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Illinois Solar For All Evaluation

December 10, 2019

Jackie Berger

Presentation Overview

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Introduction

Phase I Evaluation

- Objectives
- Program Design Review
- Initial Implementation Experience
- Stakeholder Outreach Design & Feedback
- Grassroots Education Design & Feedback
- Findings & Recommendations

Phase II Evaluation

- Objectives
- Metrics
- Research Activities
- Timeline

Discussion

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Nonprofit Research Institute

- Established in 2002
- Princeton, NJ

Mission

- Analyze data and information to assess and improve public programs

Research Areas

- Energy Efficiency & Renewable Energy
- Energy Affordability

Clients

- Federal Government (DOE, HHS)
- State Governments
- Utility Companies
- Nonprofits

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INTRODUCTION

ILSFA Foundation

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Mandated by Public Act 99-0906
Future Energy Jobs Act (FEJA)

Enacted 12/7/2016	Effective 6/1/2017

Overcome barriers to participation in the solar market faced by low-income community

Provides more generous Renewable Energy Credit (REC) contracts than the Illinois Adjustable Block Program (ABP)

ILSFA Objectives

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- **Maximize the development of new photovoltaic generating facilities**
- **Create a long-term, low-income solar marketplace throughout the state**
- **Integrate with existing energy efficiency initiatives**
- **Minimize administrative costs**

ILSFA Sub-Programs

Low-Income Distributed Generation	• PV systems on individual homes or multi-family dwellings, or ground-mounted
Low-Income Community Solar	• Subscriptions to a share of a PV system
Non-Profits and Public Facilities	• PV for non-profits and public facilities in EJ or low-income communities
Low-Income Community Solar Pilot Projects	• Community Solar projects funded using a competitive procurement approach

Key ILSFA Characteristics

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Environmental Justice Communities	Low-Income Households	Low-Income Communities	Job Training
• Higher risk of exposure to pollution based on environmental and socio-economic factors • 25% of incentives for DG, CS, and NP/PF	• Income ≤80% of Area Median Income • Adjusted for family size • Revised every five years	• Census tracts with at least 50% low-income	• Job trainee staffing requirements • Coordination with FEJA job training programs

Key ILSFA Characteristics

Incentives

- The IPA or utility purchases RECs for first 15 years of operation
- Upfront payment made when system is interconnected and energized

Community Partnerships

- Approved Vendors required to identify partnerships
- Grassroots education by community-based organizations

Consumer Protections

- Ensure economic benefits flow directly to participants
  - Financial
  - AV marketing
  - Site suitability

ILSFA Evaluation

Evaluation Requirements

- FEJA requires independent evaluation of ILSFA and third-party program administrator
- Objective criteria developed through a public stakeholder process

Phase I Evaluation

- Inform the Long-Term Renewable Resources Procurement Plan

Phase II Evaluation

- Detailed assessment of the ILSFA's implementation and results

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PHASE I EVALUATION
AUGUST – SEPTEMBER 2019

Phase I Evaluation Information Objectives

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Provide feedback & recommendations to the IPA for use in updating the Long-Term Plan.

- **Stakeholder Outreach**
- **Program Materials and Guidelines**
- **Initial Approved Vendor Registration**
- **Initial Project Applications**
- **Development of Grassroots Education Efforts**

Phase I Evaluation Activities

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Document & Materials Review

Interviews

- Illinois Power Agency
- Elevate Energy
- Stakeholders
- Grassroots Educators

Program Data Analysis

- Approved Vendor Characteristics
- Submitted Job Characteristics
- Selected Job Characteristics

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Phase I Evaluation
Program Design Review

ILSFA Funding

Program Component	% of RERF	Funding Sufficiency (Years)	2018-2019 Funding ($ Millions)	
			RERF	Utility
Distributed Generation	22.5%	7-8 Years	$4.5	$3.0
Community Solar	37.5%	7-8 Years	$7.5	$5.0
Non-Profits & Public Facilities	15%	7-8 Years	$3.0	$2.0
Community Solar Pilot	25% ($50 Million CAP)	TBD	$5.0	$0.0

Funding Supports

- REC Payments
- Program Admin
- Grassroots Education
- Evaluation

Long-Term Plan

Long-Term Renewable Resources Procurement Plan

- Approved by Illinois Commerce Commission on April 3, 2018

Details ILSFA Requirements

- ILSFA terms, conditions, and requirements
- REC prices
- Low-income energy and economic benefits
- Environmental Justice community definition

Economic Benefits

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Accrued through net metering or avoided consumption

Benefits flow to low-income participants

- No up-front costs for DG installation or upfront fee for CS subscription
- Immediate, reliable reductions in energy costs for residents or subscribers
- Payments must be less than 50% of first year estimated annual production / net metering value
- Incentives are not customized to individual economic circumstances

Sub-Program Requirements

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Distributed Generation	Community Solar	Non-Profit/ Public Facility	Community Solar Pilots
• Benefits through net metering or reduced energy costs • Master-metered buildings must pass 50% or more of energy savings to tenants	• Subscribers receive credit on utility bill for their share • Projects must identify partnerships with community stakeholders • Incentives for low-income subscription portion	• On-site PV generation • Located in EJ or Low-Income communities • Provide essential services to those communities	• Competitive procurement based on price • Price for 15 years of delivery for all RECs • Payments made over first 10 years

Non-Profit & Public Facilities

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Critical Service Providers

- Youth centers
- Hospitals
- Schools
- Homeless shelters
- Senior Centers
- Community Centers
- Places of worship
- Affordable housing providers

Community Solar Pilots

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Minimum Criteria for Eligibility	Result in economic benefit for members of the community where project is located	Partnerships with community stakeholders
	Commitment to local hiring, or	Offer subscriptions to community residents and organizations
	Partnership with community-based organization	Existing non-profit providing services in the community of the proposed project
	Funds cannot be distributed solely to a utility	Some funds must include community ownership by project subscribers

Income Eligibility

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SF Distributed Generation	MF Distributed Generation	Community Solar	Non-Profit/ Public Facility

• Household level verification
• Tax returns, 3rd party system, low-income energy program participation
	• 50% verified low-income, or
	• Alternative
	  • HUD voucher qualified or rental assistance
	  • Affordable housing
	  • MF energy efficiency qualified
		• Same as DG
		• Or participant resides in a HUD qualified census tract and signs affidavit
		• 50% must be low-income subscribers
			• Within EJ community or low-income community

Financial DG & CS Consumer Protections

Payments	• Payments or fees may not begin until the project is producing value for the participant
Costs & Fees	• Ongoing costs and fees cannot exceed 50% of the value of energy generated by the system
Loans	• Loans cannot be secured by the participant's home or home equity
Financing Terms	• Financing amounts, terms, and conditions must be based on the participant's ability to repay
Forbearance	• Contracts for loans must include forbearance

Environmental Justice Communities

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Definition

- Higher risk of exposure to pollution based on environmental and socioeconomic factors

25% of funds in sub-programs allocated to projects in EJ communities

- Low-Income Distributed Generation
- Non-Profit and Public Facilities
- Low-Income Community Solar

Other EJ Requirements

- Non-Profits and Public Facilities must be within EJ or low-income communities

Environmental Justice Factors & Designation

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Exposure	Environmental	Demographic	Designation

• Ozone
• Particulate Matter
• NATA Diesel PM
• Air Toxics Cancer Risk
• Respiratory Hazard Index
• Traffic Proximity & Volume
• Lead Paint Indicator
	• Proximity To:
	  • Risk Management Plan Sites
	  • Hazardous Waste Facilities
	  • National Priorities List Sites
	• Wastewater Dischargers Indicator
		• % Low-Income
		• % Minority
		• Less than High School Education
		• Linguistic Isolation
		• Under age 5
		• Over age 64
			• Top 25% scoring communities designated as EJ communities
			• 2,422 census block groups designated
			• Communities can self-designate
			• Assessment is based on qualitative and quantitative evidence

Approved Vendors

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Approved Vendor Types

- Approved Vendors
- Aggregator AVs (project managers)
- Aggregator Designees (subcontractors)
- Single Project Approved Vendors

Approved Vendor Requirements

- Community Involvement
- Job Training & Hiring Trainees
- Income Verification
- Marketing
- Consumer Protections

Incentives

REC prices adjusted from ABP

Based on system size, building size, geography

DG	CS	NP/PF
0% Debt	35% Debt	--
1-4 unit: customers retain 100% of net metering benefit	Customer retains 50% of virtual net metering credits	50% of energy value
Larger buildings: customers retain 50% of net metering benefit	Higher incentive for LI subscriber share	
	Adder for 100% LI Adder for >25% small subscribers	

CS Pilots
REC price based on bid price
Total funding up to $50 million
Project funding up to $20 million

Geography
Group A: Ameren, Mt. Carmel, Mid-American, rural elec coops & munis in MISO
Group B: ComEd, rural elec coops & munis in PJM.

Site Suitability Guidelines

Identify site conditions that are barriers to the installation of rooftop DG and ground-mounted PV systems.

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Roofing

- Material inspection
- 15 years of life
- Local building codes

Structural

- Withstand PV load
- No decay, fire or water damage
- Local structural code

Electrical

- Current National Electric Code
- No hazardous conditions
- No active knob & tube wiring

Space & Accessibility

- Safe access to panel and equipment
- Space for system equipment
- Accessibility clearances

Health & Safety

- No hazardous materials that will be disturbed
- No pests in work areas

Ground Mounted

- Foundation that can support PV load
- Flood risk, wetlands, protected resources

Project Selection

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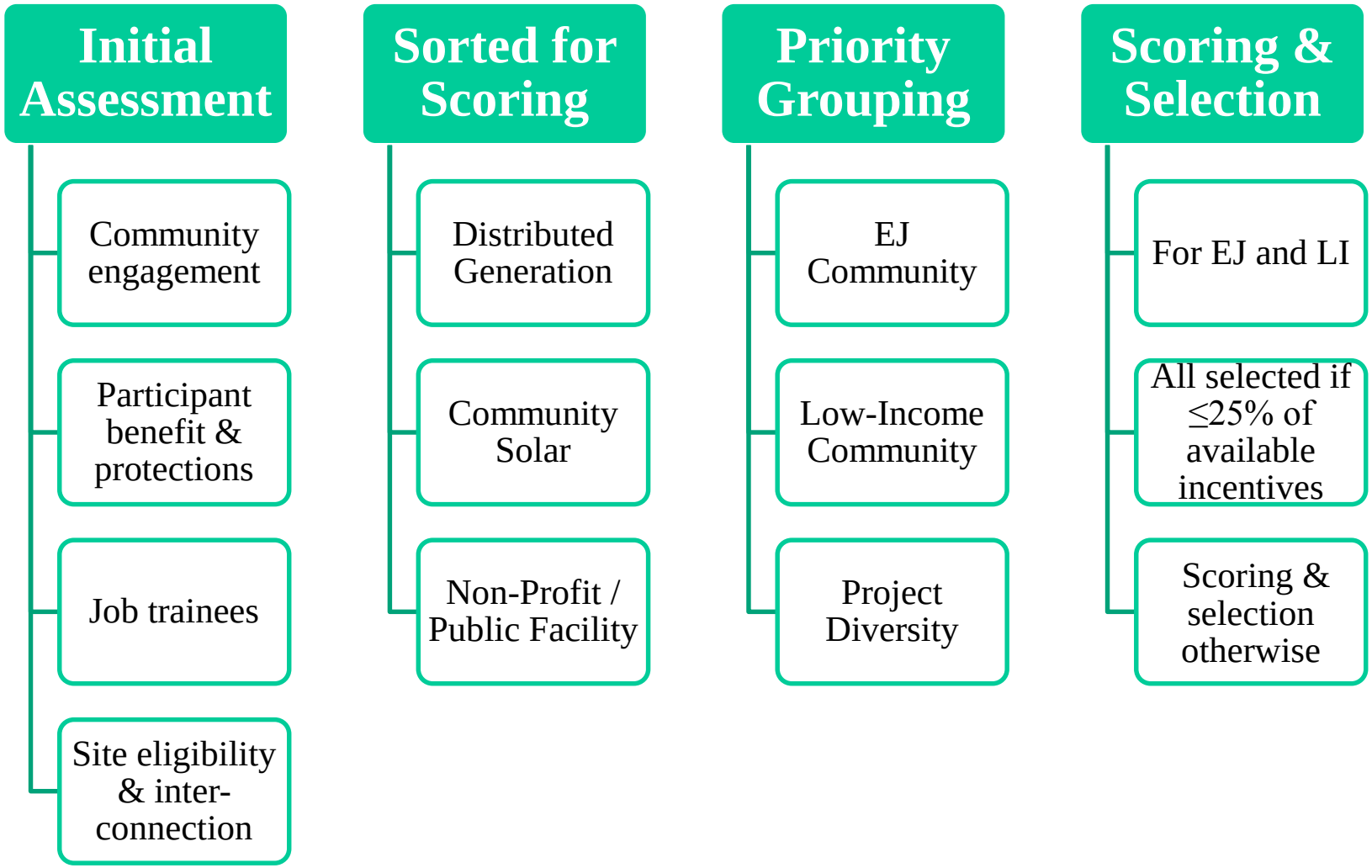

Project Selection

Project Selection Point Attributes

	Environmental Justice	Low-Income Community	Project Diversity
All Sub-Programs	• LI Community • MWBE AV	• EJ Community • MWBE AV	• EJ & LI Community • MWBE AV
DG	• Participant Savings >50% • Diversity: Utility Group A or Group B • Diversity: 1-4 Units , 5+ Units		
CS	• 100% Subscriber Owned • NP or PF Anchor • Diversity: Utility Group A or Group B • Diversity: ≤250kW, >250kW		
NP & PF	• Participant Savings >50% • Diversity: Utility Group A or Group B, Non-Profit or Public Facility • Diversity ≤100kW, >100kW		

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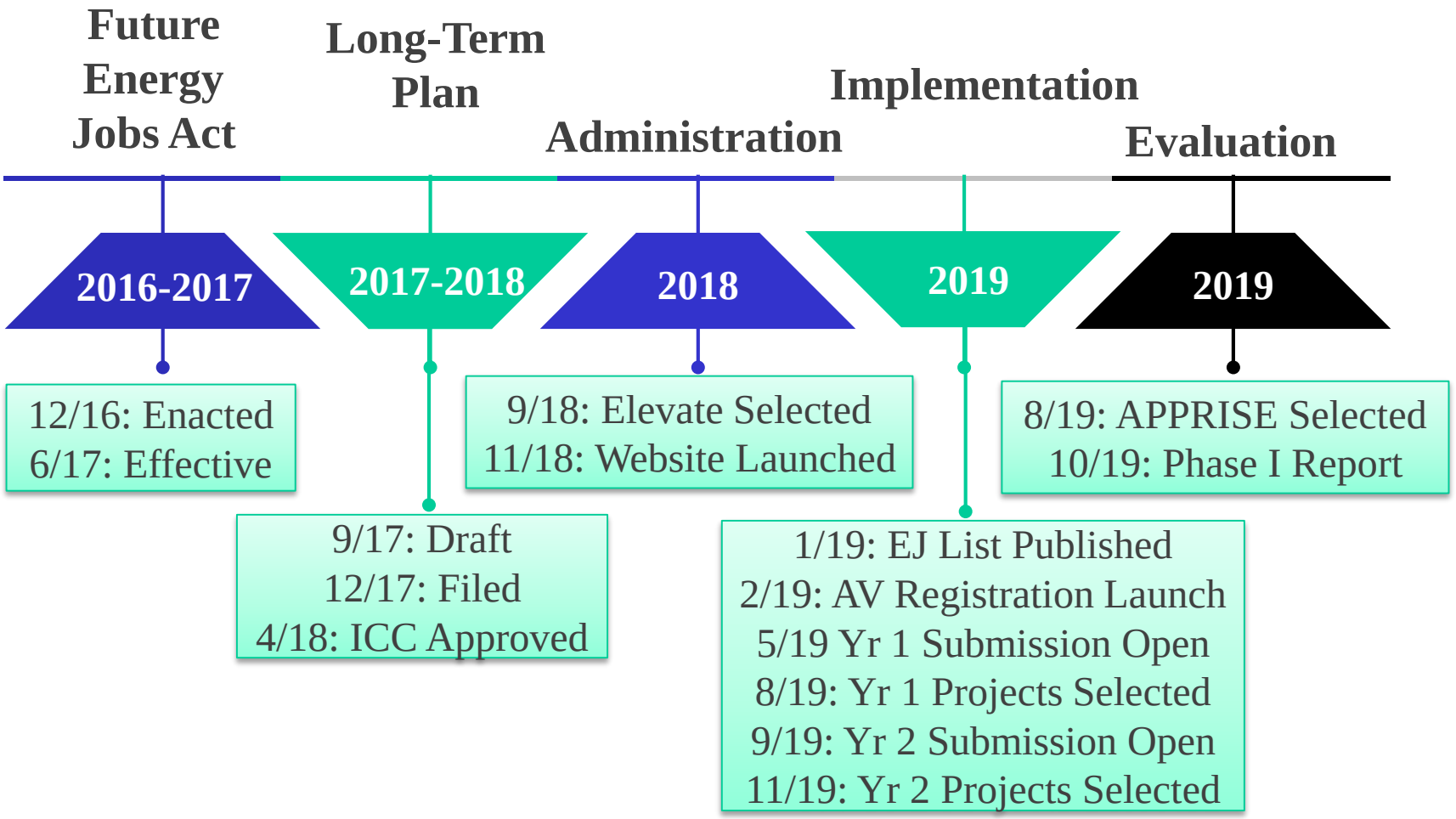
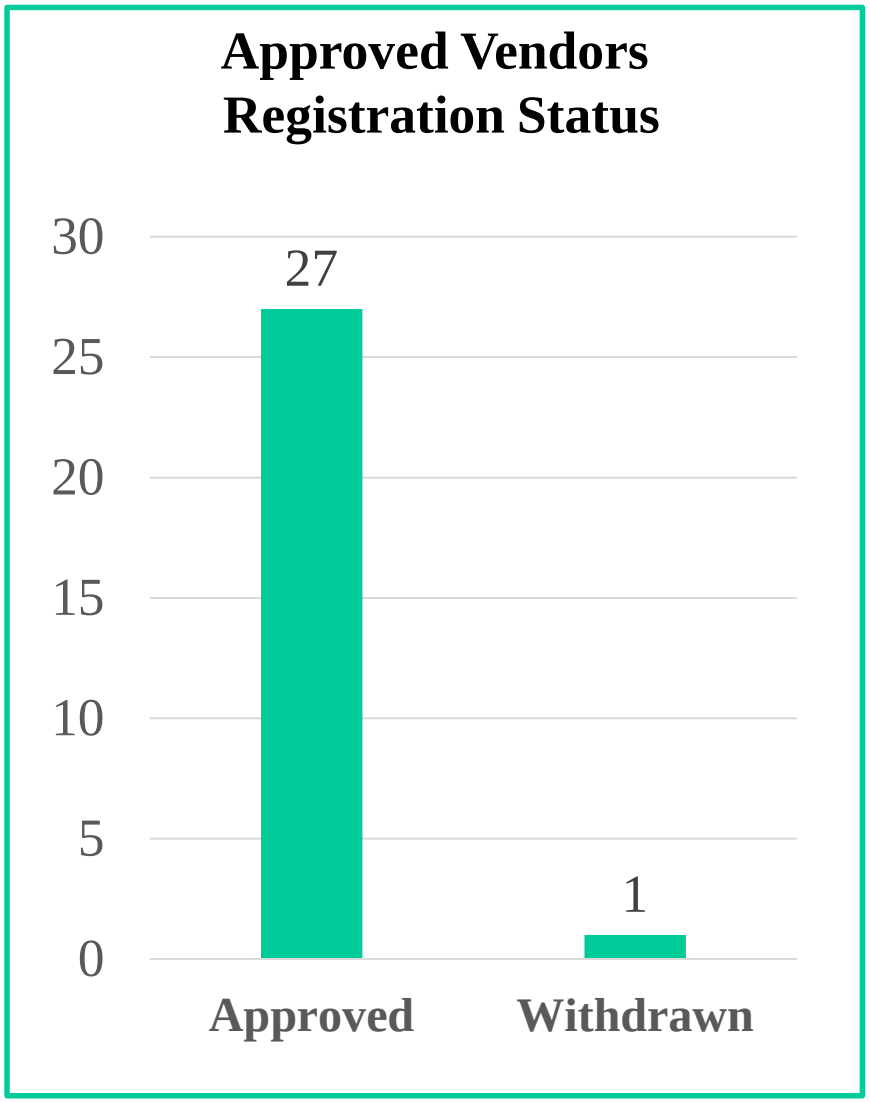
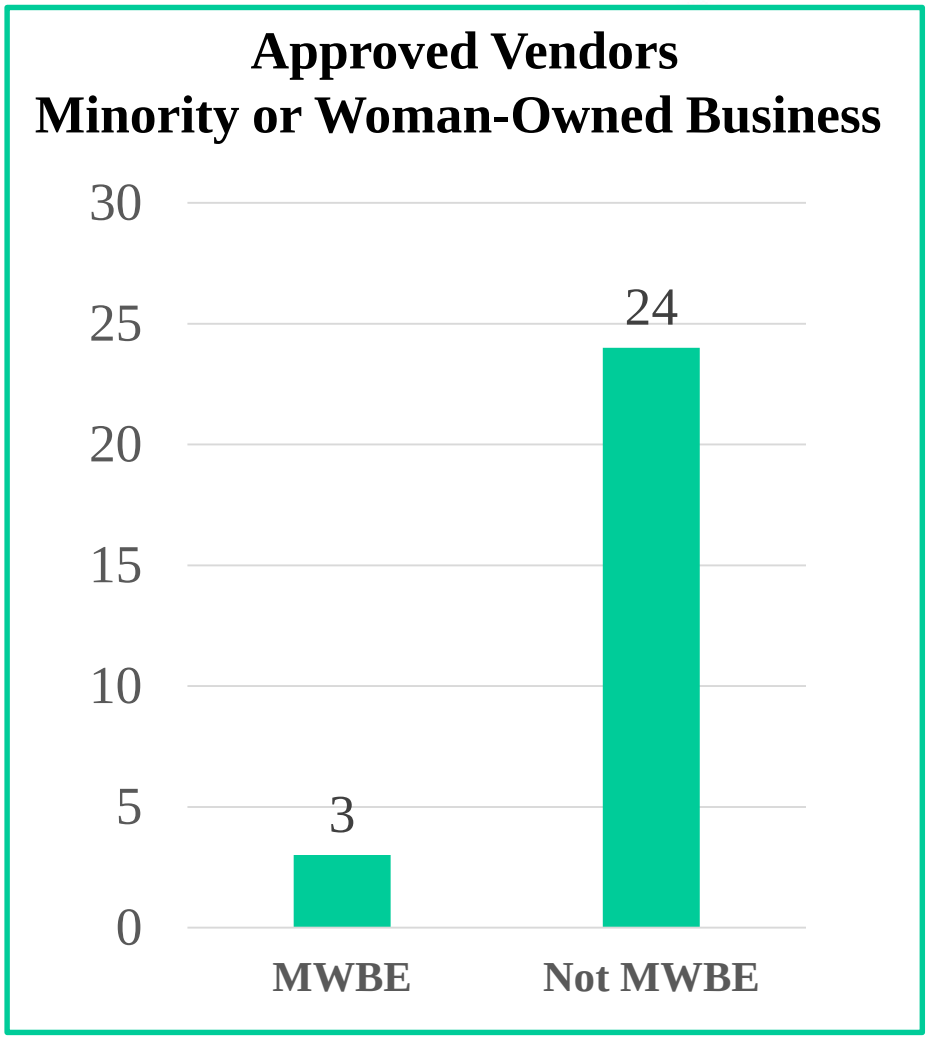
Phase I Evaluation
Initial Implementation Experience (Year 1)

Key Implementation Dates



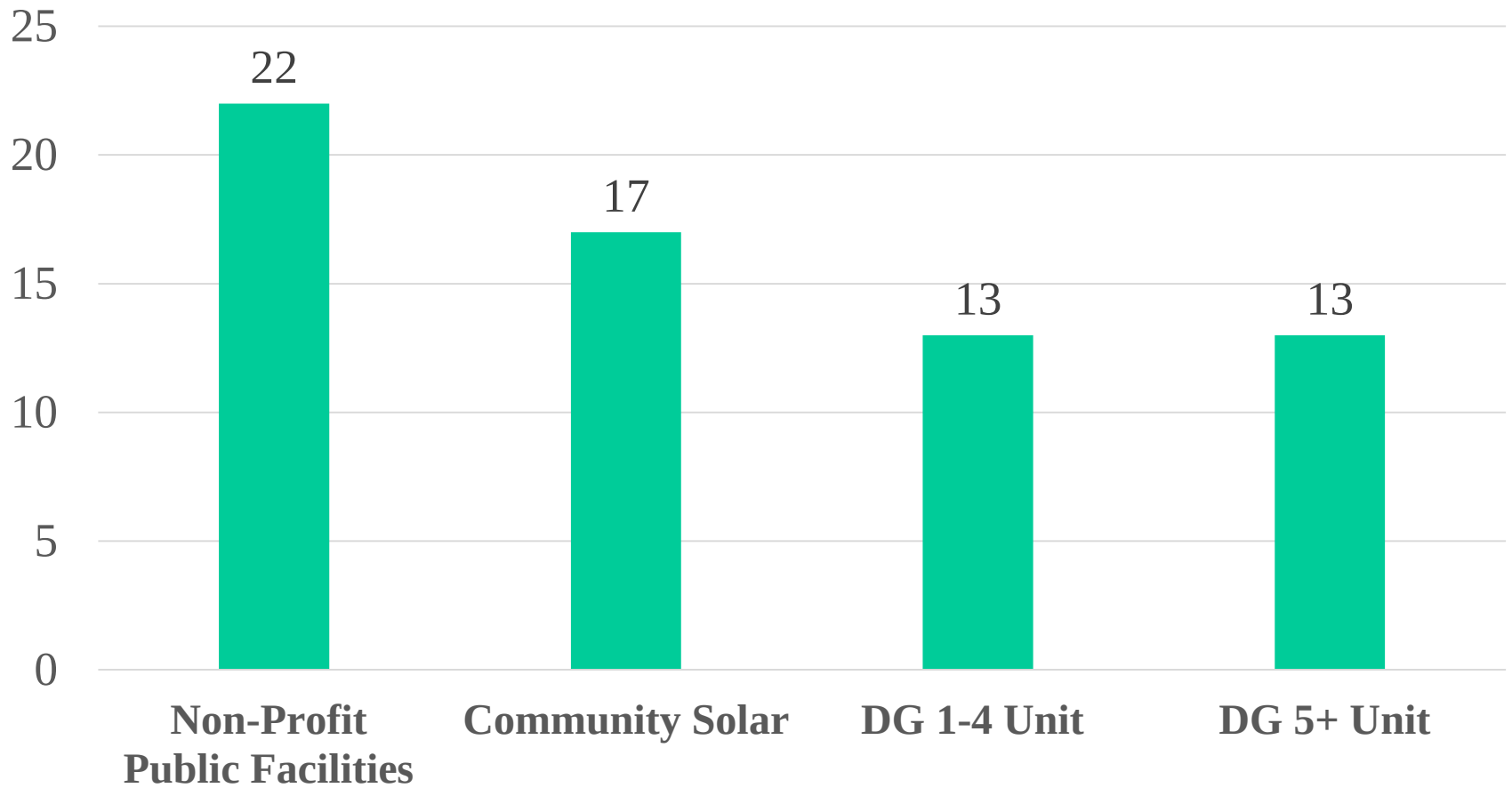
AV Registration





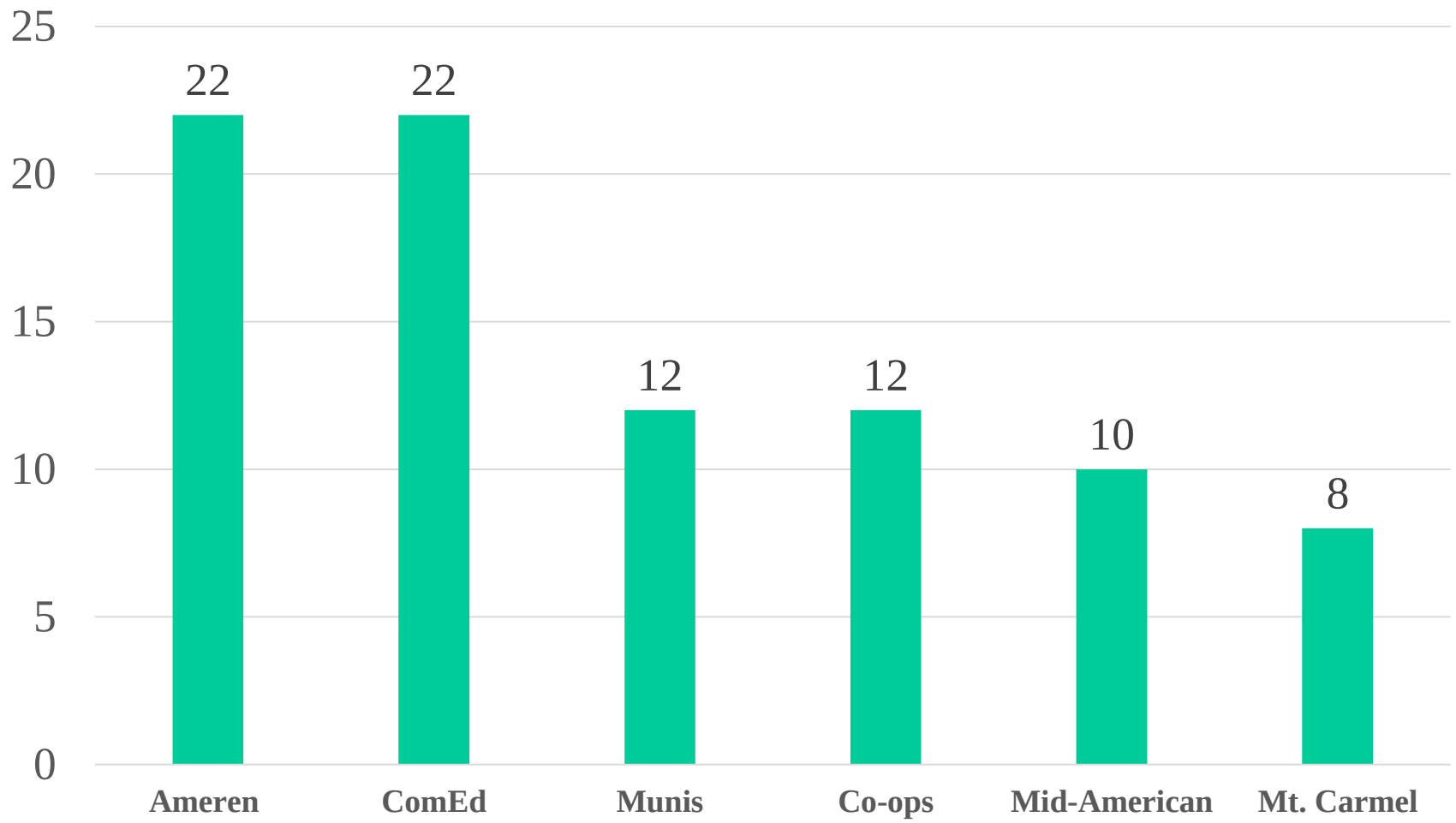
Vendor Data as of September 2019

AV Project Types



Vendor Data as of September 2019. Vendors may indicate more than one project type.

AV Service Territory

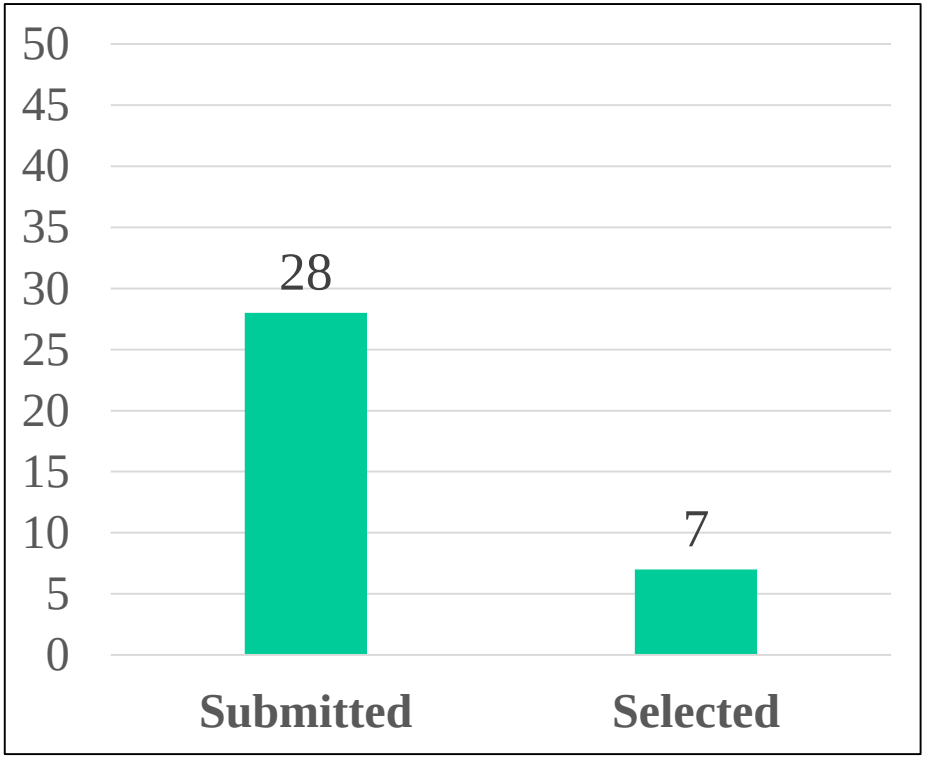


Vendor Data as of September 2019. Vendors may operate in more than one territory.

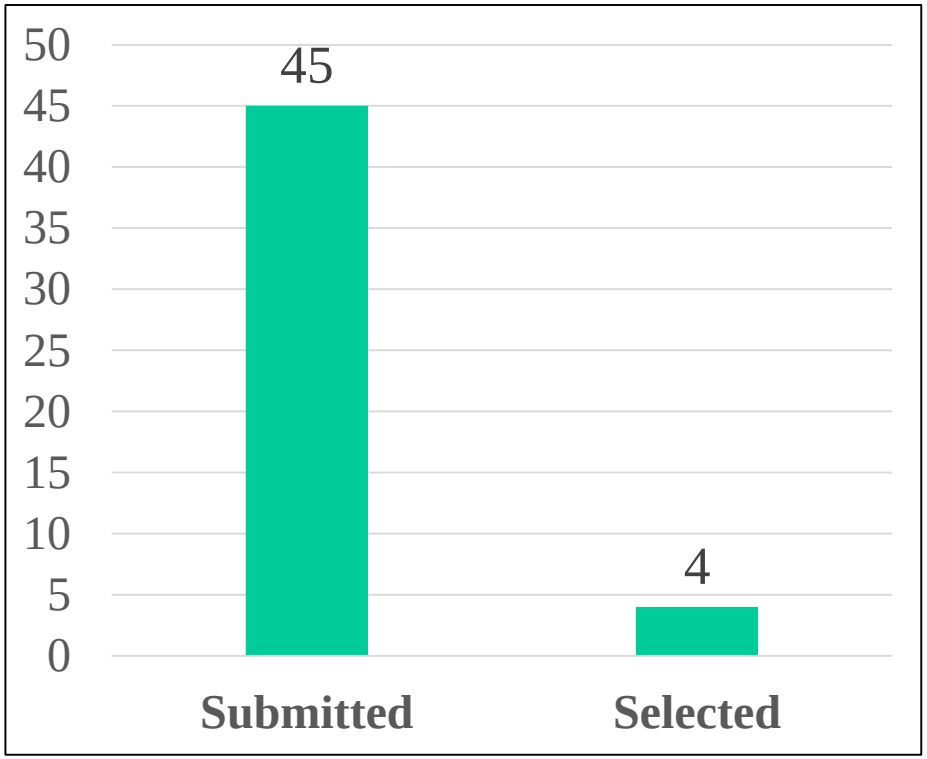
Project Application & Selection

2018-2019 Projects
Submitted & Selected

Non-Profit/Public Facilities



Low-Income Community Solar



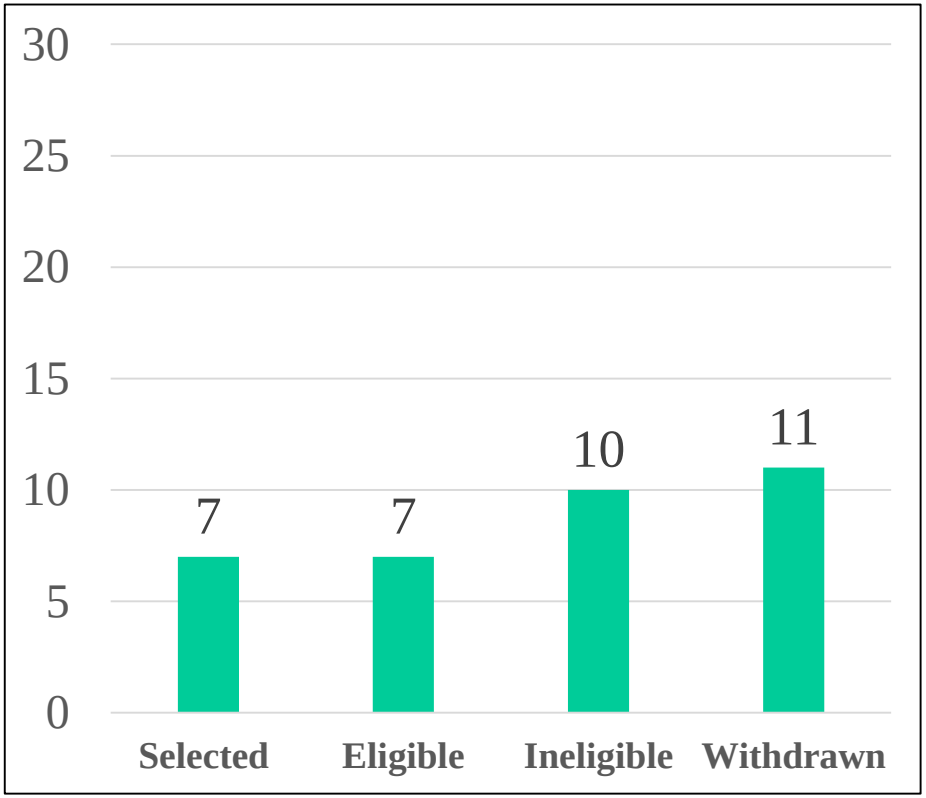
Only one Low-Income Distributed Generation project was submitted and was later withdrawn.

Project Data as of October 2019

Project Eligibility

2018-2019 Projects
Eligibility Status

Non-Profit/Public Facilities



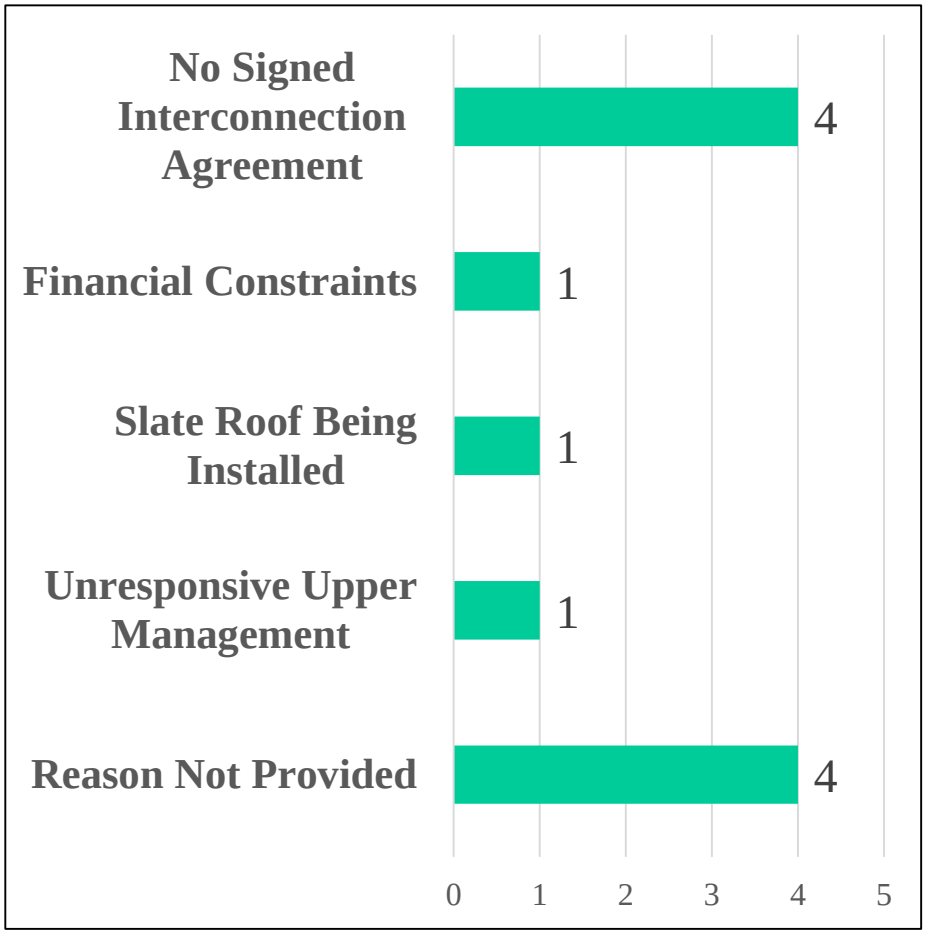
Low-Income Community Solar

Project Data as of October 2019

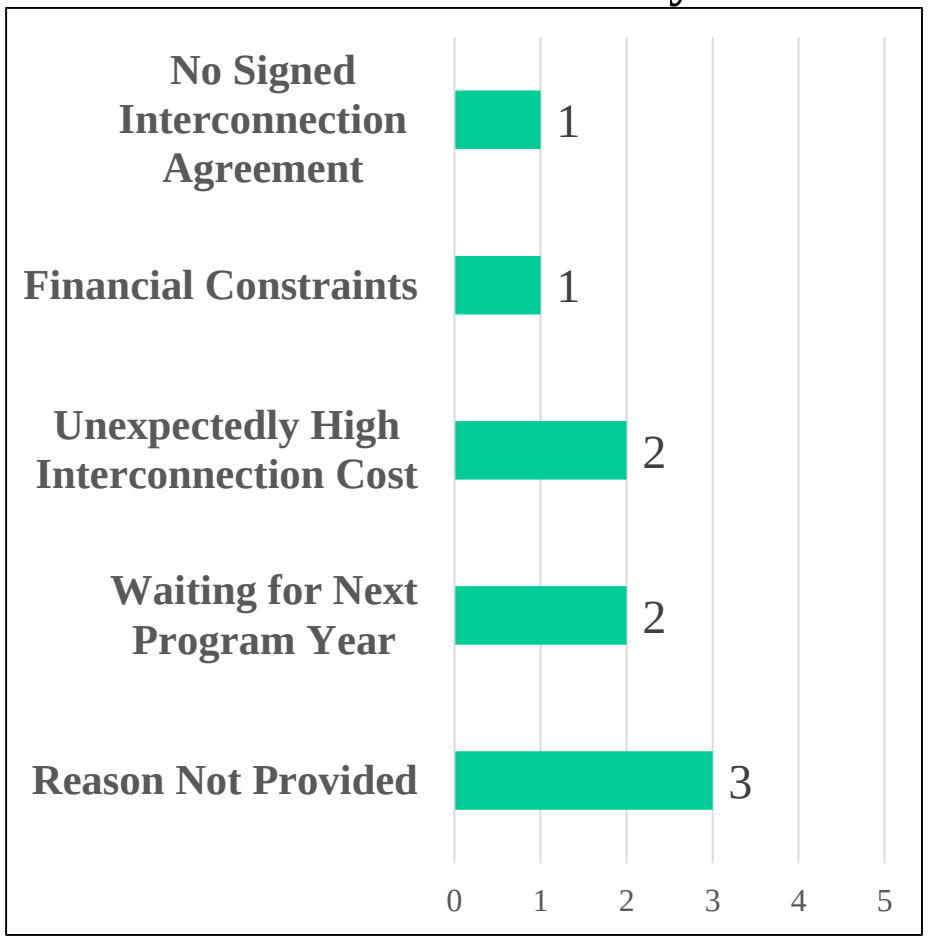
Projects Withdrawn

2018-2019 Projects
Reasons for Withdrawal

Non-Profit/Public Facilities



Low-Income Community Solar

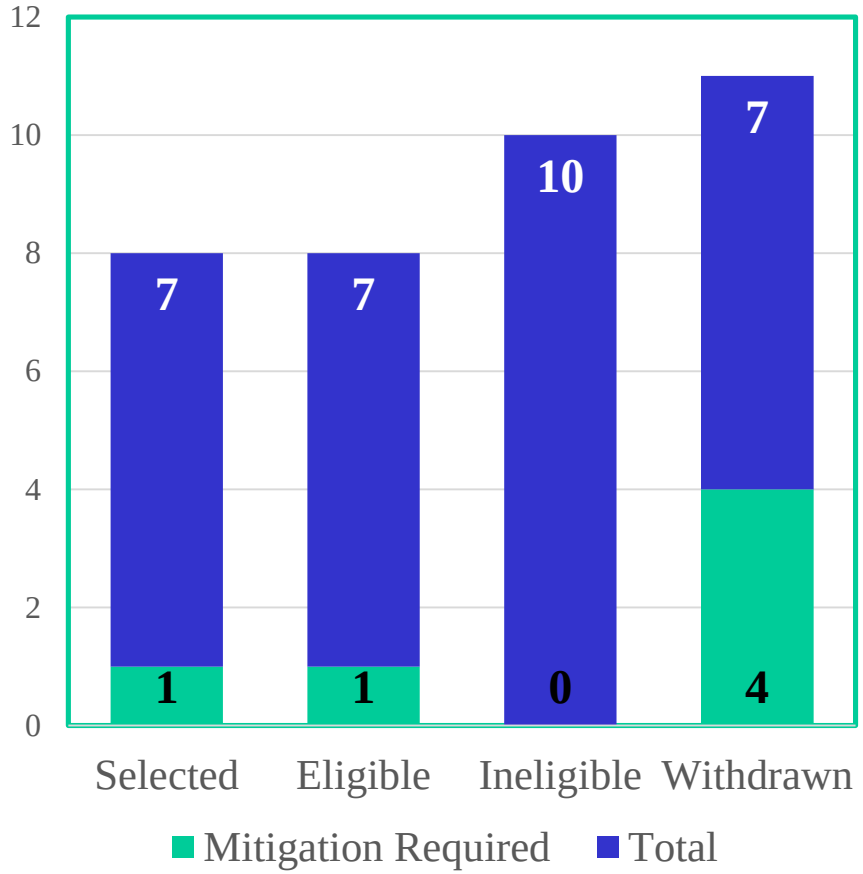


Project Data as of October 2019

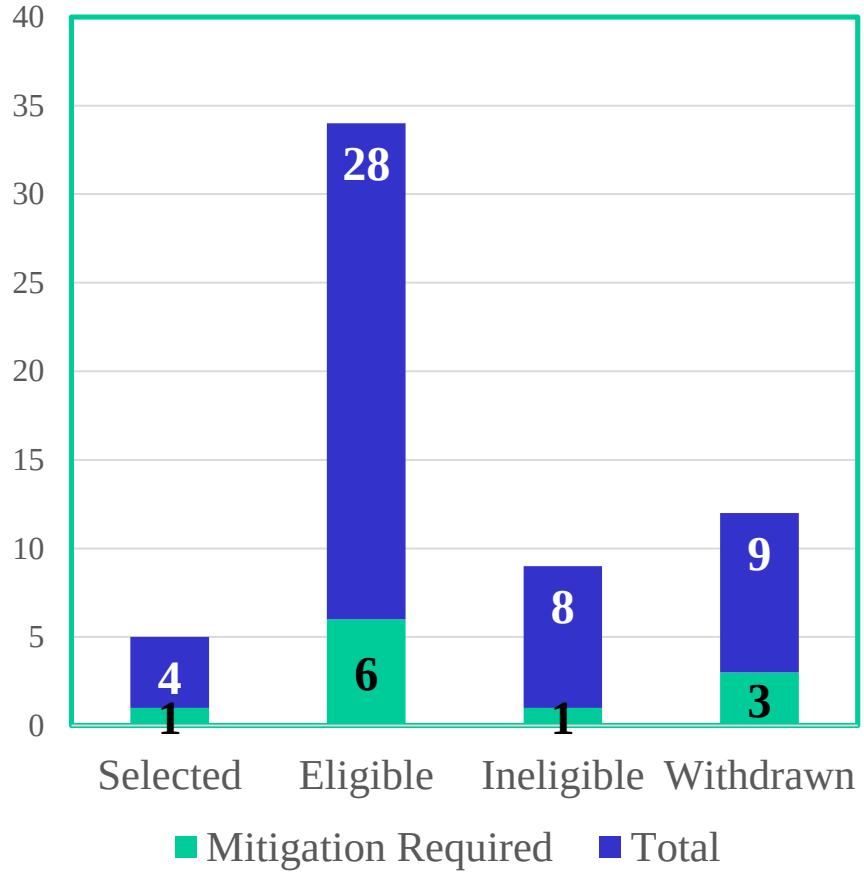
Mitigation Required

2018-2019 Projects
Project Mitigation Required

Non-Profit/Public Facilities



Low-Income Community Solar

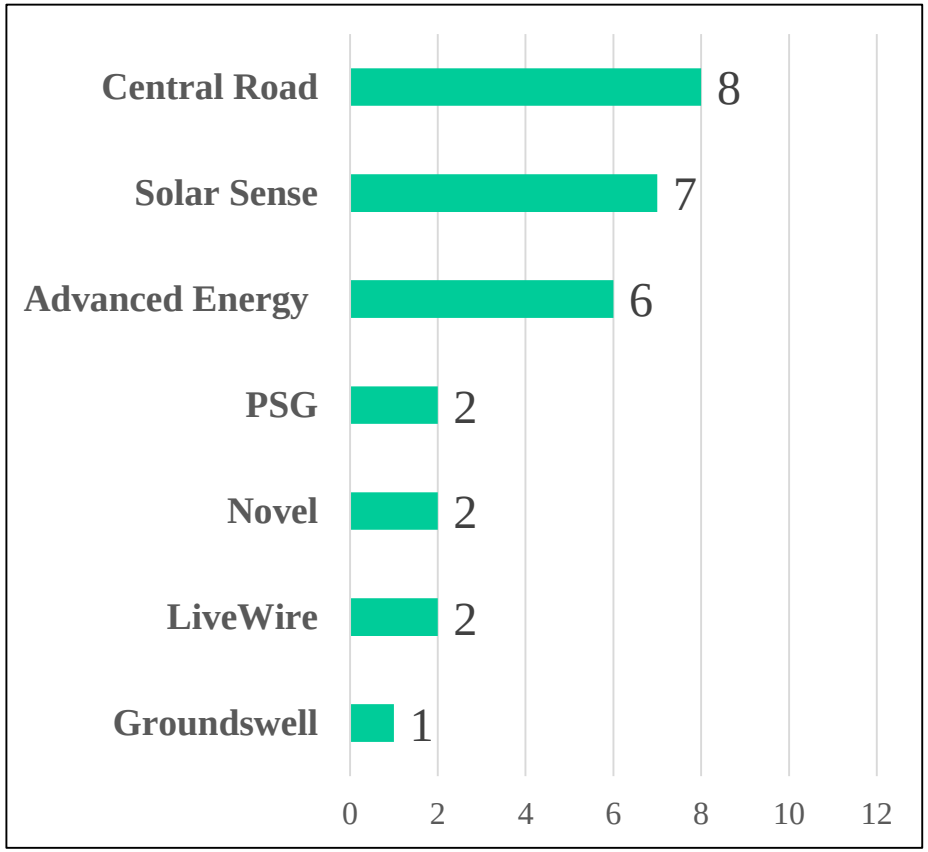


Project Data as of October 2019

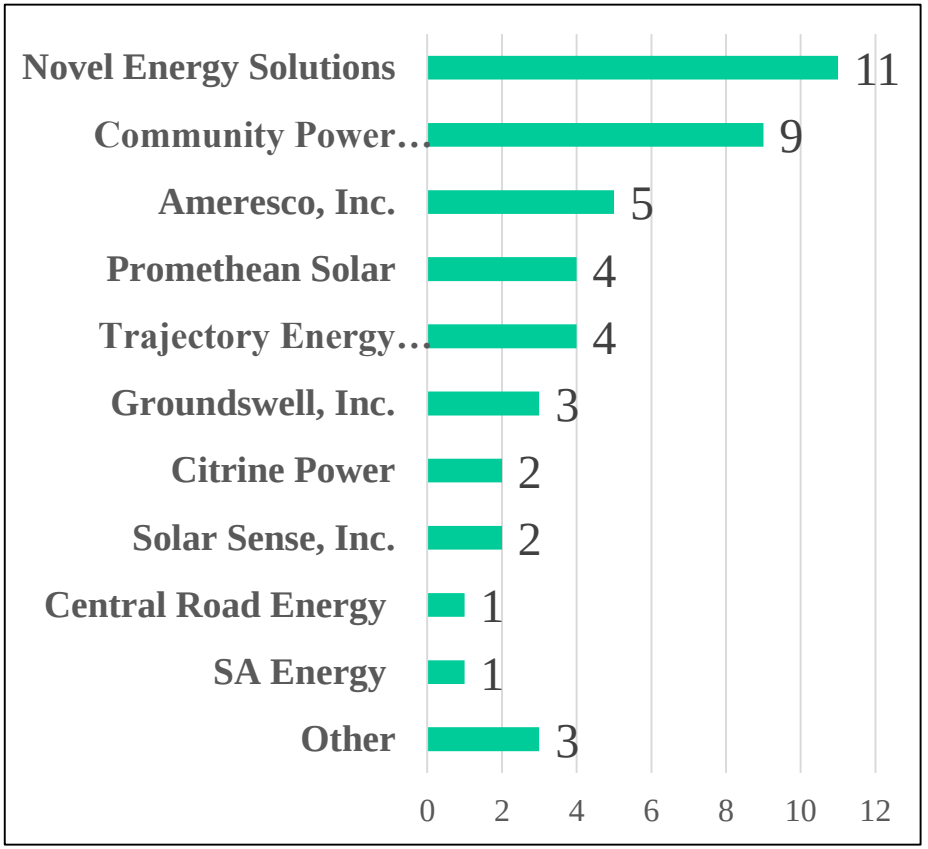
Submitted Projects

2018-2019 Projects Submitted By Approved Vendor

Non-Profit/Public Facilities



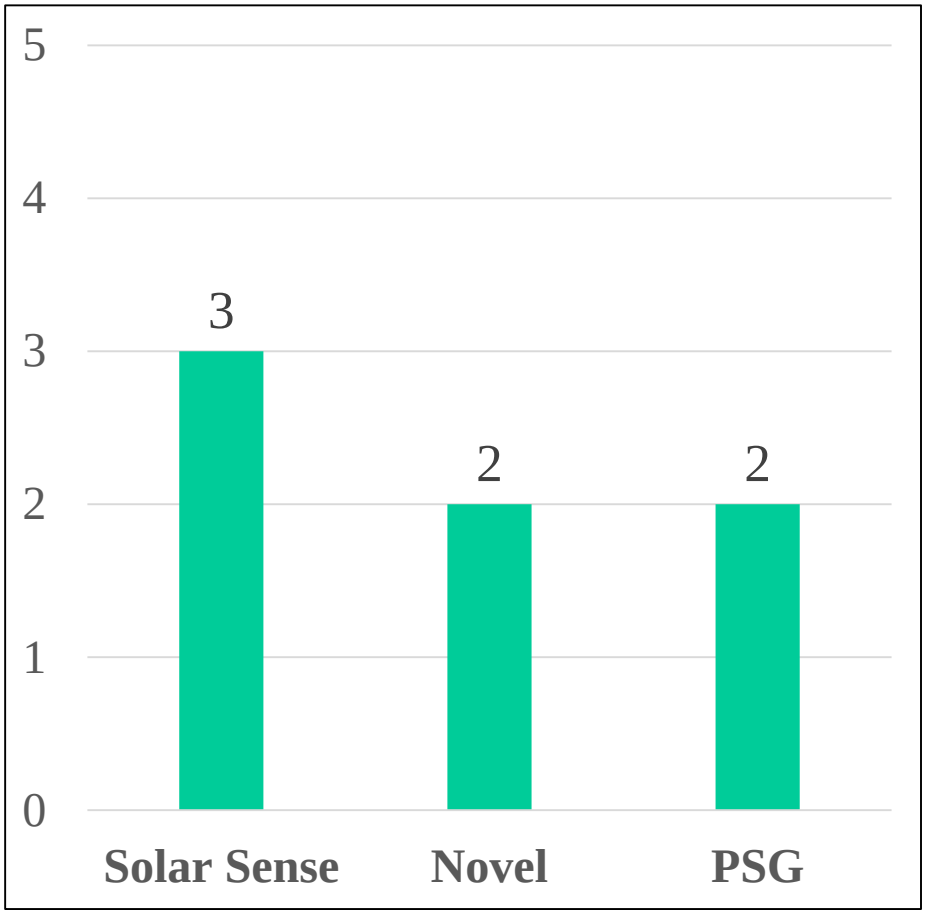
Low-Income Community Solar

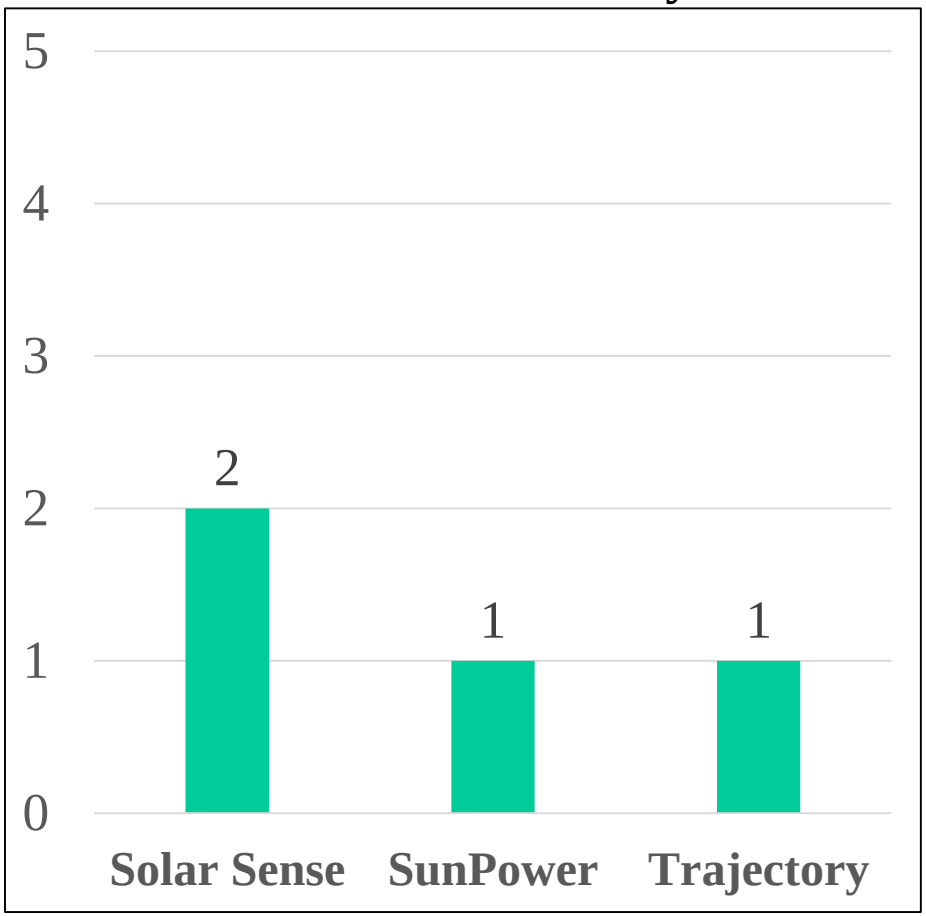


Project Data as of October 2019

Selected Projects

2018-2019 Projects Selected
By Approved Vendor



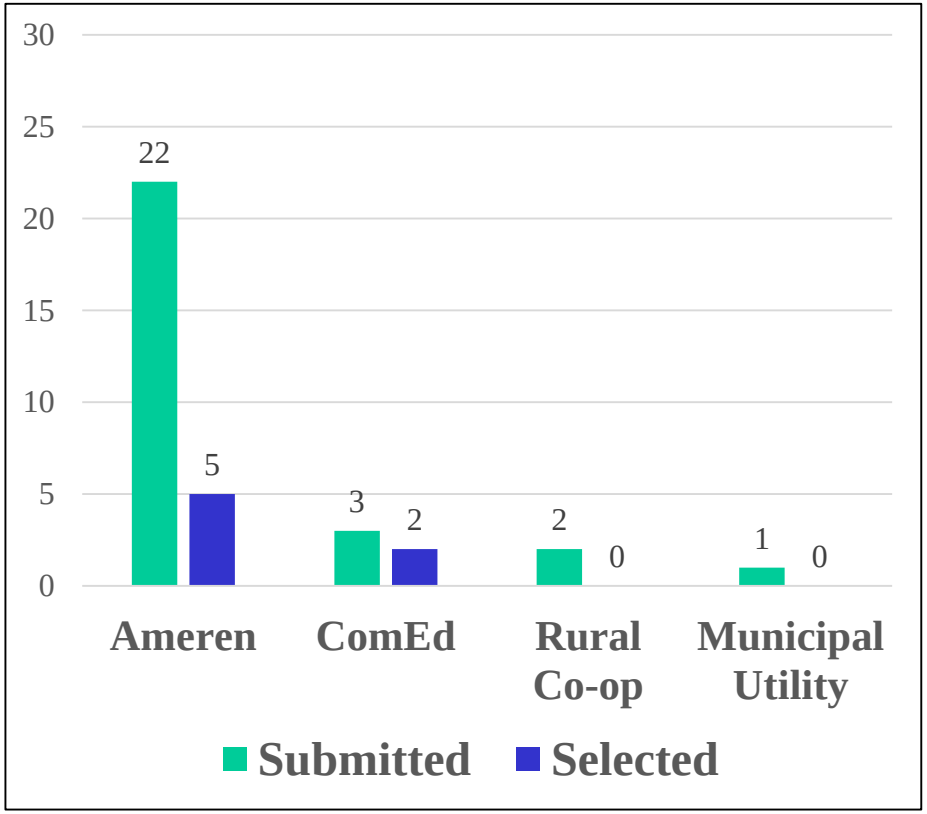


Project Data as of October 2019

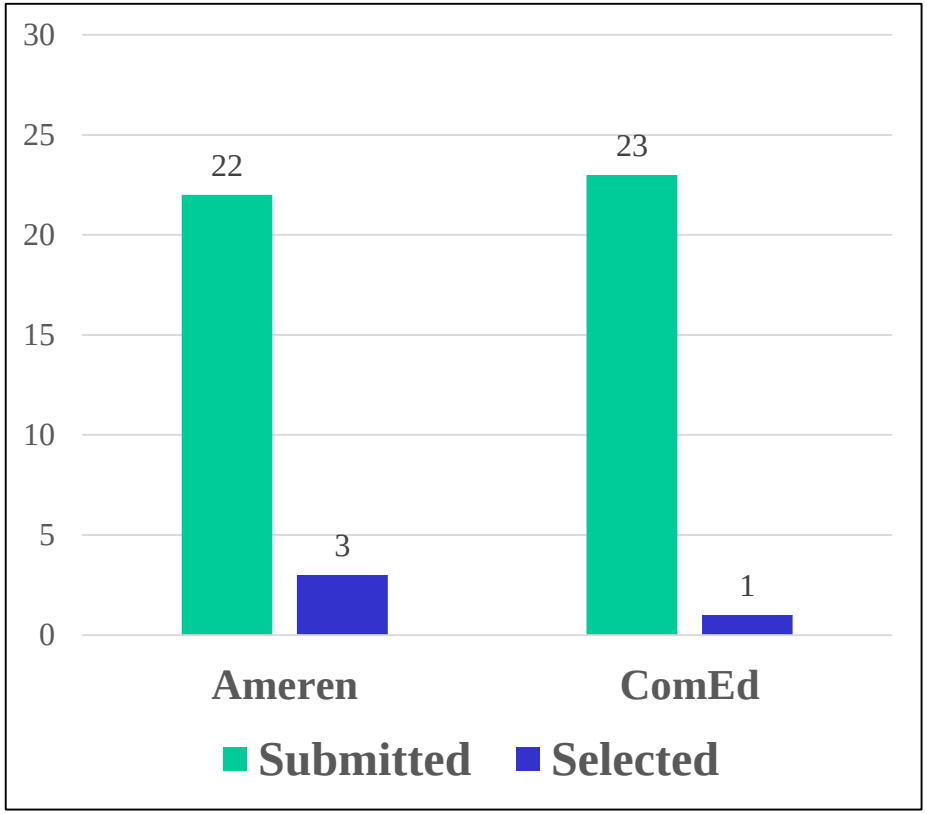
Project Application & Selection

2018-2019 Submitted & Selected Projects
By Utility

Non-Profit/Public Facilities



Low-Income Community Solar

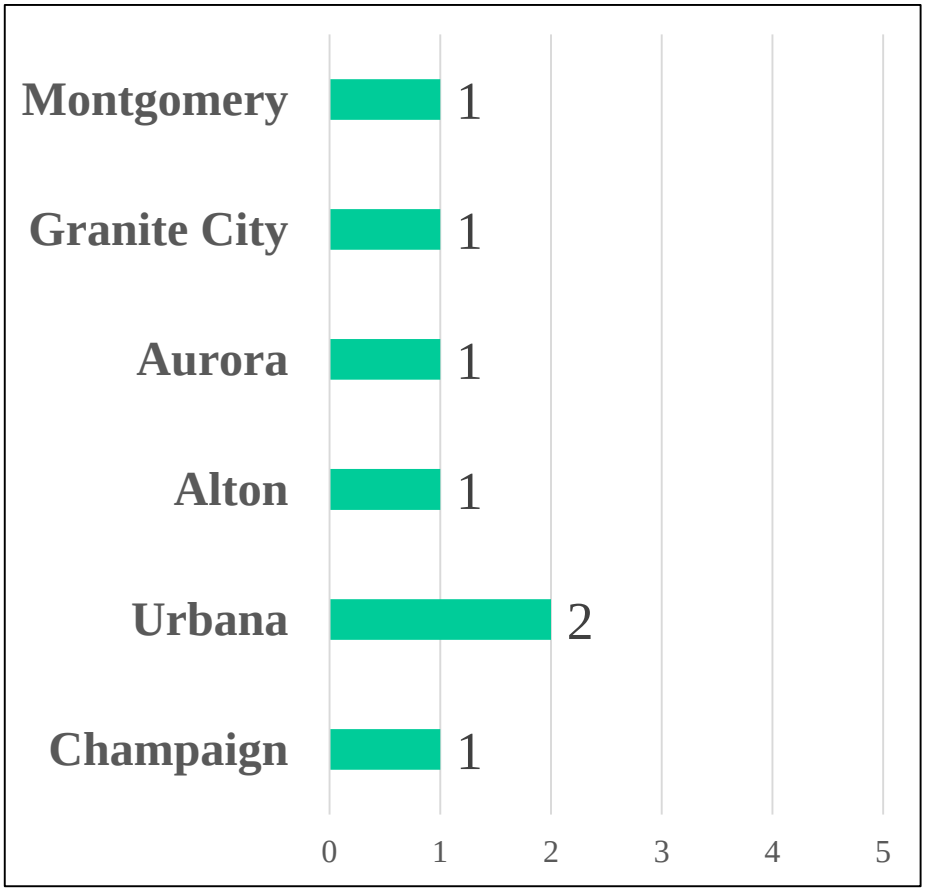


Project Data as of October 2019

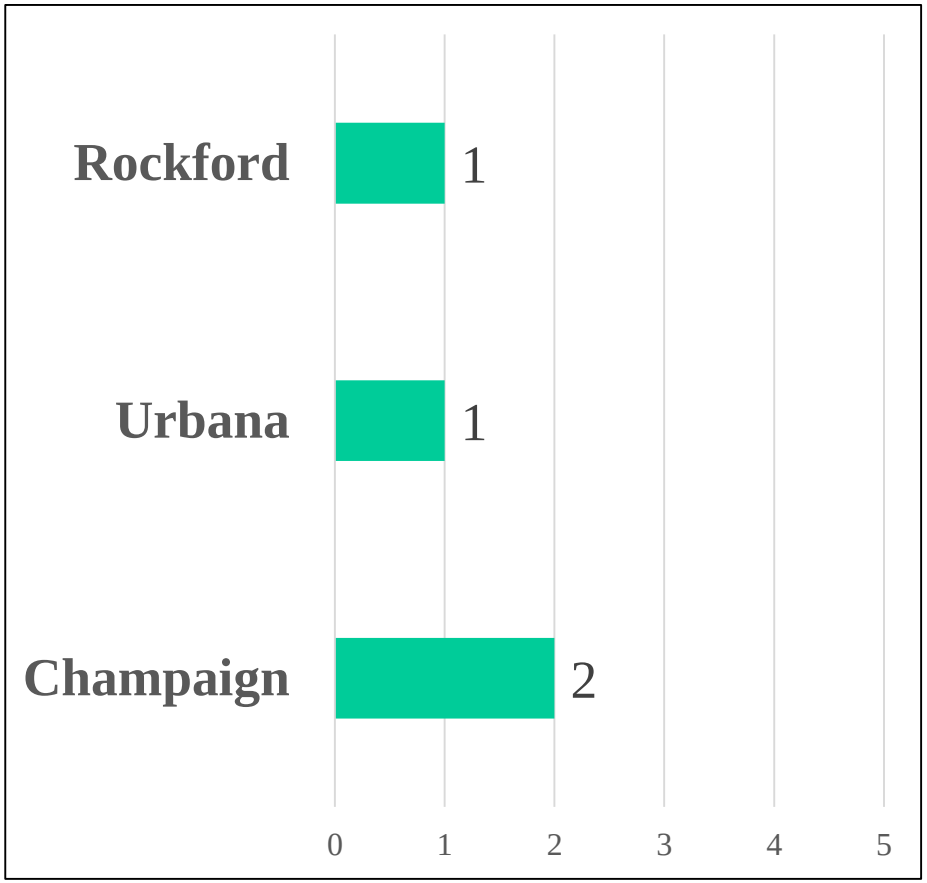
Selected Projects

2018-2019 Selected Projects By City

Non-Profit/Public Facilities



Low-Income Community Solar

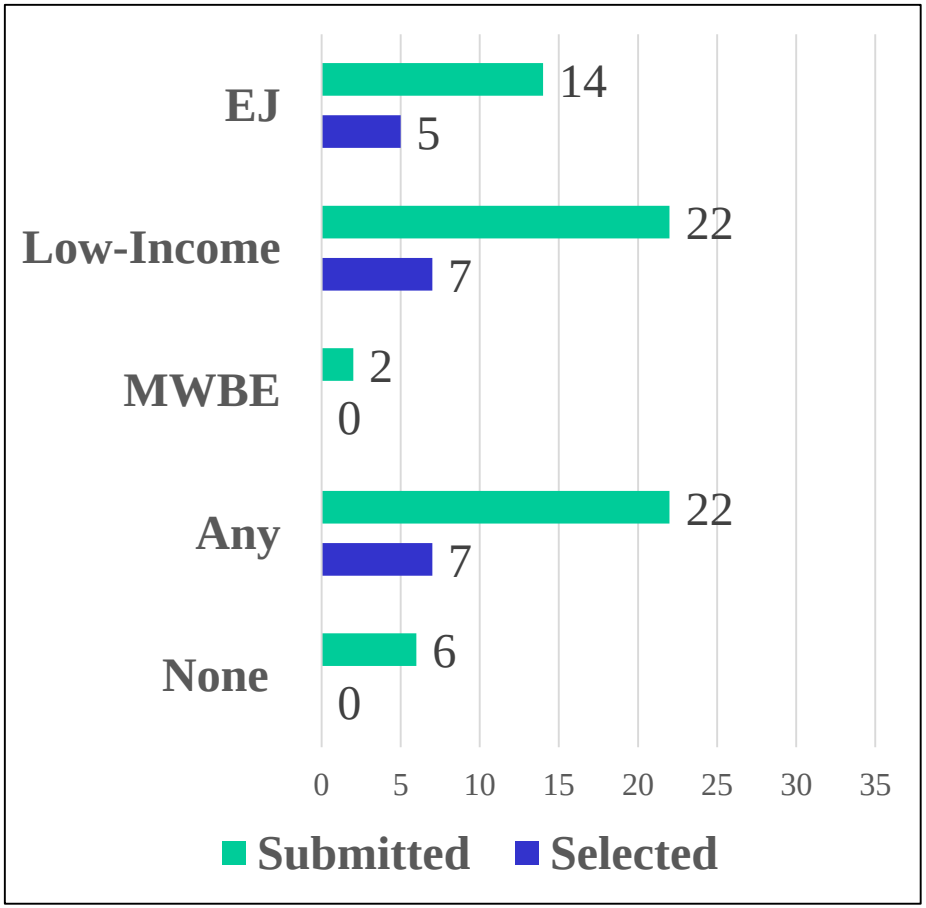


Project Data as of October 2019

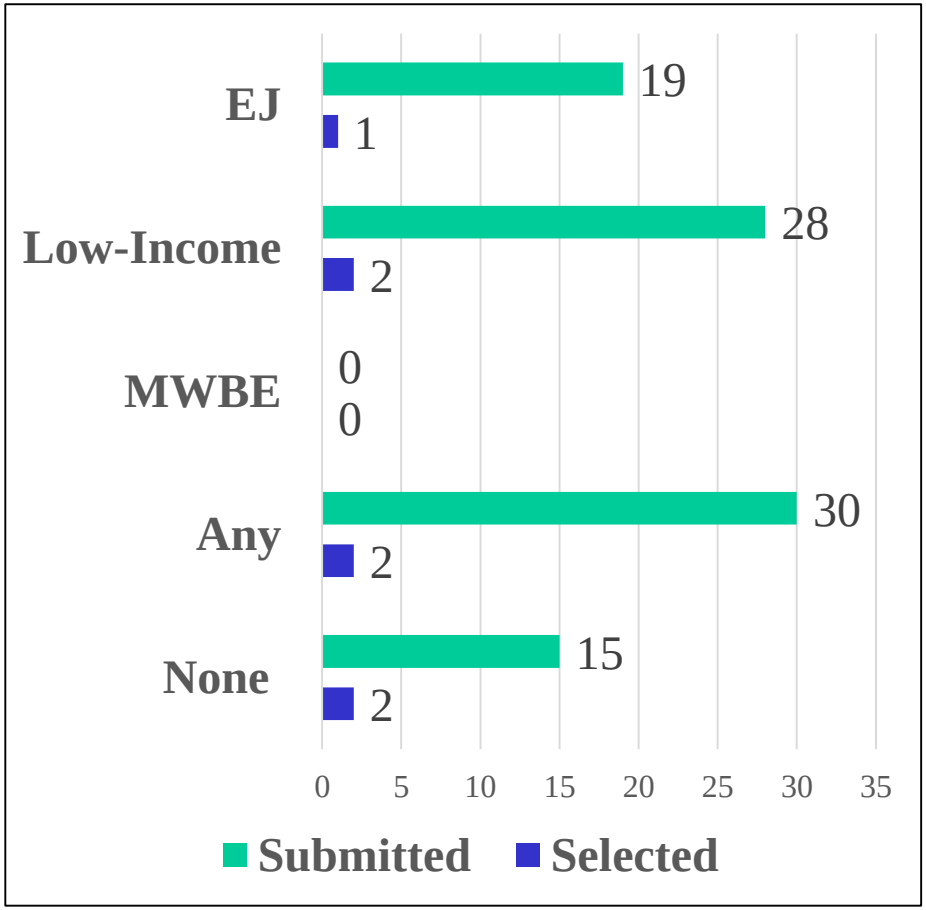
EJ & LI Communities

2018-2019 Submitted & Selected Projects

Non-Profit/Public Facilities



Low-Income Community Solar



Project Data as of October 2019

Community Solar Anchor Type

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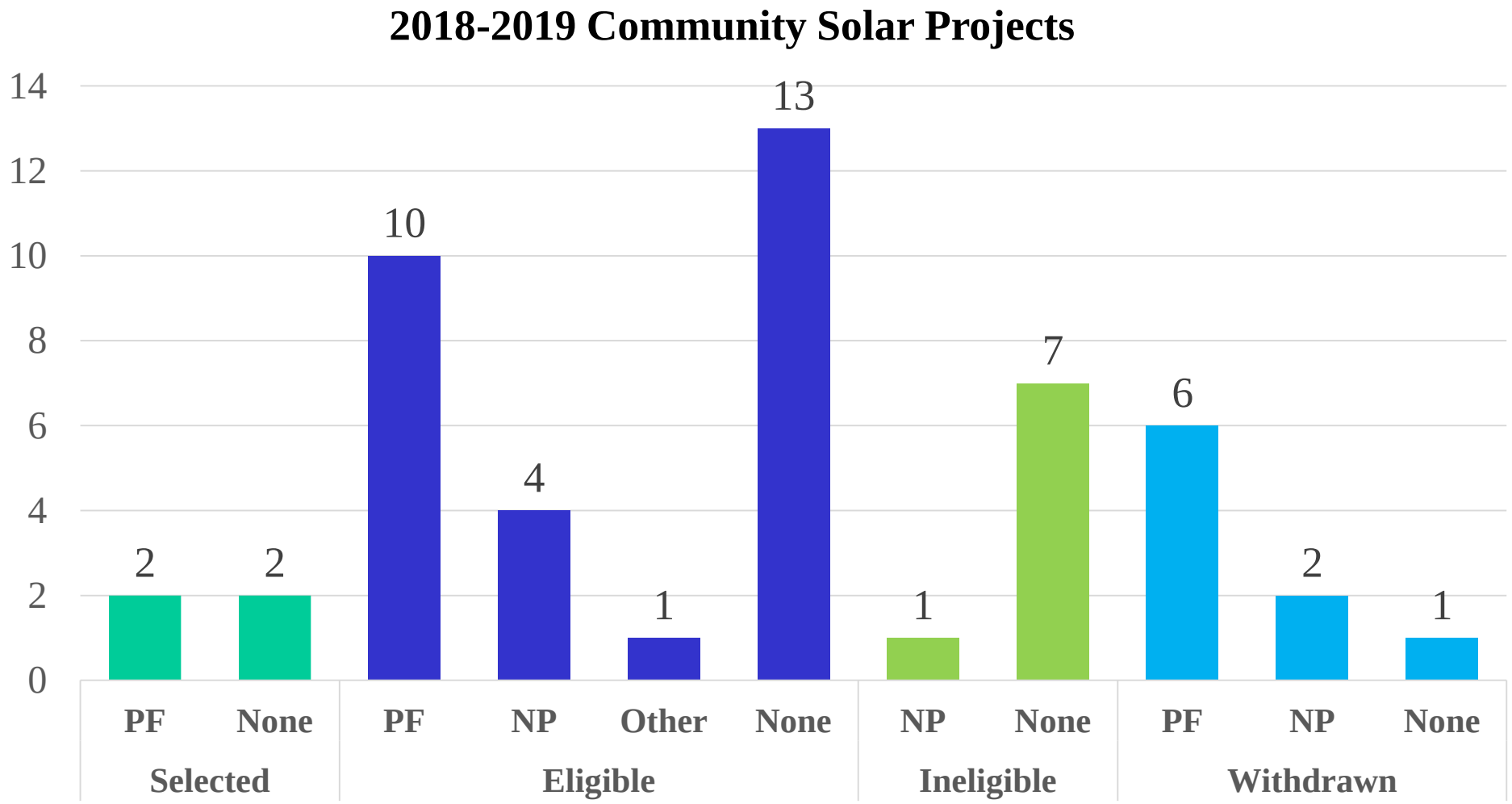
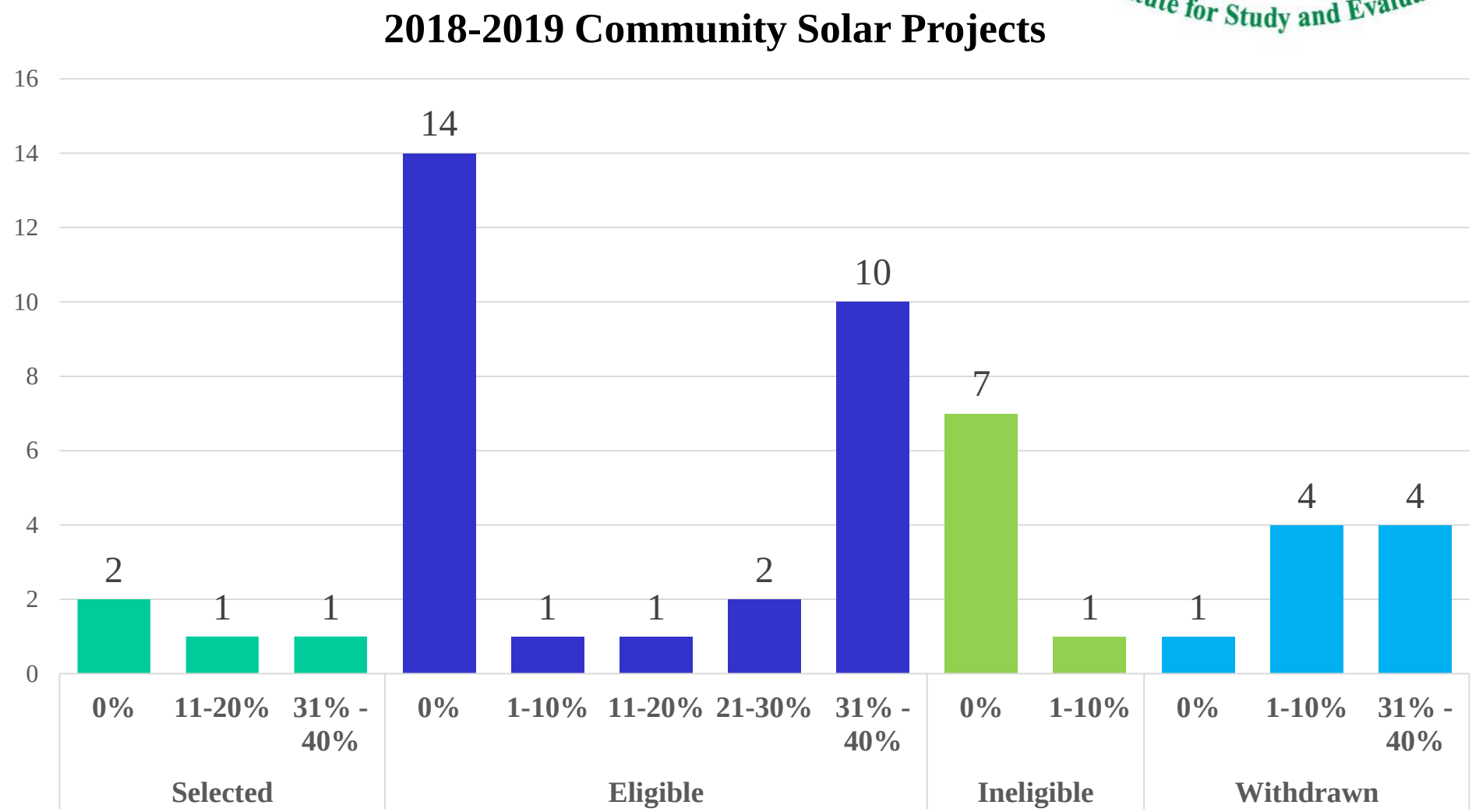


Project Data as of October 2019

Projected Anchor Share

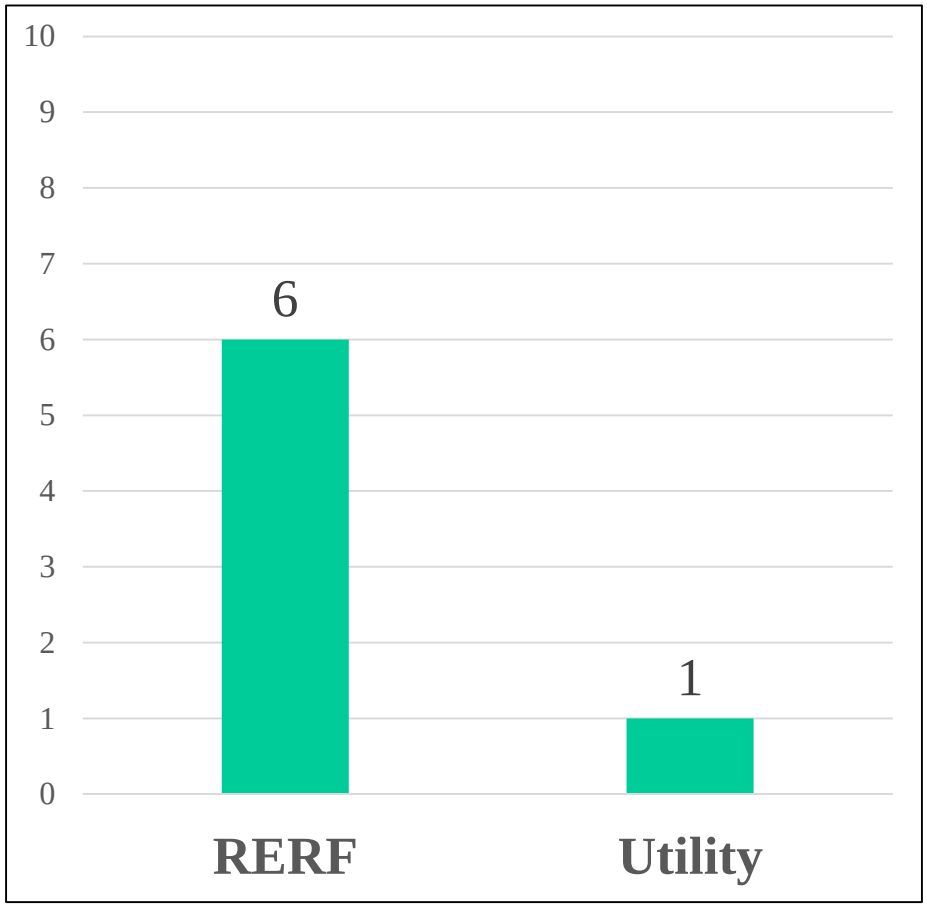


Project Data as of October 2019

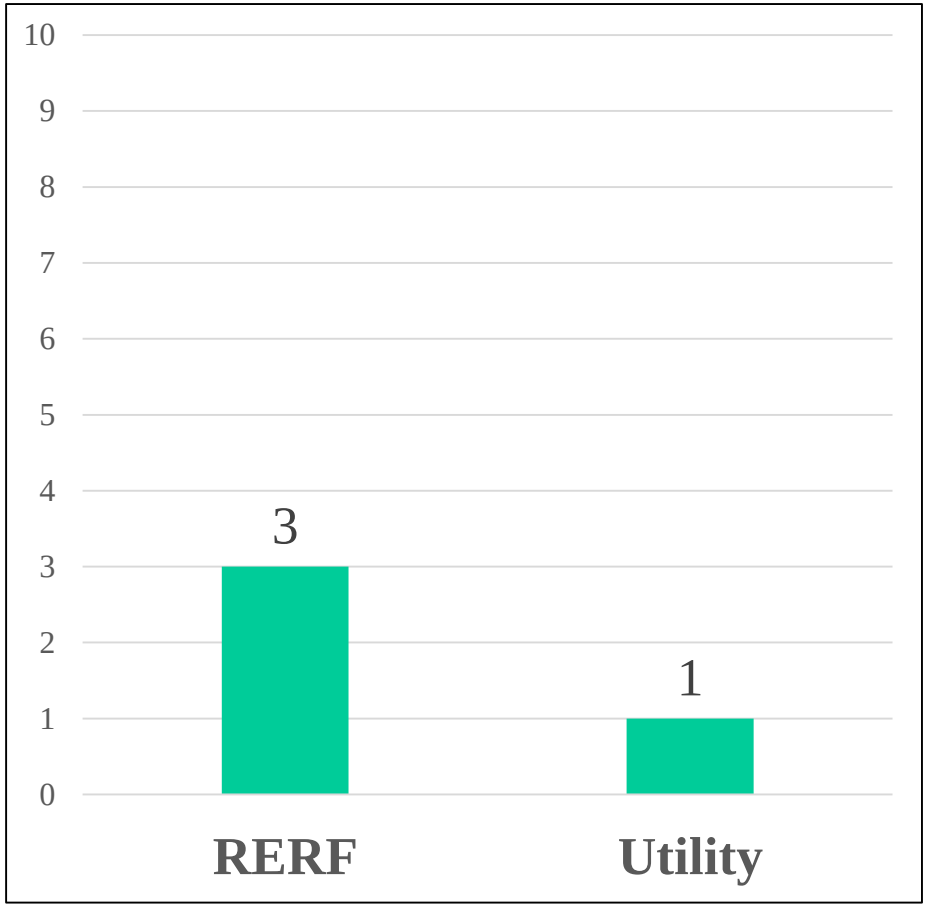
Funding Source

2018-2019 Selected Projects

Non-Profit/Public Facilities

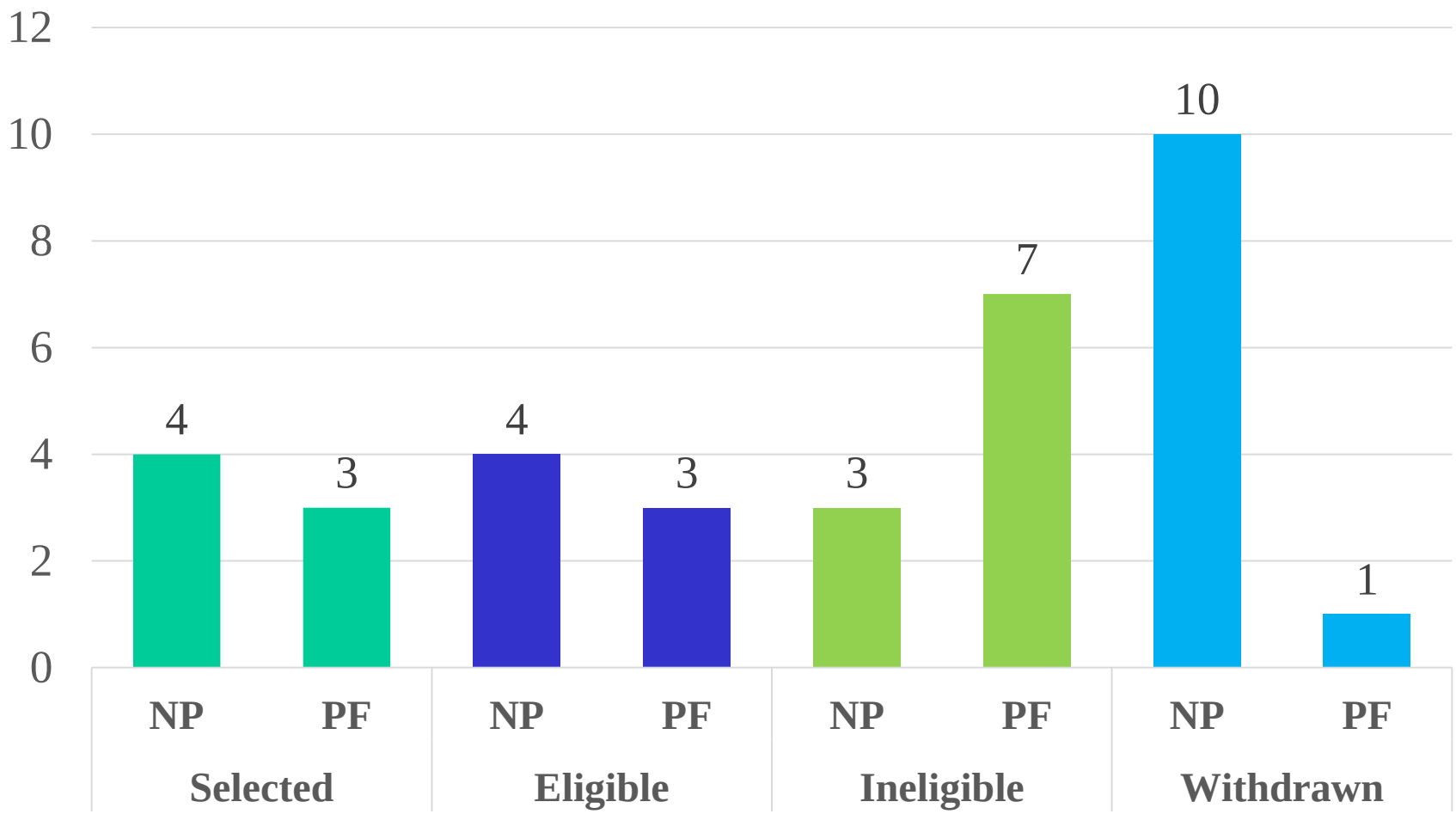


Low-Income Community Solar



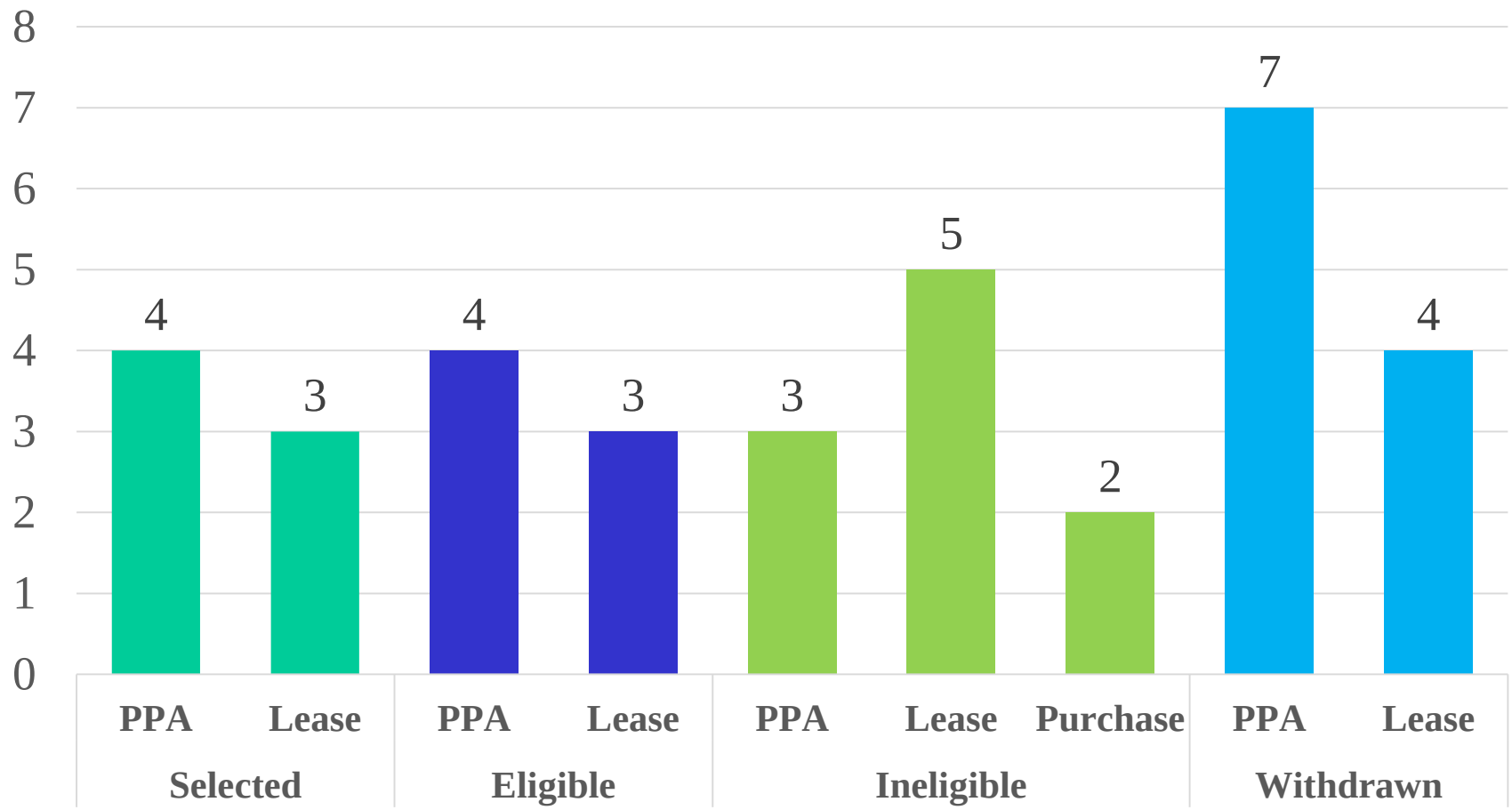
Project Data as of October 2019

Non-Profit & Public Facility



Project Data as of October 2019

Agreement Type

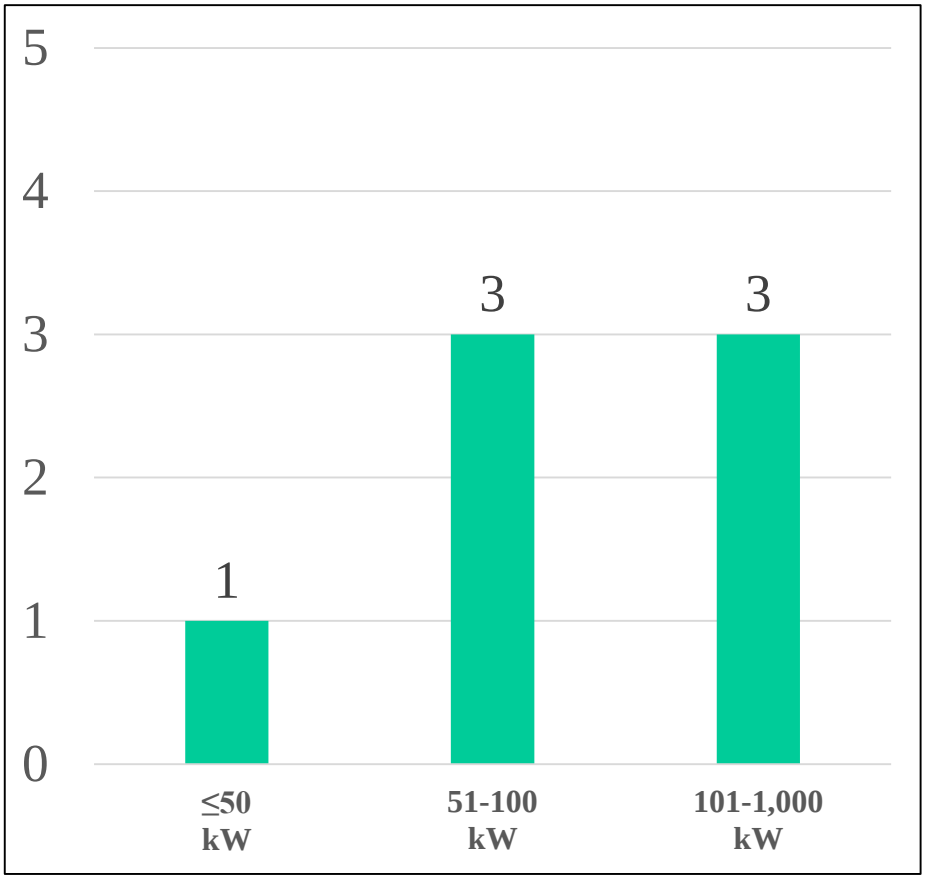


Project Data as of October 2019

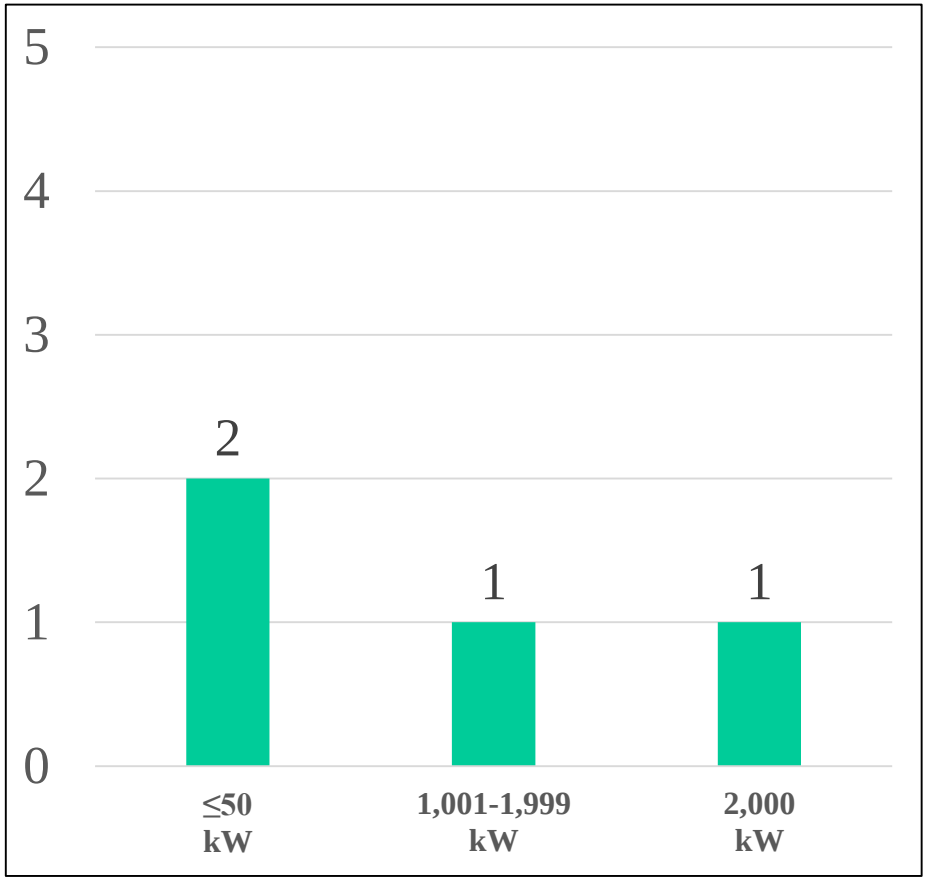
Project Size

2018-2019 Selected Projects

Non-Profit/Public Facilities



Low-Income Community Solar

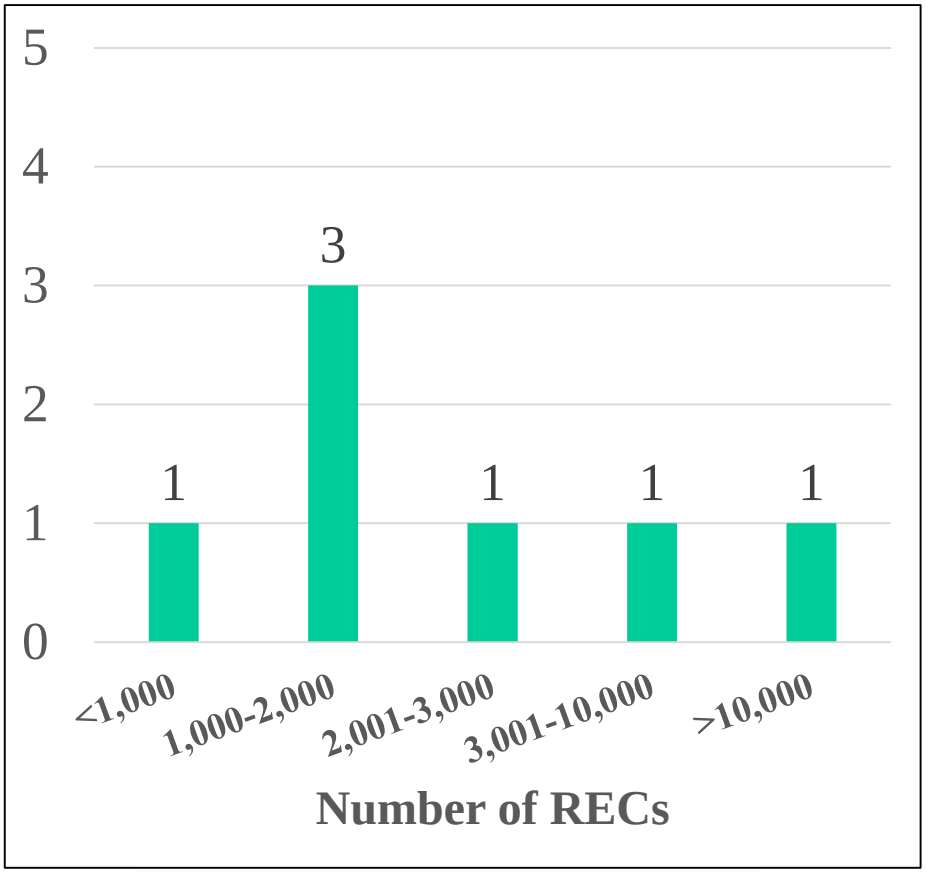


Project Data as of October 2019

Contracted RECs

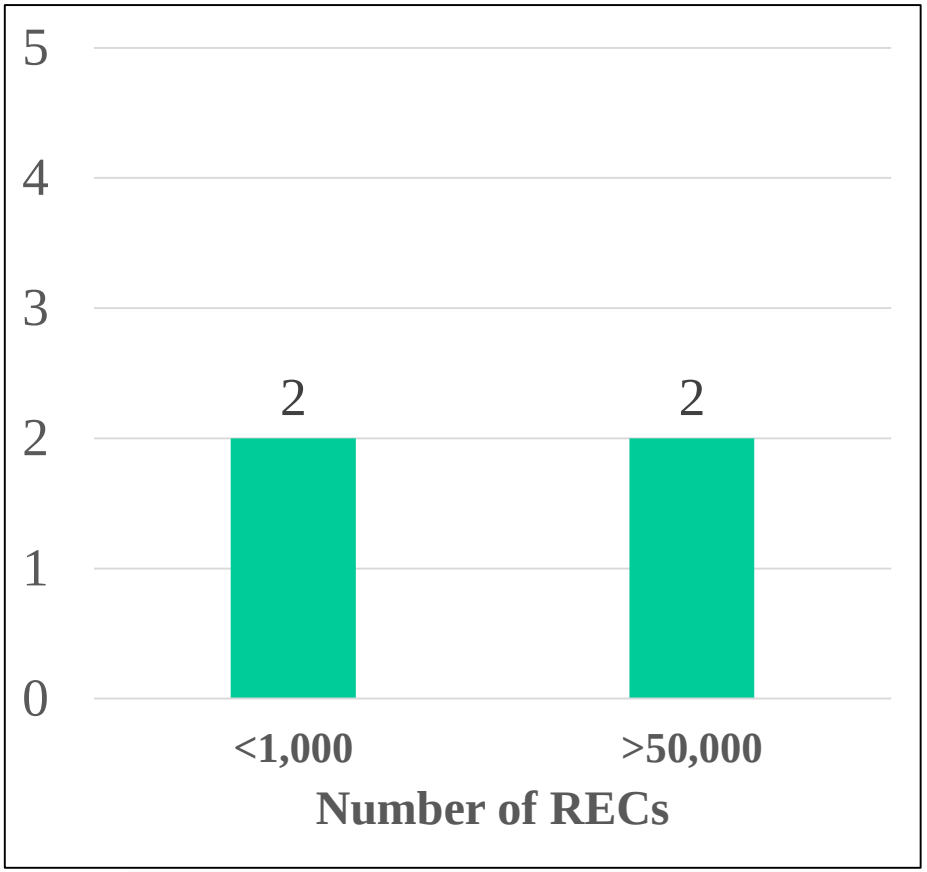
2018-2019 Selected Projects

Non-Profit/Public Facilities



Mean # RECs = 3,932

Low-Income Community Solar



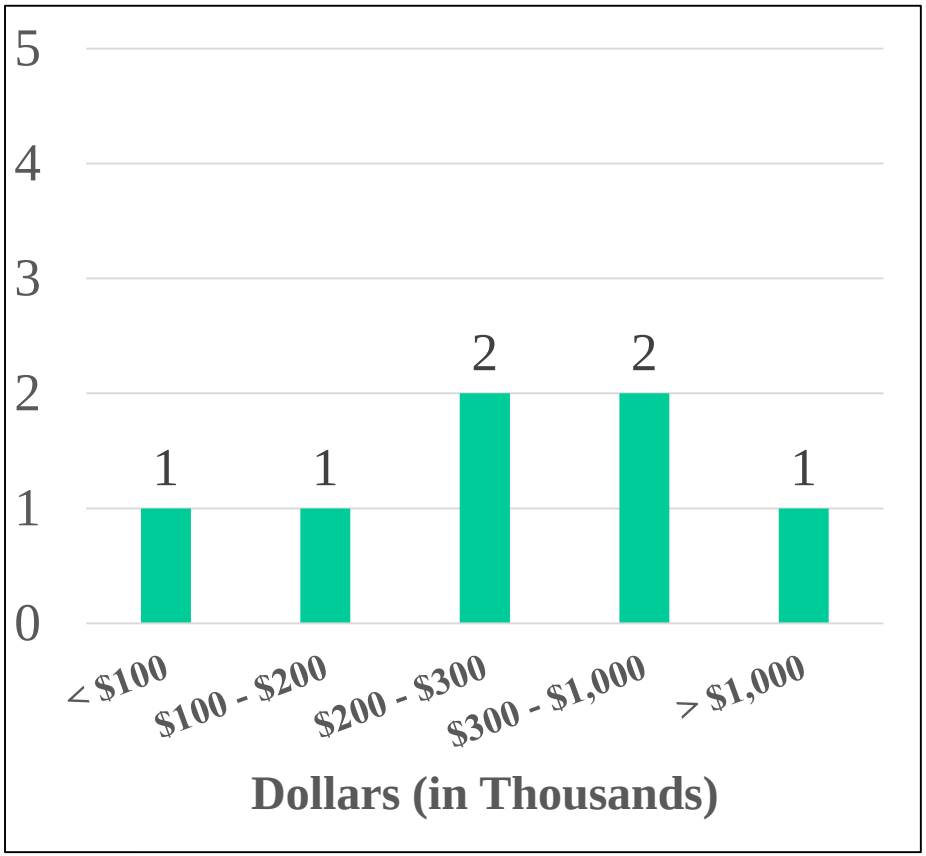
Mean # RECs = 27,450

Project Data as of October 2019

REC Value

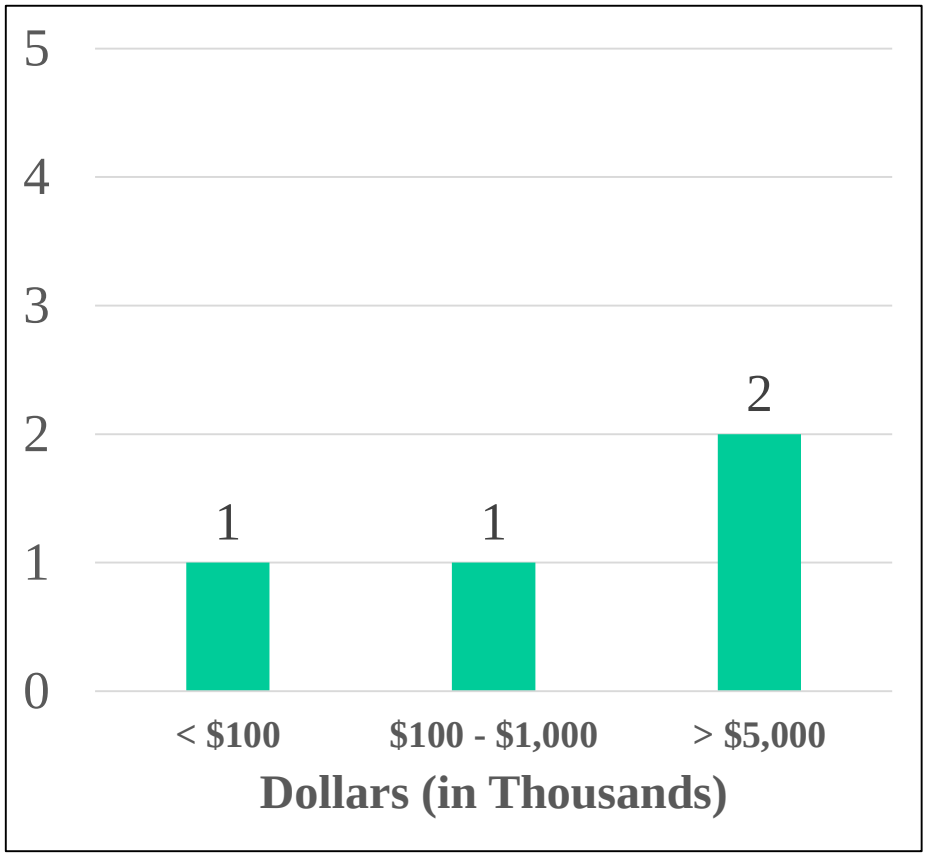
2018-2019 Selected Projects

Non-Profit/Public Facilities



Mean REC Value = $394,945

Low-Income Community Solar



Mean REC Value = $2,843,052

Project Data as of October 2019

REC Funding in EJ & LI Communities

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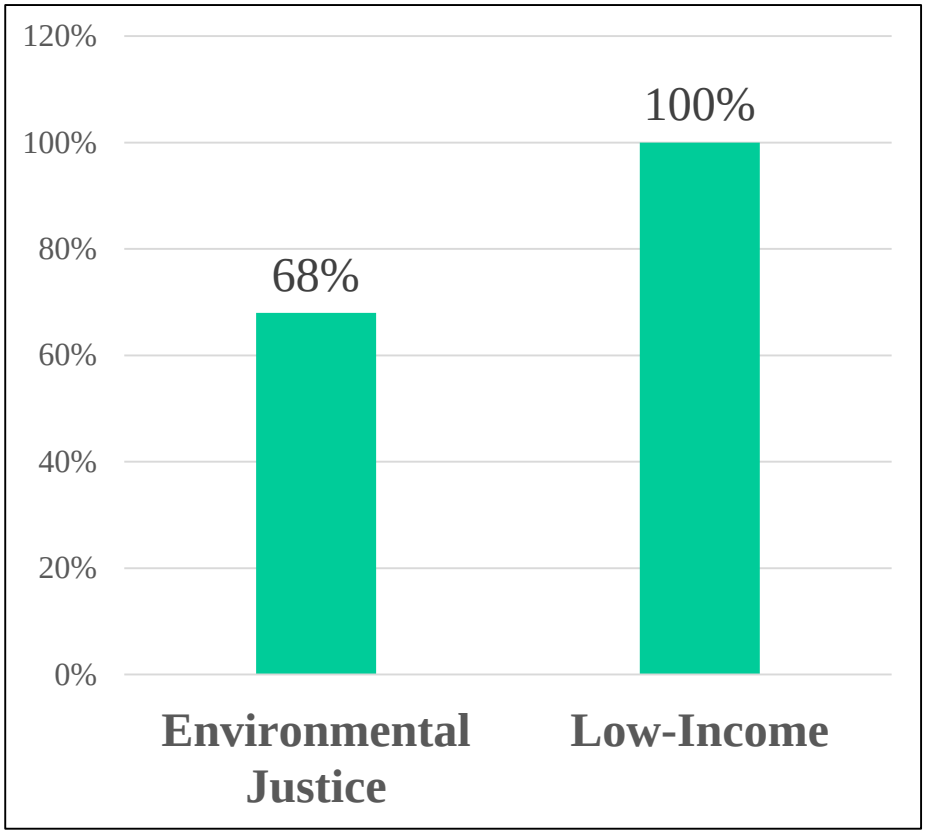
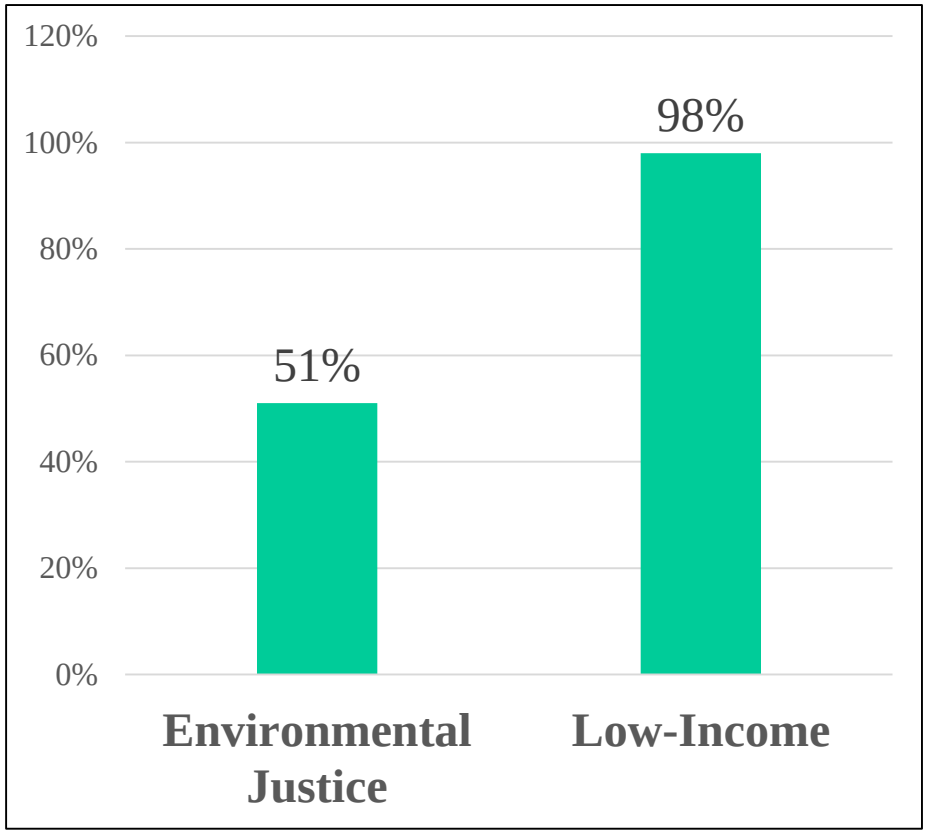
2018-2019 Selected Projects

Non-Profit/Public Facilities



Low-Income Community Solar

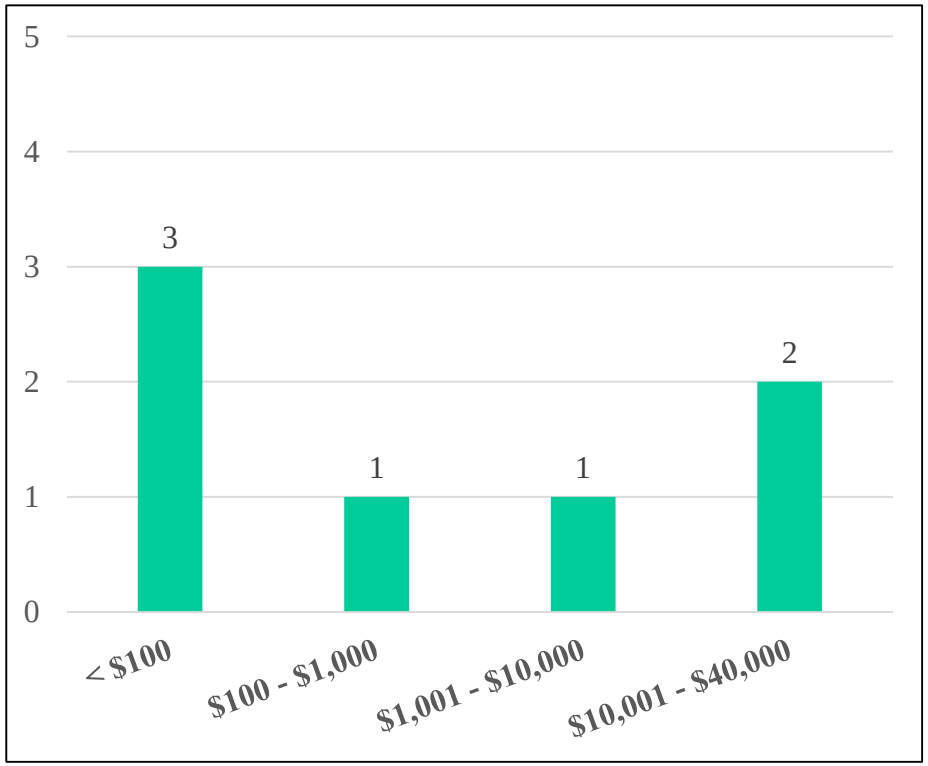


Project Data as of October 2019

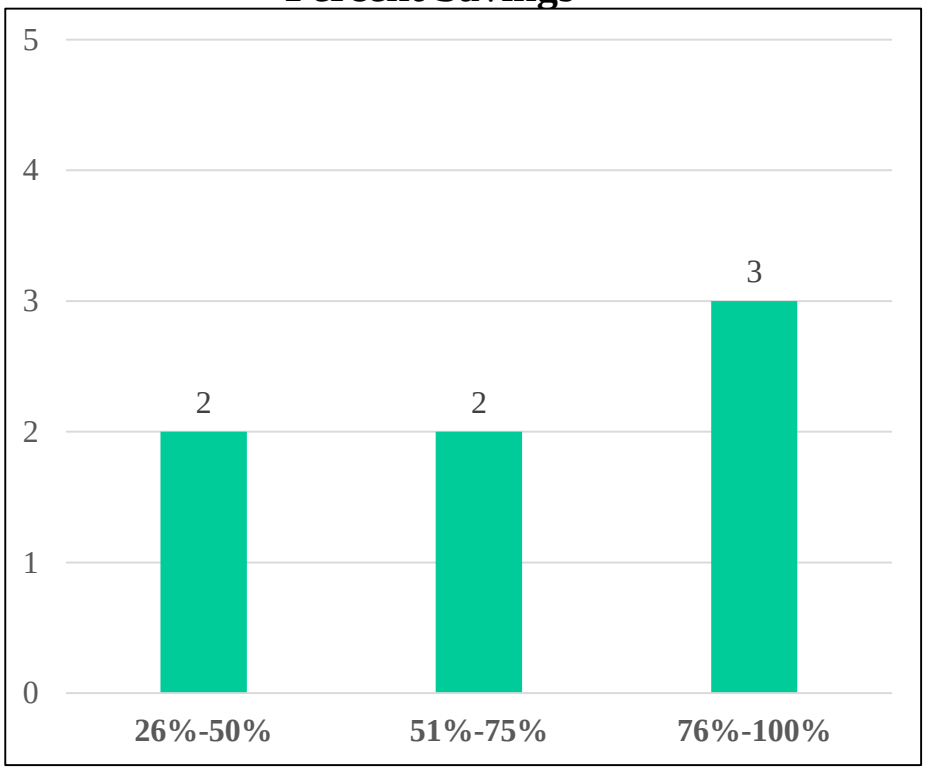
Project Costs & Savings

2018-2019 Selected Non-Profit & Public Facility Projects

First Year Costs



Percent Savings



Project Data as of October 2019

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Phase I Evaluation Stakeholder Outreach Design & Feedback

Stakeholder Outreach Overview

FEJA Objective

- Include interaction with stakeholders

Stakeholders

- Environmental Justice Communities
- Low-Income Households
- Affordable Housing Owners
- Job Training Organizations
- Job Trainees
- Community Organizations
- Non-Profit and Public Sector
- Solar Installers
- IL Commerce Commission
- Investor-Owned Electric Utilities

Stakeholder Feedback Solicitation

Many opportunities provided for feedback on webinars and posted materials.

Long-Term Plan (9/2017)	**Stakeholder Engagement (11/2018)**	**Grassroots Education (12/2018)**	**Approved Vendor Registration (12/2018, 2/2019)**
Environmental Justice Communities (1/2019)	**Third Party Program Evaluation (1/2019)**	**Job Training Requirements (2/2019)**	**Eligibility and Verification (2/2019)**
Quality Assurance (3/2019)	**REC Contract (3/2019)**	**Project Selection (4/2019)**	**Long-Term Plan Update (6/2019)**

Stakeholder Outreach Research Methodology

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16 In-Depth Telephone Interviews

More than half of the Interviews with ILSFA Working Group Members

Interviews Targeted

- ILSFA Working Group
  - Leaders
  - Non-Profit/Community Organizations
  - Solar/Energy Providers
- Non-Solar Commenters
- Solar Commenters

Interviews Conducted

- 4 Solar Companies
- 3 Solar Installers
- 3 Environmental Non-Profits
- 2 Energy Policy Experts
- 2 Solar Energy Consultants
- 2 Non-Solar Commenters

Stakeholder Outreach Participation

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Feedback Opportunity

- Most common information source was email updates

Outreach Sufficiency

- 11 of 16 felt there was sufficient outreach

Potential Additional Actions To Solicit Feedback

- Meetings in EJ communities
- More meetings in Southern IL
- Reaching out to communities without projects
- More outreach to industry stakeholders

Most Interviewees had Participated

- Future interviews will include nonparticipants

Methods of Participation

- 15 attended ILSFA presentations
- 14 reviewed online content
- 14 provided written comments

Ongoing Feedback

- 14 said they would continue to provide feedback

Stakeholder Outreach Views on Participation

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Stakeholder Views on Participation

- There was sufficient participation (8)
- The ILSFA Program was open to ideas and feedback from stakeholders (10)
- The ILSFA Program responded appropriately to comments (12)

Comments

- Limited to those in renewable energy
- Some groups not well represented
  - Low-income focused non-profits
  - African Americans
  - Businesses outside Chicago
  - Businesses in EJ communities

Reported Barriers to Participation

- Pace of the program/rapid development cycle
- Limited timeline for comments
- Limited staff resources to respond
- Information only provided in English
- Overlapped with ABP submission dates
- Other non-solar projects competing for staff's attention
- Distance/ability to come to Chicago for meetings
- Complexity of information
- Concerns about confidentiality
- Technological barriers (poor audio, streaming quality)
- Need for access to ILSFA website

Stakeholder Outreach Feedback Response

Positive views on response and online comment posting

Feedback Impact

- 12 stated that their ideas were heard and taken into account
- 9 felt they had an impact on the development of the ILSFA Program
- 10 said they felt the program incorporated stakeholder comments where feasible and beneficial

Stakeholder Outreach
ILSFA Feedback

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Distributed Generation	• Sub-program with greatest concerns • Program complexity & consumer preparation • Vendor upfront cost
Community Solar	• Support for 25% to EJs • Higher costs in Chicago • Few projects funded
Non-Profit & Public Facility	• Support for sub-program & increased funding • Expand list of qualified entities • Eligibility for NP/PF outside EJs that serve them
Community Solar Pilots	• Still in development – less feedback • Reduce price focus, test innovative models • Consider longer-term costs

Stakeholder Outreach
ILSFA Feedback

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Environmental Justice

- Approve of definition
- Appropriate funding
- Useful ILSFA website lookup tool

Consumer Protections (AV view)

- Too much focus on consumer protections
- Not enough focus on business operations

Vendor Requirements (AV view)

- Marketing material approval not needed
- Structural requirements should apply after project is selected
- Finding job trainees may be challenging

Grassroots Education

- Some highly supported & some unaware

Program Materials

- ILSFA has effective materials
- Offer in more languages
- Modify for 8th grade reading level

Evaluation

- Measure participation, barriers, and serving challenged populations
- Assess demographic and geographic equity
- Assess WMBE firm participation
- Measure participant satisfaction
- Allow sufficient time for development before assessing

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Phase I Evaluation
Grassroots Education
Design & Feedback

Grassroots Education Overview

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Hard to Reach Communities

- Seniors, very low-income, rural, language barriers

FEJA Recognized the Challenge

- Up to 5% of ILSFA funding for Grassroots Education

Grassroots Educators

- 11 community agencies selected via RFP process

Target Issues and Priority Groups

Participant Benefits	**Job Training**
EJ, geographically diverse, & hard to reach communities	**Community engagement, strategies and tactics**
General energy and solar education	**Deferred maintenance and solar readiness**

Grassroots Education Research Methodology

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11 In-Depth Telephone Interviews

Grassroots Educators

- Chicago Bungalow Association
- C.E.F.S. Economic Opportunity Corporation
- The Chicago Jobs Council
- Community Organizing and Family Issues
- Ecology Action Center
- Embarras River Basis Agency
- Faith in Place
- People for Community Recovery
- Pilsen Environmental Rights and Reform Organization
- Prairie Rivers Network
- Sustain Rockford

Grassroots Educator Characteristics

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Target Populations

- Low-income populations (5)
- Environmental Justice communities (3)
- Households with children under six (2)
- Resident associations (2)
- Elderly and disabled populations (1)
- Job seekers who are marginalized in the labor market (1)
- Any individual who qualifies for the ILSFA Program (1)

Outreach Methods

- Peer-to-peer with canvassing by community ambassadors
- Train the trainer – training other CBOs
- Videos
- Outreach offices in many counties

Focus Areas

- Cost savings (10)
- Solar accessibility due to ILSFA (6)
- Solar energy basics and utility bill impacts (3)
- Job opportunities (1)

Grassroots Educator Feedback

Barriers

- Lack of solar readiness (4)
- Skepticism about ILSFA's benefits (4)
- Lack of energy and solar understanding (3)
- Confusion with other solar programs (2)
- Lack of AVs in service area (2)

Solutions

- Referrals to other programs
- Participant testimonials
- Education from Elevate and Approved Vendors

Metrics

- Event attendance and interest in participation
- Follow-up survey measurement of knowledge and interest
- Outreach participant demographics including EJ community location

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Phase I Evaluation Findings & Recommendations

Phase I Evaluation Key Findings

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Implementation
- Aggressive timeline
- Coordination with ABP
- Stakeholder input
- Launched close to target date

Project Submissions
- 4 CS selected
  - 68% REC value in EJ
- 7 NP/PF selected
  - 51% REC value in EJ
- Almost all in LI census tracts

Challenges
- Soon after ABP launch
- Inadequate time to understand LI barriers and design ILSFA in response

Stakeholder Input
- Feedback received from variety of ILSFA stakeholders
- May be able to generate greater and more diverse participation and feedback

AV Registration
- 27 Approved Vendors
- 3 qualified MWBEs
- Need for more diversity

Grassroots Education
- 11 educators around the state
- Various types of outreach
- Diverse structure, presence, services, population, and expertise

Phase I Evaluation Recommendations

ILSFA Design

- Consider ILSFA a work in progress.
- Remain open to modifications as ILSFA evolves and additional data become available.

Materials & Website

- Information Complexity: Review and test materials with target audiences for reading level and usability.
  - Customer disclosure noted specifically.
- Participant Testimonials: Consider use in materials, website, and presentations to help potential participants overcome skepticism and fears.
- ILSFA Website: Re-organize for easier navigation, summarize AV and consumer participation steps, and provide timeline of upcoming deadlines.

Phase I Evaluation Recommendations

Stakeholder Participation Level and Diversity

- Increase response time for comments.
- Encourage ILSFA Working Group members to comment individually.
- Conduct proactive outreach to additional organizations and firms.
- Provide non-web-based opportunities for participation.
- Encourage geographic diversity with meetings in other areas of the state.
- Create presentations in Spanish and other common languages.
- Continue posting comments and responses on ILSFA website.

Approved Vendors Geographic, Size, & MWBE Diversity

- Consider AV diversity as a point area in the project diversity scoring.
- Provide outreach and education about the ILSFA to potential vendors.
- Conduct research with nonparticipating providers to understand support needed.
- Consider financing or other support to assist small businesses, perhaps with a requirement to provide DG installations in underserved areas of the state.

Phase I Evaluation Recommendations

Grassroots Education

- Continue and expand to overcome lack of awareness, skepticism, and confusion.

Participant Screening

- Coordinate with low-income energy efficiency contractors to assess low-income homes for barriers and develop list of eligible households.
- Request permission from energy efficiency participants to share information with ILSFA.
- Coordinate with job training programs to visit energy efficiency jobs and conduct solar assessments.

Phase I Evaluation Recommendations

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Energy Efficiency and Home Repairs

- Encourage AVs to have customers participate in utility energy efficiency programs prior to solar installations.
- ILSFA should work with utility programs to prioritize customers approved for solar installations to have energy efficiency work done first.
- Work with weatherization and remediation programs to determine if additional funds can be made available for home and roof repairs for potential solar participants.
- Habitat for Humanity is a potential source of funding and ILSFA should assess coordination opportunities.

Job Training

- Consider whether support is needed to help individuals overcome barriers to participation in job training programs.

Data Collection

- Continue to assess ILSFA database plans to ensure data will be sufficient to meet FEJA and IPA reporting and evaluation requirements.

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PHASE II EVALUATION
OCTOBER 2019 – JUNE 2021

Phase II Evaluation Overview

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October 2019 – June 2021 Reporting

- 2/2020, 6/2020, 12/2020, 6/2021

Provide Ongoing Feedback

- As ILSFA is implemented
- As data become available

Qualitative and Quantitative Indicators

- Projects, capacity installed, cost per kWh
- Jobs impact
- Participant impact – savings, energy burden
- Non-energy impacts – economic, environmental, electric distribution system, community awareness
- Barriers, challenges, and satisfaction
- Program administrator performance

Phase II Evaluation Components

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Statutory-Required Metrics

- # of projects installed
- Total installed kW
- Average cost per kW
- # of jobs & opportunities
- Economic, social, & environmental benefits
- Total administrative costs

Evaluated By

- Overall & Sub-Program
- DG & CS: Owner/Renter
- Business Model: Purchase, Lease, Power Purchase Agreement
- Geographic Regions, including
  - EJ, LI, urbanity
- Other socioeconomic & demographic characteristics

Additional Performance Metrics

- Incentive $ awarded
- Total average $ per expected kWh
- Housing barriers preventing DG participation
- % projects incomplete & reasons
- AV satisfaction & complaints
- Average savings by business model

Phase II Evaluation Components

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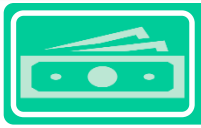
Jobs and Job Opportunities

- Construction & installation, other jobs
- Permanent & temporary
- % of install hours by trainees
- Supply chain jobs
- Indirect & induced jobs
- Average wages/salaries
- Coordination of training w/AVs

Economic, Social, & Environmental Benefits


Participant Energy Costs & Burden


Installation Locations & Job Trainee Residence


% of Panels Produced in the U.S.


Community Awareness and Other Well-Being


Electric Distribution System Reliability


CO_2 Reduction


Energy & Emissions Equivalencies

Phase II Evaluation Components

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Program Administrator Assessment

- Development and implementation of the ILSFA
- Outreach success
  - Community groups
  - Stakeholder engagement
- Approved Vendors
  - Education
  - Work with challenged AVs to bring them into compliance
  - AV feedback on experience with program administrator
- Grassroots education
- Coordination with job training and solar opportunities

Phase II Evaluation Activities

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Qualitative Research

Document Review

In-Depth Interviews

- IL Power Agency Interviews
- Program Admin Interviews
- Stakeholder Interviews
- Grassroots Educator Interviews
- Approved Vendor Interviews
- Electric Utility Interviews
- Job Trainee Interviews
- Participant In-Depth Interviews

Quantitative Research

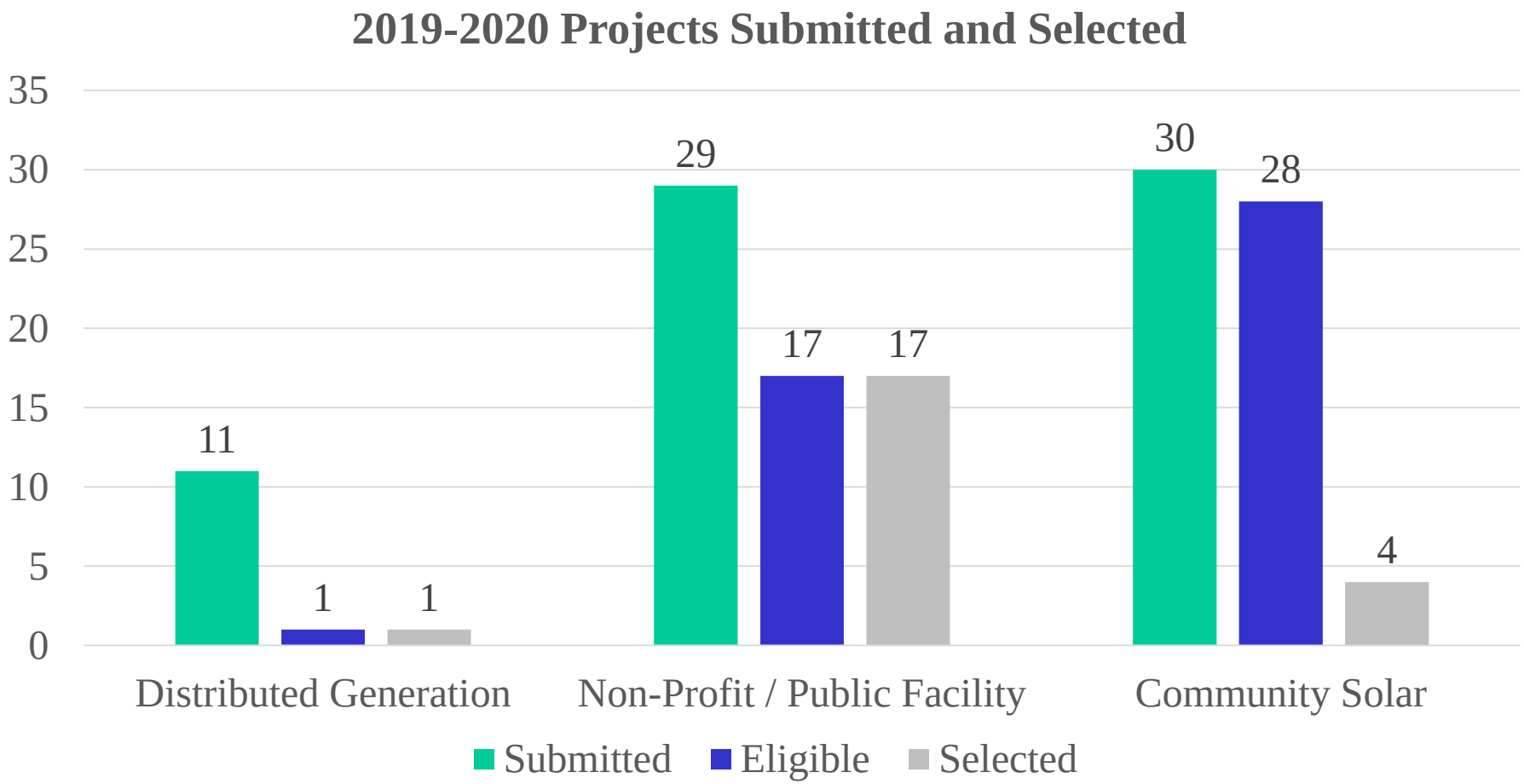
Surveys

- Approved Vendor Online Survey
- Participant Telephone Survey

Program Data Analysis

- Approved Vendor registrations
- Project applications
- Projects selected
- Income verification forms
- Job training reports
- Annual Approved Vendor reports

Phase II Evaluation Projects Submission



Project data as of December 5, 2019.

Phase II Evaluation Economic Impacts

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Direct Effects		Indirect Effects		Induced Effects
Jobs and output created from the initial investment in the program.	+	Jobs and output in industries that supply goods and services to the program.	+	Jobs and the output created when the individuals who are directly and indirectly affected by the program spend their earnings.
Examples: installer salaries, panel purchases.		Examples: office supplies purchased by Approved Vendors.		Examples: consumer goods purchased by installers.

Phase II Evaluation Economic Impacts

$$\text{multiplier} = \frac{\text{direct effects} + \text{indirect effects} + \text{induced effects}}{\text{direct effects}}$$

Example:

- Program expenditures (direct effects): $10 million
- Indirect effects: $500,000
- Induced effects: $1 million
- Multiplier = 1.15

Phase II Evaluation Economic Impacts

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Economic Benefit from ILSFA Expenditures

{ (ILSFA Spending Multiplier − Multiplier for Alternate Use of Funds) * ILSFA spending in IL } − { Multiplier for Alternate Use of Funds * ILSFA spending outside IL }

ILSFA spending - greater economic impact than retail.

ILSFA spending outside Illinois will not impact Illinois' economy.

ILSFA Funding

- RERF: Alternative Retail Electric Supplier Payments
- Utility Funding

Alternative Use of ILSFA Funds

- Retail spending
- Saving

Phase II Evaluation Economic Impacts

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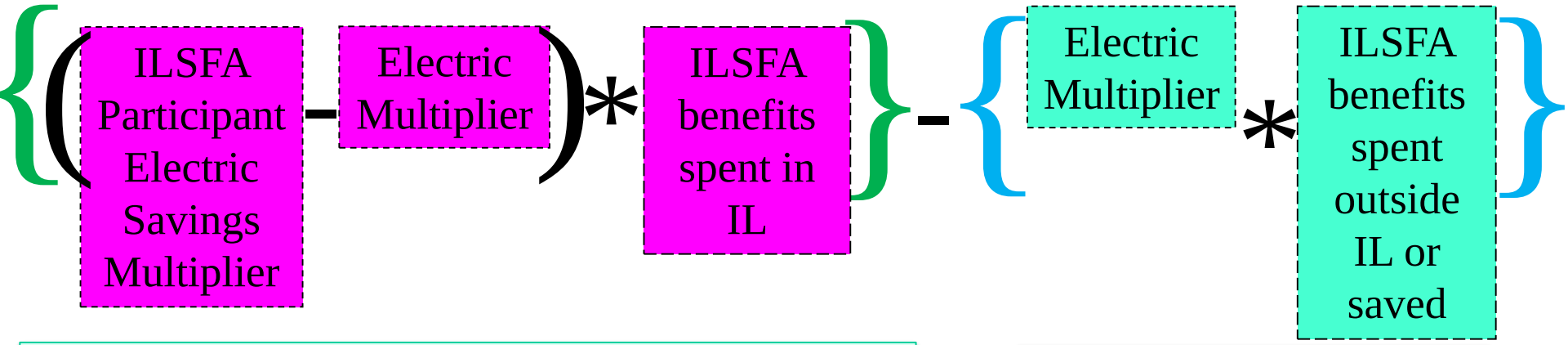
Economic Benefit from Reduced Electric Spending



ILSFA participants will save money on electric bills. The spending on retail goods will have a greater impact on the economy than the spending on electricity.

ILSFA benefits that are saved or spent outside Illinois will not impact Illinois' economy.

Phase II Evaluation Environmental Benefits

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Solar Electric Production

Reduced purchases from EDCs and ARES due to solar installations

Avoided Emissions

- CO_2
- CO
- SO_2
- NOx
- PM
- Heavy Metals

$ Value of Reduced Emissions

Computed using Air Pollution Emission Experiments and Policy Model (APEEP)

Generation Resource Mix (percent)*										
Coal	Oil	Gas	Other Fossil	Nuclear	Hydro	Biomass	Wind	Solar	Geo-thermal	Other
31.7%	0.0%	9.3%	0.1%	52.6%	0.1%	0.2%	5.7%	0.0%	0.0%	0.2%

Total Output Emission Rates (lb/MWh)						
CO_2	CH_4	N_2O	CO_2e	Annual NO_x	Ozone Season NO_x	SO_2
811.3	0.048	0.012	816.0	0.4	0.4	1.0

Source: https://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid.

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DISCUSSION

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