Cleantech Startup Growth Initiative and Manufacturing Corps Study

Final Appendix

Prepared for:

New York State Energy Research and Development Authority

Albany, New York

Patricia Gonzales, Ph.D.
Senior Project Manager

Prepared by:

Opinion Dynamics

Portland, Oregon

Ellen Steiner, Ph.D.
Vice President

Jen Loomis, Ph.D.
Principal Consultant

Natalie Fortman
Consultant

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Notice

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Appendix A. Weighting Approach

Table 1 provides the weights the team used to extrapolate survey findings to the population of participating client companies. To determine the weight value for each incubator and client type, the team divided the total number of participating companies by the respective number of surveyed participants in each incubator.

Table 1. Cleantech Startup Growth Sample Weights for Products Commercialized and Private Investment Metrics for Participating Client Companies

Incubator	Client Type	Total Number of Participating Companies	Number of Survey Participants	Weight
CenterState CEO	Active	11	6	1.83
	Graduated	0	0	N/A
Launch NY	Active	22	9	2.44
	Graduated	1	0	N/A
Long Island High Technology Incubator	Active	13	5	2.60
	Graduated	0	0	N/A
New York University Incubator	Active	17	8	2.13
	Graduated	11	4	2.75
RIT Clean Energy Incubator	Active	18	6	3.00
	Graduated	0	0	N/A
Southern Tier Clean Energy Incubator	Active	23	10	2.30
	Graduated	1	0	N/A

The team multiplied the participant sample-reported values for each subgroup by the weights in Table 1 to develop participant population estimates.

Table 2 provides the weights the team used to extrapolate survey findings to the population of non-participating companies. To determine the weight value by geographic location (a proxy for territories incubators serve), the team divided the total number of non-participating companies identified by a 2017 report titled "Characterizing New York State's Cleantech Ecosystem and the Role of NYSERDA's ICBD [Innovation Capacity and Business Development] Program" that were found to still be in business by the baseline evaluation team by the respective number of surveyed non-participants in each region.

Table 2: Cleantech Startup Growth Sample Weights for Products Commercialized and Private Investment Metrics for Non-Participating Companies

Region/Incubator	Total Number of Non-participating Companies	Number of Survey Non-participants	Weight
New York City – served by ACRE	38	5	7.6
Western Finger Lakes – served by Venture Creations	25	2	12.5
Long Island – served by CEBIP	8	2	4
Central New York – served by Clean Tech Center & Southern Tier Incubator	23	5	4.6

The team multiplied the non-participant sample-reported values for each subgroup by the weights in Table 2 to develop non-participant population estimates.

Table 3 provides the weights used to extrapolate survey findings to the population of participating client companies who manufacture products. To determine the weight value for each Manufacturing Corps (M-Corps) Administrator (Admin), the team divided the total number of participating companies by the respective number of surveyed participants for each M-Corps Admin.

Table 3. M-Corps Weighting Approach for Participating Client Companies

M-Corps Admin	Client Type	Estimated Number of Participating Companies Involved in Manufacturing	Number of Survey Participants involved in Manufacturing	Weight
Hardware Scaleup	Active	16	6	2.67
	Graduated	0	0	N/A
SecondMuse	Active	19	8	2.38
	Graduated	7	1	7.00

The team multiplied the participant sample-reported values (only the values of those involved in manufacturing) by the weights in Table 3 to develop estimates for the participant population of cleantech startup companies involved in manufacturing.

Table 4 provides the weights used to extrapolate survey findings to the population of non-participating companies who manufacture products. For each subgroup listed in Table 4, the team used the population of non-participating companies involved in manufacturing identified in the

2017 ICBD report and identified as in business at the time of the baseline evaluation. The team developed weights by dividing the estimated number of manufacturing companies by the respective number of surveyed non-participants who reported being involved in manufacturing.

Table 4: Manufacturing Corps Weighting Approach for Non-Participating Companies

Region/Incubator	Estimated Number of Non-participating Companies Involved in Manufacturing	Number of Survey Non-participants Involved in Manufacturing	Weight
New York City - served by ACRE	19	1	19
Western Finger Lakes - served by Venture Creations	25	1	25
Long Island – served by CEBIP	5	0	N/A
Central New York – served by Clean Tech Center & Southern Tier Incubator	22	1	22

The team multiplied the non-participant sample-reported values (only the values of those involved in manufacturing) by the weights in Table 3 to develop estimates for the non-participant population of cleantech startup companies involved in manufacturing.

Appendix B.   Participant Client Survey

NYSERDA Cleantech
and M-Corps Participa

Appendix C. Non-participant Survey

NYSERDA Cleantech
& M-Corps Nonpartic

Appendix D.   Incubator Interview Guide

NYSERDA Cleantech
Incubator Interview G

Appendix E.   M-Corps Administrator Interview Guide

NYSERDA M-Corps
Admin Interview Guid

Appendix F.Social Network Analysis Methods and Results

Social Network Analysis (SNA) is a powerful methodology for assessing a range of questions related to relationships between various organizations, people, or other entities. The evaluation team explored SNA as an evaluation method given the program theory. The team leveraged this exploratory analysis to better understand the relationships and interactions across core actors as part of the Cleantech Startup Growth and M-Corps initiatives. Specifically, the SNA assessed three of the known market gaps (henceforth called domains) facing entrepreneurs in the clean energy marketplace including access to capital, development of strategic partnerships, and provision of key business support. The next section introduces some terms used in the following sections.

Glossary of Key Terms

Startups – new businesses in the clean energy market in New York State. Startups include businesses that applied and were accepted as part of NYSERDA's Cleantech Startup Growth and M-Corp Initiatives (participating startups) as well as those who applied but were not accepted as part of the NYSERDA initiatives (non-participating startups)

Startup Types – classifications of the startups that reflect their industry. The team reviewed the type of products or services that each startup organization was developing or commercialized by leveraging information on the startups' websites and categorizing that into common industries. Example types include: product/technology manufacturing, installation/construction services, and service and consulting.

Providers – organizations supporting new businesses through the stages of product development and commercialization. These organizations include incubators, accelerators, investors, mentors, electric and gas utilities, and other actors.

Interaction –a unique connection that exists between a unique startup and a unique provider as reported by a startup representative. One interaction means that a startup is connected to just one provider, two interactions means that a startup is connected to two distinct providers, etc.

Methodology

In both the participant and non-participant surveys used for the Cleantech Startup Growth and M-Corps evaluation, a section was included to support the SNA survey. One question asked for up to five names and email addresses of people within their organization who most actively communicate or interact with other people or organizations operating in the cleantech space. The SNA survey was fielded to these contacts. Other questions asked for the names of organizations in the cleantech space in New York and for the names of organizations they interact with outside of New York. The organization names were compiled and presented to respondents of the SNA survey. The SNA survey asked respondents to indicate which organizations someone from their company interacted with between 2018 and 2020. Respondents also reported whether they or someone from their company interacted with a provider organization within three domains: (1) Access to Capital, (2) Facilitation of Strategic Partnerships, and (3) Provision of Business Support. Appendix G contains the SNA survey.

The SNA survey was fielded in July 2021. It was sent to 459 people at 273 unique startup companies. Of the 459 contacts, 321 (70%) were identified as being at a participant startup (that is, they received support from a NYSERDA-sponsored incubator or M-Corps Admin) while the remainder were at non-participating startups. The SNA survey respondents reflect this breakdown: of the 73 unique respondent organizations that completed the survey, 53 were participants (73%). Non-participating startups included in the survey effort were limited to organizations who have applied to NYSERDA initiatives but who were not awarded a contract and thus are not in the portfolio. Using startup company as the unit of analysis, the SNA survey response rate was 27% (73 of 273).

The evaluation team carefully explored responses for consistency or conflicting information and performed needed cleaning of the survey data. The evaluation team also performed data restructuring to develop an adjacency matrix. Such a matrix is a common data structure for social network analysis. The evaluation team leveraged Gephi and R software packages to complete data analysis and network visualization.

SNA Findings

As part of the SNA survey, the evaluation team collected feedback from participating and non-participating startups on the nature, frequency, and success of their interactions with providers, such as incubators, mentors, accelerators, and investors, during the process of product development and commercialization (see Table 9, Table 10 and Table 12 for detail on the

surveyed startups and the list of providers they reported having interactions with). As part of the analysis the evaluation team mapped and explored interactions between cleantech startups and providers, as well as drew comparisons where relevant, between participating and non-participating startups. The analysis allowed for useful insight into startup interactions with providers, including their diversity, intensity, and success.

Overall Interactions

Table 5 compares average number of interactions between participants and non-participants broken down by startup type. As can be seen in the table, participants on average are connected to more providers than non-participants (15 interactions on average for participants versus 10 for non-participants). Further exploration suggests the difference in the number of interactions is driven by startup type, although given the small sample sizes of this analysis, care must be taken in interpreting these results. For example, both participating and non-participating startups in product/technology manufacturing, installation/construction services, and service and consulting have very similar average number of interactions.

Participating startups in these three types – analytics platforms/solutions, software solution/platform, and EV charging startups – on average have a greater number of respondent interactions as compared with non-participating startups with those same types. Non-participating start-ups in the battery/storage space have more interactions that participating startups. Participating food and agriculture startups have the largest average number of interactions among all startup types. Unfortunately, there were no food and agricultural startups in the non-participant sample, so there is no information upon which to compare.

Table 5. Participating and Non-Participating Startup Interactions

Startup Type	Number of Respondent Startups		Average Number of Per-Respondent Interactions	
	Participants	Non-participants	Participants	Non-participants
Food/agriculture	2	0	22	--
Product/technology manufacturing	30	1	18	18
Analytics platforms/solutions	4	2	12	7
Installation/construction services	2	2	12	12
Services and Consulting	3	10	10	11
Software solution/platform	7	2	10	4
Battery/Energy Storage	4	1	9	15
EV Charging Solutions	1	2	8	1

Startup Type	Number of Respondent Startups		Average Number of Per-Respondent Interactions	
	Participants	Non-participants	Participants	Non-participants
Average Interactions	**53**	**20**	**15**	**10**

Diversity, intensity, and success of participant interactions with NYSERDA incubators and M-Corps Admins varied considerably by startup type. For example, participating startups focusing on product and technology manufacturing and participating startups focusing on products or solutions in the agricultural sector tended to have more interactions on average with incubators and other provider organizations than startups focused on analytic platforms and solutions, installation services, or consulting services, which tended to have diverse connections. Figure 1 below shows interactions across participating startups and provider organizations, including NYSERDA, NYSERDA-sponsored incubators, and NYSERDA-sponsored M-Corps Admins.

Figure 1. Participating Startup and Provider Interactions
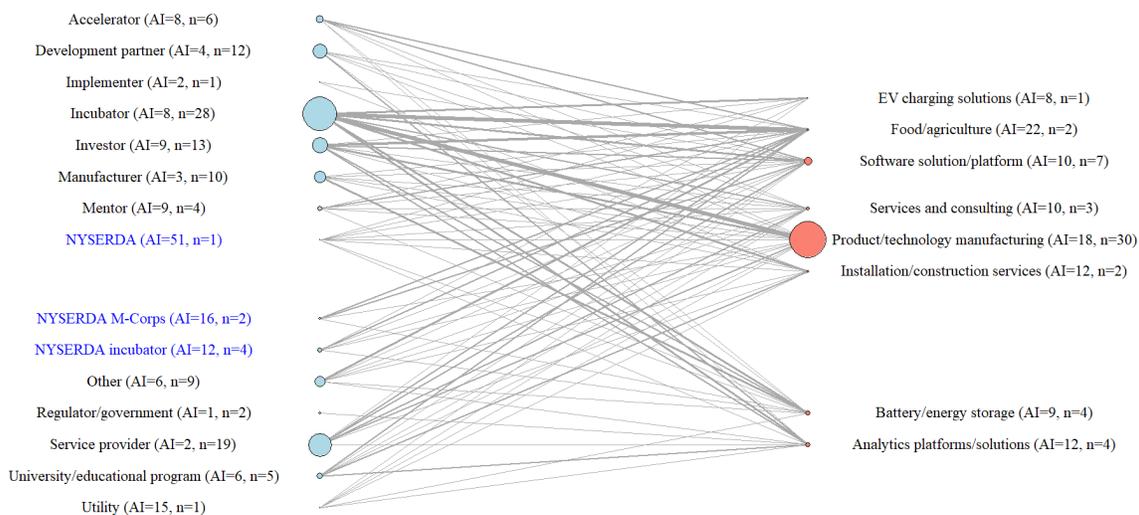
Figure 1 includes all interactions between participating startups and provider organizations. The size of the bubbles on each side in the graph represents the number of organizations in each bubble, while the thickness of lines shows the number of interactions reported between 2018 and 2020. Providers are presented on the left-hand side of the graph while participating startups are presented on the right. Average number of interactions for each group of organizations is included next to each bubble (labeled AI), along with the number of organizations comprising each bubble. Average interactions for startups represent total interactions across all organizations included in the bubble divided by the total number of startup organizations included in each

bubble. For example, an average value of 18 interactions for the product/technology manufacturing startup bubble means that a product/technology manufacturing startup on average has connections with 18 provider organizations.

As can be seen in Figure 1, food and agriculture startups averaged 22 interactions, the highest of any grouping,[1] followed by product/technology manufacturing startups with an average of 18 interactions. Interestingly, startups focused on energy storage solutions as well as startups developing charging solutions featured the lowest number of interactions on average – eight and nine, respectively, with the highest number of interactions for any individual startup within those two categories not exceeding 12.

Participating startups were connected to a variety of providers with most of the connections being with investors and incubators. Connections to incubators and investors were particularly pronounced among product/technology manufacturing startups, and startups focused on installation/construction services, energy storage, and food and agriculture. This is not surprising, as those startups generally require considerable upfront infusion of capital. Conversely, connections of startups focused on analytics platforms and solutions, as well as consulting/services were less focused on incubator and investor providers relationships and typically had more diverse connections.

Interactions by Domain

Table 6 summarizes the average number of interactions for each startup type across the three domains studied. Overall, participating startups interacted with a similar number of providers on average when forming strategic partnerships, trying to gain access to capital, or obtain business support (six interactions on average versus seven and eight, respectively). Among startups focused on services and consulting, interactions to develop strategic partnerships were much more pronounced (average of ten interactions), while among startups focused on product/technology manufacturing and food/agriculture, interactions were most intensive in the area of business support and access to capital.

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[1] Notably, this average is driven by an agricultural technology company that leverages organic cycling science to transform unrecoverable food by-products into organic nutrients. This startup reported having 35 interactions with providers, both NYSERDA-sponsored and non-NYSERDA sponsored.

Table 6. Participant Average Number of Interactions by Domain

Startup Type	Domain		
	Access to Capital	Facilitation of Strategic Partnerships	Provision of Business Support
Food/agriculture	9	6	9
Product/technology manufacturing	8	7	10
Installation/construction services	3	7	5
Analytics platforms/solutions	4	7	4
Services and consulting	4	10	6
Software solution/platform	5	4	6
Battery/energy storage	3	5	4
EV charging solutions	5	4	5
Average Interactions	**7**	**6**	**8**

Interactions Across Provider Types and Domains

An assessment of interactions from provider organizations' perspective offers interesting insight. Table 7 shows average number of interactions between participating startups and provider type. Average interactions were calculated by dividing the total number of interactions between startups and providers in each category by the total number of providers. As such, the values in the table should be interpreted as the average number of interactions with startups that a provider organization has. For example, a value of eight in the Accelerator row in the table means that each accelerator, on average, interacted with eight distinct participating startups.

NYSERDA-sponsored incubators and M-Corps Admins were connected to more individual startups on average (12 and 17, respectively) than non-NYSERDA providers, which highlights their influence in the cleantech ecosystem. Also, incubator, investor, mentor, and accelerator provider organizations were connected with more startups on average than manufacturers, implementers, service providers, and regulatory and government agencies, likely due to the critical role those providers play in the startup's journey toward product commercialization.

Table 7. Interactions by Provider Type

Provider Type	Average Number of Unique Startups Interacted With
NYSERDA	51
NYSERDA M-Corps	17
Utility	15

Provider Type	Average Number of Unique Startups Interacted With
NYSERDA-sponsored incubator	12
Incubator	9
Investor	9
Mentor	9
Accelerator	8
University/educational program	6
Development partner	4
Manufacturer	3
Implementer	2
Service provider	2
Regulator/government	1
Other	6
Average Number of Startups Interacted With	**7**

Table 8 shows the average number of interactions between participating startups and groups of providers for each startup type across three domains. Similar to the table above, average interactions were calculated by dividing, for each domain, the total number of interactions between startups and providers in each category by the total number of providers. As such, the values in the table should be interpreted as the average number of interactions with startups that a provider organization has in a specific domain. For example, a value of three in the Accelerator row and access to capital column in the table means that each accelerator interacted with three distinct participating startups on average in the domain of capital access.

NYSERDA's incubators and M-Corps Admins were connected to more startups on average in the domain of business support provision than in the domains of facilitating access to capital or facilitating strategic partnerships.[2] This imbalance in interactions was not as pronounced among non-participating incubators, where average number of startup connections was relatively evenly distributed across the three domains. Among providers not sponsored by NYSERDA, utilities had considerably more interactions with participating startups in the domain of facilitating strategic partnerships than other providers.

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[2] Notably, many startups reported interacting with NYSERDA. The evaluation team believes that when reporting NYSERDA, startups were thinking about one of NYSERDA sponsored providers instead. Without additional detail, the evaluation team is unable to better classify those interactions.

Table 8. Interactions by Provider Type and Domain

Provider Type	Domain		
	Access to Capital	Facilitation of Strategic Partnerships	Provision of Business Support
NYSERDA	40	32	34
NYSERDA M-Corp	7	9	14
Utility	2	11	6
NYSERDA-sponsored incubator	7	5	9
Incubator	4	4	5
Investor	7	2	2
Mentor	3	4	8
Accelerator	3	4	5
University/educational program	1	1	4
Development partner	1	2	1
Manufacturer	0	1	2
Implementer	0	0	1
Service provider	0	1	1
Regulator/government	0	1	0
Other	2	2	3
Average Number of Startups Interacted With	**3**	**3**	**4**

Effectiveness of Interactions

While overall and domain-specific interactions offer an understanding of the intensity of network of connections that participant startups pursue over the course of the commercialization process, not all of those interactions lead to successful outcomes.

As such, in addition to exploring the intensity of the interactions, the evaluation team explored success of interactions by developing network maps and scrutinizing the interactions in them, comparing, where relevant, interaction success between participating and non-participating startups. Effectiveness of interactions was explored across three domains.

Effectiveness of Interactions – Access to Capital

Figure 2 displays the participant network and associated statistics related to interaction success in terms of access to capital, while Figure 3 shows the same but for non-participants. The evaluation team grouped providers into NYSERDA-sponsored and non-NYSERDA sponsored providers.[3] Nodes in the network graphics represent individual startups, with the node color associated with the startup type. The lines between the nodes represent interactions, with light grey lines indicating less successful or less effective interactions and black lines indicating effective and successful interactions. The evaluation team classified interactions as successful when interactions led to securing capital. Alongside the network graphs are tables with success rates by provider organization types as well as by startup type. Success rates were calculated by dividing successful interactions by the total number of interactions. Due to small sample sizes, the evaluation team does not break down non-participant results by provider type or startup type.

As can be seen in the figures, participating startups tend to be more successful than non-participating startups in securing access to capital (44% versus 32% success rate). When seeking capital, participating installation/construction service startups, food/agriculture startups, as well as service and consulting startups have the highest degree of success (75%, 76%, and 75%) of all interactions resulting in securing access to capital (Figure 2). Conversely, startups focused on developing analytic platforms/solutions, battery/energy storage, and EV charging solutions have the lowest success rate in securing access to capital. Understanding reasons for unsuccessful interactions among those startups can help prepare and position those startups for increased success. NYSERDA-sponsored incubators and M-Corps Admins were considerably more successful than non-NYSERDA sponsored incubators in helping startups secure access to capital (59% and 57% compared to 34%).

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[3] Note that the evaluation team does not include NYSERDA as part of these network graphics.

Figure 2. Success of Participant Interactions – Access to Capital

Legend:
- ● Product/technology manufacturing
- ● Battery/energy storage
- ● EV charging solutions
- ● Analytics platforms/solutions
- ● Services and consulting
- ● Software solution/platform
- ● Installation/construction services
- ● Food/agriculture
- ■ Non-NYSERDA provider
- ■ NYSERDA sponsored incubator/M-Corp

- ■ Secured financing
- ■ Did not secure financing
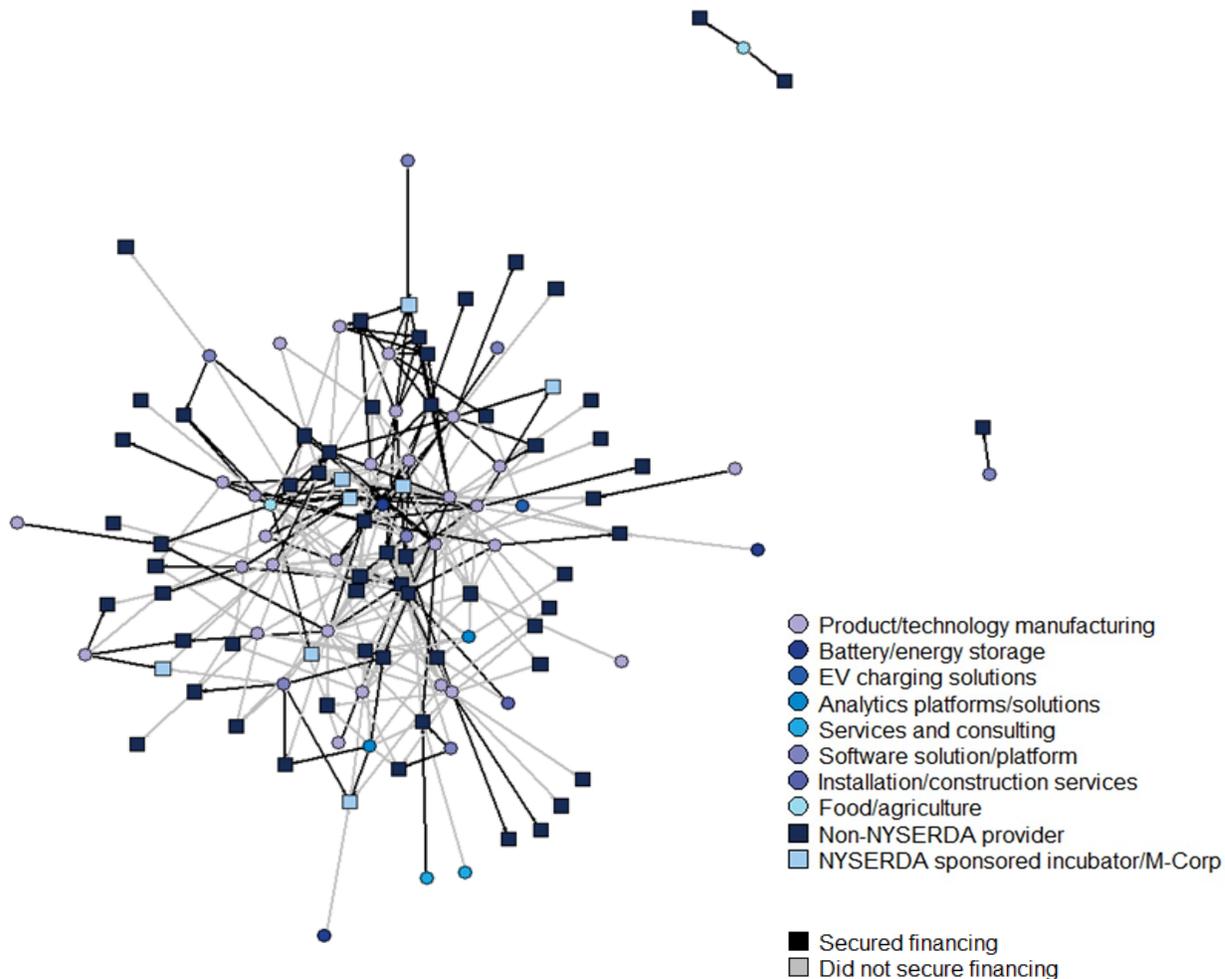
Provider Type	% of Interactions Resulting in Secured Financing
University/educational program	100%
Utility	100%
Development partner	86%
NYSERDA	83%
Mentor	67%
NYSERDA incubator	59%
NYSERDA M-Corps	57%
Service provider	50%
Incubator	34%
Accelerator	28%
Investor	24%
Manufacturer	0%
Other	59%
Total	**44%**

Participating Startup Type	% of Interactions Resulting in Secured Financing
Food/agriculture	76%
Installation/construction services	75%
Services and consulting	75%
Software solution/platform	48%
Product/technology manufacturing	43%
Analytics platforms/solutions	24%
EV charging solutions	20%
Battery/energy storage	11%
Total	**44%**

Figure 3. Success of Non-participant Interactions – Access to Capital

Startup Types and Providers

- ○ Product/technology manufacturing
- ● Battery/energy storage
- ● EV charging solutions
- ● Analytics platforms/solutions
- ● Services and consulting
- ● Software solution/platform
- ● Installation/construction services
- ○ Food/agriculture
- ■ Non-NYSERDA provider
- □ NYSERDA sponsored incubator/M-Corp

Interactions

- ■ Secured financing
- □ Did not secure financing

% of Interactions Resulting in Secured Financing
32%

Effectiveness of Interactions – Facilitation of Strategic Partnerships

Figure 4 displays the participant network and associated statistics related to interaction success in terms of facilitation of strategic partnerships, while Figure 5 shows the same for non-participants. The evaluation team classified interactions as successful when they were reported as being "extremely effective" or "very effective" on a five-point scale by startups.[4]

As can be seen in the figures, participating startups tend to be more successful than non-participating startups in developing strategic partnerships (48% versus 21% success rate). When seeking support in facilitating strategic partnerships**,** the most effective interactions can be observed among participating startups focused on developing analytic platforms, software solutions and platforms, and food and agriculture (startups rate 58%, 73% and 100% of their interactions in this domain as extremely or very effective). Installation and construction services startups only report 27% of all of their interactions in this domain being extremely or very effective. Notably, interactions with NYSERDA incubators and M-Corps Admins are on par with other non-NYSERDA sponsored providers in terms of their effectiveness in this domain.

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[4] Startups rated effectiveness using a five-point scale where "0" represented "Not at all effective," "3" represented "Very effective," and "4" represented "Extremely effective."

Figure 4. Success of Participant Interactions – Facilitation of Strategic Partnerships

Startup Types and Providers

- Product/technology manufacturing
- Battery/Energy Storage
- EV Charging Solutions
- Analytics platforms/solutions
- Services and Consulting
- Software solution/platform
- Installation/construction services
- Food/agriculture
- Non-NYSERDA Provider
- NYSERDA Sponsored Incubator/MCorp

Interactions

- Extremely/very effective
- Not at all/slightly/moderately effective
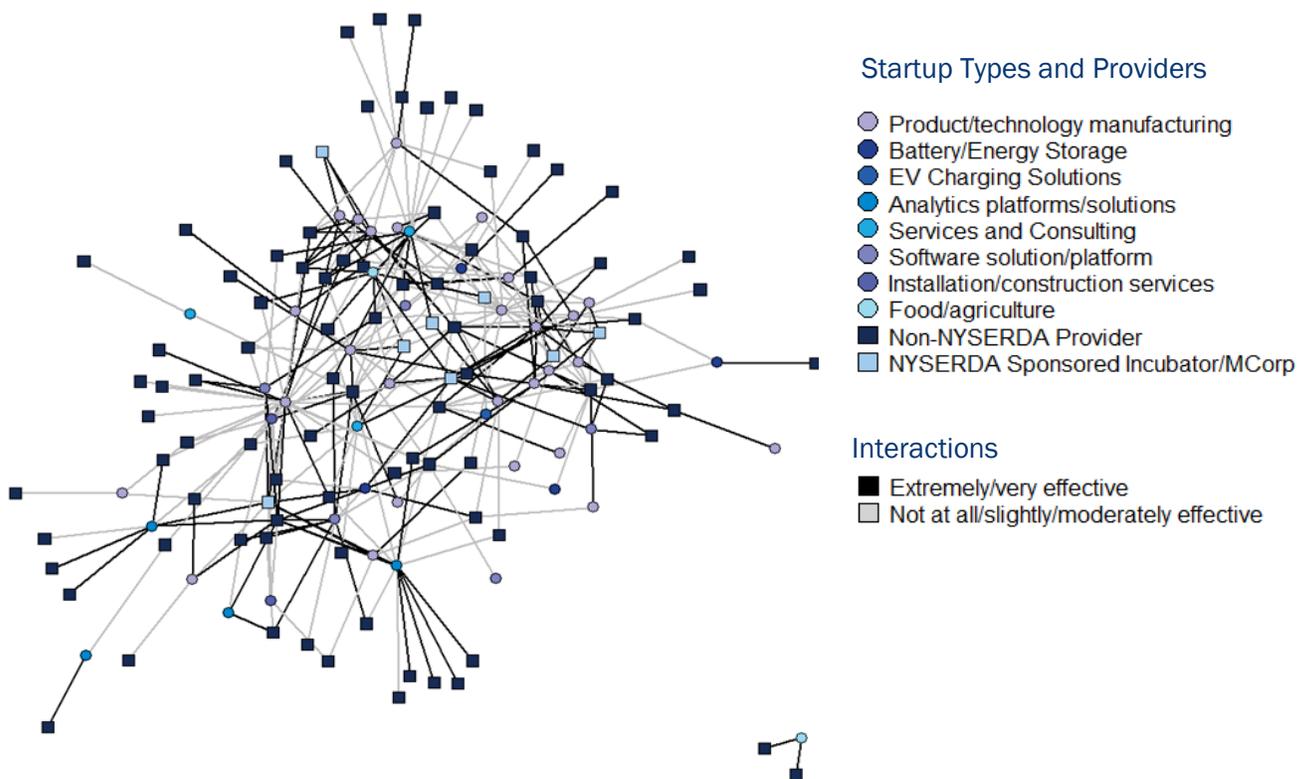
Provider Type	% of Interactions Rated as Extremely/Very Effective
Regulator/government	100%
University/educational program	71%
NYSERDA M-Corps	65%
NYSERDA incubator	64%
Development partner	58%
Mentor	56%
Investor	52%
NYSERDA	48%
Incubator	47%
Utility	45%
Manufacturer	42%
Service provider	37%
Accelerator	29%
Other	33%
Total	**48%**

Participating Startup Type	% of Interactions Rated as Extremely/ Very Effective
Food/agriculture	100%
Software solution/platform	73%
Analytics platforms/solutions	58%
Battery/energy storage	47%
Product/technology manufacturing	45%
Services and consulting	41%
Installation/construction services	27%
Total	**48%**

Figure 5. Success of Non-participant Interactions – Facilitation of Strategic Partnerships

Startup Types and Providers

- Product/technology manufacturing
- Battery/Energy Storage
- EV Charging Solutions
- Analytics platforms/solutions
- Services and Consulting
- Software solution/platform
- Installation/construction services
- Food/agriculture
- Non-NYSERDA Provider
- NYSERDA Sponsored Incubator/MCorp

Interactions

- Extremely/very effective
- Not at all/slightly/moderately effective
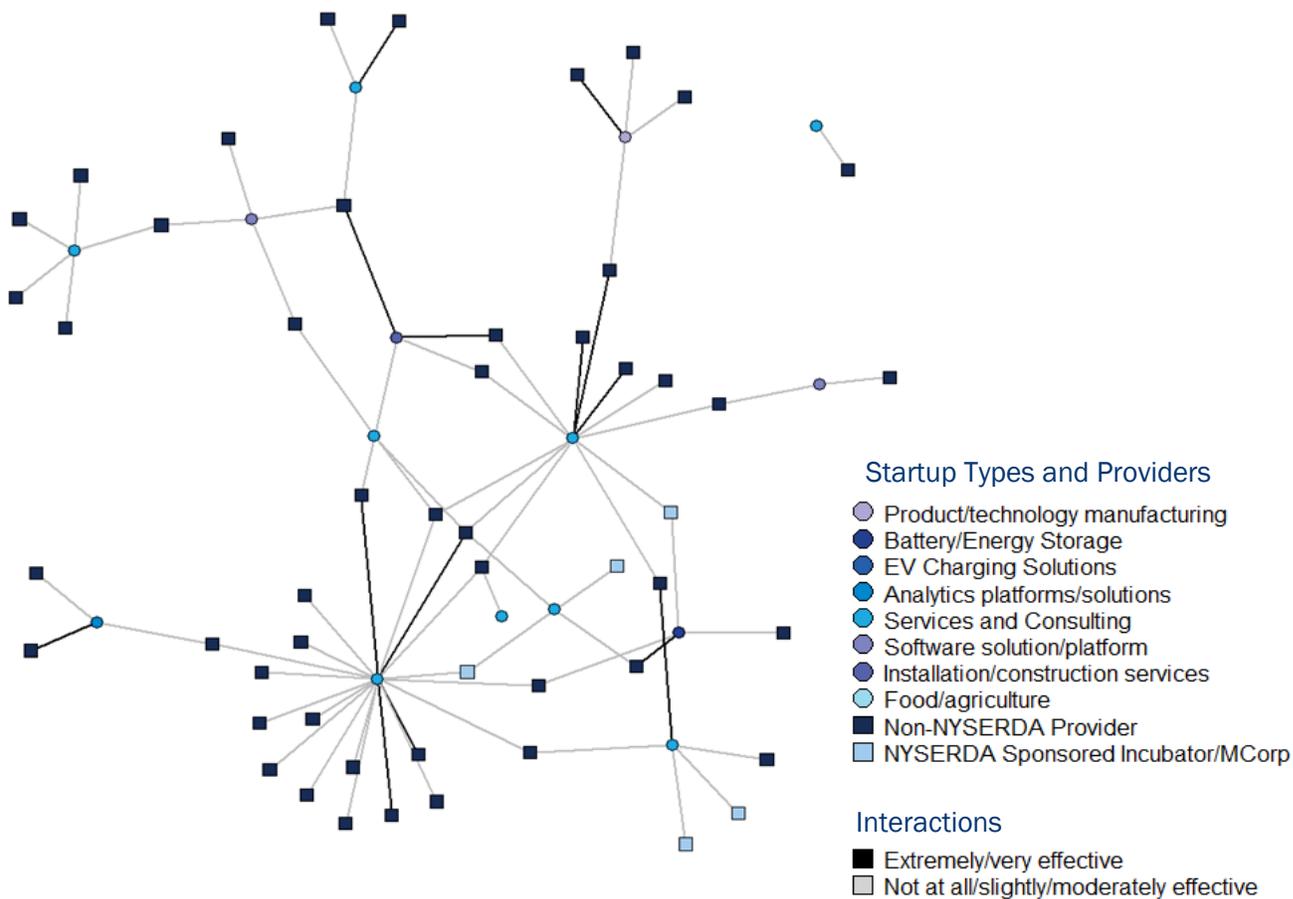
% of Interactions Rated as Extremely/ Very Effective
21%

Effectiveness of Interactions – Provision of Business Support

Figure 6 displays the participant network and associated statistics related to interaction success in terms of provision of business support, while Figure 7 shows the same for non-participants. The evaluation team classified interactions as successful when they were reported as being extremely and very effective by startups using the same five-point scale described earlier. As can be seen in the figures, participating startups tended to be more successful than non-participating startups in accessing key business support (62% versus 36% success rate).

When seeking support in facilitating provision of key business support, participating startups focused on battery/energy storage solutions, food and agriculture, and installation/construction services are more likely to report extremely or very effective interactions (75%, 89%, and 100%, respectively). Software and product technology startups were less likely to report effective outcomes from their interactions with providers (56% and 59% of all interactions rated as extremely or very effective).

Figure 6. Success of Participant Interactions – Provision of Business Support

Startup Types and Providers

- Product/technology manufacturing
- Battery/Energy Storage
- EV Charging Solutions
- Analytics platforms/solutions
- Services and Consulting
- Software solution/platform
- Installation/construction services
- Food/agriculture
- Non-NYSERDA Provider
- NYSERDA Sponsored Incubator/MCorp

Interactions

- Extremely/very effective
- Not at all/slightly/moderately effective
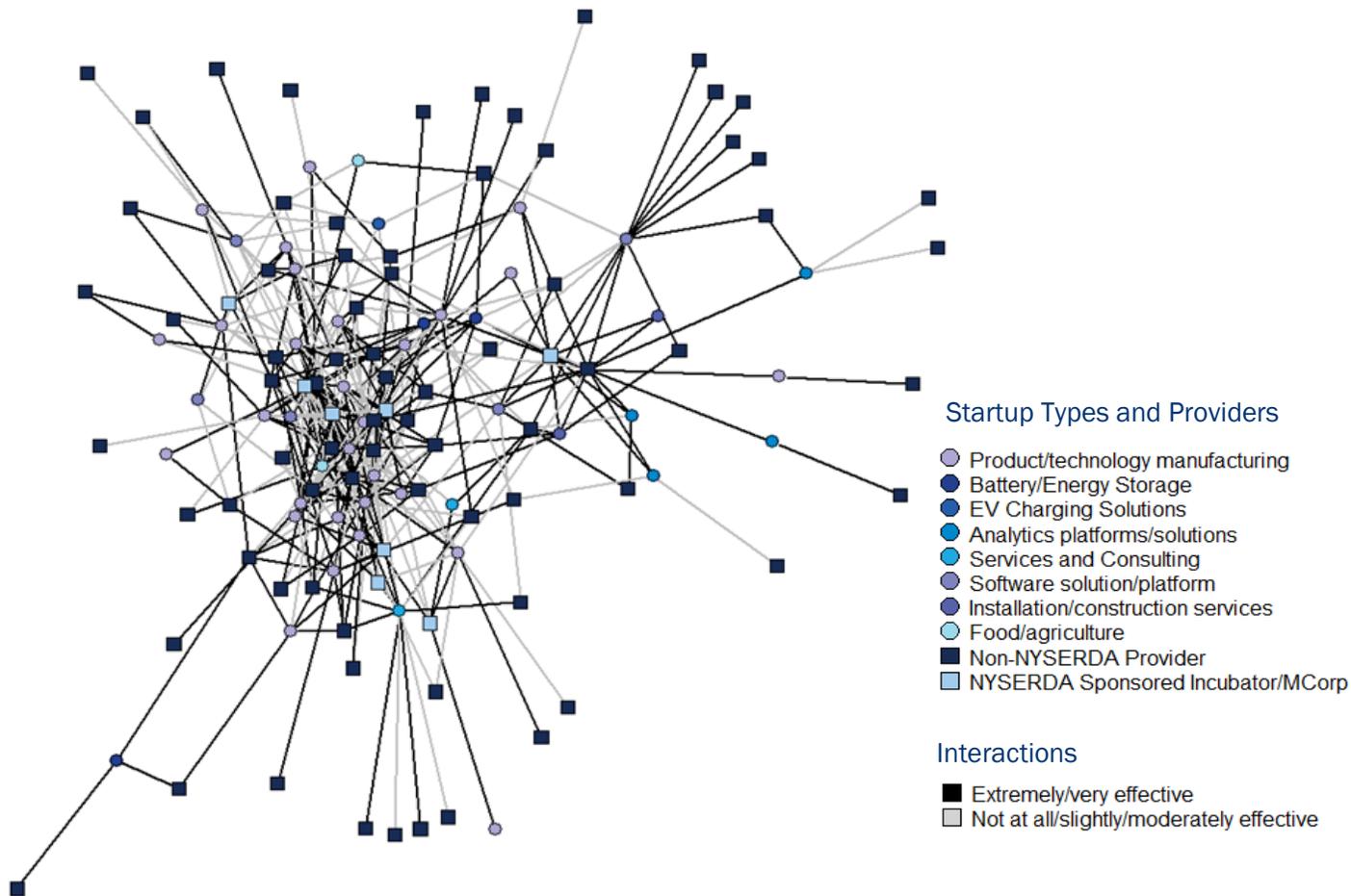
Provider Type	% of Interactions Rated as Extremely/ Very Effective
Implementer	100%
Service provider	82%
Utility	80%
University/educational program	78%
Mentor	77%
NYSERDA	74%
Investor	71%
Manufacturer	67%
NYSERDA M-Corps	65%
Incubator	59%
NYSERDA incubator	48%
Development partner	47%
Accelerator	25%
Other	64%
Total	**62%**

Participating Startup Type	% of Interactions Rated as Extremely/ Very Effective
Installation/construction services	100%
Food/agriculture	89%
Battery/energy storage	75%
Services and consulting	68%
Analytics platforms/solutions	67%
Product/technology manufacturing	59%
Software solution/platform	56%
Total	**62%**

Figure 7. Success of Non-participant Interactions – Provision of Business Support

Startup Types and Providers

- ○ Product/technology manufacturing
- ● Battery/Energy Storage
- ● EV Charging Solutions
- ● Analytics platforms/solutions
- ○ Services and Consulting
- ○ Software solution/platform
- ● Installation/construction services
- ○ Food/agriculture
- ■ Non-NYSERDA Provider
- ☐ NYSERDA Sponsored Incubator/MCorp

Interactions

- ■ Extremely/very effective
- ☐ Not at all/slightly/moderately effective
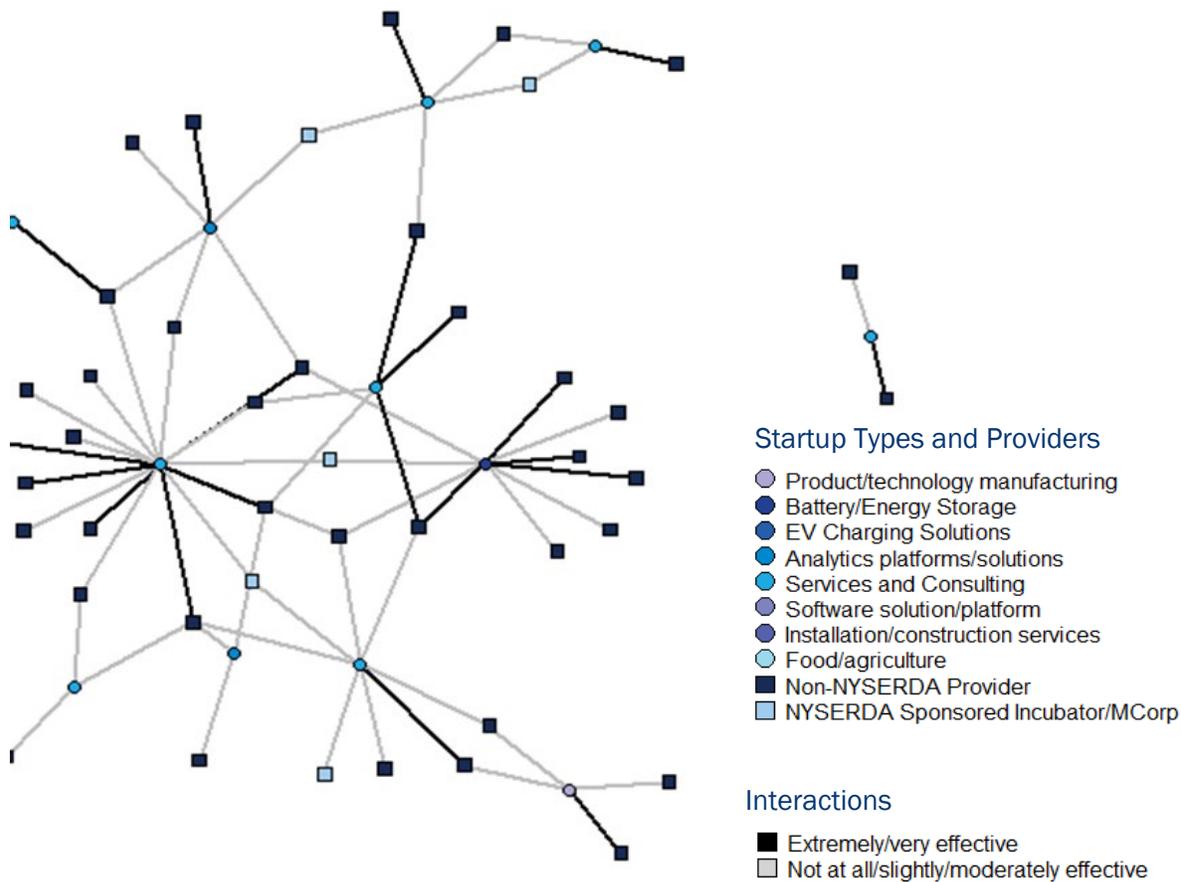
% of Interactions Rated as Extremely/ Very Effective
36%

Effectiveness of Participating Incubator Interactions – Access to Capital

Success rate of individual NYSERDA-sponsored incubators varied across the three domains studied. Figure 8 shows NYSERDA-sponsored incubator success in securing capital. RIT Clean Energy and CenterState CEO incubators achieved the highest (100%) success rate and SouthernTier Cleantech and Launch NY incubators achieved the lowest success rate (33% and 38%, respectively) when it comes to helping startups secure capital.

Figure 8. Success of NYSERD7A-Sponsored Organizations – Access to Capital
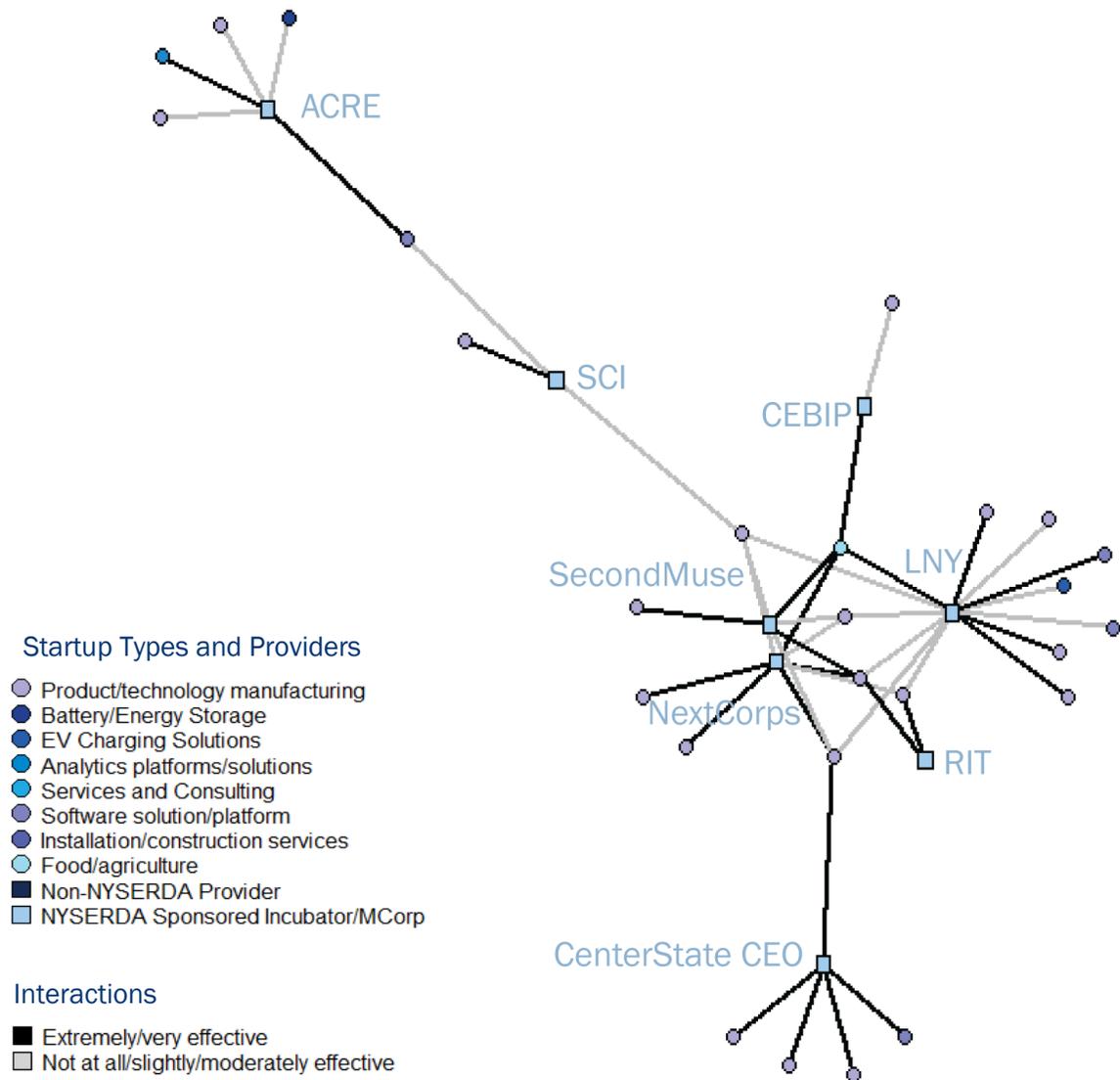
NYSERDA-Sponsored Provider	% of Interactions Resulting in Secured Financing
CenterState CEO	100%
RIT Clean Energy Incubator	100%
NextCorps	63%
CEBIP	50%
SecondMuse	50%
ACRE	40%
Launch NY (LNY)	38%
SouthernTier Cleantech Incubator	33%

Effectiveness of Participating Incubator Interactions – Facilitation of Strategic Partnerships

Figure 9 shows NYSERDA sponsored incubator success in facilitating strategic partnerships. RIT Clean Energy and CenterState CEO were also rated as highly effective by startups in facilitating strategic partnerships, whereas Launch NY was rated as the least effective.

Figure 9. Success of NYSERDA-Sponsored Organizations – Facilitation of Strategic Partnerships
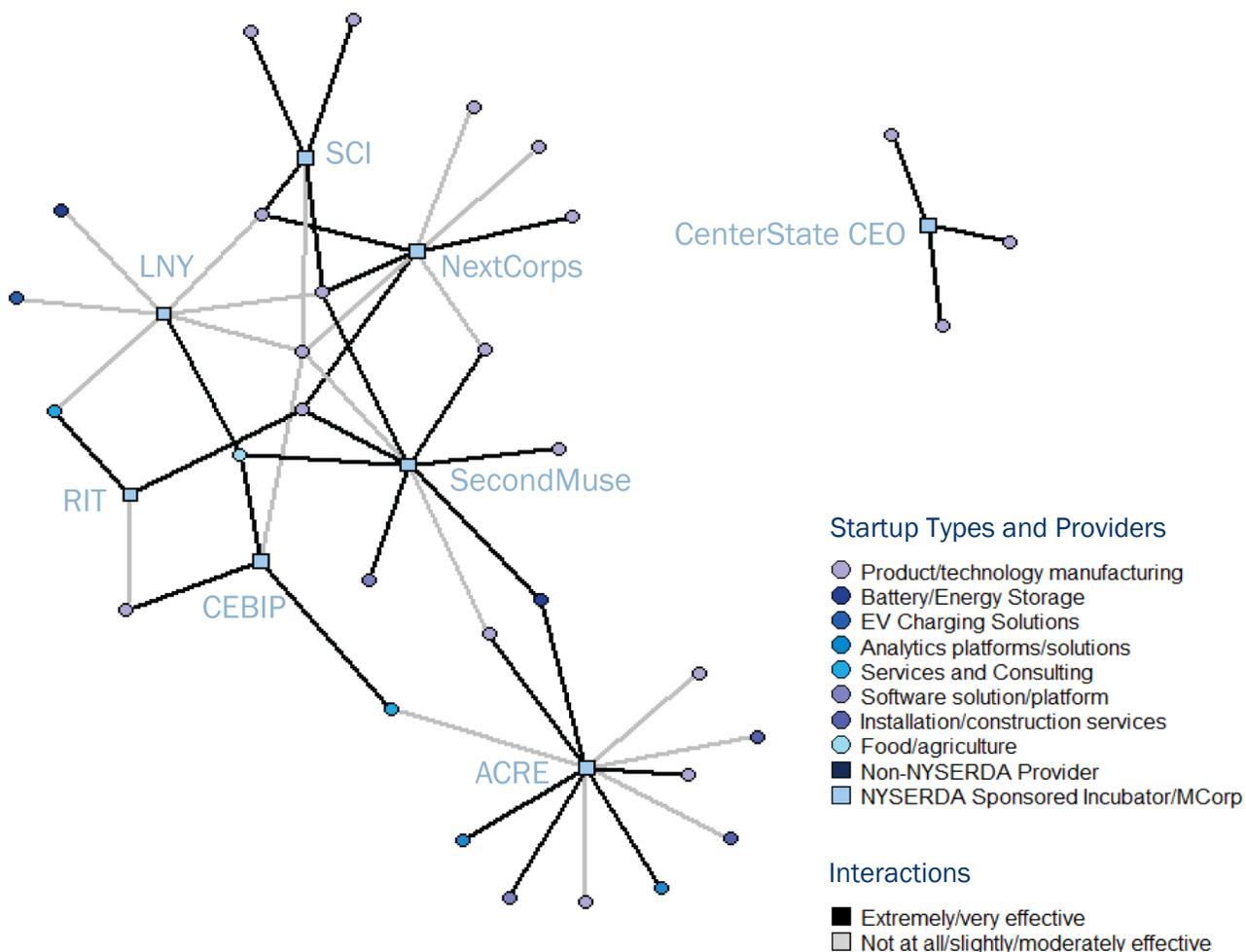
NYSERDA-Sponsored Provider	% of Interactions Rated as Extremely/ Very Effective
CenterState CEO	100%
RIT Clean Energy Incubator	100%
SouthernTier Cleantech Incubator	80%
SecondMuse	78%
CEBIP	75%
ACRE	60%
NextCorps	50%
Launch NY (LNY)	20%

Effectiveness of Participating Incubator Interactions – Provision of Business Support

Figure 10 shows NYSERDA-sponsored incubator success in providing business support. ACRE was the most effective incubator with a 91% success rate among surveyed startups, whereas Launch NY lagged behind other sponsored incubators in facilitating provision of business support with a 29% success rate.

Figure 10. Success of NYSERDA-Sponsored Organizations – Provision of Business Support

Startup Types and Providers

- ○ Product/technology manufacturing
- ● Battery/Energy Storage
- ● EV Charging Solutions
- ● Analytics platforms/solutions
- ● Services and Consulting
- ● Software solution/platform
- ● Installation/construction services
- ○ Food/agriculture
- ■ Non-NYSERDA Provider
- ▢ NYSERDA Sponsored Incubator/MCorp

NYSERDA-Sponsored Provider	% of Interactions Rated as Extremely/ Very Effective
ACRE	91%
NextCorps	69%
CEBIP	67%
CenterState CEO	67%
SouthernTier Cleantech Incubator	63%
SecondMuse	62%
RIT Clean Energy Incubator	60%
Launch NY (LNY)	29%

Interactions

- ■ Extremely/very effective
- ▢ Not at all/slightly/moderately effective

Summary of SNA Findings

The evaluation team leveraged SNA to explore the interactions among cleantech startups and providers in New York State across three domains: providing business support, facilitating access to capital, and facilitating strategic partnerships. The analysis found NYSERDA-sponsored incubators and M-Corps Admins positively influenced the cleantech startups. The NYSERDA-sponsored providers (incubators and M-Corps Admins) were connected to more startup companies on average than incubators and accelerators that lack NYSERDA sponsorship. NYSERDA's incubators and M-Corps Admins had more connections in the domain of business support provision than in the domains of facilitating access to capital or facilitating strategic partnerships. NYSERDA-sponsored incubators and M-Corps Admins were particularly successful in helping startups secure access to capital, and were on par with other providers in terms of in developing strategic partnerships. Participating startups had more successful interactions across the domains than did non-participating startups.

The comparative findings from the SNA suffer from the same limitation as the Cleantech Startup Growth and M-Corps analysis in that the non-participant sample is limited to startup companies that were interested in NYSERDA support but did not receive it. There may be other non-participant cleantech companies that were eligible for the survey, but which were unknown. Increasing the non-participant sample would allow for more startup types to be captured in the analysis and more robust comparisons made.

Supplemental SNA Tables

Table 9. Classification of Respondent Startup Organizations into Types

Startup Organization	Startup Type
475 High Performance Building Supply	Product/technology manufacturing
Accelerate Wind, LLC	Product/technology manufacturing
Actasys Inc	Product/technology manufacturing
Active Energy Systems, Inc.	Battery/Energy Storage
Aestus Inc.	Product/technology manufacturing
Air Company Holdings, Inc.	Product/technology manufacturing
Alim Innovations	EV Charging Solutions
Amperon Holdings, Inc	Analytics platforms/solutions
Atrevida Science LLC	Product/technology manufacturing
Barretto Bay Strategies	Services and Consulting
BESS Technologies	Battery/Energy Storage
BluePrint Geneva, Inc.	Services and Consulting

Startup Organization	Startup Type
Bonded Energy Solutions Corp.	Services and Consulting
BTG LLC	Services and Consulting
CAPRO-X	Product/technology manufacturing
Centsible House Inc	Services and Consulting
CertainSolar	Product/technology manufacturing
Charge CCCV LLC	Battery/Energy Storage
CLIP.Bike	Product/technology manufacturing
Clir Renewables	Software solution/platform
Combined Energies	Product/technology manufacturing
Combplex	Product/technology manufacturing
Dandelion Energy Inc	Installation/construction services
Dimien Inc.	Product/technology manufacturing
Dollaride	Software solution/platform
Ducted Wind Turbines	Product/technology manufacturing
Eco-Carriage LLC	EV Charging Solutions
Ecogy Energy	Analytics platforms/solutions
Ecolectro, Inc.	Product/technology manufacturing
Edison Innovative Power	Product/technology manufacturing
Empower Equity Inc	Services and Consulting
Energy Visions New York, LLC (in formation)	Services and Consulting
EnKoat LLC	Analytics platforms/solutions
EthosGen, LLC	Product/technology manufacturing
Farm to Flame Energy	Product/technology manufacturing
Folia Materials	Product/technology manufacturing
Frio	Product/technology manufacturing
Greenwich Energy Solutions	Installation/construction services
Halmar International	Installation/construction services
HELIXintel	Software solution/platform
Hestia Technologies Inc.	Software solution/platform
Hub Controls USA Inc	Product/technology manufacturing
KLAW Industries	Product/technology manufacturing
Maalka Inc	Analytics platforms/solutions
MeteoViva, Inc.	Analytics platforms/solutions
New Money Inc	Services and Consulting
Optimized Thermal Systems, Inc	Services and Consulting
Phase Innovations LLC	Product/technology manufacturing
Project Economics dba PowerMarket	Software solution/platform
Qunnect	Product/technology manufacturing
Reliable Energy Analytics	Analytics platforms/solutions
RENEW Energy Partners	Services and Consulting

Startup Organization	Startup Type
Re-Nuble	Food/agriculture
Resonant Energy	Installation/construction services
Saascharge, Inc.	EV Charging Solutions
Skyven Technologies	Product/technology manufacturing
SolarFest	Services and Consulting
Soteria Battery Innovation Group	Product/technology manufacturing
SourceOne	Services and Consulting
Southern Tier Technologies	Product/technology manufacturing
Spring Lane Capital	Services and Consulting
Sunny Clean Water	Product/technology manufacturing
Swift Rails Inc	Software solution/platform
Tagup Inc.	Software solution/platform
ThayerMahan, Inc.	Software solution/platform
Thermolift Inc.	Product/technology manufacturing
Viridi Parente Inc	Battery/Energy Storage
Vistex Composites LLC	Product/technology manufacturing
Wavelength Lighting	Product/technology manufacturing
WeRadiate LLC	Software solution/platform
WexEnergy LLC	Product/technology manufacturing
Wheatfield Gardens LLC	Food/agriculture
Zinc8 Energy Solutions Inc.	Battery/Energy Storage

Table 10. Classification of Provider Organizations into Types

Provider Organization	Provider Type
76West (76W)	Incubator
ACRE	Incubator
AEA	Development partner
Air Co	Other
ArcWorks	Manufacturer
Astral Power	Other
Binghamton University	Incubator
Braemar Energy Ventures	Investor
Breakthrough Energy Ventures	Incubator
BrightPower	Service provider
Brookhaven National Laboratory	Development partner
Build Edison	Development partner
CAMM, Binghamton	Manufacturer
Carbon to Value Initiative	Incubator
Carrier	Manufacturer
CEBIP (Clean Energy Business Incubator Program, Long Island Incubator)	Incubator

Cleantech Startup Growth Initiative and Manufacturing Corps Study

Provider Organization	Provider Type
Center for Regional Economic Advancement at Cornell (CREA)	Incubator
CenterState CEO	Incubator
CEVG (Clean Energy Ventures Group)	Investor
Chloe Capital	Investor
Clean Energy Leadership Institute	Incubator
Clean Tech Open (CTO)	Incubator
CleanTech Center (CTC)	Incubator
CleanTech Open Northeast	Accelerator
Climate 4 Tech	Incubator
Columbia Technology Ventures (CTV)/ Columbia EIR (NEIR)	Mentor
ConEd (Consolidated Edison)	Utility
Convoy Solutions	Service provider
Cornell Center for Material Science	Development partner
Cornell University - McGovern Center and Praxis	Incubator
Cornell Tech	University/Educational Program
C-PACE	Service provider
CREO	Service provider
Crysta-Lyn Chemical Company	Development partner
CUNY	University/Educational Program
Davis Standard	Manufacturer
DCAS	Regulator/government
Duro UAS	Manufacturer
Dynamo (Dynamo Energy Hub)	Development partner
eco (ECO Incubator)	Incubator
EDF	Incubator
EMPEQ	Service provider
Empire Clean Cities	Service provider
Empire Medicinals	Incubator client or graduate
EMS	Manufacturer
Energy Impact Partners	Investor
equinor	Other
Excell Patners	Investor
Food X	Accelerator
For Climate Tech	Incubator
fuze hub	Other
GCT Partnership	Incubator
GE	Manufacturer
German American Chamber of Commerce	Other
GLASE	Service provider

Cleantech Startup Growth Initiative and Manufacturing Corps Study

Provider Organization	Provider Type
Golisano Center for Sustainability	University/Educational Program
Green Lots	Service provider
Greenskies	Investor
Greentech investment forum	Investor
Greenworks Lending	Service provider
GTI	Development partner
ICF	Service provider
iMperium3 New York (I3)	Manufacturer
International District Energy Association (IDEA, District Energy)	Other
Jamestown BPU	Regulator/government
Jim Lo Gerfo	Mentor
Kathy Servoss	Service provider
Kaufman Center (Kaufman Souther Tier Incubator, SCI, Binghamton Incubator)	Incubator
Kawi group	Service provider
KSTI	Incubator
Launch NY (LNY)	Incubator
Launchpad Venture Group	Investor
LC Drives	Manufacturer
Leidos	Implementer
Linde / Praxair	Manufacturer
Luminate	Accelerator
Manufacturing Corps (M-Corps, Scale for ClimateTech, S4C)	Incubator
Mechanical Testing Inc	Service provider
Micatu	Development partner
National Science Foundation	Investor
National Grid	Utility
NECEC	Accelerator
New Energy Nexus	Incubator
New Lab	Other
New York Green Bank (Green Bank, NYGB)	Investor
New York State Pollution Prevention Institute (NYSP2I is a division of RIT)	University/Educational Program
NextCorps (High Tech Rochester, Hardware Scaleup)	Incubator
NEXUS-NY	Mentor
NOWRDC	Incubator
NREL	Incubator
NY Best	Accelerator
NYC Mayors Office of Sustainability	Regulator/government
NYCEEC	Other

Provider Organization	Provider Type
NYISO	Electric sysem operator
NYPA (New York Power Authority)	Investor
NYSERDA	Accelerator
NYU Tandon School Of Engineering	Development partner
Orsted	Development partner
Power Market	Service provider
Powerhouse Ventures	Investor
Prime Coalition	Investor
Primet Precision Materials	Manufacturer
Rev Ithaca	Incubator
RIT Clean Energy Incubator	Incubator
RMI	Service provider
Roc City Consultants	Service provider
Rochester Institute of Technology (RIT)	Other
Sciarraba Walker	Service provider
SCORE	Mentor
Sealed	Service provider
SecondMuse (Scale for ClimateTech, M-Corps)	Service provider
Solar Home Factory	Manufacturer
SolarKal	Service provider
SouthernTier Cleantech Incubator (SCI, Binghamton Incubator)	Incubator
Spring Lane Capital	Investor
StoneWork Capital	Service provider
Sunamp Projects	Manufacturer
SUNY RF (Research Foundation for the State University of New York)	Investor
Sustaintainable Westchester	Other
Syracuse Tech Garden (TechGarden)	Incubator
Taitem Engineering PC	Service provider
Tesla	Manufacturer
The Clean Fight	Accelerator
The Syracuse University Center of Excellence for Environmental Systems	Development partner
TRC	Service provider
Upstate Capital Association of New York	Investor
Upstate Venture Connect	Incubator
Urban Future Lab (UFL)	Incubator
Urban X	Incubator
UrbanLab	Incubator
US Wind	Development partner
UTS	Manufacturer

Provider Organization	Provider Type
VBL Maritime	Other
venture creations (Rochester incubator)	Incubator
Venture for ClimateTech (V4C)	Accelerator
WE Cornell	University/Educational Program
Wegmans	Development partner
WESCO energy services	Development partner
WEX Energy	Service provider
Willdan	Service provider

Table 11. Respondent Sample Sizes by Startup Type

Startup Organization	Number of Participating Startup Organizations Surveyed	Number of Non-Participating Startup Organizations Surveyed
Analytics platforms/solutions	4	2
Battery/Energy Storage	4	1
EV Charging Solutions	1	2
Food/agriculture	2	0
Installation/construction services	2	2
Product/technology manufacturing	30	1
Services and Consulting	3	10
Software solution/platform	7	2
Total	**53**	**20**

Table 12. Provider Organization Types

Provider Organization	Number of Unique Organizations
Accelerator	8
Development partner	14
Electric system operator	1
Implementer	1
Incubator	34
Incubator client or graduate	1
Investor	16
Manufacturer	15
Mentor	4
Other	11
Regulator/government	3
Service provider	25
University/Educational Program	5
Utility	2
Total	**140**

Appendix G.   SNA Survey

Social Network
Analysis Survey.pdf