “For each of the following items, please rate the level/amount of each when you first joined the REV Campus Challenge: For each of the following items, please rate the level/amount of each in 2019. - The level of support from the administration for implementing clean energy projects and initiatives.” (n=71). * Denotes a statistically significant difference between ratings at p<0.10 or better. *** Denotes a statistically significant difference between ratings at p<0.01 or better.

As discussed in the *Influential Factors* section, members who reported an increase in support from administration for clean energy projects since joining the program (n=44, 61%) were not more likely to report an increase in implementation of clean energy projects than members who did not report an

increase in support (n=38, 66%), potentially due to the impact of the COVID-19 pandemic on clean energy projects.

Across all members, 11% gave low ratings for administration support during the 2019-2020 school year (1 or 2 on a 1-to 5-scale, with 5 representing the highest level), with similar results by membership levels. A significantly higher proportion of members at the Participant level reported low ratings for when they first joined the REV Campus Challenge (46%, n=28, p<0.01) compared to Achievers and Leaders (12%, n=43).

Nonmember campuses reported moderate but notable support from administration for implementing clean energy projects and initiatives. When the Market Evaluation Team asked respondents for their level of agreement with the statement, “There is a desire among campus leadership to make a commitment to clean energy and sustainability,” 42% *strongly agreed* and 53% *somewhat agreed* (n=19).

Interviews with sustainability and facilities staff provided an overview of the process typically required to secure management buy-in and support for clean energy and sustainability projects. Although project ideas can originate with students, sustainability staff, or facilities teams, the personnel ultimately responsible for project approval depends on a mix of project size, complexity, and subject matter.

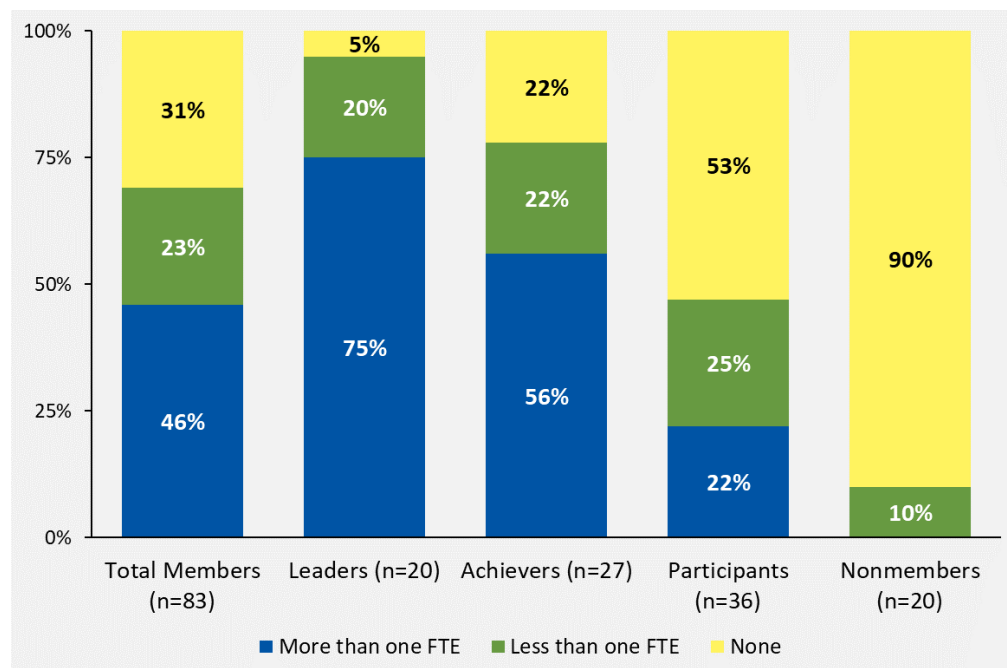
- Two campuses reported that sustainability or facilities staff may be able to approve small projects independently (e.g., changing waste bins, modifications to less than 1,000 square feet).
- All 27 campuses that provided responses indicated that larger projects require elevation to senior administration and, often, the board of trustees. Senior administration mentioned included the school president and president’s cabinet, the vice president of finance or chief financial officer (CFO), other vice presidents of administration, the director of facilities, or the broader SUNY administration and its Office for Capital Facilities. Leaders in facilities management are more often involved in the final decision-making than are sustainability staff.

When asked further questions about the critical information needed to propel a clean energy or sustainability project forward, respondents said members of the sustainability, energy management, and facilities staff gather relevant project details, including proposed scope and timeline, rationale, economic and noneconomic benefits (e.g., energy and cost savings, carbon reductions, increased equipment reliability), costs, and key financial indicators (i.e., return-on-investment and payback period). When asked what information is most critical to securing project approval, the two most common responses were the economics of the project, including costs and benefits (17 out of 27 campuses) and alignment with a campus’s priorities and needs, such as those outlined in a campus’s Master Plan or Capital Plan (six of 27 campuses).

2.5.2.3 Support Staff for Clean Energy and Sustainability

Most members surveyed have dedicated staff for clean energy and sustainability projects. Overall, 46% (n=83) had at least one full-time equivalent (FTE), 23% had less than one FTE, and 31% did not have dedicated staff (Figure 23). The presence and level of staffing varied by membership levels, with most Leaders having at least one dedicated FTE (75%, n=20), and most Participants not having any dedicated staff (53%, n=36). During the 2019-2020 school year, significantly more members had at least one FTE (46%) than during the 2018-2019 school year (31%, n=96, $p < 0.05$); the percentage with no dedicated staff in 2019-2020 (31%) was statistically equivalent to the previous year (34%, n=96). Nonmembers surveyed were significantly less likely than any of the member groups to have dedicated clean energy and sustainability staff. Comparatively, 10% of nonmembers (n=20, $p < 0.05$) had any staff, and the two nonmembers that did have staff had less than one FTE.

Figure 23. Dedicated Staff for Clean Energy and Sustainability Initiatives



Source: 2019-2020 Member Survey question B7 “Does your institution have a dedicated staff member assigned to manage clean energy and sustainability initiatives?” (n=83) and 2019-2020 Nonmember Survey question D12 (same wording; n=20)

2.5.3 Recognition for Clean Energy Achievements

This section explores trends in the type and frequency of public recognition that New York campuses receive for clean energy and sustainability initiatives. It also explores the extent to which this public recognition can drive further clean energy and sustainability initiatives.

2.5.3.1 Trends in Public Recognition

Both NYSERDA and outside organizations are publicly recognizing NYS campuses for clean energy and sustainability initiatives, especially REV Campus Challenge members. Among surveyed member campuses (n=85), 27% received recognition from any organization related to their clean energy initiatives, with seven members specifically mentioning NYSERDA as the source of recognition. Of these seven, four specifically mentioned their REV Campus Challenge member status badge as recognition. Other sources of recognition included the U.S. Environmental Protection Agency (EPA) (five respondents), Environment America (two respondents), and other local sources (five respondents). Campuses with higher member engagement, namely Leaders (45%) and Achievers (29%), were more likely to receive recognition than participants (16%). There was a statistically significant difference ($p < 0.05$) only between the Leader and Participant groups.

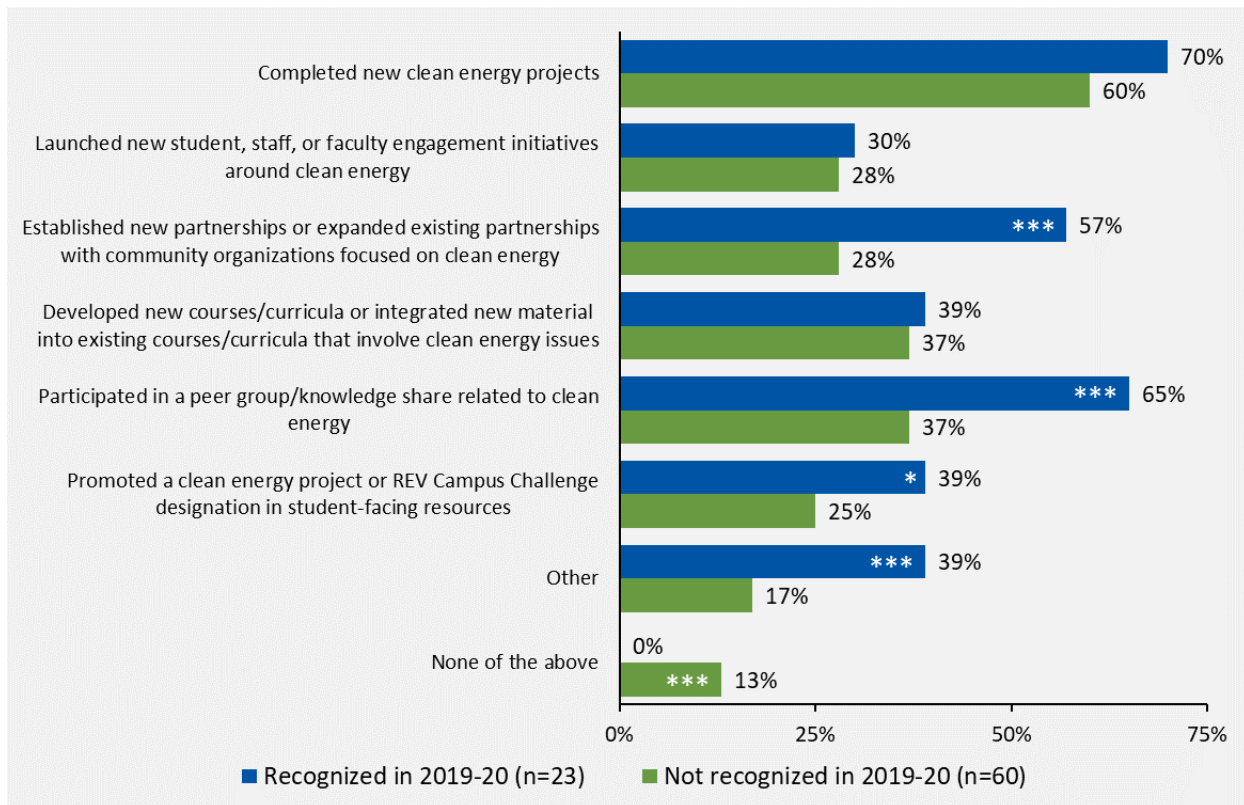
Recognition was also more common among private institutions, with 40% of private institutions (n=42) being recognized versus 14% of public institutions (n=43, $p < 0.05$). In comparison, none of the surveyed nonmember campuses reported receiving recognition during the 2019-2020 school year (n=20).

As shown in Figure 24, campuses who received recognition in the 2019-2020 school year were more involved in knowledge sharing and assisting other campuses than those who did not receive recognition. Specifically, members who received recognition were significantly more likely to have established community partnerships (57%), participated in peer group knowledge-sharing (65%), and promoted their clean energy efforts to students (39%). Additionally, all members who received recognition reported accomplishing at least one clean energy project or initiative.

All 12 sustainability staff who provided responses during interviews reported receiving recognition from NYSERDA and/or outside organizations. Although every Campus Challenge member receives a badge, most staff referred to having received NYSERDA's Participant, Achiever, or Leader status as recognition they received from NYSERDA. Of the most common sources of outside recognition, seven campuses

were recognized by AASHE STARS, five by The Princeton Review Guide to Green Colleges, and three by the Sierra Club Cool Schools List.

Figure 24. 2019-2020 Accomplishments and Clean Energy Recognition



Source: 2019-2020 Member Survey questions B8 “In 2019, did your institution accomplish any of the following? (Select all that apply.)” by B14 “Was your institution recognized in 2019 for its clean energy efforts?” (n=83)

* Denotes a statistically significant difference between groups at $p < 0.10$ or better. Denotes a statistically significant difference between ratings at $p < 0.01$ or better.

2.5.3.2 Influence of Public Recognition

As noted in the 2.3.3 *Influential Factors* section, the influence of recognition on clean energy and sustainability initiatives appears limited, with only a small portion of interviewed and surveyed campuses indicating that recognition influenced clean energy and sustainability activities. Two interviewed sustainability staff explained that, though it is not the driver of initiatives, recognition does help justify these activities, and a third explained that recognition keeps morale high and proves that others recognize and appreciate these activities. Campuses more often reported being motivated internally, with statements like “It’s the right thing to do” and “The goal is just to get the job done.”

Surveyed member campuses also provided feedback on the influence of different factors on their decisions to take certain clean energy and sustainability actions. Members reported that the opportunity to earn recognition was most influential on the decision to take actions pertaining to student- and staff-engagement, as shown in Table 10.

Table 10. Influence of Opportunity to Earn Recognition

Members	Percentage
Promoted a clean energy project or REV Campus Challenge designation in student-facing resources (i.e., prospective student information, online campus forum)	52% (n=23)
Launched new student, staff, or faculty engagement initiatives around clean energy	32% (n=22)
Completed new clean energy projects (i.e., energy efficiency, energy conservation, or renewable energy)	25% (n=52)
Established new partnerships or expanded existing partnerships with community organizations focused on clean energy	21% (n=29)
Developed new courses/curricula or integrated new material into existing courses/curricula that involve clean energy issues	20% (n=30)
Participated in a peer group/knowledge share related to clean energy	19% (n=37)

Source: 2019-2020 Member Survey question B10, “You mentioned your institution completed the accomplishments listed below in 2019. Which, if any, of the following factors contributed to your institution’s decision to take these actions? – The opportunity for recognition as a result of taking action”.

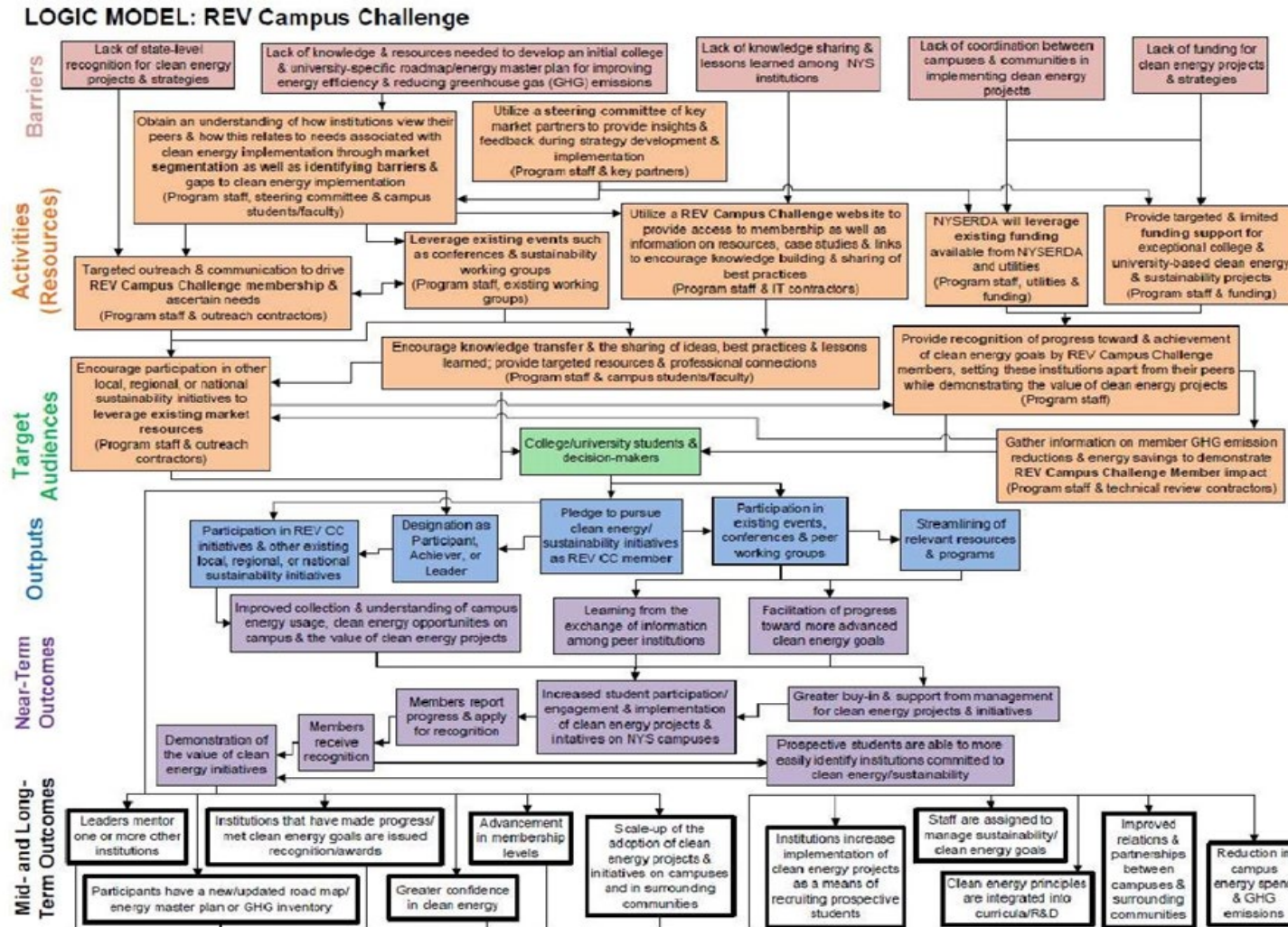
The opportunity to receive recognition had a smaller influence on the decision to take on other clean energy and sustainability actions, such as establishing new or expanded partnerships with community organizations; developing new courses, curriculum, or educational material; and participating in a peer group or knowledge share.

2.6 Logic Model Review

The REV Campus Challenge logic model illustrates NYSERDA’s theory of how providing support to campuses to achieve their clean energy goals will address market barriers and lead to advancements in clean energy project implementation, thus lowering energy spend and GHG emissions. The REV Campus Challenge is intended to engage all campuses within New York State, including those that are not eligible to participate in other NYSERDA programs. The logic model is presented in Figure 25.

The Market Evaluation Team interviews with program stakeholders confirmed that program staff are aligned on the program theory and activities. However, the program’s logic model has several aspects that are not clear or are outdated, which creates the need for logic model updates or supplemental documentation to be aligned with the current program structure.

Figure 25. REV Campus Challenge Logic Model



2.6.1 Barriers

The barriers listed in the program’s logic model are all valid barriers that the Market Evaluation Team confirmed with the program team and through market evaluation activities. Through discussions with NYSERDA, the Market Evaluation Team confirmed that the barriers apply to all New York State campuses, not just members, which is aligned with NYSERDA’s overall program vision. However, the Market Evaluation Team noted one barrier that is not in the logic model and another that could be revised. The missing barrier is the lack of campus management support/prioritization for clean energy projects and activities. Greater management buy-in-/support for clean energy projects is one of the near-term outcomes in the logic model and one of the indicators tracked and reported to DPS (I18). Members also said support from campus administration significantly increased (by 23 percentage points) after joining the REV Campus Challenge (see *Support from Campus Administration* section). Thus, including a lack of management support/prioritization for clean energy projects and activities as a market barrier is appropriate.

The Market Evaluation Team recommends revising one barrier—lack of state-level recognition for clean energy projects and strategies. Several members said additional recognition opportunities beyond what is currently offered would be beneficial. Though they referenced state-level recognition, they also thought help with how to communicate the benefits of projects on a more local level, such as on-campus signage and inclusion in campus marketing materials, would be valuable. This feedback warrants expanding the barrier to “lack of recognition for clean energy projects and strategies” and removing the “state-level” qualifier.

2.6.2 Activities and Outputs

Table 11 shows each REV Campus Challenge activity included in the logic model, the associated outputs, and the status of each. The Market Evaluation Team confirmed that all but one of the program activities listed in the logic model are either ongoing or completed, with the exception being “Funding Support and Competitions.” As noted by the program team during the stakeholder interview, the REV Campus Challenge closed its own funding vehicles and competitions at the end of 2019, focusing instead on FlexTech as the main way to support campuses with technical and financial resources.

Table 11. Status of REV Campus Challenge Activities and Outputs

Activities	Outputs	Status
Market Segmentation and Identifying Barriers: Obtain an understanding of how institutions view their peers and how this relates to needs associated with clean energy implementation through market segmentation as well as identifying barriers and gaps to clean energy implementation	<ul style="list-style-type: none"> • Participation in REV Campus Challenge initiatives and other existing local, regional, or national sustainability initiatives. • Designation as Participant, Achiever, or Leader. • Pledge to pursue clean energy/ sustainability initiatives as REV Campus Challenge member. • Participation in existing events, conferences, and peer working groups. • Streamlining of relevant resources and programs. 	Fully implemented; ongoing
Steering Committee: A steering committee of key market partners to provide insights and feedback during strategy development and implementation was created to launch the REV Campus Challenge in 2015. This committee continues to be a valuable resource.		Closed; no longer active
REV Campus Challenge Membership: Targeted outreach and communication to drive REV Campus Challenge membership and ascertain needs.		Fully implemented; ongoing
REV Campus Challenge Website: Use a REV Campus Challenge website to provide access to membership as well as information on resources, case studies, and links to encourage knowledge building and sharing of best practices		Fully implemented; ongoing
Leverage Existing Events: NYSERDA will leverage existing events such as conferences and sustainability working groups.		Fully implemented; ongoing
Leverage Existing Funding: NYSERDA will leverage existing funding available from NYSERDA and utilities.		Fully implemented; ongoing
Funding Support and Competitions: Provide targeted and limited funding support for exceptional college and university based clean energy and sustainability projects.		Fully implemented; technical assistance is ongoing
Knowledge Transfer: Encourage knowledge transfer and sharing of ideas, best practices, and lessons learned; provide targeted resources and professional connections.		Fully implemented; ongoing
Leverage Existing Market Resources: Encourage participation in other local, regional, or national sustainability initiatives to leverage existing market resources		Fully implemented; ongoing
Recognition: Provide recognition of progress toward and achievement of clean energy goals by REV Campus Challenge members, setting those institutions apart from their peers while demonstrating the value of clean energy projects. Recognition will take the form of website updates, press releases, and other college and university identified valuable practices.		Implemented as “Member Spotlights” and membership level designation; ongoing
REV Campus Challenge Member Impact: Gather information on member GHG emissions reductions and energy savings to demonstrate REV Campus Challenge member impact.	Fully implemented; ongoing	

Though program activities in the logic model are clear, the Market Evaluation Team had difficulty discerning the linkages between each activity and the various outputs. In the current logic model, all activities funnel through the target audience to the outputs, making it difficult to associate various program activities with expected outputs. Additionally, there are several instances where multiple activities are linked to one another rather than directly to an output. Including explanation behind each linkage would help to clarify the rationale behind the linkage and demonstrate how the activity leads to the associated output.

Across the five listed outputs, the Market Evaluation Team confirmed that all were supported by relevant research findings. REV Campus Challenge activities have resulted in members' pledging to pursue clean energy initiatives; participation in existing events and working groups; streamlining resources and programs; designation as Leader, Achiever, or participant; and participation in REV Campus Challenge initiatives.

2.6.3 Outcomes

Overall, NYSERDA's outcomes for the REV Campus Challenge are aligned with the program indicators reported annually to DPS. Results from this year's evaluation are included in the *Market Progress Indicators* section. Through discussions with program stakeholders, NYSERDA confirmed that the outcomes in the logic model are exclusive to members.

The elements that compose NYSERDA's three testable hypotheses (see the Executive Summary for more information) are all included in the logic model. However, the causal relationships in the testable hypotheses are not clearly articulated in the logic model, as some require moving through multiple steps before finding the relationship. For example, hypothesis #1 states "if NYSERDA recognizes progress toward and achievement of NYS institutions' clean energy goals, then the adoption of clean energy projects and strategies on NYS campuses will increase." The Market Evaluation Team was able to identify the elements that compose this testable hypothesis (one Activity and one Mid- to Long-Term Outcome) but the intermediate steps, such as Outputs and Near-Term Outcomes, that lead to this Mid- to Long-Term Outcome are not clear. Similar to the Market Evaluation Team recommendation in the *Activities and Outputs* section, the Market Evaluation Team recommends articulating the rationale behind each linkage to help better explain the program logic. Beyond the testable hypotheses, the Market Evaluation Team was not able to identify other causal relationships due to the complex logic model design and lack of clear linkages between logic model elements.

2.6.4 Target Audience

The Market Evaluation Team did not fully agree with the inclusion of "students" in the target audiences for the logic model. Students are not listed in the target audience for the target market characterization, and the program activities all focus on engaging with campus administration/staff. Though students are an important aspect for successful implementation of some activities, they are not the key audience that program staff need to engage to encourage campuses to join and participate in the REV Campus Challenge.

3 Other Findings

The Market Evaluation Team collected several other data points that were not included in the main body of the report, including an inventory of all New York State campuses and student survey demographics.

3.1 Campus Inventory

The Market Evaluation Team compiled data on institutional characteristics and program eligibility and participation status of 259 higher education institutions in New York State using the New York State Education Department’s list of higher education institutions and a list of higher education institutions provided by NYSERDA.⁷ The Market Evaluation Team also used data from the respective websites of higher education institutions and multiple additional publicly available datasets.

As listed in Table 12, the data cover several categories: basic institution data, detailed institution data, institution representative contact information, and NYSERDA program membership and eligibility. This section summarizes the statistics, characteristics, and completeness of the data in each category.

⁷ New York State Education Department Office of Higher Education (2020). For the purpose of maintaining consistency with past DPS reporting, The Market Evaluation Team used the campus population value of 250 for calculating market progress indicators that are divided by the entire (member and nonmember) campus population. As discussed between the Market Evaluation Team and NYSERDA, after the Year 3 (2022) major update, the Market Evaluation Team will re-evaluate the population of campuses eligible to be members.

Table 12. Summary of Data Collected

Category	Variables
Basic Institution Data	<ul style="list-style-type: none"> • Name • Address • Website • County • Ownership type • Degree program type • Region • Liberal arts status
Detailed Institution Data	<ul style="list-style-type: none"> • In-state undergraduate tuition • Out-of-state undergraduate tuition • Undergraduate student population • Graduate/other student population • Endowment • Student environmental groups
Institution Representative Contact Information	<ul style="list-style-type: none"> • Contact name • Contact title • Contact department • Contact email • Contact phone
REV Campus Challenge Membership and Eligibility	<ul style="list-style-type: none"> • REV Campus Challenge membership status • Programs participated in • REV Campus Challenge membership level • REV Campus Challenge membership start date • Electric system benefits charge status

3.1.1 Data Summary

This section provides a summary of all data points contained in the campus inventory.

3.1.1.1 Basic Institution Data

The Market Evaluation Team collected basic information about higher education institutions in New York State; 51% of these institutions were REV Campus Challenge members as of July 2020 (Table 13).

Table 13. Member vs. Nonmember Institutions

Member	Count	% Total
Yes	132	51%
No	127	49%
Total	259	100%

Source: NYSERDA, July 2020

The Market Evaluation Team examined the New York State campus population by ownership type (Table 14) and degree program type (Table 15). When analyzed by ownership type, 57% of these institutions are

independent and privately owned, 32% are public State University of New York (SUNY) (24%) or City University of New York (CUNY) (8%) campuses, and 11% are proprietary schools.⁸ Public institutions had the highest REV Campus Challenge membership rate at 81%, compared to 43% of independent institutions and 7% of proprietary schools.

Table 14. Institutions by Ownership Type

Primary Ownership Type	Members	Percentage Members	Nonmembers	Percentage Nonmembers	Total	Percentage Total
Independent (privately owned)	63	48%	85	67%	148	57%
SUNY	48	36%	13	10%	61	24%
CUNY	19	14%	3	2%	22	8%
Proprietary (privately owned)	2	2%	26	20%	28	11%
Total	132	100%	127	100%	259	100%

Source: New York State Education Department Office of Higher Education, 2020. Percentages do not add to 100% due to rounding.

As shown in Table 15 (analyzing by degree program type), nearly half (48%) of New York State institutions are four-year colleges. Among members, this percentage is slightly higher, at 53% compared to 43% for nonmembers. A greater proportion of members (20%) than nonmembers (9%) are community colleges, whereas graduate programs and two-year colleges (are predominantly nonmembers (29 of 34 institutions and 29 of 31 institutions, respectively).

Table 15. Institutions by Degree Program Type

Secondary Ownership Type	Members	Percentage Members	Nonmembers	Percentage Nonmembers	Total	Percentage Total
4-Year College	70	53%	54	43%	124	48%
Community College	26	20%	11	9%	37	14%
Graduate Programs Only	5	4%	29	23%	34	13%
2-Year College	2	2%	29	23%	31	12%
University College	16	12%	1	1%	17	7%
Ag and Tech College	6	5%	1	1%	7	3%
University Center	4	3%	0	0%	4	2%
Specialized College	2	2%	1	1%	3	1%
Graduate Center	1	1%	1	1%	2	1%
Total	132	100%	127	100%	259	100%

Source: New York State Education Department Office of Higher Education, 2020

⁸ Proprietary schools are schools that are privately owned and operated as a for-profit business.

Table 16 analyzes campuses (members and nonmembers) by New York State Regents region. Among member and nonmember campuses, the New York City region is the most common location, accounting for 39% of all campuses in New York State. The concentration of nonmembers is greater in this region than members, likely driven by the high number of proprietary and small independent campuses (which tend to be nonmembers) in the New York City region.

Table 16. Campus Region

Regents Region	Members	Percentage Members	Nonmembers	Percentage Nonmembers	Total	Percentage Total
New York City	41	31%	59	46%	100	39%
Hudson Valley	15	11%	18	14%	33	13%
Capital District	12	9%	11	9%	23	9%
Western New York	12	9%	9	7%	21	8%
Long Island	10	8%	9	7%	19	7%
Finger Lakes	9	7%	8	6%	17	7%
Central New York	11	8%	3	2%	14	5%
Mohawk Valley	9	7%	4	3%	13	5%
Southern Tier	6	5%	4	3%	10	4%
Northern	7	5%	2	2%	9	3%
Total	132	100%	127	100%	259	100%

Source: New York State Education Department Office of Higher Education, 2020

Of all institutions in New York State, 18% are identified as liberal arts institutions (Table 17).⁹ Twenty-three percent of member campuses are identified as liberal arts institutions compared to 13% of nonmember campuses.

Table 17. Liberal Arts Status Frequencies

Liberal Arts?	Members	Percentage Members	Nonmembers	Percentage Nonmembers	Total	Percentage Total
No	101	77%	107	84%	208	80%
Yes	30	23%	16	13%	46	18%
Unknown	1	1%	4	3%	5	2%
Total	132	100%	127	100%	259	100%

Source: various sources.

⁹ Because there is not a strict definition of liberal arts, the Market Evaluation Team collected this information from various sources, including: CollegeData.com, 2020; Niche.com, Inc., 2020; Wikipedia, 2020; U.S. News, 2020; and assorted campus websites.

Of all institutions in New York State, 29% had at least one student environmental group on campus (Table 18). Members are more likely to have student environmental groups (44%) than nonmembers (13%).

Table 18. Student Environmental Group Frequencies

Environmental Group?	Members	Percentage Members	Nonmembers	Percentage Nonmembers	Total	Percentage Total
No	74	56%	111	87%	185	71%
Yes	58	44%	16	13%	74	29%
Total	132	100%	127	100%	259	100%

3.1.1.2 Detailed Institution Data

The Market Evaluation Team collected more detailed information about higher education institutions in New York State (Table 19). This includes information about tuition, student population size, endowment, the number of environmental majors, and the number of environmental groups on campus. Among the public institutions, in-state undergraduate annual tuition (median \$6,076) tended to be approximately half as much as out-of-state tuition (median \$11,590). Among the variables collected, it was most challenging to find publicly available statistics on the size of institutions' endowments (75% missing).

Table 19. Campus Financial and Population Summary Statistics: All Institutions

Variable	Mean	Median	Standard Deviation	Percentage Missing ^a
In-state undergraduate annual tuition	\$6,970	\$6,076	\$3,447	11%
Out-of-state undergraduate annual tuition	\$13,720	\$11,590	\$6,642	13%
Private school undergraduate annual tuition	\$24,497	\$21,696	\$17,700	29%
Undergraduate student population	5,813	2,590	8,528	19%
Graduate/other student population	1,534	489	2,616	N/A
Endowment	\$1,153 M	\$181 M	\$2,728 M	75%

Source: Sources: The Chronicle of Higher Education, 2019; CollegeData.com, 2020; assorted institution websites.

^a "% Missing" for "Graduate/other student population" listed as N/A because institutions with apparently missing data may, in fact, have no graduate students. The "% Missing" for "Endowment" is high due to the lack of available data.

The Market Evaluation Team calculated these statistics for REV Campus Challenge members and nonmembers, as shown in Table 20. Both member and nonmember institutions tended to have approximately comparable tuition costs, particularly for in-state undergraduates. Member institutions tended to have larger student populations and have larger endowments. Consistent with the member institutions' decisions to participate in the REV Campus Challenge, these institutions also tended to have a larger number of campus environmental groups than did nonmember institutions.

Table 20. Campus Financial and Population Summary Statistics by Member Type

Variable	Members				Nonmembers			
	Mean	Median	Standard Dev.	% Missing	Mean	Median	Standard Dev.	% Missing
In-state undergraduate tuition	\$6,964	\$6,890	\$2,250	10%	\$6,995	\$5,238	\$6,613	13%
Out-of-state undergraduate tuition	\$14,027	\$14,216	\$5,026	13%	\$12,451	\$10,028	\$11,316	13%
Private school undergraduate tuition	\$6,964	\$6,890	\$2,250	10%	\$6,995	\$5,238	\$6,613	13%
Undergraduate student population	8,166	4,242	10,116	8%	2,650	1,293	3,996	29%
Graduate/other student population	2,072	831	3,126	N/A	880	342	1,616	N/A
Endowment	\$1,234 M	\$198 M	\$2,757 M	63%	\$905 M	\$85 M	\$2,709 M	87%

3.1.1.3 REV Campus Challenge Membership and System Benefits Charge (SBC) Status

The Market Evaluation Team aggregated data about the electric SBC status of institutions in New York State to assess the percentage of institutions eligible to participate in NYSERDA programs, such as FlexTech (Table 21). Overall, 72% of member campuses pay the full electric SBC, making them eligible to receive incentives and participate in NYSERDA offerings. The dataset provided by NYSERDA had missing SBC status for 101 campuses. For these campuses, the Market Evaluation Team used information about each campus' electric utility to estimate their SBC status. However, because of the mixed SBC status for many campuses in New York City (i.e., some campuses have full, partial, and none within the same utility's territory), the Market Evaluation Team left these as unknown.

Table 21. Electric System Benefits Charge Status

Status	Members	Percentage Members	Nonmembers	Percentage Nonmembers	Total	Percentage Total
Full	95	72%	64	50%	159	61%
Partial	2	2%	1	1%	3	1%
None	34	26%	15	12%	49	19%
Unknown	1	1%	47	37%	48	19%
Total	132	100%	127	100%	259	100%

Source: NYSERDA, 2020. "NYSERDA REV Campus Challenge tracking database."

Table 22 shows that the REV Campus Challenge membership has increased each year, with the highest growth from 2016 to 2017 and 2018 to 2019. In 2018, 72 member institutions participated in all NYSERDA programs, higher than any other year, followed by 65 in 2019 (Table 22). Over this period,

the program with the highest participation was Roadmaps Technical Assistance at 41 members, followed by REV Campus Challenge Energy to lead 2016 at 31 members, and then FlexTech at 30 members.

Table 22. NYSERDA Program Participation by Year

Year	Total Members	Members Participating in Programs	Yearly Participation Percentage
2016	62	39	63%
2017	94 (+32)	31	33%
2018	104 (+10)	72	69%
2019	127 (+23)	65	51%
2020*	132 (+5)	23	17%

Source: NYSERDA, 2020. “NYSERDA REV Campus Challenge tracking database.”

Note: 2020 data are incomplete and likely influenced by the COVID-19 pandemic, which halted some campus’ plans for clean energy projects.

3.1.2 Sources

The Market Evaluation Team used the following sources for the campus inventory.

- CollegeData.com. Accessed September 21, 2020. “Explore Colleges.” <https://www.collegedata.com/>
- New York State Education Department of Education Office of Higher Education (OHE). Accessed September 21, 2020. “College and University Campuses in New York State Directory.” <http://eservices.nysed.gov/collegedirectory/index.htm>
- Niche.com, Inc. Accessed October 7, 2020. “Find Your Niche.” <https://www.niche.com/>
- NYSERDA. 2020. “NYSERDA REV Campus Challenge tracking database.”
- U.S. News. Accessed October 7, 2020. “U.S. News Best Colleges.” <https://www.usnews.com/best-colleges>
- The Chronicle of Higher Education. Last modified February 4, 2019. “College and University Endowments, 2007-2018.” https://www.chronicle.com/article/college-and-university-endowments-2007-18/?cid=gen_login_refresh&cid=gen_sign_in
- Wikipedia. Accessed October 7, 2020. “List of colleges and universities in New York (state).” [https://en.wikipedia.org/wiki/List_of_colleges_and_universities_in_New_York_\(state\)](https://en.wikipedia.org/wiki/List_of_colleges_and_universities_in_New_York_(state))

3.2 Student Survey Demographics

To gain a better understanding of the student population surveyed, the Market Evaluation Team asked a series of demographic questions; these results are shown in Table 23.

Table 23. Student Demographics

Question	Percentage of Students
D1. What type of housing do you live in? (n=157)	
University owned	60%
Non-university owned	35%
Prefer not to say	5%
D2. Approximately how far do you live from campus? (n=55; only asked for non-university owned housing)	
Closer than 2 miles	20%
3 to 10 miles	46%
Greater than 10 miles	34%
D3. What year of college are you currently in? (n=158)	
Freshman	34%
Sophomore	24%
Junior	17%
Senior	21%
Graduate	3%
Prefer not to say	1%

Source: 2019-2020 Nonmember Survey questions D1-D3

4 Methodology

This section describes the methodology for each data collection activity.

4.1 Member and Nonmember Surveys

The Market Evaluation Team fielded surveys with representatives from New York State colleges and universities that have enrolled in REV Campus Challenge (the member survey) and representatives from campuses not enrolled in the program (the nonmember survey). Since members and nonmembers are mutually exclusive groups, the population covered by these two surveys comprised all institutions of higher education (campuses) in the state.

4.1.1 Member Survey

NYSERDA has fielded a survey among member campuses every year since the REV Campus Challenge began, though not all survey questions have been the same every year. For the 2019-2020 school year survey, the Market Evaluation Team solicited members to take an online survey through email invitations, sending three emails per contact. After these initial emails, the NYSERDA program team conducted additional outreach to nonresponders, encouraging members to complete the survey. Of 132 members enrolled in REV Campus Challenge for the 2019-2020 school year, 93 (70%) completed enough questions to be included in the analysis, though not all respondents answered all questions. Due to the high response rate relative to the small population size, the 90% confidence interval for binomial responses was $\pm 4.6\%$ or better (for questions with 93 responses).

As 2020 was the first year NYSERDA formally evaluated this program, the Market Evaluation Team reviewed the annual survey with NYSERDA evaluation and program staffs, updating several survey questions for the version of the member survey fielded this year. The following are the changes and rationale for each:

- In previous years, indicators I8, I17, I18, and I25 (the last four items in Table 1) were measured by respondent agreement with a single statement that related clean energy indicators to the prior evaluation year—for example, “Compared to the start of 2018, I now have a greater understanding of clean energy opportunities on our campus.” Because the original intent of this indicator was to measure changes relative to before the campus became a REV Campus Challenge member, the Market Evaluation Team modified the question to compare baseline actions or behaviors to current actions or behaviors. The first question asked members to rate their level of agreement with each statement *as it related to the current evaluation year* while the second question asked the level of agreement *as it related to when they first joined the REV Campus Challenge*—for example, on a 1 to 5

scale, rating their level for *this year* of “My level of understanding of clean energy opportunities on our campus” compared to their rating of the same indicator from *when they first joined the REV Campus Challenge*. Any respondent was given credit toward this indicator if their rating for the current evaluation year was higher than their rating for when they joined the program. **Therefore, these four metrics should not be compared to prior years because of the change in measurement methodology—in other words, there is no reasonable equivalent for comparison. Instead, the Market Evaluation Team recommends using the recalculated metrics as a new baseline, with future years compared to this year to observe change and progress.**

- To improve the respondent experience completing the survey, the Market Evaluation Team made several small wording changes to questions. These changes did not impact the intent of the questions in any meaningful way, and thus, the metrics are comparable to results in prior years.

4.1.2 Nonmember Survey

The Market Evaluation Team designed a survey for nonmember campuses based on the member survey. The Market Evaluation Team used secondary research to identify contacts from nonparticipating campuses to develop the survey sample, selecting 124 nonparticipating campuses for outreach. Upon completion of the survey, the interviewer asked respondents if they were willing to participate in a follow-up interview and for contact information for other staff who are part of the decision-making process for planning and approving clean energy projects. The Market Evaluation Team set a target quota of 41 surveys with nonmember campuses and completed 21 surveys, despite making at least five attempts per campus. The nonmember survey assessed the following research objectives:

- Understand awareness of the REV Campus Challenge and barriers to participation
- Assess current levels of participation in local, regional, or national sustainability initiatives, events, conferences and working groups, and levels of interest in future opportunities
- Assess levels of energy usage reporting and clean energy opportunities or projects and collaboration with peer institutions
- Assess levels of support and achievement for advancing sustainability goals
- Identify levels and types of recognition
- Assess levels of engagement with clean energy projects and initiatives
- Assess external impacts of campus clean energy commitment on prospective students and community engagement
- Understand the impact of COVID-19 on institutions’ operations and clean energy project implementation

4.2 In-Depth Interviews

The Market Evaluation Team designed a sample that contained more than 250 campuses across New York State, including 132 campuses that are members of the REV Campus Challenge and 124 nonmembers. Campuses represented a variety of institution types (community colleges, state universities,

and private institutions), locations (rural and urban), and curricula focus (liberal arts, medicine, music, religion, and more). For each of the campuses included in the sample, the Market Evaluation Team aimed to interview three contacts, holding the following roles: sustainability directors and coordinator staff, facility and energy management staff, and admissions office staff. The goal was to collect multiple perspectives from the same campus to capture a more holistic view of clean energy and sustainability progress and roadblocks across member and nonmember campuses, as well as the potential role NYSERDA could play in further advancing related initiatives.

Although the original target was 54 completes for each of the three groups, the Market Evaluation Team ultimately completed phone interviews with 15 sustainability directors and coordinator staff, 15 facility and energy management staff, and six admissions office staff. Interviews took place during November 2020 through February 2021, with the Market Evaluation Team securing interviews. The Market Evaluation Team made up to three outreach attempts through a combination of email and phone calls. Table 24 shows the list of campuses interviewed.

The reduced number of interview completes resulted from a combination of factors that created challenges for securing interviews:

- *Incomplete contact information:* Oftentimes campuses did not list the names or contact information for each of the three roles listed above, meaning the Market Evaluation Team needed to resort to contacting the main campus phone line or generic email address, often resulting in no response.
- *Impacts of COVID-19 on campus operations:* As a result of the COVID-19 pandemic, many staff were working remotely, reducing the chance that they would be at their desk to answer their phone. In addition, the pandemic added stressors and new responsibilities to the workload of many staff members, leading some staff to not have time for an interview. Due to the latter, the Market Evaluation Team ultimately removed 17 medical and nursing schools from the list of campuses eligible for outreach given the heightened demands facing these institutions.
- *Timing of outreach:* Outreach overlapped with the holidays that span across November, December, and January. Although that is a challenging time of year for securing interviews under any scenario, the fact that many schools are on academic breaks during portions of those months only added to the difficulty of connecting with staff.
- *Lack of familiarity with interview topics:* Among both member and nonmember campuses, contacted individuals at times conveyed that they did not feel equipped to complete an interview given their lack of involvement in clean energy and sustainability initiatives. In some instances, individuals connected the Market Evaluation Team to alternative contacts at the campus and, at other times, declined an interview. The Market Evaluation Team ultimately removed 11 nonmember campuses where contacts indicated that their campus did not manage energy use, primarily because the campus rents their space or operates online-only.

When designing the workplan for the next major program update (2022), the Market Evaluation Team will work with NYSERDA to determine the appropriate interview targets.

Table 24. Completed Interviews

Sustainability Staff	Facility/Energy Management Staff	Admissions Staff
Members		
15 Completes	12 Completes	6 Completes
Houghton College	Jefferson Community College	CUNY Hunter College
State University of New York College at New Paltz	State University of New York College at New Paltz	Wells College
Sullivan County Community College	SUNY College of Agriculture and Technology at Morrisville	Monroe Community College
CUNY Hunter College	State University of New York at Albany	Siena College
Onondaga Community College	State University of New York College at Fredonia	Paul Smiths College
Cornell University	State University of New York College at Geneseo	Munson Williams Proctor Arts Institute or PrattMWP (an extension of Pratt Institute)
Colgate University	State University of New York College at Oneonta	
Le Moyne College	Broome Community College	
Bard College	St. John's University	
Barnard College	State University of New York College of Environmental Science and Forestry	
Clarkson University	Manhattan School of Music	
Vassar College	Alfred University	
Wells College		
Skidmore College		
Paul Smiths College		
Nonmembers		
0 Completes	3 Completes	0 Completes
	Saint Joseph's Seminary and College	
	New York Studio School	
	Rockefeller University	
Total		
15 Completes	15 Completes	6 Completes
Target		
15 Completes	15 Completes	5 Completes

4.3 Student Survey

During the in-depth interviews, the Market Evaluation Team interviewers asked contacts from each campus if they would be willing to distribute an online survey to students. Staff members who agreed to administer the survey to students did so via an anonymous link sent to the entire student body via email.

Four campuses agreed to administer the survey on the Market Evaluation Team’s behalf. The student survey assessed three key topics:

- Student engagement with campus clean energy initiatives
- Student awareness of campus clean energy and sustainability initiatives
- Influence of campus clean energy commitment on student enrollment decisions

The Market Evaluation Team set a target quota for member campuses and nonmember campuses of 68 each (for a total of 136 surveys). To encourage responses, the Market Evaluation Team offered students a chance to win one of 10 \$50 Amazon gift cards. the Market Evaluation Team achieved the target quota for member campus responses but was short of nonmember target quota. Table 25 details student response rates.

Table 25. Student Survey Response Rates

Campus	REV Campus Challenge Member Status	Survey Population	Surveys Completed	Estimated Response Rate
Clarkson University	Member	Full student body (3,081)	19	0.6%
Villa Maria College	Nonmember	Full student body (520)	52	10.0%
Paul Smiths College	Member	Full student body (700)	54	7.7%
Siena College	Member	Full student body (3,191)	58	1.9%
Total	All	7,492	183	2.4%
	Members	6,972	131	1.9%
	Nonmembers	520	52	10.0%

4.4 Secondary Data Review

The Market Evaluation Team developed a campus inventory of all institutions in New York State to gain a better understanding of the member and nonmember populations. The Market Evaluation Team collected the following data for each institution:

- Institution type and level of enrollment (both undergraduate and graduate)
- NYSERDA program participation
- Financial information (tuition cost and endowment)
- Contact information, including names, phone numbers, and email addresses for sustainability directors and coordinators, facility and energy management staff, and admissions office staff

4.5 Recommended Changes to Future Evaluation Years

Based on the results from this year’s evaluation, the Market Evaluation Team recommends several improvements to the workplan for future REV Campus Challenge evaluation years. The Market

Evaluation Team will discuss these changes with NYSERDA when planning the next evaluation year's scope.

Nonmember Survey: In this evaluation, the Market Evaluation Team began fielding the survey in December 2020 and completed in March 2021. The Market Evaluation Team plans to conduct the nonmember survey again in evaluation year 3 (2022-2023) and recommends conducting the nonmember survey in the fall, allowing for a longer follow-up period with nonresponders. Additionally, NYSERDA will provide the Market Evaluation Team with a list of the sustainability organizations that nonmember campuses belong to which may help to improve response rate by referencing their membership in the invite email or phone call.

Eligible Campus Population: During the nonmember surveys, the Market Evaluation Team found some campuses that would not be a strong fit for the program, such as campuses that rent their space (i.e., small schools in New York City) or online-only campuses. Out of the full sample of 124 nonmember campuses, the Market Evaluation Team was able to contact 66 campuses. Of these, the Market Evaluation Team found 21 that would not be a strong fit for the program based on the previously discussed criteria, and as such, would recommend removing these from the population of eligible campuses. The Market Evaluation Team will document these reasons and attempt outreach again during evaluation year 3 (2022-2023). After that year's nonmember survey effort, the Market Evaluation Team will make a formal recommendation to NYSERDA on the number of campuses that should be removed from the eligible population. Additionally, the REV Campus Challenge program team will provide the Market Evaluation Team with an updated dataset of reasons why nonmember campuses have not joined the program which will assist with getting an accurate nonmember count.

Indirect Impacts: As discussed in the *Indirect Impacts Estimation* section, none of the 20 nonmember survey respondents qualified for indirect impacts in this year's evaluation. Though 10 of 20 campuses reported completing a clean energy project in the past three years, none had an energy master plan or climate action plan. Having one of these plans was the initial qualifying factor for a project to count toward indirect impacts. However, because campuses are not required to have an energy master plan or climate action plan as part of the program, this criterion may not be needed for the next indirect impacts estimation (evaluation year 3, 2022-2023). The Market Evaluation Team recommends working with NYSERDA to determine if the creation of an energy master plan or climate action plan is integral to the REV Campus Challenge and, if not, how the indirect impacts methodology should be modified.

In-Depth Interviews: In the original statement of work, the Market Evaluation Team planned to collect 54 in-depth interviews per market actor type (sustainability staff, facilities managers, and admissions office staff). As noted in the *In-Depth Interviews* section, the Market Evaluation Team encountered a low response rate, especially among admissions office staff, resulting in lower interview targets. For the next evaluation year that includes in-depth interviews (year 3, 2022-2023), the Market Evaluation Team recommends targeting 15 interviews per group. This will provide a strong qualitative dataset to work from, providing additional context to the quantitative surveys. The Market Evaluation Team also recommends beginning the fielding period earlier (late fall), allowing for a longer follow-up period with nonresponders, especially among hard-to-reach groups such as admissions office staff and nonmember campus staff. Additionally, the Market Evaluation Team recommends targeting at least three interviews per type at nonmember campuses to create a more balanced dataset. In this year's evaluation, all 15 sustainability staff, 12 of 15 facilities managers, and all six admissions office staff were from member campuses.

Student Survey: In this year's evaluation, the Market Evaluation Team fielded the student survey in February through April 2021. Though many campuses expressed interest in fielding the survey, the timeframe for gaining approval was longer than anticipated, resulting in only three member and one nonmember campuses fielding the survey. For the next evaluation year that includes the student survey (year 3, 2022-2023), The Market Evaluation Team recommends beginning the survey period earlier in the year (late fall) to ascertain campus approval. This will allow the Market Evaluation Team to field the survey in the first half of the spring semester rather than the second half, as happened this year. Additionally, the Market Evaluation Team recommends involving NYSERDA in the process of gaining campus approval, as this may improve the success rate at member campuses.

Appendix A. Indirect Impacts Estimation Methodology

The Market Evaluation Team used information from the nonmember survey to determine indirect impacts associated with the REV Campus Challenge. The Market Evaluation Team estimated indirect impacts for nonmember higher-ed institutions but not for REV Campus Challenge members since all member savings are being counted as direct impacts of the program. The Market Evaluation Team used the following algorithm to estimate indirect impacts from the REV Campus Challenge.

$$\textit{Indirect benefits} = \textit{Influenced Nonmember Adoption}_{ml} * \textit{UEB}_{ml}$$

Where the equation's variables have the following definitions:

- **Influenced Nonmember Adoption_{ml}**: Number of nonmember higher-ed institutions who have adopted a climate action/energy master plan due to the influence of the REV Campus Challenge and meet the minimum requirements for a REV Campus Challenge membership level (ml). An influenced nonmember campus can count as either 100% or 50%, depending on the influence level (see bullets below).
- **Unit Energy Benefit (UEB_{ml})**: Assigned energy savings (MWh or MMBtu) or CO₂e reductions per campus for clean energy practices resulting from self-designated adoption levels, equivalent to criteria for REV Campus Challenge membership levels (ml)

The Market Evaluation Team used the following approach:

- If a campus reported having a climate action plan or energy master plan (D4=1 or 2) the respondent was asked what, if anything, influenced their decision to adopt that plan.
- If the campus reported that something influenced its decision to adopt a climate action plan or energy master plan (question D16), it was asked a question about the influence level of several program components (question D18).
- If the respondent answered very important or important for any of the following components, the campus was eligible for counting toward indirect impacts:
 - Information from NYSERDA
 - Information from a peer institution (The Market Evaluation Team will verify the peer institution is a REV Campus Challenge member with question D19)
 - The opportunity for recognition as a result of taking action
 - Training, workshop, webinar, or other event (The Market Evaluation Team will verify the event is relevant with question D20)
- If the respondent gave an answer of very important for any influence source, they were awarded 100% influence. If they said a factor was important, they were awarded 50% influence. All other responses received 0% influence.
- Additionally, campuses must have reported at least one accomplishment from question D14 to count toward indirect impacts. This accomplishment must have occurred (D15) either the same year or after the climate action plan or energy master plan was created (D5).

- The Market Evaluation Team then used the clean energy commitment level designation described below to apply an appropriate unit energy benefit for each nonmember campus. The Market Evaluation Team defined these levels to approximate the three REV Campus Challenge membership levels.

REV Campus Challenge Member Level Designation: Based on nonmember respondents’ answers to a series of questions, the Market Evaluation Team designated the best-fit REV Campus Challenge membership level, basing these designations on the descriptions for each membership level, as noted in Table A-1.

Table A-1. Nonmember-Membership Level Criteria

Membership Level	Description (from NYSERDA)	Requirements
Participant	These members have a strong desire to jump-start their institution’s commitment to and ability to achieve clean energy adoption goals and to engage in energy efficiency opportunities and investigate the potential for on-campus renewable energy projects.	D1=1 or 2
Achiever	These members formally committed to reducing greenhouse gas emissions either in an existing statewide or national campus energy challenge and have dedicated staff to focus on clean energy investments. They have a desire to engage with the external community to promote clean energy.	Meet Participant requirements plus: <ul style="list-style-type: none"> • D4=1, 2, or 3 (based on year given in D5) • D12=1 or 2 (based on year given in D13) • EITHER D2=1-4 for any option OR D7=1, 2, or 3
Leader	These members have demonstrated the value of comprehensive campus clean energy investments, are embracing clean energy research and development and curricula efforts as applicable to their institution, and are looking to increase engagement with their communities.	Meet Achiever requirements plus at least two of the following (based on year given in D15) <ul style="list-style-type: none"> • D14=1 • D14=3 • D14=4

The team relied on the Campus Inventory and the Nonmember Campus Survey to estimate nonmember adoption influenced by REV Campus Challenge. The Campus Inventory database provided the total number of higher-ed institutions in New York, while the survey data indicated the proportion of the nonmember population that have adopted clean energy practices influenced by the program. There were three adoption levels equivalent to the Leader, Achiever, and Member categories for member institutions. The team multiplied the proportions of campuses surveyed that have adopted practices at each adoption level (including the factor for proportion of influence at 100% or 50%) by the total number of campuses in New York State to determine influenced nonmember adoption for each adoption level, as described by the equation below.

Influenced Nonmember Adoption_{ml}

$$= (\% \text{ NY nonmember campuses that have adopted practices influenced by REV Campus Challenge}_{ml} * \text{total NY nonmember campuses})$$

As noted above, the nonmember survey asked survey respondents who adopted a climate action/energy master plan following the launch of NYSERDA’s REV Campus Challenge and who identify one or more contributing factors that correspond with a REV Campus Challenge activity or output to rate the importance of each factor in their decision to implement each clean energy project or practice. The Market Evaluation Team used the survey responses to assign a level of program influence to nonmember market adoption—no influence (0%), some influence (50%), or fully program-induced (100%), as summarized in Figure A-1.

Figure A-1. Program Influence Assessment Approach

