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# LONG ISLAND SOLAR ROADMAP

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## Social Science Work Plan – Updated 1 February 2019

### Goals

The goal of the social science research is to characterize the level of awareness and the positive and negative perceptions of Long Island residents about mid- to larger-scale solar PV projects. The information will be used to better understand how solar energy generation can be sited, designed, and constructed in ways that meet the needs and preferences of local communities and reduce siting conflicts. We will gather information through a survey of Long Island residential electric utility customers to understand the perceptual barriers that may hinder solar development projects as well as the perceptions and values that may motivate support for solar development.

### Deliverables

1. Summary of residents' perceptions and preferences of solar energy installations in their communities, which will inform recommendations about solar siting, design, and construction. This summary will be provided in written and visual forms for circulation and use.
2. Recommendations about which types of solar installations, business models, and messages might be most successful when developing policies and strategies to lower barriers to installation of solar energy generation on low-impact, low-conflict sites.

### Approach

The social sciences research component of this project has already involved 1) interviews with Steering Committee (SC) members and 2) interviews with Consortium (CN) members. The SC and CN interview analysis is complete. These interviews suggest that the social science research component of this project should address perceptual barriers to solar development as well as policy barriers. The remainder of the social science research on the project is proposed to involve the work plan outlined below.

Using the information from these interviews to guide development of the questions, we propose next to distribute an online survey to PSEG residential utility customers. To the extent possible, a spatially balanced sampling design will be applied across the entire study area. The survey will assess residents' knowledge and perceptions of mid- to large-scale solar energy installations (250 kW and greater), levels of and reasons for support and/or opposition, and levels of support for settings and business models for solar technology development.

In addition, the Leadership Team is exploring two other opportunities for data collection and outreach based on suggestions by the Consortium. One is an opportunity to survey or otherwise collect data from business owners on Long Island. The other involves possible focus groups, workshops, or development of educational materials that may be targeted for particular groups of relevant actors on Long Island (i.e. the farming community, the business community, environmental justice organizations, etc.). These

additional opportunities may be pursued after completion of the research described below, if the Leadership team determines there is sufficient time, capacity, funding, and alignment with the project's overall goals.

## Research questions

Survey questions (SQ) corresponding to each research question appear in parentheses below.

1. What are residents' perceptions of and preferences for solar energy generation in their community?
  - 1.1 Do demographic, geographic, or knowledge indicators influence respondents' perceptions and preferences for solar?
    - a. What is the demographic profile of survey respondents, including town of residence, age, gender, education level, household income, race, ethnicity, and political affiliation? (SQ 3.1-3.8)
    - b. What is the perceived level of knowledge about solar electricity and level of experience engaging with solar development among survey respondents? (SQ 1.5, 1.6, 1.7)
    - c. How do the above indicators correlate with answers to questions about attitudes and opinions as outlined below?
  - 1.2 Does having a solar system installed at a respondents' home or place of work influence their perceptions and preferences for solar?
    - a. Do respondents have a solar system installed at their home or place of work? (SQ 1.1, 1.2, 1.4)
    - b. If so, what motivated the decision to install a solar system? (SQ 1.3)
  - 1.3 What is respondents' current level of support for increased solar energy on Long Island, and what are the main reasons for support? (SQ 1.8, 2.1, 2.2, 2.3)
2. Which types of installations (ground mounted, rooftop, parking lot, community solar, private investment in commercial solar, etc.) are residents most likely to support in their community?
  - 2.1 What types of mid- to large-scale solar installations and settings do respondents prefer in their community? (SQ 2.4)
    - a. Proposed types of installations and settings to include:
      - i. Ground mounted solar panels in places that are visible from roads or houses
      - ii. Ground mounted solar panels in places that are not visible from roads or houses
      - iii. Ground mounted solar panels on previously degraded lands (brownfields and landfills) that may or may not be visible from roads or houses in my community

- iv. Ground mounted solar panels in areas that were previously developed for a different purpose (so the vegetation is already removed) that may or may not be visible from roads or houses
- v. Solar panels mounted on commercial or industrial rooftops that may or may not be visible from roads or houses
- vi. Solar panels shading parking lots and parking garages that may or may not be visible from roads or houses

2.2 What types of financial models do respondents support? (SQ 2.5)

- a. Proposed options in the survey include:
  - i. Public financing, where public funds are used for projects on public buildings
  - ii. Privately funded projects built by local companies, with the electricity generated purchased by the utility
  - iii. Privately funded projects built by national or international companies, with the electricity generated purchased by the utility
  - iv. Privately funded projects developed as community solar systems, where individual utility customers can elect to purchase the electricity generated
  - v. Publicly funded projects developed as community solar systems, where individual utility customers can elect to purchase the electricity generated
  - vi. Privately funded projects on private property, with the electricity generated going primarily to the property owner

2.3 What factors increase or decrease support for solar development? (SQ 2.6)

- a. Proposed factors in the survey item include:
  - i. Personal and community economic benefits, including benefit to self, low income households, or schools
  - ii. Personal benefit to accessing solar energy
  - iii. Climate change mitigate benefit
  - iv. Mixed use
  - v. Tree removal
  - vi. Projects visible from the road or home
  - vii. Ability to provide supplemental income for local farmers

2.4 What do respondents think the impacts of the projects they most support would be on their community? (SQ 2.7)

- a. Proposed impacts to include:
  - i. Personal or community economic benefits
  - ii. Local, regional, or global environmental benefits
  - iii. Aesthetic impacts, and are these either appealing or unappealing
  - iv. Positive or negative health benefits

- 2.5 What factors influence opposition to mid- to large-scale solar installations, and which of these factors are most important? (SQ 2.8-2.11)
- a. Proposed factors to include:
    - i. perceived negative aesthetic/visual impacts
    - ii. perceived negative health impacts
    - iii. perceived negative environmental impacts
    - iv. perceived negative or unfairly distributed economic impacts
  - b. When it comes to solar energy development, what are respondents' biggest concerns?

## Key sources of information

1. The interview summaries from the SC and CN interviews have guided the development of this workplan.
2. Data from a study of residential solar technology adopters in (upstate) NY has guided the development of this workplan. These survey results suggest that economic and environmental benefits are equally important for motivating residential solar technology adoption, with perceived honesty of the solar installer as the third most influential motivation identified.
3. There are existing data regarding climate change beliefs, environmental values, and perceptions of renewable energy available from a long-term national survey conducted by the University of Michigan. These data suggest widespread general support for renewable energy technology. See <http://www.closup.umich.edu/national-surveys-on-energy-and-environment/nsee-at-ten.php>; <http://closup.umich.edu/issues-in-energy-and-environmental-policy/41/findings-from-the-fall-2018-nsee/>
4. There are existing data regarding policy and permitting processes shaping renewable energy development across New York from a CUNY-NYSERDA collaboration; the project leadership team is in the process of attempting to access these data so that we can disaggregate and view survey results from Long Island separately. These data consider questions regarding policy and permitting fragmentation across Long Island municipalities, which is an issue that was noted in interviews with Consortium and Steering Committee members. These data allow the project leadership team to consider these issues without collecting primary data about policy and permitting via an additional survey. <https://nysolarmap.com/resources/reports-and-guides/surveys/>
5. New data will come from online ratepayer survey of LI customers. In addition, focus groups with targeted groups (for example, decision makers or topic experts such as those in the consortium; active advocacy groups, environmental justice organizations) may occur after the survey results are analyzed if the leadership team is supportive of additional data collection.