

Illinois Solar for All Evaluation

Summary Report

October 2021

Table of Contents

- I. Introduction1
- II. ILSFA Program2
 - A. Future Energy Jobs Act.....2
 - B. Long-Term Renewable Resources Procurement Plan2
 - C. Resources2
 - D. Sub-Programs.....3
 - E. Consumer Protections3
 - F. Environmental Justice4
 - G. Job Training4
 - H. Implementation4
- III. Evaluation5
- IV. Metrics6
 - A. Vendors, Projects, and Production.....6
 - B. Impacts9
- V. Recommendations11
 - A. Design11
 - B. Partnerships and Coordination.....11
 - C. Implementation12

I. Introduction

The Illinois Solar for All (ILSFA) Program was mandated by the state's Public Act 99-0906, colloquially known as the Future Energy Jobs Act (FEJA), which was enacted on December 7, 2016 and went into effect on June 1, 2017. FEJA required the development of the ILSFA Program to bring photovoltaics to low-income communities in Illinois. The ILSFA Program provides more generous Renewable Energy Credit (REC) contracts than those offered through the Illinois Adjustable Block Program (ABP) to overcome barriers faced by the low-income community to participation in the solar market.¹

FEJA requires an independent evaluation of the ILSFA Program with objective criteria developed through a public stakeholder process. The Illinois Power Agency (IPA) contracted with APPRISE, and its subcontractor Aeffect, Inc., to conduct an evaluation of the ILSFA Program. The evaluation began in August 2019 and covered the program developments through June 2021. Five detailed evaluation reports were developed and published.²

This Summary Report provides the following information.

- **ILSFA Program:** This report presents an overview of the key components of ILSFA. While the ILSFA Program has evolved during the first two years of implementation, the key design characteristics of the program remain the same as in the original conception of the program.
- **Evaluation:** Five lengthy evaluation reports have been published. These reports provide detailed information on the program design and implementation, participating vendors, project submissions and approvals, feedback from many program actors, program impacts, assessments of the program administrator, and recommendations for program refinement. This Summary Report provides a brief description of the evaluation activities that were undertaken during the evaluation period.
- **Metrics:** Key metrics required by FEJA and additional metrics developed with stakeholder input are provided in this report.
- **Recommendations:** The recommendations developed through the research that are still applicable at the current time are summarized in this report. Additional justification for these recommendations is provided in the previous detailed evaluation reports.

APPRISE prepared these reports under contract to the IPA. The IPA and the ILSFA Program Administrator, Elevate, facilitated this research by furnishing data and information to APPRISE. Any errors or omissions in this report are the responsibility of APPRISE. Further, the statements, findings, conclusions, and recommendations are solely those of analysts from APPRISE and do not necessarily reflect the views of the IPA.

¹The Adjustable Block Program (ABP) supports the development of new photovoltaic distributed generation systems and new photovoltaic community generation projects in Illinois through the purchase of Renewable Energy Credits. The ABP is not targeted to low-income households and Environmental Justice communities like the ILSFA Program is.

²Evaluation reports are available at <https://www.illinoissfa.com/evaluation/>

II. ILSFA Program

This section provides a brief overview of the ILSFA Program.

A. *Future Energy Jobs Act*

FEJA required the development of the ILSFA Program to bring photovoltaics to low-income communities in Illinois. The objectives of the program are to 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; and minimize administrative costs.

B. *Long-Term Renewable Resources Procurement Plan*

The IPA was directed to develop a Long-Term Plan with a proposed approach to the design, implementation, and evaluation of the ILSFA Program. The Long-Term Plan was approved by the Illinois Commerce Commission (ICC) on April 3, 2018. The Long-Term Plan is required to be updated every two years. The First Revised Long-Term Plan was published on April 20, 2020.

A draft of the Second Revised Long-Term Plan was released for public comment on August 16, 2021. However, because the Climate and Equitable Jobs Act³ was signed into law on September 15, 2021 and this Act required changes to that Plan, the IPA withdrew the second Revised Long-Term Plan and will develop a new draft Revised Long-Term Plan reflecting modified statutory requirements. The new Revised Long-Term Plan will be released for public comment no later than January 13, 2022. The IPA anticipates holding workshops and providing other opportunities for stakeholder input during that draft Long-Term Plan development.

The Long-Term Plan provides additional detail on the ILSFA Program.

- **Economic Benefits:** Requirements to ensure benefits flow to low-income participants.
- **Net Metering:** Projects are required to participate in net metering.
- **Project Viability:** The ILSFA Program does not provide funding for roof repairs or wiring upgrades that may be needed to implement the solar installations.
- **Capacity Factor:** Options are provided to convert the kilowatt size of a project to the number of RECs the system would be expected to generate over 15 years.
- **REC Payments:** Dollars per REC based on the 15-year expected REC production.
- **Contracts:** Contracts are with the IPA or the utility.

C. *Resources*

The ILSFA Program is funded through the Renewable Energy Resources Fund (RERF) that was created with Alternative Compliance Payments remitted by Alternative Retail Electric Suppliers (ARES) for the procurement of renewable energy resources; and by funds collected by the utilities under their RPS tariffs. Table II-1 provides a summary of the program funding.

³Public Act 102-0662, see: <https://www.ilga.gov/legislation/publicacts/102/PDF/102-0662.pdf>

Unallocated funds from previous program years were rolled into additional funding for following years. Most of these funds were for the DG sub-program.

Table II-1
ILSFA Funding Summary

Program Year	Funding Source	DG	CS	NP/PF	CS Pilot
2018-2019	RERF	\$4,500,000	\$7,500,000	\$3,000,000	\$20,000,000
	Utility	\$3,000,000	\$5,000,000	\$2,000,000	\$0
	Total	\$7,500,000	\$12,500,000	\$5,000,000	\$20,000,000
2019-2020	RERF	\$4,500,000	\$7,500,000	\$3,000,000	\$0
	Utility	\$3,518,697	\$5,864,494	\$2,345,798	\$0
	Total	\$8,018,697	\$13,364,494	\$5,345,798	\$0
2020-2021	RERF	\$4,950,000	\$8,250,000	\$3,300,000	\$0
	Utility	\$3,418,081	\$5,696,802	\$2,278,721	\$0
	Total	\$8,368,081	\$13,946,802	\$5,578,721	\$0
2021-2022 ⁴	RERF	\$4,950,000	\$8,250,000	\$3,300,000	\$0
	Utility	\$3,384,018	\$5,640,031	\$2,256,012	\$0
	Total	\$8,334,018	\$13,890,031	\$5,556,012	\$0

D. Sub-Programs

There are four sub-programs within the Illinois Solar for All Program.

1. *Low-Income Distributed Generation (DG)*: Photovoltaic projects for individual homes and multi-family buildings.
2. *Low-Income Community Solar (CS)*: Participants subscribe to a share of a CS system.
3. *Non-Profits and Public Facilities (NP/PF)*: NP/PF receive incentives for on-site photovoltaic generation.
4. *Low-Income Community Solar Pilot Projects (LICS Pilot)*: This competitive procurement approach is based only on the price for 15 years of delivery of all RECs.

E. Consumer Protections

The ILSFA Program has developed extensive procedures to ensure that consumers are protected. The key financial protections with respect to the DG and CS sub-programs include no upfront customer payments, ongoing participant costs and fees must not exceed 50 percent of the system's energy value, loans must not be secured by the program participant's home, financing terms must be based on the participant's ability to repay, and loans must offer terms that include forbearance. Approved Vendors must also ensure that marketing materials are accurate.

⁴This funding is outside the timeframe of this evaluation report.

F. Environmental Justice

Environmental Justice (EJ) communities are defined as having a higher risk of exposure to pollution based on environmental and socioeconomic factors. FEJA requires allocation of 25 percent of funds in the DG, NP/PF, and CS sub-programs to projects in EJ communities.

G. Job Training

The ILSFA Program requires that AVs meet the following job training requirements.

- **Portfolio Requirement:** Annual installations across an AV's portfolio of projects must include at least ten percent of hours from qualified job trainees in Year 1, 20 percent in Year 2, and 33 percent in Year 3 and beyond.
- **DG Requirement:** Thirty-three percent of all DG projects annually must include at least one qualified job trainee.

H. Implementation

The first round of project submissions opened in May 2019 for the DG, NP/PF, and CS sub-programs. Subsequent program year submission windows opened in September 2019, July 2020, and June 2021. The LICS Pilot procurement event was in December 2019.

III. Evaluation

This section provides an overview of the research conducted. The assessment included the following research, summarized in Table III-1.

- Document and Material Review: Review and assessment of ILSFA materials developed for AVs, participants, and Grassroots Educators, including the ILSFA website.
- Best Practices Review: Review and comparison of low-income community solar programs developed by states and utilities across the country.
- Interviews and Surveys with Program Actors: In-depth telephone interviews with all program actors and an on-line survey with AVs. Program participants were not interviewed because there were too few participants during the initial program development.
- Data Analysis: Analysis of ILSFA Program data, American Community Survey Data, and Emissions & Generation Resource Integrated Database (eGRID) data.
- Program Administrator Assessment: Performance assessment of Elevate in all key areas.
- Stakeholder Presentations: Two presentations to stakeholders to provide information on evaluation activities and findings.

**Table III-1
ILSFA Evaluation Research**

Research Activities		Research Activities and Number of Interviews or Reviews				
		Phase I	Phase II			
			1 st Interim	2 nd Interim	3 rd Interim	Final
Document & Materials Review		√	√	√	√	√
Interviews	IPA	4				2
	Elevate / NERA	7 / 0	10 / 0	9 / 4	8 / 0	5 / 0
	Stakeholder	16	18	14		27
	Electric Utility					7
	Approved Vendor		22	20	48	25
	Grassroots Educator	11			10	
	Grassroots Education Participant			16	21	
	Job Trainee					16
	LI DG Managers / Green Banks					13 / 11
Data Analysis	Program Data	√	√	√	√	√
	American Community Survey		√	√	√	√
	Economic & Environmental Impact				√	√
	Equivalencies Estimation				√	√
Program Administrator Assessment			√	√	√	√
Low-Income Solar Best Practices Review				26		
Stakeholder Presentation			√			√
Report Published		10/2019	4/2020	8/2020	4/2021	10/2021

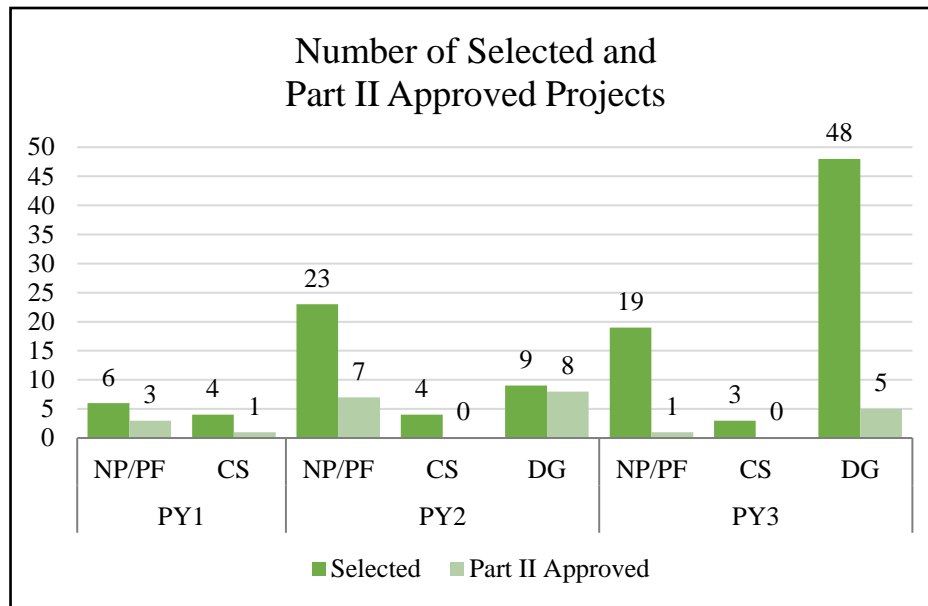
IV. Metrics

This section provides a summary of the key evaluation metrics, including impacts estimated for projects selected in the first three program years. Information is based upon April 2021 data.

A. Vendors, Projects, and Production

Over the first three program years, 116 projects were selected and 25 projects were approved to be invoiced by Approved Vendors for constructed projects (Part II Approved).

Status	PY1 – PY3: 2018-2021			
	NP/PF	CS	DG	Total
Selected	48	11	57	116
Part II Approved	11	1	13	25

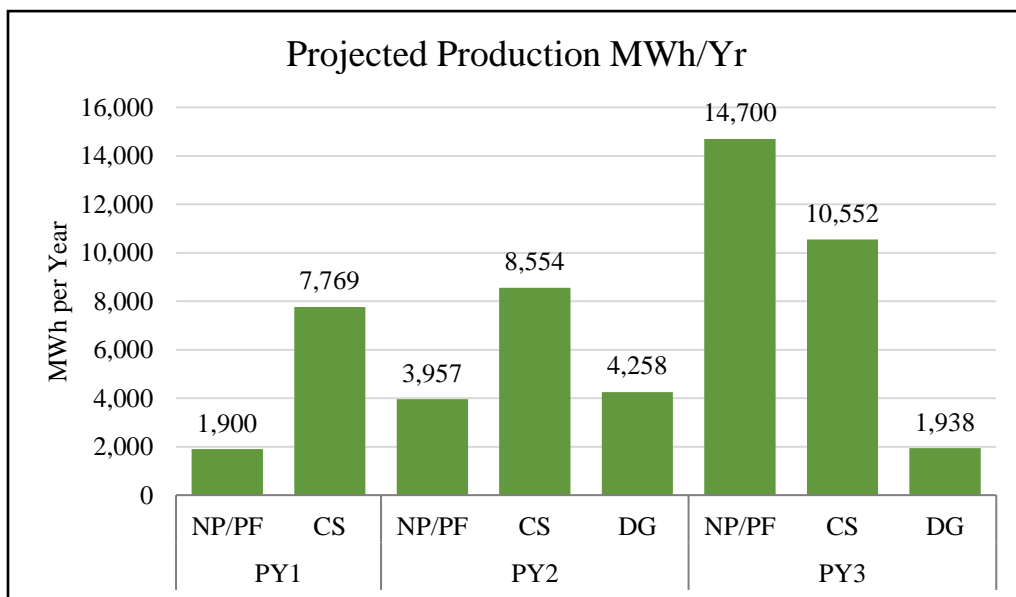
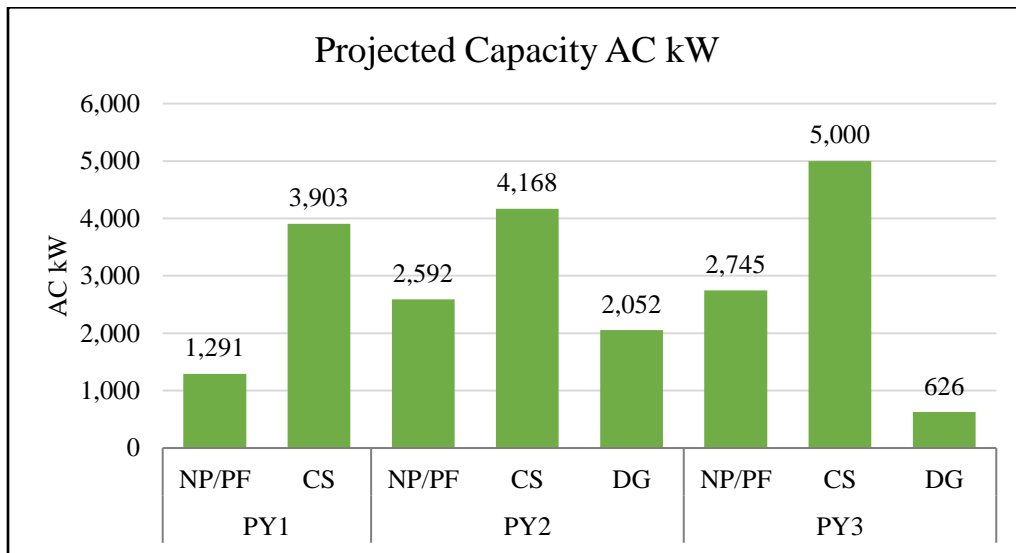


Overall, 42 percent of submitted projects were selected. In some cases projects were not selected because they did not meet program requirements and in other cases the sub-program was oversubscribed.

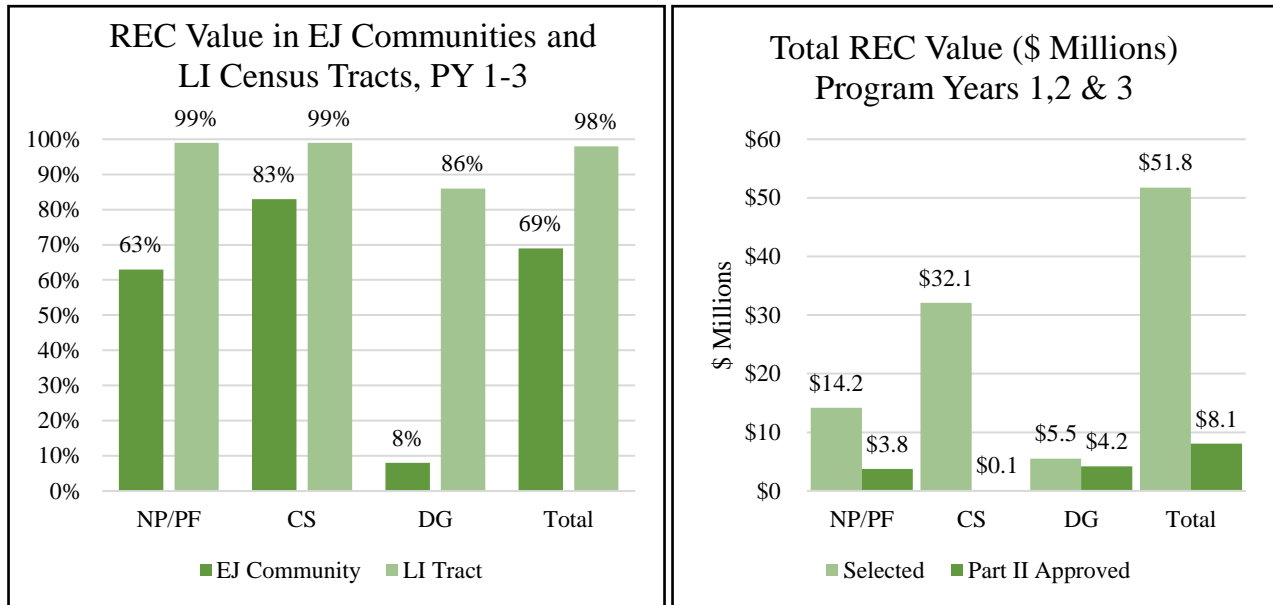
All Projects	PY1 – PY3: 2018-2021			
	NP/PF	CS	DG	Overall
Number Submitted	102	92	80	274
Number Selected	48	11	57	116
% Selected	47%	12%	71%	42%

The projected AC kW for all selected projects is 22,376 AC kW and the total projected production is 53,627 MWh/year.

All Selected Projects	PY1: 2018-2019			PY2: 2019-2020				PY3: 2020-2021			
	NP PF	CS	Total PY1	NP PF	CS	DG	Total PY2	NP PF	CS	DG	Total PY3
Total AC kW	1,291	3,903	5,194	2,592	4,168	2,052	8,811	2,745	5,000	626	8,370
Total MWh/Yr	1,900	7,769	9,669	3,957	8,554	4,258	16,769	14,700	10,552	1,938	27,190

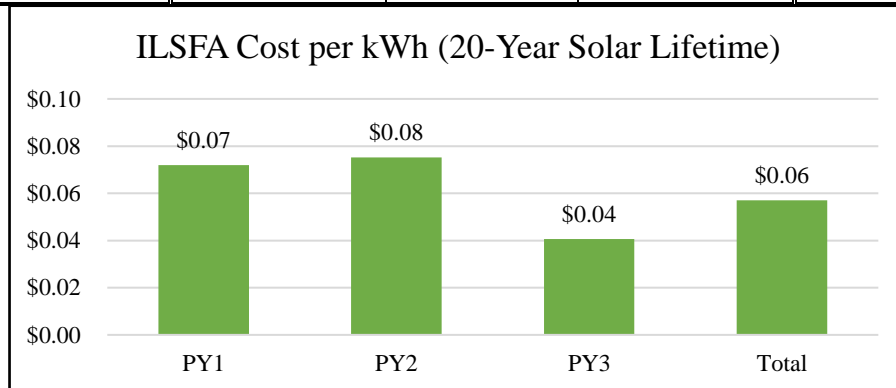


Over the first three program years, a total of \$51.76 million was allocated to selected projects. As of April 2021, just over eight million dollars was approved to be invoiced by AVs for constructed projects. Almost all REC dollars were for projects in low-income census tracts and 69 percent were in EJ communities.



The cost per kWh for selected projects in the first three program years, assuming a 20-year lifetime, is \$.06 per kWh.

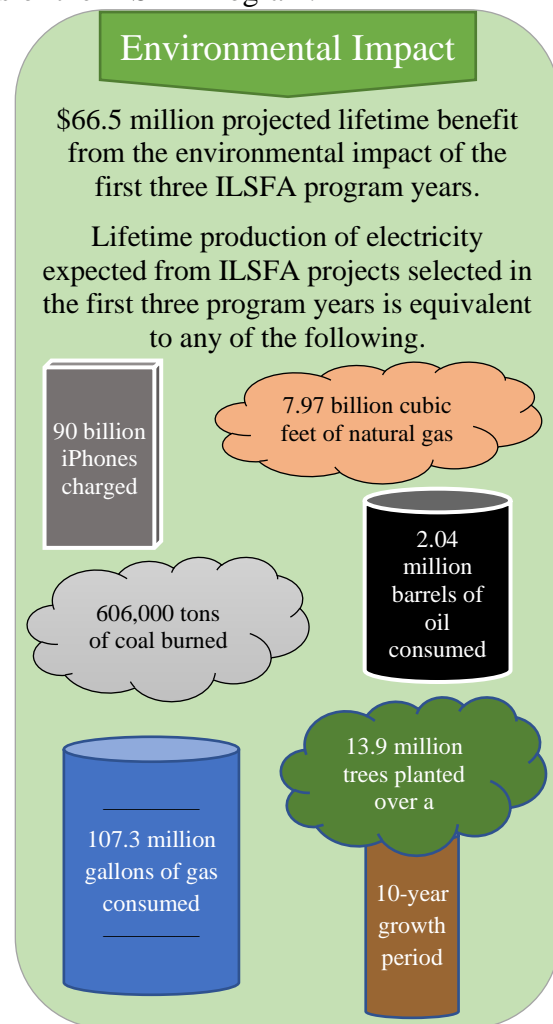
	PY1	PY2	PY3	Total
IPA Admin	\$375,426	\$222,155	\$299,019	\$896,600
RECs	\$10,780,000	\$22,090,000	\$18,880,000	\$51,760,000
Evaluation	\$76,731	\$339,550	\$496,095	\$912,376
Elevate Admin	\$2,500,000	\$2,100,000	\$2,200,000	\$6,800,000
NERA Admin	\$192,400	\$461,160	\$185,684	\$839,244
Total Spent	\$13,910,000	\$25,240,000	\$22,070,000	\$61,220,000
MWh/yr	9,669	16,769	27,190	53,628
\$/kWh (20 yr)	\$0.07	\$0.08	\$0.04	\$0.06



B. Impacts

This section provides an overview of the impacts of the ILSFA Program.

- Job Training and Job Creation: As of May 2021, 107 job trainee affidavits were submitted to Elevate representing 12 Approved Vendors, 63 projects, and 33 unique individuals.
- Participant Energy Burden
 - Due to the slow start of the DG sub-program and the length of time required to construct and obtain subscribers for these large CS projects, data were only available for a small number of DG participants.
 - Participants are not asked to provide data on their energy bills. Therefore, the pre-solar and post-solar energy burden percentages are unknown.
 - Previous research presented in the ILSFA Phase II 1st Interim Evaluation Report (www.illinoissfa.com/evaluation/) found that the mean annual electric bill for ILSFA-eligible households was \$1,562 for single-family households and \$1,004 for multi-family households.
 - Using these estimates, for the mean ILSFA-eligible household in a single-family home, the projected savings would reduce energy burden from 6.0 percent to 2.7 percent. For the mean ILSFA-eligible multi-family household, the projected savings would reduce energy burden from 2.1 percent to 0.9 percent. The impact for multi-family may be higher than this because the maximum income-eligibility was applied because rent rolls were used to verify eligibility rather than household income.
- Domestically Produced Panels: In a survey with AVs conducted in September and October 2020, only four percent of the 47 respondents said they did not plan to use solar panels manufactured outside of the U.S. While 36 percent planned to use foreign-produced panels, 49 percent said it was too early to say, and 11 percent were not involved in procurement of panels (usually when there was a subcontractor).



Seven AVs reported that domestically produced panels would be between seven and 50 percent more expensive, with a mean value of 32 percent more expensive. Other common

factors that contributed to the decision of which panels to use were quality, efficiency or performance, availability, AV Manual, and the manufacturer reputation.

- **Economic Impacts:** The estimated value of the increase in economic output in Illinois was over \$34 million in first year benefits and \$40.8 million in lifetime benefits from the first three ILSFA Program years. The evaluation team estimated the creation of 100 full-time job years from first-year economic benefits and 265 job years from lifetime economic benefits from the first three ILSFA Program years.
- **Environmental Impacts:** The estimated value of avoided emissions was over \$4 million in first year benefits from the first three years of selected ILSFA projects and \$66.5 million in lifetime benefits from the first three ILSFA Program years.
- **Electric Distribution System:** While ILSFA projects are a small part of the solar installations coming online in Illinois, and only a small part of the ILSFA projects have been energized to date, the evaluation team conducted interviews with Illinois utilities to assess the grid impacts of the ILSFA Program. The beneficial impacts of additional solar for Illinois include the following.
 - **Voltage:** Increasing the amount of distributed generation throughout the state can lead to better sustained voltage, as the generation is closer to the end users.
 - **Generation:** Illinois has been retiring coal plants for years and this has left a production void, causing Illinois to import energy from other regions to satisfy the load requirement. The increased solar production can help fill that generation void.
- **Equivalencies:** The evaluation team translated the projected electric production from ILSFA projects into energy and emission equivalencies to provide a context for understanding ILSFA Program benefits. The following equivalencies were estimated and are expected from the first three ILSFA program years of projected 20-year lifetime kWh production for all selected projects (as opposed to completed and energized projects).
 - Tons of coal burned: 606,000
 - Cubic feet of natural gas burned: 7,969 million
 - Barrels of oil consumed: 2.04 million
 - Gallons of gasoline consumed: 107.26 million
 - Homes powered: 100,720
 - iPhones charged: 90,055 million
 - Cars taken off the road for one year: 190,840
 - Trees planted over 10-year growth period: 13.90 million

V. Recommendations

Recommendations for ILSFA design, partnerships, and implementation are made based upon the evaluation research conducted during the first two years of program implementation.

A. *Design*

The evaluation team made the following recommendations for refining the ILSFA design.

- **Assess and Streamline DG Project Requirements:** The DG sub-program has used only a small part of the available funding and had few projects proposed and approved. AVs have cited many barriers to project development including the extensive requirements for project submission and approval. To improve participation, redundancies in required documentation should be eliminated, the waiting period between disclosures and contract execution should be reduced or removed, and the batch requirement for the first set of projects should be reduced. Some of these changes may require modifications to the Long-Term Plan.
- **Limit Program Changes:** Elevate reported that they spend significant time revising the program procedures in response to changes to requirements. This has prevented Elevate from taking proactive actions to improve the program. Going forward, program design changes should focus on refinements that reduce barriers to DG project development and participation. Limiting program changes in this manner will allow Elevate to focus more of their attention on streamlining the project development and implementation processes and increasing DG project implementation.
- **Green Bank Plan:** The Climate and Equitable Jobs Act of 2021 includes a provision to create a green bank, the Illinois Finance Authority Climate Bank, as well as a new entity called the Clean Energy Jobs and Justice Fund (CEJFF).⁵ The Clean Energy Jobs and Justice Fund can provide complementary financing to help grow the ILSFA Program. Such financing could help smaller AVs who do not have the available capital to construct projects and provide collateral prior to energizing the project and receiving the RECs payments. The IPA should develop plans for how the Climate Bank and the Clean Energy Jobs and Justice Fund can specifically aid AVs in project financing.

B. *Partnerships and Coordination*

The evaluation team recommends increasing and improving partnerships and coordination with related organizations, programs, and services. Such partnerships need further development to increase participation in the DG sub-program.

- **Coordination with Weatherization Agencies:** AVs who pursue DG sub-program projects face challenges finding interested individuals who have solar-ready homes. Ideally, DG installations would be developed at homes where energy efficiency has been implemented and fewer panels are needed to meet the home's electric needs. All interviewed CAA Stakeholders said that they would be able to screen for ILSFA eligibility during Weatherization Assistance Program (WAP) service delivery. Some stated that they would

⁵Public Act 102-0662: <https://ilga.gov/legislation/publicacts/102/PDF/102-0662.pdf>

require additional training, guidelines, or compensation. Some CAA respondents said that they would be able to provide lists of energy efficiency program participants who would be good candidates for solar to the ILSFA administrators. Elevate should develop and implement a process to work collaboratively with the CAAs, including the provision of training where needed.

- **Coordination with Other Low-Income Programs (Habitat for Humanity, Housing Programs, etc.):** Elevate should investigate other low-income programs that they can coordinate with to identify potential participants for the DG sub-program.
- **Assess Future Coordination with Utility Low-Income Programs:** Future legislation that specifies how utilities engage with the ILSFA Program and provides funding to support other aspects of project development could be considered.

C. Implementation

- **Proactive Assessment and Planning:** Elevate implemented the complex ILSFA Program in a short time period; developed numerous materials, the website, and portal; recruited and supported numerous solar vendors; and selected projects in all sub-programs. They focused on core responsibilities, ensured that program requirements were met, managed several project submission periods, and implemented additional project procedures as AVs reached later steps of project implementation. However, Elevate has not been able to proactively plan the program process, assess how to effectively design systems and procedures to create efficiencies and remove redundancies, or take important steps to overcome program challenges. To achieve greater program success, Elevate needs to use what they have learned, think and work a few steps ahead of the current implementation steps, and address problems that have not been resolved.
- **Stakeholder and Partner Outreach and Engagement:** Implement proactive outreach to stakeholders beyond the current email blasts to engage CAAs and other organizations that serve low-income households.
- **DG AV and Participant Outreach:** Conduct outreach to AVs to develop more offers to include on the offer list for potential participants. The Chicago Porch and Roof Replacement Program that Elevate implements is a good target for potential DG customers with solar-ready homes. Elevate should provide increased outreach to past and current participants, and investigate whether participants in similar programs around the state can be targeted.
- **Marketing (website and other marketing materials):** Improve the design of the website to make it easier to find information and understand the program. Improve other marketing materials to illustrate participation steps in a simple and straightforward manner.
- **Job Training Organization Qualification:** Qualify additional job training programs outside of the Chicago area. Job trainees and AVs both stated that the limited locations of the job training programs was a barrier.

- Project Submission and Approval (process, instructions, portal, and required documents): Review the entire process and streamline wherever possible. AVs recommended presenting program information in a more synthesized and simplified manner, creating a manual for the portal, and allowing AVs to upload a large number of photos.
- Improve the Part II Approval Process: AVs reported challenges uploading documentation and photos, difficulties taking required pictures during construction, issues collecting job training documents, and redundancies in required documentation. Make this process easier for the AVs.